

NOMINATION

to the
World
Heritage
List



Pearling
Testimony of an Island Economy

Nomination to the World Heritage List

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بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ
مَرَجَ الْبَحْرَيْنِ يَلْتَقِيَانِ
بَيْنَهُمَا بَرْزَخٌ لَا يَبْغِيَانِ
فَبِأَيِّ آءَالَآءِ رَبِّكُمَا تُكَذِّبَانِ
يَخْرُجُ مِنْهُمَا اللُّؤْلُؤُ وَالْمَرْجَانُ
فَبِأَيِّ آءَالَآءِ رَبِّكُمَا تُكَذِّبَانِ

In the Name of Allah the Most Gracious, the Most Merciful

He has made al-Bahrain (the two seas) flow freely (so that) they meet together.

Between them is a barrier which they cannot pass.

Which then of the bounties of your Lord will you deny?

There come forth from them pearls, both large and small.

Which then of the bounties of your Lord will you deny?

Al-Quran, Surat-ul-Rahman, 19-23

A photograph of two men sitting on a patterned rug in a room. They are both wearing white shirts. The man on the left is looking towards the man on the right. The man on the right is looking down at something in his hands. The room has a window with blinds and a framed picture on the wall.

Executive Summary

State Party

KINGDOM OF BAHRAIN

State, Province or Region

Kingdom of Bahrain, territorial waters

Kingdom of Bahrain, Muharraq Island, Muharraq Governorate

Name of Property

Pearling, testimony of an island economy

Geographical coordinates to the nearest second

Name of property	No.	Longitude	Latitude	UTM Easting	UTM Northing
Hayr Bū-l-Thāmah	1	50°54'42.84"E	26°47'25.44"N	491243.3	2963224.3
Hayr Bū'Amāmah	2	50°48'13.14"E	26°48'27.036"N	480486.4	2965131
Hayr Shtayyah	3	50°48.55.836"E	26°36'40.896"N	481633.8	2943404.9
Bū Māhir Seashore	4a	50°36'47.916"E	26°14'26.952"N	461421.2	2902397
Qal'at Bū Māhir	4b	50°36'48.636"E	26°14'28.608"N	461441.1	2902448
Al-Ghūṣ House	5	50°36'51.084"E	26°14'38.364"N	461510	2902748
Badr Ghulum House	6	50°36'48.348"E	26°14'44.592"N	461434.8	2902940
Al-Jalahma House	7	50°36'49.14"E	26°14'45.528"N	461456.9	2902969
Al-Alawi House	8	50°36'47.808"E	26°14'49.2"N	461420.2	2903082
Fakhro House	9	50°36'38.592"E	26°14'51.9"N	461165.2	2903165
Murad House	10	50°36'48.996"E	26°14'58.632"N	461485.9	2903371
Murad Majlis	11	50°36'48.996"E	26°14'57.696"N	461454.4	2903343
Siyadi Shops	12	50°36'36.216"E	26°14'59.784"N	461100.1	2903408
Amārat Yousif A. Fakhro	13a	50°36'33.156"E	26°14'59.892"N	461014.6	2903412
'Amārat Ali Rashed Fakhro (I)	13b	50°36'34.38"E	26°15'0.612"N	461048.7	2903434
'Amārat Ali Rashed Fakhro (II)	13c	50°36'33.912"E	26°15'1.224"N	461036.1	2903452
Nūkhidhah House	14	50°36'39.42"E	26°15'16.488"N	461190	2903922
Siyadi House	15a	50°36'46.404"E	26°15'19.332"N	461384.4	2904009
Siyadi Majlis	15b	50°36'45.396"E	26°15'19.296"N	461356.1	2904007
Siyadi Mosque	15c	50°36'45.072"E	26°15'18.612"N	461346.9	2903987

In the above table and all further parts of the nomination dossier the reference UTM projection datum is Ain al-Abid and the geographic projection datum is WGS.84

Textual description of the boundaries of the nominated property

The boundaries of the 15 properties and the primary as well as secondary buffer zones are introduced in textual descriptions below. All geographical references are given as UTM Northing and Easting with projection datum Ain al-Abid. Since some of the boundaries are rather complex or can only be defined by their geographical coordinates in lack of other visible geographical markers (as for the marine properties) it is advised to read the descriptions with assistance of the relevant maps provided.

Property boundaries:

Oyster beds

The three oyster beds are located north of *Muharraq* Island. They are called *Hayr Bū 'Amāmah*, *Hayr Bū-l-Thāmah* as well as the larger bed *Hayr Shtayyah*. *Hayr Bū 'Amāmah* and *Hayr Bū-l-Thāmah* have similar sizes and are located close to each other in the northern territorial waters of Bahrain. *Hayr Shtayyah*, the largest oyster bed, is located between the other two and the northern shores of *Muharraq* Island.

Property 1: *Hayr Bū-l-Thāmah*

Hayr Bū-l-Thāmah has an oval shape which is significantly tapered from the southern side. Its boundaries can be described starting from the most western point (485362.3 E/2960416 N) and then going northwards until coordinate (487823.3 E/2966090 N), the most northwestern corner of the bed. Moving horizontally towards the east, through coordinates (492599.2 E/2966334 N) and (494160.2 E/2966269 N) which define the northern most limit of the bed until coordinate (496537.5 E/2965139 N), where the direction changes slightly south until (497755 E/2963647 N), the most eastern point of this oyster bed. The boundary then goes slightly south-westwards, returning to (485362.3 E/2960416 N).

Property 2: *Hayr Bū 'Amāmah*

Hayr Bū 'Amāmah has an overall rectangular shape, with curved corners. Its boundary is described starting from the most western point (475627.3 E/2964205 N), which reaches northwards until (477054.8 E/2967770 N), where it curves eastwards until (478877.4 E/2968653 N). The boundary then extends straight towards the eastern end of the bed, which is defined by the coordinates (483981.4 E/2967626 N) and (484478

E/2967029 N), before extending south towards (483962.6 E/2962280 N) where it connects to (482950.5 E/2961366 N) and (481775.4 E/2961358 N) at the southeastern corner through a curve. The boundary continues north-westwards and closes when reaching (475627.3 E/2964205 N).

Property 3: *Hayr Shtayyah*

Hayr Shtayyah is round with an exclusion zone in the southern centre. The oyster bed's boundary is described starting from (470543.5 E/2942681 N), the most western point, continuing north-eastwards where it reaches the northernmost point (481515.5 E/2952191 N). The boundary then follows a curved eastward line with a southward inclination towards (492093.7 E/2943250 N), the easternmost point of the bed. From there, the boundary continues south-westwards until (483391 E/2935377 N) and (481450 E/2935397 N). At these points, the boundary takes a 90 degree direction change towards the centre of the bed, occurring at points (481082.4 E/2943916 N) and (478977.2 E/2944118 N), before moving back to (477492.7 E/2934589 N), the boundary's southernmost point. The boundary then curves back to (470543.5 E/2942681 N), the origin of the description.

Property 4a: *Bū Māhir* Seashore

The oval property encompasses both sea and land. The boundary description starts inland at point (461467.6 E/2902496 N), the northern most point of the property, and lies southwards and eastwards, following the limits of the garden area, which are included in the property. Going past the coast guard's cantina, the boundary continues south beyond the beach to point (461500.4 E/2902432 N), located in the *qirāḥ* zone of shore. From the *qirāḥ* zone, the boundary describes a curve around the *haddrah*, reaching the deepest sea at point (461389 E/2902312 N). The curve continues then north-westwards to coordinate (461336.9 E/2902354 N) the most western point of the property, before arriving back on land at (461399.1 E/2902466 N), the edge of the existing peer. Further eastwards, the boundary reaches (461420.7 E/2902470 N), to the immediate left of one of *Bū Māhir* fort's tower footprints. The boundary closes north-eastwards at (461452.8 E/2902493 N) and back to (461467.6 E/ 2902496 N).

Property 4b: *Qal'at Bū Māhir*

The property boundary of *Qal'at Bū Māhir* follows the exact outline of its standing remains. From the northernmost point (495193.2 E/2976844 N) the boundary follows the inner elevation to (498856.5 E/2976171 N). Going slightly eastwards, the boundary encloses the remains of the southern wall (500110.4 E/2972920 N) and

(500195.9 E/2969394 N). From (500195.9 E/2969394 N), the boundary takes its turn westwards, in a circular shape, surrounding the only remaining tower of the fort. At (495889.9 E/2937890 N), the boundary meets the outer elevation of *Qal'at Bū Māhir's* west wing, where it then continues northwards until (492859.9 E/ 2934648 N). The distance between (492859.9 E/2934648 N) and (495193.2 E/2976844 N) represents the northern short end of the remaining wing.

Property 5: *Al-Ghūṣ* House (Road 1615, house no. 972)

Al-Ghūṣ House is the first urban property to the north of *Qal'at Bū Māhir*. Its boundary follows the exact limits of the plot where it is situated (plot 13571). The boundary's southeastern limits are defined by the intersection of Road 1615 and Road 1612. From these roads, the boundary extends northwards until (461501.7 E/2902756 N), then eastwards until (461509 E/2902756 N), and southwards until (461509 E/2902752 N), before joining Road 1615 at point (461519.5 E/2902752 N).

Property 6: *Badr Ghulum* House (Lane 1622, house no. 1256)

Directly north of *Al-Ghūṣ* House lies the *Badr Ghulum* property, which is composed of the *Badr Ghulum* House and, next to it, part of the *Turabi* House. The boundary includes plots 13308 and 13307, and parts of plot 13306. Lane 1622 borders *Badr Ghulum* House at its southern and eastern façades. At point (477627.6 E/2968509 N), the property's western limit, the boundary start stretching from Lane 1622 perpendicularly to point (478877.4 E/2968653 N), where it runs eastward in the direction of Lane 1622 to (475627.3 E/2964205 N).

Property 7: *Al-Jalahma* House (Road 1624, house no. 1321, 1319)

Al-Jalahma House lies to the northeast of the *Badr Ghulum* House. The property's boundary includes the two parts of the house on plots 10155 and 24633, and parts on plot 24631. The connecting element on the first floor, which covers part of Lane 1622, is also included in the boundary. The northern façade is bordered by Road 1624. Starting from (461470.1 E/2902985 N) at Road 1624, the property extends southwards to (461475.5 E/2902966 N), and westwards to (461458.8 E/2902960 N), where it meets Lane 1622. Following the house's street façade, the boundary is defined northwards until the *ṣabāṭ* (the connecting element), crosses Lane 1622 and follows the façade southwards to the corner of the building (461457.9 E/2902952 N). The property extends westwards until (461448.6 E/2902950 N), and northwards until (461446.8 E/2902956 N), following the boundary wall of the property until (461447.7 E/2902980 N) on Road 1624.





Exchange of pearling memories in the Muharraq coffee shop

Property 8: *Al-Alawi House* (Abdulrahman Al-Fadil Avenue, house no. 414)

The property boundary of *Al-Alawi House*, which is located north of *Al-Jalahma* complex, follows, exactly, its square-shaped façade outline which at the same time fills plot 13751. The property's southeastern façade is adjacent to Abdulrahman Al-Fadil Avenue, between points (461429 E/2903080 N) and (461419 E/2903073 N). The other two corners of the square property are defined by the coordinates (461411.7 E/2903084 N) and (461421.2 E/2903090 N).

Property 9: *Fakhro House* (Shaykh Abdullah Bin Ahmed Avenue, house no. 252)

Situated northwest of *Al-Alawi House*, the *Fakhro House* boundaries are defined by the remains of the old house and the boundary walls of the property with its garden. The property includes plot 13074 and a large part of plot 13975. To the southeast, the property's boundary is defined by Shaykh Abdullah bin Ahmed Avenue, which starts from the façade corner at coordinates (461209.7 E/2903178 N) running towards the following corner at (461178.1 E/2903152 N). From there, the boundary follows the limits of the old peer up to (461131 E/2903127 N) and further north towards (461119.4 E/2903149 N). The property boundaries are closed by returning to the remaining house's corner at (461160.6 E/2903184 N), and along the façade to (461187.3 E/2903208 N).

Property 10: *Murad House* (Road 1308 no. 62 and 64, Road 1313 no.169)

Murad House is located on the intersection of Lane 1308 and Lane 1313, which defines the southwestern corner of the trapeze shaped house. From there, the boundaries follow the building's façade; from point (461462.4 E/2903377 N) towards the second visible corner of the building, and then north-eastwards until (461501.8 E/2903388 N), before turning back to lane L1308.

Property 11: *Murad Majlis*, (Road 1308, no 70)

The rectangular shaped *Murad Majlis* is located facing *Al Murad House*, across Lane 1313. The southeastern façade of *Murad Majlis* is defined at Lane 1306. From Lane 1306 the boundary takes direction towards coordinate (461450.1 N/2903333 E) and then extends north-westwards until (461445 E/2903346 N). The boundary then extends further northeastwardly towards (461456.6 E/2903353 N) and follows the Muawdah Mosque limits to Lane 1308.

Property 12: *Siyadi Shops, Tujjar* (Avenue, no. 1653, 1655, 1667 and 1669; *Sūq al-Qaysariyyah*, no. 81, 83, 87, 67, 68a, 68b, 68c, 68d, 91 and 93)

The *Siyadi Shops* are located in the area locally named as *Sūq al-Qaysariyyah*. The property comprises two buildings, including the street separating them, and is bordered by Bu Maher Avenue to the east. From Bu Maher Avenue the property's boundaries, starting with the corner of the eastern building (489765.9 E/2948338 N), extend westwards to the corner at (481515.5 E/2952191 N). On the other side of *Sūq al-Qaysariyyah's* main street, the western complex runs from (478661.4 E/2951135 N) northwards to the building's corner, and follows the building's façade on Tujjar Avenue until the southern visible corner at (478977.2 E/2944118 N). The boundary further follows the building's elevation to (481082.4 E/2943916 N), and from this point returning to *Sūq al-Qaysariyyah* at (479309.1 E/2940643). The eastern complex of the property extends south until (461452.8 E/2902493 N) where its boundary runs, along the façade, towards (461336.9 E/2902354 N) which is situated at Bu Maher Avenue.

Property 13: *'Amārat Yousif A. Fakhro*, and *'Amārat Ali Rashed Fakhro (I)* and *'Amārat Ali Rashed Fakhro (II)*, (Tujjar Avenue, no. 1622, 1626, 1632 and 1640; Lane 1551, no. 1524, 1506, 1496, 1494, 1490, 1502 and 1504)

The *'Amārat* complex includes *'Amārat Ali Rashed Fakhro (I)* and *(II)*, including the street between them (lane 1551), and *'Amārat Yousif A. Fakhro*. *'Amārat Ali Rashed Fakhro (II)* optically merges with the building structures to its north and east. The complex, comprising the three properties, is bordered by Tujjar Avenue to the east, from *'Amārat Ali Rashed Fakhro (I)'s* southeastern corner (461074.9 E/2903428 N), following the building's contours until (461050.4 E/2903442 N). At this point, the boundary crosses Lane 1551 and meets *'Amārat Ali Rashed Fakhro (II)'s* elevation at (461049.9 E/2903446 N), and then continues, along the Lane 1551, following the *'amārah's* boundary wall and the exact limits of plot 11368 until returning again to Lane 1551. The boundary then follows the *'amārah's* elevation southwards until the southernmost corner, (461023.7 E/2903443), where it crosses the lane once again at (461024.4 E/2903438 N). From there, the property's boundary runs southwards following the western division wall to point (461022.6 E/2903424 N), indicating the separating wall between *'Amārat Ali Rashed Fakhro (I)* and *'Amārat Yousif A. Fakhro*. The boundary then turns westwards to point (460968.3 E/2903417 N), after which it crosses through plot 02018986 to (460974.1 E/2903389 N) on the southern plots boundary. Finally, the boundary turns eastwards following the plot's limits and the course of Tujjar Avenue (461076.2 E/2903424 N).

Property 14: *Nūkhidhah* House (Lane 920, no. 365)

The *Nūkhidhah* House is located in *Farīj Shaykh Abdallah*. Its boundary coincides with the exact built structure, which is square shaped and bordered by Lane 920 on three sides (north, east and west) and a neighbouring house to the south, on plot 12820.

Property 15: *Siyadi* complex: *Siyadi Majlis* (Lane 910, no. 79), *Siyadi* House (Lane 914, no. 203) and *Siyadi* Mosque (Lane 914)

The *Siyadi* complex is the northernmost property and is composed of three buildings including a portion of narrow Lane 914 between the two houses. The property, comprising the three architectural structures, is bordered by Lane 910 to the north and Lane 914 to the south. The buildings form an L-shape with the long side (*Siyadi Majlis* and *Siyadi* House) directed east-west, and the short side (*Siyadi Majlis* and *Siyadi* Mosque) directed north-south.

The property boundary extends from the northwestern corner of *Siyadi Majlis* (461348.4 E/2904018 N), then passes eastwards along the building's façade towards the corner (461365.4 E/2904016 N). From there, the boundary line crosses Lane 914 to the *Siyadi* House corner, and continues along the façade until point (461395.4 E/2904024 N), the northernmost point of the house. From here the property's boundary turns south-eastwards, following the separating wall, until the limit of plot 17127, at (461403.9 E/2904013 N), further following the plot limits until (461398 E/2903999 N). Along *Siyadi* House's elevation towards its southwestern corner (461366.6 E/ 2903997 N), the boundary crosses Lane 914 a second time; this time towards *Siyadi Majlis'* southeastern corner, and follows its façade further to the connecting point with *Siyadi* Mosque's boundary wall. Towards the south, the property's boundary corresponds to the contours of plot 13060083 on which the mosque sits. The boundary follows the mosque's eastern and southern façade and its western wall until it connects again with *Siyadi Majlis* along the northern wall at (461349.4 E/ 2904000.5 N). Finally, the boundaries connect again to the origin of the description, following the *Majlis'* separating wall towards Lane 910, at (461348.4 E/2904018 N).

Buffer zone boundaries:

Oyster beds buffer zone:

The buffer zone completely surrounds the three oyster beds in an oblong shape that also includes the marine protected reserve of *Bū-l-Thāmah* reef. The

boundary line is described starting from its most northern point (495193.2 E/2976844 N), and extends eastwards and southwards around the *Bū-l-Thāmah* reef until point (500195.9 E/2969394 N), at which point the boundary evolves southwards until (495889.9 E/2937890 N). Following this, the boundary describes a semicircular shape around *Hayr Shtayyah* until point (465614.8 E/2943649 N), before turning northwards towards point (473840.4E/ 2971821N), where it curves northeastwards to (476195.1 E/ 2973331 N). Following an eastern direction, the boundary extends to (490773.9 E/2974203 N) before again curving around *Bū-l-Thāmah* reef where it ends back in point (495193.2 E/2976844 N).

Bū Māhir Seashore and *Qal'at Bū Māhir* buffer zone:

The northern part of the primary protection zone is bordered by the Khalifa Al-Kabeer Highway, which also separates it from *Muharraq* city. The boundary then runs, following the pedestrian walk at the southern side of the highway, from (461295.3 E/2902575 N) to (461717E/ 2902574 N). It includes west and eastward parts of the *Muharraq* fishing harbor and the Coast Guard's territory in the centre, with the seashore property with *Qal'at Bū Māhir* laying south. The territorial waters in the south of the seashore and *Qal'at Bū Māhir* are as well enclosed within the primary protection zone. This semicircular area with a radius of 742 metres is defined starting from the northernmost point (460709.4 E/2902559 N) towards its southernmost (461448.3 E/2901692 N) and the westernmost point (462174.1 E/2902310 N).

Primary protection zone boundaries:

Al-Ghūṣ House buffer zone:

The zone begins at the north-eastern corner point (461529.6 E/2902785 N) on Road 1612. The buffer zone then descends southwards through building blocks and across Lane 1616 until it borders the adjacent building block. From there, the boundary crosses Road 1615 and, passing through another building complex, reaches coordinates (461546.3 E/2902715 N) in the south-east. The zone continues through the same building block westwards, passing through Road 1612, and traverses another building block to reach point (461492.4 E/2902721 N) on Road 1611. From there, the zone expands north alongside the same building block, crossing again Road 1615 as well as another building block, until it reaches coordinate (461488.4 E/2902780 N) on Lane 1616 in the north-west. The zone outline turns east along Lane 1616, passing through another building block, until the point of origin (461529.6 E/ 2902785 N) is reached, again after crossing Road 1612.

Al-Jalahma buffer zone:

The so-called *Al-Jalahma* buffer zone encompasses three properties: *Al-Alawi* House, *Badr Ghulum* House and *Al-Jalahma* House. The buffer zone begins north-east of *Al-Alawi* House at coordinate (461437.2 E/2903125N) on Road 1417. The zone boundary then turns southwards and runs closely along a building block that borders east on Road 1417. The line then crosses this road and meets coordinate (461479.5 E/2903103 N), where it turns south again, while cutting through a larger building block until it meets (461500.2 E/2903049 N). From there the zone continues its course westwards along Road 1626, traversing south through another building block, then crossing Lane 1624 and continuously descending south until the zone meets with (461505.7 E/2902967N) on Lane 1622. The outline keeps descending, following the course of Lane 1622 while bordering two more building blocks and cutting through a third, until it ends on the most southern point in coordinate (461455.6E/2902909N) in the centre of another building block. The zone boundary line then continues slightly north-westwards, going through the same building block, until it reaches Road 1611 and then turning north and crossing Lane 1622. From there, the buffer zone follows the westward outline of another building block and continues north, alongside Road 1611, to meet (461392.7 E/2902973 N). Towards

the east, the zone follows the road along the same building block and then turns north, bordering further building blocks, up to coordinate (461368 E/2903080N), where Lane 1527 crosses with Bu Maher Avenue. From this point, the zone cuts north-eastwards through another building block and then crosses Lane 1421 and continues to expand north-eastwards, bordering and cutting through a larger building block, until point (461437.2 E/2903125N) on Road 1417.

Fakhro House buffer zone:

The *Fakhro* House buffer zone includes the building blocks and streets that surround the house. The boundary is described starting at coordinate (461203.3 E/2903252 N), where Lane 1325 crosses with Bu Maher Avenue. The zone borderline descends south, along the building blocks on Bu Maher Avenue, until it crosses Shaykh Abdullah bin Ahmed Avenue, where it then turns east along the building blocks and reaches coordinate (461297.7 E/2903232 N), the point where Lane 1421 crosses Shaykh Abdullah bin Ahmed Avenue. The zone line further takes a southern course through Lane 1421 and along the building blocks until it ultimately intersects (461322.5 E/2903189 N) and turns west through another building block, crossing Bu Maher Avenue. From here, the boundary turns north-westwards to border a few larger building



Performance of pearling songs on the dhows

blocks situated in Road 1519. The boundary takes a turn northwards at coordinate (461189.7 E/2903112 N) on Road 1519, through blocks of buildings, and again crosses Shaykh Abdullah bin Ahmed Avenue until (461100.8 E/2903089 N). From this point the boundary crosses several buildings as well as crossing Lane 1513, where it reaches the coordinate (461071.4 E/2903131 N). Finally, the boundary continues east to include part of a building block and reaches coordinate (461087.4 E/2903187 N) on Road 1511. The zone continues alongside Road 1511 up to (461203.3 E/2903252 N).

Murad buffer zone:

Murad buffer zone includes the surrounding areas of two properties: *Murad* House and *Murad Majlis*. The description starts at point (461495.7 E/2903424 N), which is the corner of a building where the zone expands south along the building's facade across an open space until it reaches another building block. From this point, the zone turns south-east through another open space that is connected to Road 1349 and Lanes 1308 and 1311. Following Lane 1311 southwards, the boundary ends in coordinate (461550.8 E/2903365 N) and turns west in a right angle crossing through several buildings located on Shaykh Abdulla Bin Ahmed Avenue. From this point the line is headed towards (461511.5 E/2903327 N). The boundary continues westwards along the same

avenue until it turns north at coordinate (461443.3 E/2903302 N). The property line then crosses a building block and exits on Lane 1308, where it directly enters into Lane 1318 towards coordinate (461425.6 E/2903351 N). The boundary continues in a north-eastern direction, crossing a dense building block, until it reaches coordinate (461432 E/2903390 N). At this point, the boundary turns east and crosses Lane 1313; ending again in the origin of the description (461495.7 E/2903424).

Sūq buffer zone:

The *sūq's* buffer zone is composed of the surroundings of four architectural structures, the *Siyadi* Shops and three *'amārat*: *'Amārat Yousif A. Fakhro*, and *'Amārat Ali Rashed Fakhro* (I) and (II).

The boundary description starts at point (461093 E/2903502 N) on Shaykh Hamad Avenue and continues southwards to Road 1123 alongside the building blocks. From here, the buffer zone crosses the same street again and turns eastwards to pass along a building located in Lane 1337. From this building, the boundary continues southwards along the border of an open space, slightly turning south-west along buildings, and crosses Bu Maher Avenue. The boundary then follows the street line westwards and crosses Tujjar Avenue.



Details of window frames in Al-Jalahma House

After crossing Tujjar Avenue, the line continues through coordinate (461073.2 E/2903354 N), on Road 1502, further north along a large building block parallel to Road 1557. After the boundary stretches north, to cross Road 1557, it turns westwards on the other side of the road until reaching coordinate (460964.6 E/2903371 N). Finally, the zone moves straight north through an open space and cuts through a building block to meet coordinate (460936.5 E/2903465 N), on Shaykh Hamad Avenue. The northern boundary of the *sūq* buffer zone follows, from this coordinate, the buildings alongside Shaykh Hamad Avenue to the east. The boundary then crosses, once again, Tujjar Avenue and follows the façades of another building block, along the avenue, until it finally meets coordinate (461093 E/2903502 N).

Nūkhidhah House buffer zone:

A smaller-sized buffer zone surrounds the *Nūkhidhah* House. From the northeastern point of the primary protection zone (461206.1 E/2903959 N), the boundary turns south through building blocks and enters Lane 920 before it traverses through another building block to end in coordinate (461220 E/2903902 N). From this coordinate, the boundary line turns west through the same building block and moves south again to reach Lane 932; following its course to the west until point (461196.3 E/2903884 N). This part of Lane 932 represents the southern border of the primary protection zone. From coordinate (461196.3 E/2903884 N) the boundary line moves north within Lane 932 and later follows its course to the west. Crossing another building block, the boundary then turns again at (461168.2 E/2903906 N) to the north, crossing Lane 934, and follows its course north alongside a building block up to point (461157.8 E/2903944 N). The northern border of the *Nūkhidhah* House's primary protection zone is limited by Lane 934, which connects (461157.8 E/2903944 N) eastwards to (461206.1 E/2903959 N).

Siyadi buffer zone:

The *Siyadi* buffer zone consists of the three northern *Siyadi* properties' surrounding urban environments: *Siyadi Majlis*, *Siyadi* House and *Siyadi* Mosque. The properties are situated in the centre of the primary protection zone. The most northern point in the primary protection zone, (461410.1 E/2904069 N), is found within a building block that is situated along the western side of Shaykh Isa Avenue. The boundary line descends south through this building and eventually crosses Lane 905. The boundary then traverses further south through an empty space and finally reaches coordinate (461428.4 E/2904024 N). The line continues south along Shaykh Isa Avenue and meets coordinate (461433.5 E/2902310 N). After crossing Road 911, from which it turns westward, the boundary traverses large building blocks

and crosses Road 911, for a second time; continuing further west until (461348.2 E /2903940 N). From this most southwestern coordinate, the boundary ascends north through several building blocks, crossing Lane 914, and moves along this lane towards the west side until it finally turns north along the boundary of a corner building. It then reaches coordinate (461297.9 E/2903980 N) on Lane 912. The boundary then passes north through Lane 912 and turns east, traversing several building blocks, before it turns again - north, east and north - to cross Lane 910. From this point, the boundary continues north alongside Lane 937 until it reaches coordinate (461301.9 E/2904050 N). A horizontal line that passes from west to east through many building blocks and empty spaces specifies the northern border of the primary protection zone. This northern line ends at the coordinate (461337.9 E/2904067 N), which is of the same level as coordinate (461410.1 E/ 2904069 N), after the boundary has crossed Lane 905.

Secondary protection zone boundaries:

The secondary protection zone surrounds all urban properties and their primary protection zones and constitutes a shared buffer zone of the 12 properties located on *Muharraq* Island. Starting at the seashore and *Qal'at Bū Māhir*, the buffer zone crosses straight ahead over Khalifa Al-Kabeer Highway and reaches into the urban fabric of *Muharraq*. The buffer zone stretches north and crosses Road 1601 at the level of *Al-Ghūṣ* House. From there, the buffer zone surrounds its primary protection zone and heads north crossing Road 1612 and proceeds northwards along Road 1625. The zone then follows the course of Lane 1627 which is located eastwards of *Al-Jalahma* House primary protection zone. To the north, the boundary crosses Road 1630. After crossing Road 1630, the line stretches further north, with a slight western inclination, until it crosses the intersection of Abdulrahman Al-Fadil Avenue with Road 1415, at the level of *Al-Alawi* House. The course of the buffer zone subsequently takes several turns westwards while continuously moving north, crossing Road 1414, east of the *Fakhro* House. The boundary then joins, in an eastern direction, along Road 1415.

The zone here follows an irregular contour and turns further east to run parallel to Shaykh Abdulla Bin Ahmed Avenue at the lower level of *Murad* House. The boundary line crosses Road 1411, Lane 1409 and Road 1405 and ultimately joins Lane 1401. The course turns northwest just before the major intersection of Shaykh Isa Avenue/ Al Khalifa Avenue. From here boundary stretches north and parallel to Shaykh Isa Avenue, crossing Lane 1308. The line then turns west and follows the course of the *Murad* cluster's primary protection zone. The boundary of the secondary protection zone then further



Historic photograph of diver inspecting his pearls



Southern façade of Siyadi complex from courtyard of Siyadi Mosque



moves west and turns north; passing through several buildings blocks in an irregular manner until it reaches Lane 1335. After crossing Lane 1335, the boundary line continues, east of the *sūq*, and crosses Lane 1339 at the *sūq*'s northern edge.

The buffer zone continues northwards, crossing: Shaykh Hamad Avenue; Lane 1120; Lane 1138; Lane 1137; and further up, Shaykh Abdullah Avenue. The buffer zone then surrounds, northwards, the primary protection zone of the *Nūkhidhah* House parallel to Road 916. The zone joins, eastwards, Road 911, which borders the southern primary protection zone boundaries of *Siyadi* complex. The buffer zone then turn eastwards and surrounds the primary protection zone of *Siyadi* complex. The boundary passes through Road 913 and crosses Shaykh Isa Avenue; passes along Lane 623. The boundary further stretches north, parallel to Shaykh Isa Avenue, to the east of *Siyadi* complex. At the point where the secondary protection zone crosses Shaykh Isa Avenue and continues its course westwards, we note the northernmost boundary. Towards the south, the buffer zone turns away from the primary protection zone of *Siyadi* complex and bends westwards to meet parallel with Wali Ahmed Avenue and the northern boundary of the *Nūkhidhah*'s primary protection zone. From here, the secondary protection zone continues south along Road 931 and crosses Lane 932. It descends even further south, crossing: Lane 918; Lane 919; Shaykh Abdulla Avenue and ultimately Shaykh Hamad Avenue.

In the vicinity of *Sūq al-Qaysariyyah*, the buffer zone widens southwest to include the primary protection zone of the *sūq*. It follows Avenue 10 southwards, turns east along Road 1502 and then meets Road 1504 heading south; following its course to cross Tujjar and Bu Maher Avenue. After including the *sūq*'s primary protection zone, the buffer narrows once more to surround the *Murad* complex. Since the *Fakhro* House's primary protection zones lays far to the west, the buffer zone changes its direction to the west as well; surrounding the *Fakhro* primary protection area. To reach this destination, the boundary is defined, moving westwards, from *Murad* House and crossing Lanes 1319, 1321, and 1323, where it joins Lane 1325. The boundary eventually crosses Shaykh Abdullah Bin Ahmed Avenue and, afterwards, Tujjar Avenue at the northern end of the primary protection zone of *Fakhro* House. The boundary's course further turns south, in an almost straight contour along Avenue 10, until it meets and eventually follows Road 1523 in its direction eastwards. Further to the south, the zone's boundaries widen, once again, and include the primary protection zones houses of the *Alawi* and *Jalahma* families. While moving south, the buffer zone crosses Abdulrahman Al-Fadil Avenue at the level of *Al-Alawi*'s primary protection zone. It continues south and crosses Road 1611, crossing several building blocks parallel to

the primary protection zone of *Al-Jalahma* House, and turns at the southwestern end of *Al-Jalahma's* primary protection zone, which lies to the east, to join Shaykh Isa Avenue. Here the zone is again narrowed and later widens again, after a short distance southwards, to include the area surrounding *Al-Ghūṣ* House's primary protection zone. The secondary protection zone boundary continues south, in a straight line, passing through several building blocks until ultimately crossing Khalifa Al Kabeer Highway. After crossing Khalifa Al Kabeer Highway, the protection zone boundary meets with the origin of description, at the *Bū Māhir* Seashore and *Qal'at Bū Māhir's* seashore buffer zones.

Statement of Outstanding Universal Value

The following Statement of Outstanding Universal Value is proposed for the property:

Factual summary

Pearling, testimony of an island economy is a serial nomination of 15 sites. These encompass 3 oyster beds as marine sites located in the northern territorial waters of Bahrain, one seashore site located at the southern tip of *Muharraq* Island and 11 architectural properties, encompassing 17 architectural structures, embedded in the urban fabric of *Muharraq* city. In terms of categories of cultural property set out in article 1 of the 1972 Convention, the serial site consists of 4 sites, 9 monuments and 2 groups of buildings.

Brief synthesis:

Pearling is an outstanding example of a traditional sea-use, which shaped the single product economy and cultural identity of an island society. This millennia-long practice is the most significant example globally of a natural pearl-collection tradition and is based on the Arabian Gulf oyster beds north of Bahrain, which are the best-known source of pearls since ancient times.

Although the pearling economy collapsed as a result of irreversible economic change in the 1930s, many of its characteristic features and practices survive. The natural resource remains in the surviving oyster beds *Hayr Bu-l-Thamah*, *Hayr Bu am'amah*, and *Hayr Shtayyah*. The architectural testimony in *Muharraq* is the last remaining example which comprises residential and commercial structures that are tangible manifestations of all major social and economic roles and institutions associated with the pearling society and acts as a memory marker for the cultural identity it produced and still maintains.

Beyond the World Heritage context place names, family names, social hierarchies, surviving legal systems, songs, stories, poetry, festivals and dances are associated with these physical resources and assist in transmitting the grand narrative of the pearling economy.

Criterion (iii): The spatial and architectural testimony of the pearling economy in *Muharraq* and the northern waters of Bahrain reflect the culmination and final expression of more than six millennia of pearling history in the Arabian Gulf, the global centre of natural pearl collection. It is the last remaining, and therefore outstanding, example that represents the complete narrative of the cultural tradition of pearling, which dominated the Arabian Gulf between the 2nd and early 20th century, and the related human system established in a single-product island economy. While the economic system subsided, the remaining testimony continues to carry the grand narrative it produced, which is still the most significant source of Bahraini cultural identity.

Criterion (v): Pearling, and the testimony it brought forth in *Muharraq* is an outstanding example of traditional sea-use and human interaction with the environment, which shaped the economic system and cultural identity of an island society. The oyster beds and the architectural testimony of this socio-cultural and economic system are representative of a tradition that became vulnerable and was gradually abandoned in the 1930s. The collapse of the international natural pearl market value in face of the global economic crisis and the introduction of large-scale cultivation of pearls have irreversibly impacted the system's viability and vitality.

Integrity and authenticity:

As a serial nomination, the site conveys a complete understanding of the cultural tradition of pearling and the related human system established in a single product economy. The oyster beds and architectural properties selected represent the testimony of this economic system and are of adequate size to contain all major features required to embody the grand narrative it produced. The site's integrity suffered from adverse effects of insensitive housing development and neglect for decades. This is now counteracted by a special zoning arrangement which ensures the compatibility and control of new developments and urban upgrading schemes which reduce the negative impact of earlier additions.

The authenticity of the site is related to its ability to convey the shared memory and historical experience of all major social and economic roles and processes



Days on the dhow – second home of divers and traders

that constituted the human and economic system of pearling. While the oyster beds truthfully testify to the outstanding quality of pearls and have maintained the potential of economic pearl collection, the architectural properties are credible memory markers of the grand narrative. In maintaining reference to the traditional uses and functions and in illustrating traditional building techniques and designs, the architectural properties demonstrate an acceptable degree of authenticity. Over time elements of these structures were modified or changed, but later additions show architectural continuity with earlier buildings. Since the authenticity of the attributes acting as memory triggers is considered fragile, the management system gives special emphasis to their preservation and promotion.

Management and protection requirements:

The management of the serial property is governed by a Steering Committee which comprises 12 different governmental bodies as well as representatives of the property owners and businesses in the buffer zones. The day-to-day management process is, following the directives of the Steering Committee, translated into strategies by five technical and thematic subcommittees and implemented by task forces in different departments under the practical coordination of a site administration unit in the Ministry of Culture and Information. The participatory and transparent character of the management system ensures adequate cooperation between all stakeholders.

The marine properties are in the process of designation as marine protected areas under the Decree (2) of 1995 with respect to the Protection of Wildlife. The seashore and architectural properties are registered as monuments under the Decree Law No. (11) of 1995 Concerning the Protection of Antiquities.

The urban setting is regulated through the stipulations of a "Special Protection Zone" established by the Ministry of Municipalities and Agriculture in line with the Resolution no. 28 of the year 2009 regarding the specification of the regulatory stipulations for the development in different areas in the Kingdom. In addition the Ministry of Culture and Information and the mostly private traditional owners of the architectural properties have signed legal agreements covering the long-term understanding of use and conservation requirements. Conservation and restoration projects are underway for several of the properties and are guided by an integrated conservation plan as part of the management system. They are predominantly aimed at improving the presentation and interpretation of the sites and their narratives.

Criteria proposed

Criterion (iii): The spatial and architectural testimony of the pearling economy in *Muharraq* and the northern waters of Bahrain reflect the culmination and final expression of more than six millennia of pearling history in the Arabian Gulf, the global centre of natural pearl collection. It is the last remaining, and therefore outstanding, example that represents the complete narrative of the cultural tradition of pearling, which dominated the Arabian Gulf between the 2nd and early 20th century, and the related human system established in a single-product island economy. While the economic system subsided, the remaining testimony continues to carry the grand narrative it produced, which is still the most significant source of Bahraini cultural identity.

Criterion (v): Pearling, and the testimony it brought forth in *Muharraq* is an outstanding example of traditional sea-use and human interaction with the environment, which shaped the economic system and cultural identity of an island society. The oyster beds and the architectural testimony of this socio-cultural and economic system are representative of a tradition that became vulnerable and was gradually abandoned in the 1930s. The collapse of the international natural pearl market value in face of the global economic crisis and the introduction of large-scale cultivation of pearls have irreversibly impacted the system's viability and vitality.

Contact information of official institution / agency

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Tawwāsh boat visiting dhows to buy pearls

Introduction



INTRODUCTION



"We are all, from the highest to the lowest, slaves of one master – pearl. (...) All thought, all conversation, all employment, turns on that one subject; everything else is merely by-game, and below even secondary consideration." (Palgrave, 1883, p. 100)

With this nomination dossier the Kingdom of Bahrain proposes the heritage of pearling on its islands for inscription on the World Heritage List of UNESCO. Under the name “Pearling, testimony of an island economy”, Bahrain proposes a serial site of 15 property components located both in the Northern maritime waters of the kingdom and on *Muharraq* island, which over many centuries housed the globally most significant pearling society and economy.

As a result of irreversible economic change commencing in the early 1930s, the island society's pearling economy declined, and within a decade had been abandoned as its major source of income. This rapid shift brought with it not only the complete economical reorientation of a community previously solely dependent on income from the collection and trade of pearls, but also profound cultural and social change. Yet despite these changes and the 70 years that have passed, the grand narrative of pearling is still present in the memory of Bahraini citizens and continues as the primary reference of their identity. Bahrain – the centre of pearling – may have shifted its economic dependencies but its image, its pride and its uniqueness remain linked to its status during the pearling era.

To give adequate account of the importance of this grand island narrative, the professional team that prepared this nomination file has decided to propose an innovative nomination emphasising several categories reflected as ‘underrepresented’ in the Global Strategy discussions (UNESCO, 1994, p. 27) and the ICOMOS gap analysis report (ICOMOS, 2004b, 2005b). It emphasises the theme of ‘human interaction with the environment’ and ‘modes of subsistence’, exemplified by a human and economic system based on the exploitation of a natural sea resource. It is thereby the first nomination to include an economic form of sea-use since the addition of sea-use to criterion (v) in 2005 (ICOMOS, 2008, p. 30). The serial site includes underwater cultural heritage components – a rarity on the World Heritage List – and its architectural testimony is primarily of vernacular character, and consists of remains reflecting the last stage of the pearling economy in the late 19th and early 20th century. Both vernacular architecture and 20th century (especially non-European) heritage have been considered as lacking on the World Heritage List since the earliest Global Strategy discussion (UNESCO, 1994). As the representation of an island narrative, the nomination proposed could be considered a symbolic property in a typological framework, which would be the first in the Arab Region.

The nomination dossier is centred on the grand narrative of the pearling economy - the core of Bahraini identity - and its preserved spatial testimony. The narrative should not, however, be understood simply as a ‘story’ that the inhabitants of *Muharraq* Island tell each other. It is, rather, comprehensive shared memory

and explanation of historical experience and traditional knowledge, and provides meaning to contemporary identity in the entire Arabian Gulf. To fully embrace the significance of both, the grand narrative and its spatial and physical testimony, i.e. the properties proposed for World Heritage Listing, the following sections of the nomination dossier will often analyse the two layers contributing to the Outstanding Universal Value in parallel. On one hand the dossier describes the sites and buildings as the spatial and architectural testimony, on the other hand it constantly reminds of their function as the testimony of a human system and a memory that far transcends the sites in their physical reality. The spatial and architectural testimony in this context is a combination of two essential elements. It is testimony of the culmination and final expression of more than 7000 years of pearling history in the Arabian Gulf and at the same time the representation and spatial memory marker of a contemporary island identity and its grand narrative of exploitation, trade and the beauty of pearls.

The main part of the nomination dossier presented in this book is consolidated with additional documents submitted with the nomination dossier. Predominantly these are the documentation of the management system entitled “Management Plan”, the maps, and survey drawings of the architectural testimony, images as well as legal texts. Considering the intended use of the images for future reference and promotion and the volume of the legal texts, we have opted to partly include these components in digital form only. A contact sheet of the images with descriptions and references as well as an overview and English summary of the legal documents are available in chapter 7, Documentation of this nomination file.

The nomination at hand aims to present a complete set of information following the requirements of the latest nomination format outlined in the Operational Guidelines for the Implementation of the World Heritage Convention (UNESCO, 2008). This format has not always been the most supportive for the aspects presented and to better illustrate some particular ideas and features of this nomination, additional headlines have been introduced which are not part of the continuous numbering enforced by the format approved by the World Heritage Committee. However, the authors believe that the information provided in these chapters contributes material relevant to an assessment of the Outstanding Universal Value of the serial property and may further be seen as potential ideas for future revisions of the nomination format.

1

Identification



IDENTIFICATION

1

1.a State Party

Kingdom of Bahrain

1.b State, Province or Region

Kingdom of Bahrain, territorial waters

Kingdom of Bahrain, *Muharraq Island*, *Muharraq Governorate*

1.c Name of Property

Pearling, Testimony of an Island Econom

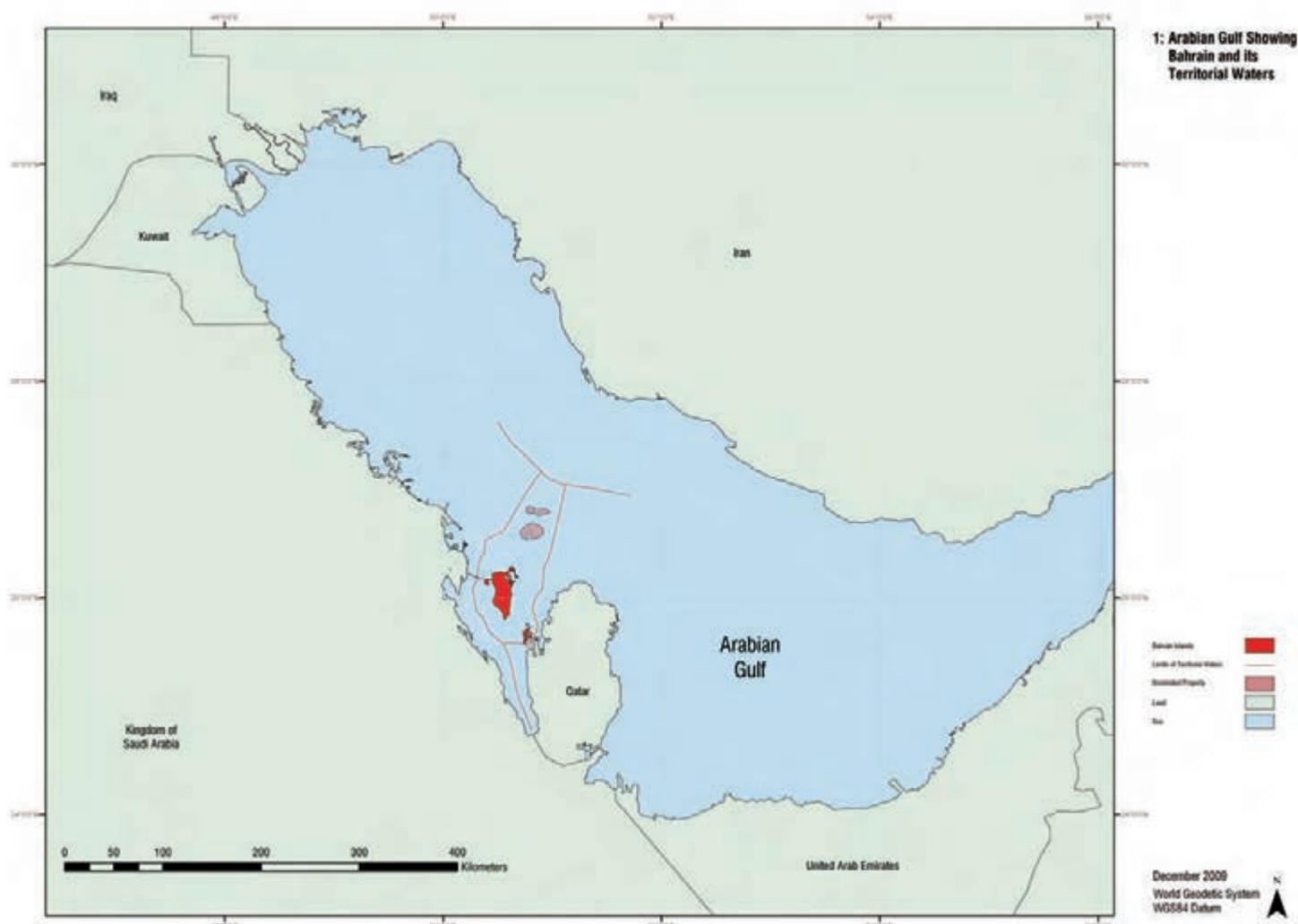
1.d Geographical coordinates to the nearest second

Central coordinates of each serial property:

No	Name of serial property	Location (in words)	Longitude	Latitude	UTM Easting	UTM Northing
Maritime properties: Oyster Beds						
1	Hayr Bū-l-Thāmāh	Bahraini waters	50°54'42.84"E	26°47'25.44"N	491243.3	2963224.3
2	Hayr Bū 'Amāmāh	Bahraini waters	50°48'13.14"E	26°48'27.036"N	480486.4	2965131
3	Hayr Shtayyah	Bahraini waters	50°48.55.83"E	26°36'40.896"N	481633.8	2943404.9
Seashore properties						
4a	Bū Mahir Seashore	Muharraq (<i>Hālat Bū Mahir</i>)	50°36'48.636"E	26°14'28.608"N	461421.2	2902397
4b	Qal'at Bū Mahir	Muharraq (<i>Hālat Bū Mahir</i>)	50°36'51.084"E	26°14'38.364"N	461441.1	2902448
Urban Properties: Architectural Testimony of the Pearling Heritage						
5	Al-Ghūṣ House	Muharraq, Farīj al- <i>Hālah</i>	50°36'48.348"E	26°14'44.592"N	461510	2902748
6	Badr Ghulum House	Muharraq, Farīj al- <i>Hālah</i>	50°36'49.14"E	26°14'45.528"N	461434.8	2902940
7	Al-Jalahma House	Muharraq, Farīj al- <i>Hālah</i>	50°36'47.808"E	26°14'49.2"N	461456.9	2902969
8	Al-Alawi House	Muharraq Farīj al-Zeyyayna	50°36'38.592"E	26°14'51.9"N	461420.2	2903082
9	Fakhro House	Muharraq Farīj al-Zeyyayna	50°36'48.996"E	26°14'58.632"N	461165.2	2903165
10	Murad House	Muharraq Farīj al-Mu'awdah	50°36'48.996"E	26°14'57.696"N	461485.9	2903371
11	Murad Majlis	Muharraq Farīj al-Mu'awdah	50°36'36.216"E	26°14'59.784"N	461454.4	2903343
12	Siyadi shops	Muharraq Sūq	50°36'33.156"E	26°14'59.892"N	461100.1	2903408
13(a)	'Amārat Yousif A. Fakhro	Muharraq Sūq	50°36'34.38"E	26°15'0.612"N	461014.6	2903412
13(b)	'Amārat Ali Rashed Fakhro (I)	Muharraq Sūq	50°36'33.912"E	26°15'1.224"N	461048.7	2903434
13(c)	'Amārat Ali Rashed Fakhro (II)	Muharraq Sūq	50°36'39.42"E	26°15'16.488"N	461036.1	2903452
14	Nūkhidhah House	Muharraq Farīj Sh. Abdallah	50°36'46.404"E	26°15'19.332"N	461190	2903922
15(a)	Siyadi House	Muharraq Farīj Sh. Abdallah	50°36'45.396"E	26°15'19.296"N	461384.4	2904009
15(b)	Siyadi Majlis	Muharraq Farīj Sh. Abdallah	50°36'45.072"E	26°15'18.612"N	461356.1	2904007
15(c)	Siyadi Mosque	Muharraq Farīj Sh. Abdallah	50°36'48.348"E	26°14'44.592"N	461346.9	2903987

1.e Maps and plans, showing the boundaries of the nominated property and buffer zone

Of the 15 serial properties, 3 are located in the northern territorial waters of Bahrain and the remaining 12 on the island of Muharraq, the second largest island of Bahrain located to the north-east of the main island. The following maps shall serve to illustrate the precise locations and boundaries of all serial properties:

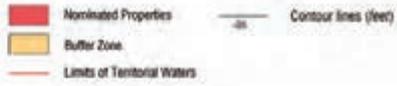


Arabian Gulf showing Bahrain and its territorial waters

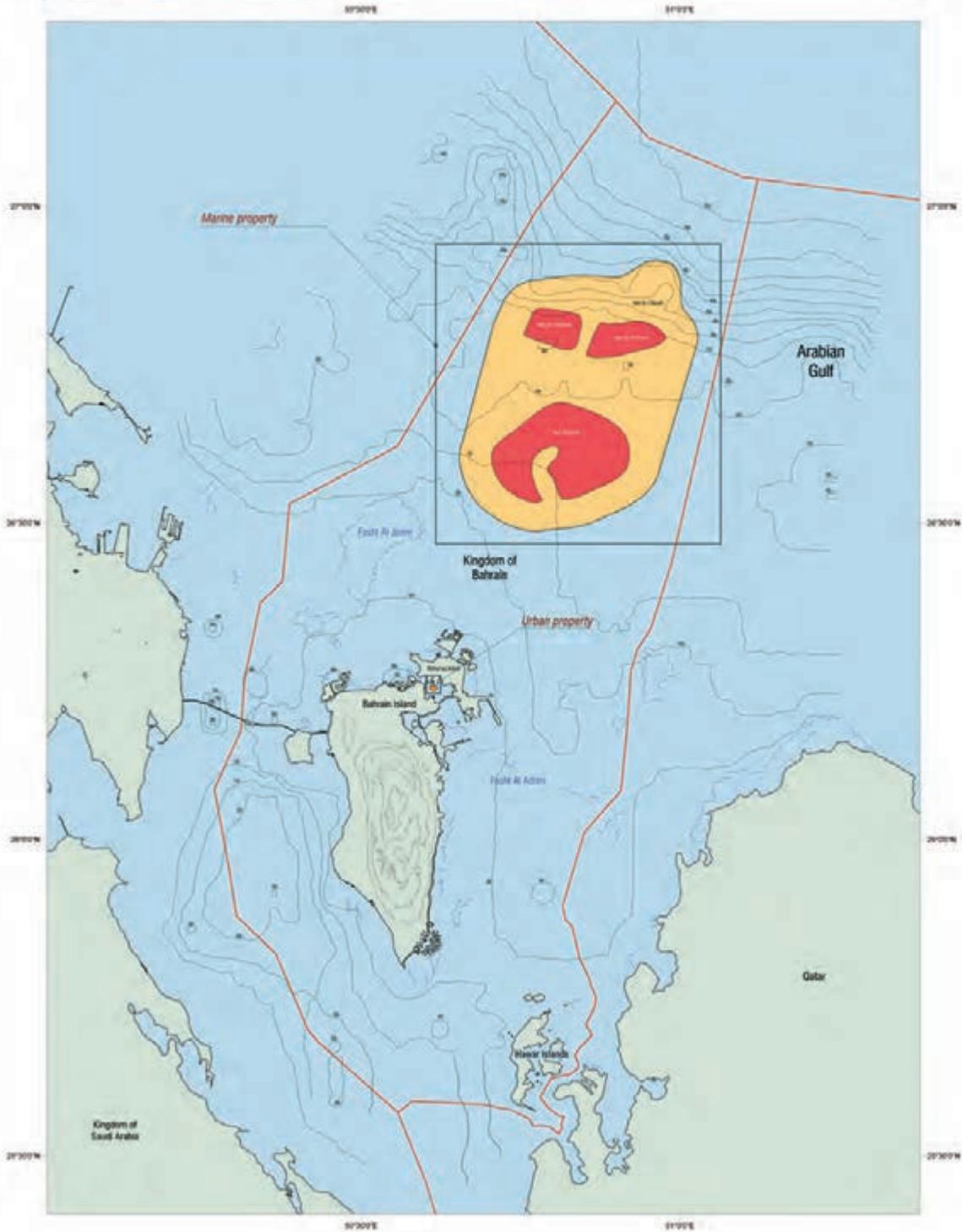
2: Topographical Map of Bahrain with Nominated Properties and their Buffer Zones

December 2009

World Geodetic System WGS84 Datum

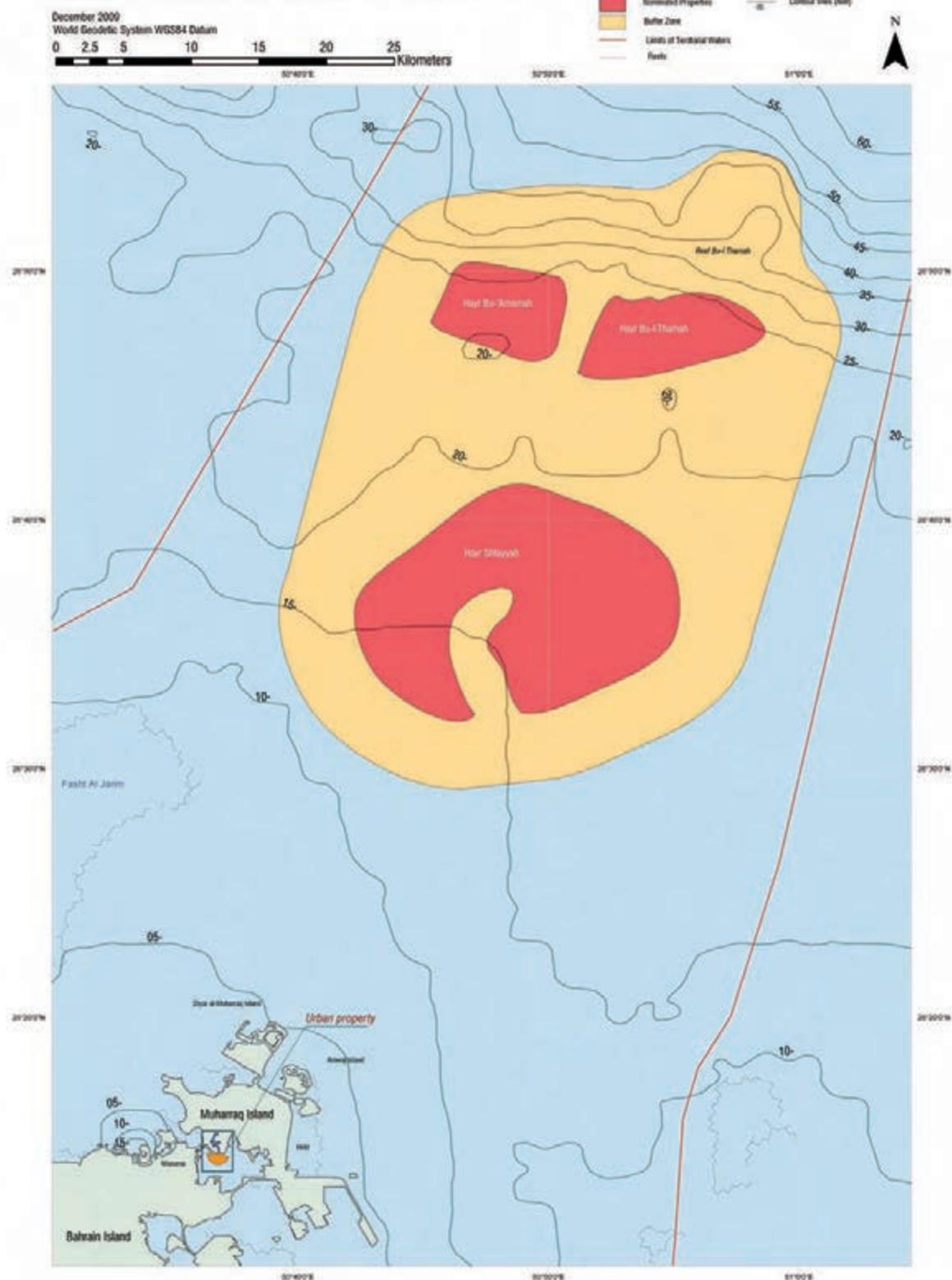


— Contour lines (feet)



Topographical map of Bahrain with nominated properties and their buffer zones

3: Topographical Map of the Nominated Properties and their Buffer Zones



Topographical map of Bahrain with nominated properties and their buffer zones

4: Satellite Photo of Bahrain with Nominated Properties and their Buffer Zones

December 2009

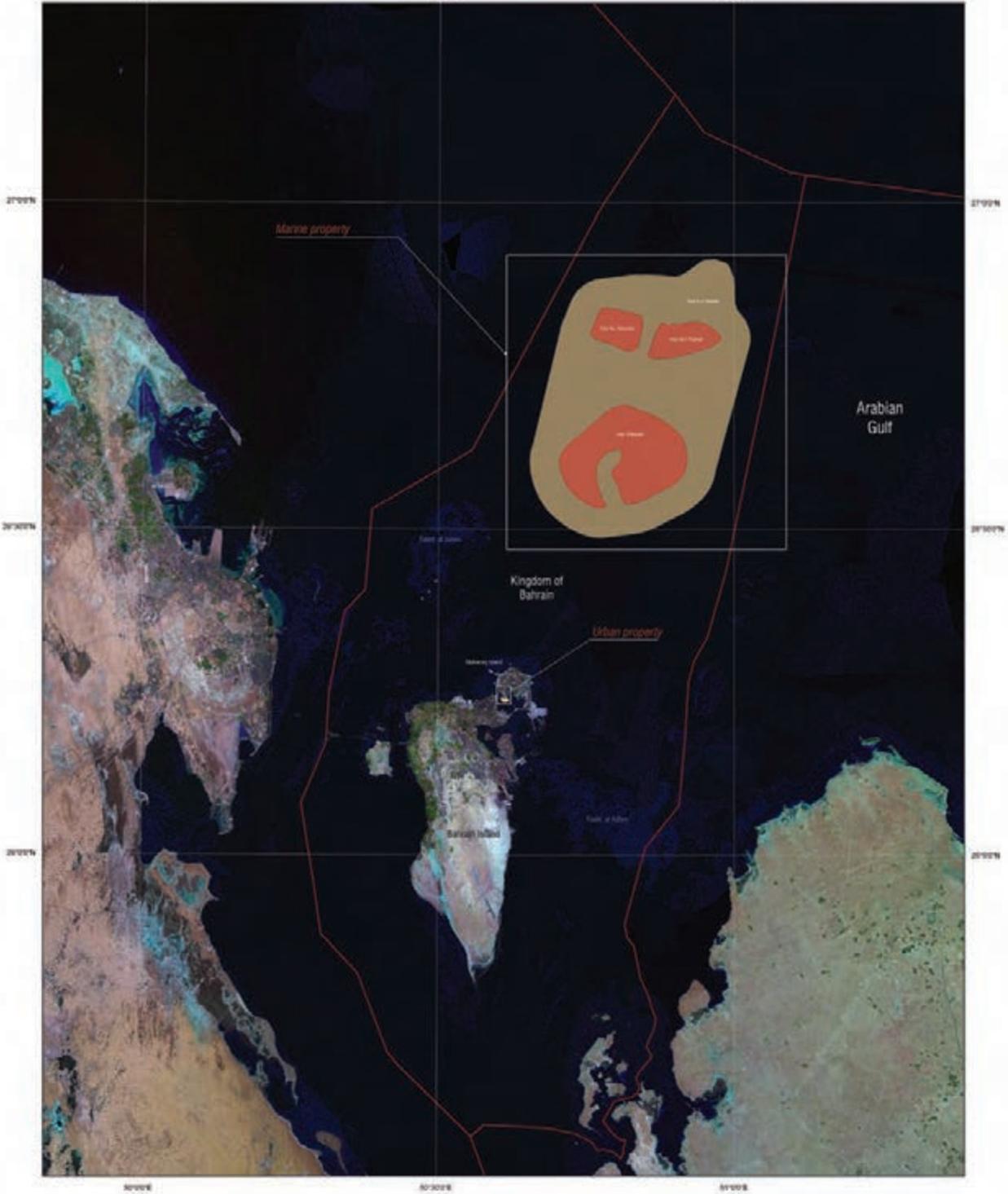
Ain el Abd Datum Gridzone 39 N



Limits of Territorial Waters

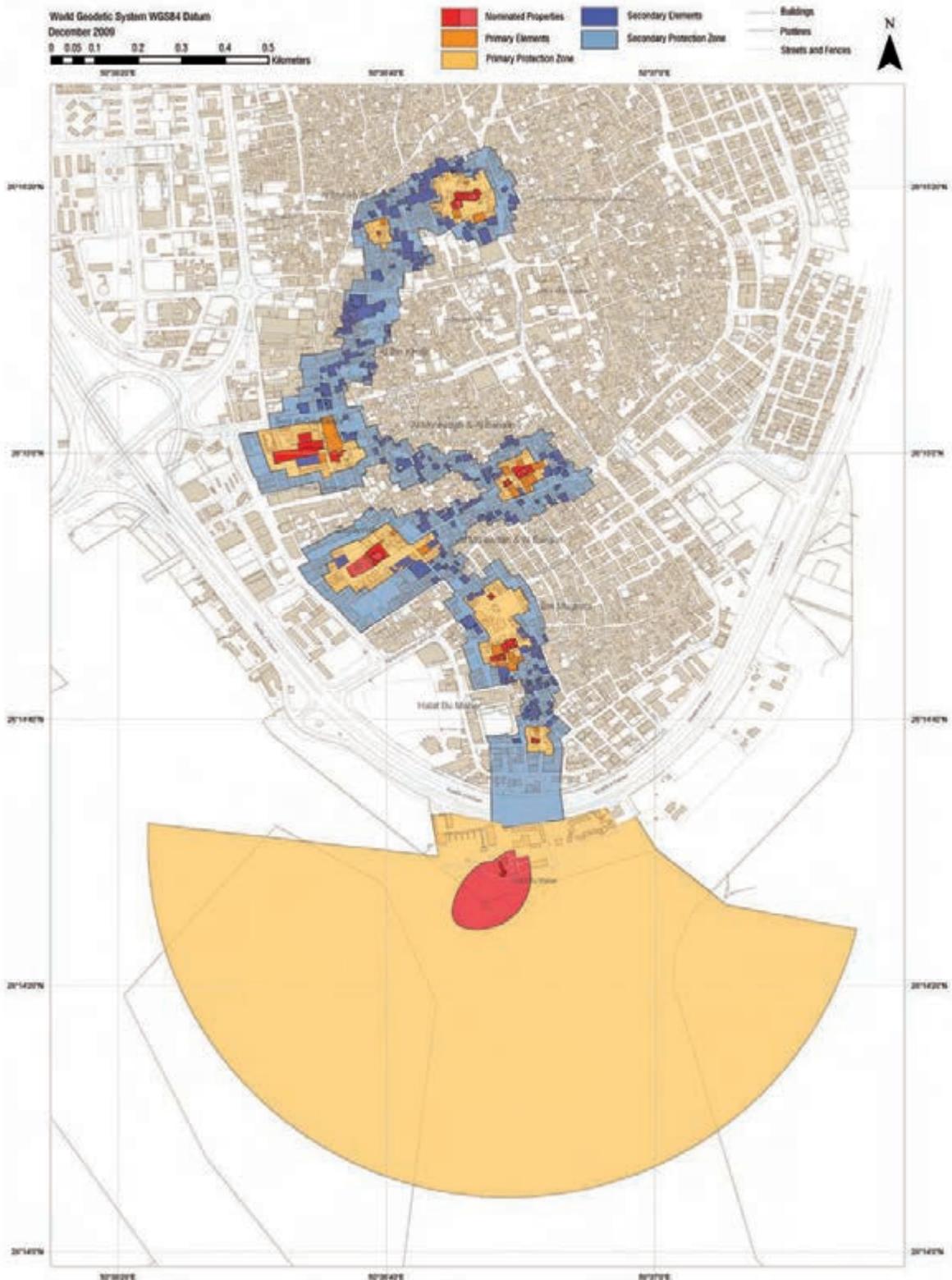
Nominated Properties

Buffer Zone



Satellite photo of Bahrain with nominated properties and their buffer zones

5: Cadastral Map of the Urban Properties and their Buffer Zones



Cadastral map of the urban properties and their buffer zones

6: Aerial photo of Muharraq with nominated properties and buffer zones

December 2009

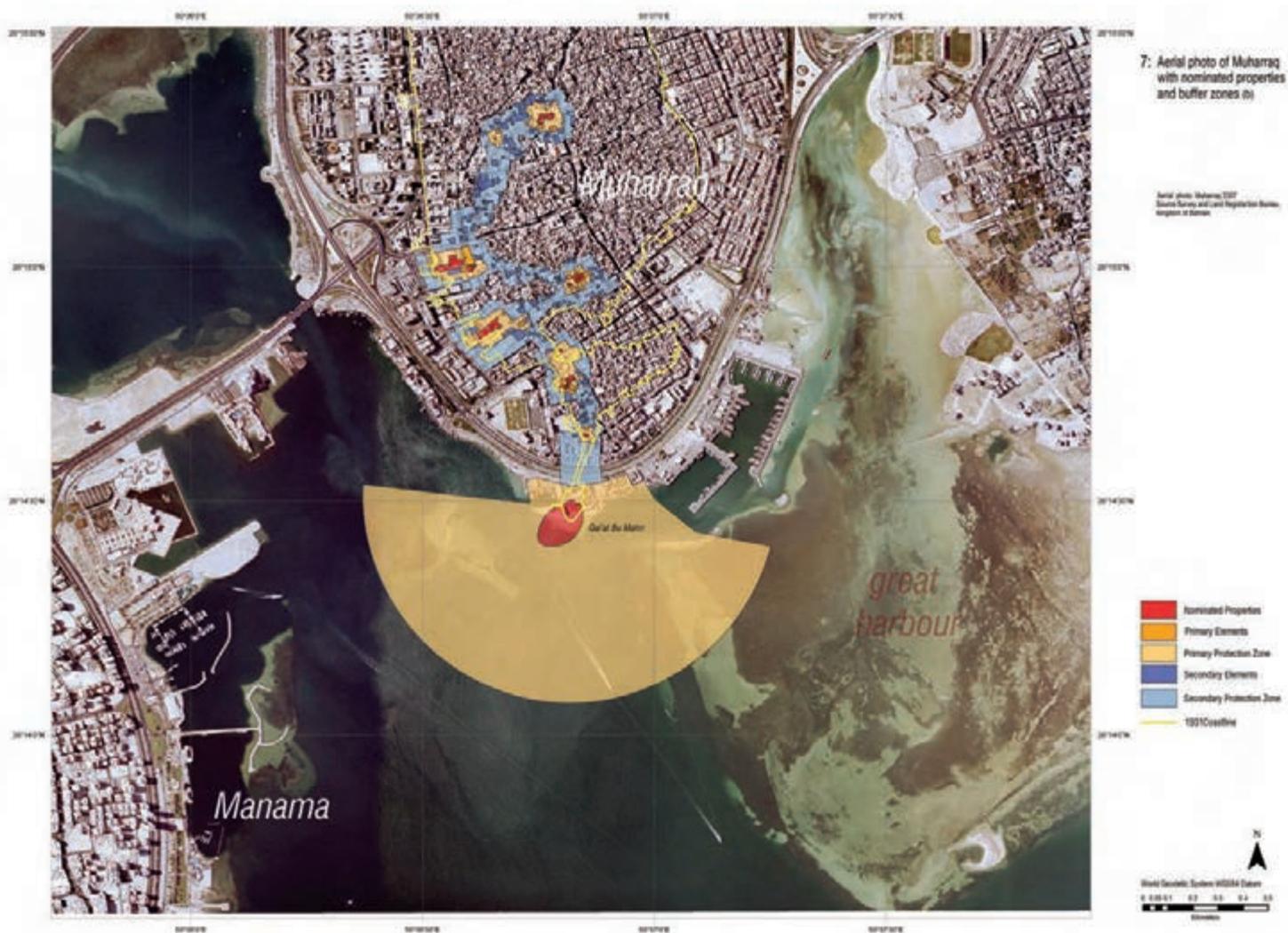
World Geodetic System WGS84 Datum
05.09.05 0.12 0.19 0.24 0.2

Aerial photo: Muharraq, 2007
Source: Survey and Land Registration Bureau,
Kingdom of Bahrain

- Nominated Properties
- Primary Elements
- Primary Protection Zone
- Secondary Protection Zone
- Secondary Elements
- Coastline 1931



Aerial photo of Muharraq with nominated properties and buffer zones (A)



Aerial photo of Muharraq with nominated properties and buffer zones (B)

IDENTIFICATION

1

1.f Area of nominated property (ha.) and proposed buffer zone (ha.)

1.f.i Coordinates of serial property boundaries:

Name of serial property	Point	UTM - AIN AL-ABD DATUM		WGS84 DATUM	
	Name	Easting	Northing	WGS84 Longitude	WGS84 Latitude
Maritime properties: Oyster Beds					
Hayr Bū-l-Thāmāh (property 1)	BT 1	485362.3	2960416	50°51'9.972"E	26°45'54"N
	BT 2	486670	2964323	50°51'57.168"E	26°48'1.008"N
	BT 3	487823.3	2966090	50°52'38.856"E	26°48'58.5"N
	BT 4	490110.9	2966019	50°54'1.728"E	26°48'56.268"N
	BT 5	490743.4	2965795	50°54'24.66"E	26°48'48.996"N
	BT 6	492599.2	2966334	50°55'31.872"E	26°49'6.564"N
	BT 7	494160.2	2966269	50°56'28.428"E	26°49'4.476"N
	BT 8	496537.5	2965139	50°57'54.576"E	26°48'27.792"N
	BT 9	497755	2963647	50°58'38.676"E	26°47'39.3"N
	BT 10	497482.9	2962921	50°58'28.812"E	26°47'15.684"N
	BT 11	496357.6	2962085	50°57'48.06"E	26°46'48.504"N
	BT 12	491319.9	2960526	50°54'45.684"E	26°45'57.744"N
	BT 13	487577.5	2959976	50°52'30.18"E	26°45'39.78"N
	BT 14	486095.6	2960057	50°51'36.504"E	26°45'42.372"N
Hayr Bū 'Amāmāh (property 2)	BA 1	475627.3	2964205	50°45'17.208"E	26°47'56.688"N
	BA 2	477054.8	2967770	50°46'8.652"E	26°49'52.644"N
	BA 3	477627.6	2968509	50°46'29.352"E	26°50'16.656"N
	BA 4	478877.4	2968653	50°47'14.64"E	26°50'21.444"N
	BA 5	483981.4	2967626	50°50'19.608"E	26°49'48.288"N
	BA 6	484478	2967029	50°50'37.644"E	26°49'28.884"N
	BA 7	484605.3	2965462	50°50'42.324"E	26°48'37.98"N
	BA 8	483962.6	2962280	50°50'19.176"E	26°46'54.516"N
	BA 9	482950.5	2961366	50°49'42.564"E	26°46'24.78"N
	BA 10	481775.4	2961358	50°49'0.012"E	26°46'24.456"N
	BA 11	476682.2	2963380	50°45'55.44"E	26°47'29.904"N
Hayr Shtayyah (property 3)	SH 1	470543.5	2942681	50°42'14.868"E	26°36'16.704"N
	SH 2	472740.6	2946154	50°43'34.032"E	26°38'9.708"N
	SH 3	478661.4	2951135	50°47'7.872"E	26°40'51.996"N
	SH 4	481515.5	2952191	50°48'51.084"E	26°41'26.484"N
	SH 5	489765.9	2948338	50°53'49.776"E	26°39'21.564"N
	SH 6	492093.7	2943250	50°55'14.088"E	26°36'36.216"N
	SH 7	490370.8	2939033	50°54'11.88"E	26°34'19.092"N
	SH 8	483391	2935377	50°49'59.772"E	26°32'20.04"N
	SH 9	481450	2935397	50°48'49.608"E	26°32'20.616"N
	SH 10	479309.1	2940643	50°47'31.92"E	26°35'11.004"N
	SH 11	481082.4	2943916	50°48'35.856"E	26°36'57.492"N
	SH 12	478977.2	2944118	50°47'19.716"E	26°37'3.936"N
	SH 13	476878.3	2941460	50°46'4.008"E	26°35'37.428"N
	SH 14	478537.4	2935123	50°47'4.38"E	26°32'11.544"N
	SH 15	477492.7	2934589	50°46'26.652"E	26°31'54.12"N
	SH 16	473811.8	2936184	50°44'13.524"E	26°32'45.744"N
	SH 17	471233.5	2939433	50°42'40.068"E	26°34'31.188"N

Name of serial property	Point	UTM - AIN AL-ABD DATUM		WGS84 DATUM	
	Name	Easting	Northing	WGS84 Longitude	WGS84 Latitude
Seashore properties					
Bū Mahir Seashore (property 4a)	se 01	461467.6	2902496	50°36'49.572"E	26°14'30.156"N
	se 02	461469.9	2902479	50°36'49.644"E	26°14'29.616"N
	se 03	461494.9	2902483	50°36'50.544"E	26°14'29.724"N
	se 04	461500.4	2902432	50°36'50.76"E	26°14'28.104"N
	se 05	461389	2902312	50°36'46.764"E	26°14'24"N
	se 06	461336.9	2902354	50°36'44.856"E	26°14'25.512"N
	se 07	461399.1	2902466	50°36'47.088"E	26°14'29.184"N
	se 08	461420.7	2902470	50°36'47.88"E	26°14'29.292"N
	se 09	461452.8	2902493	50°36'49.032"E	26°14'30.084"N
Qal'at Bū Mahir (property 4b)	qb 01	461437.8	2902468	50°36'48.492"E	26°14'29.256"N
	qb 02	461447.2	2902445	50°36'48.852"E	26°14'28.5"N
	qb 03	461451.1	2902445	50°36'48.996"E	26°14'28.5"N
	qb 04	461446.3	2902442	50°36'48.816"E	26°14'28.392"N
	qb 05	461442.3	2902433	50°36'48.672"E	26°14'28.14"N
	qb 06	461441.5	2902444	50°36'48.636"E	26°14'28.464"N
	qb 07	461433.3	2902465	50°36'48.348"E	26°14'29.184"N
Urban Properties: Architectural Testimony of the Pearling Heritage					
Al-Ghūṣ House (Property 5)	gh 01	461501.7	2902756	50°36'50.76"E	26°14'38.616"N
	gh 02	461509	2902756	50°36'52.048"E	26°14'38.616"N
	gh 03	461509	2902752	50°36'51.048"E	26°14'38.508"N
	gh 04	461519.5	2902752	50°36'51.408"E	26°14'38.508"N
	gh 05	461520.1	2902742	50°36'51.444"E	26°14'38.184"N
	gh 06	461502	2902742	50°36'50.796"E	26°14'38.148"N
Badr Ghulum House (property 6)	ba 01	461446.9	2902950	50°36'48.78"E	26°14'44.916"N
	ba 02	461450.8	2902935	50°36'48.924"E	26°14'44.412"N
	ba 03	461419.1	2902932	50°36'47.772"E	26°14'44.34"N
	ba 04	461416.7	2902942	50°36'47.7"E	26°14'44.664"N
Al-Jalahma House (property 7)	ja 01	461439.6	2902972	50°36'48.492"E	26°14'45.636"N
	ja 02	461448.7	2902974	50°36'48.852"E	26°14'45.708"N
	ja 03	461447.7	2902980	50°36'48.816"E	26°14'45.888"N
	ja 04	461470.1	2902985	50°36'49.608"E	26°14'46.068"N
	ja 05	461475.5	2902966	50°36'49.788"E	26°14'45.42"N
	ja 06	461458.8	2902960	50°36'49.212"E	26°14'45.276"N
	ja 07	461457.9	2902966	50°36'49.176"E	26°14'45.456"N
	ja 08	461455.3	2902965	50°36'49.068"E	26°14'45.42"N
	ja 09	461457.9	2902952	50°36'49.176"E	26°14'44.988"N
	ja 10	461448.6	2902950	50°36'48.852"E	26°14'44.916"N
	ja 11	461446.8	2902956	50°36'48.78"E	26°14'45.096"N
	ja 12	461443.1	2902955	50°36'48.636"E	26°14'45.06"N
Al-Alawi House (property 8)	al 01	461421.2	2903090	50°36'47.844"E	26°14'49.452"N
	al 02	461429	2903080	50°36'48.132"E	26°14'49.164"N
	al 03	461419	2903073	50°36'47.772"E	26°14'48.912"N
	al 04	461411.7	2903084	50°36'47.484"E	26°14'49.272"N

IDENTIFICATION

1

Name of serial property	Point	UTM - AIN AL-ABD DATUM		WGS84 DATUM	
	Name	Easting	Northing	WGS84 Longitude	WGS84 Latitude
Fakhro House (property 9)	fa 01	461187.3	2903208	50°36'39.384"E	26°14'53.304"N
	fa 02	461209.7	2903178	50°36'40.212"E	26°14'52.332"N
	fa 03	461178.1	2903152	50°36'39.06"E	26°14'51.468"N
	fa 04	461131	2903127	50°36'37.368"E	26°14'50.676"N
	fa 05	461119.4	2903149	50°36'36.936"E	26°14'51.36"N
	fa 06	461160.6	2903184	50°36'38.412"E	26°14'52.512"N
Murad House (property 10)	mr 01	461462.4	2903377	50°36'49.284"E	26°14'58.812"N
	mr 02	461501.8	2903388	50°36'50.688"E	26°14'59.172"N
	mr 03	461509.7	2903370	50°36'51.012"E	26°14'58.452"N
	mr 04	461477.7	2903351	50°36'49.86"E	26°14'57.948"N
Murad Majlis (property 11)	mm 01	461456.6	2903353	50°36'49.068"E	26°14'58.02"N
	mm 02	461465.1	2903343	50°36'49.392"E	26°14'57.696"N
	mm 03	461450.1	2903333	50°36'48.852"E	26°14'57.372"N
	mm 04	461445	2903346	50°36'48.672"E	26°14'57.804"N
Siyadi shops (property 12)	sh 01	461085.2	2903417	50°36'35.676"E	26°15'0.72"N
	sh 02	461100.2	2903420	50°36'36.216"E	26°15'0.18"N
	sh 03	461102.1	2903415	50°36'36.288"E	26°15'0"N
	sh 04	461105.1	2903416	50°36'36.396"E	26°15'0.036"N
	sh 05	461119.7	2903422	50°36'36.936"E	26°15'0.216"N
	sh 06	461120.6	2903418	50°36'36.972"E	26°15'0.108"N
	sh 07	461114.1	2903416	50°36'36.72"E	26°15'0.36"N
	sh 08	461115	2903409	50°36'36.756"E	26°14'59.784"N
	sh 09	461108.3	2903406	50°36'36.504"E	26°14'59.712"N
	sh 10	461105.5	2903405	50°36'36.432"E	26°14'59.712"N
	sh 11	461108.7	2903395	50°36'36.54"E	26°14'59.352"N
	sh 12	461090.1	2903394	50°36'35.856"E	26°14'59.316"N
'Amārāt Complex: 'Amārāt Yousif A. Fakhro (13a); 'Amārāt Ali Rashed Fakhro (I) (13b); 'Amārāt Ali Rashed Fakhro (II) (13c); (property 13)	su 01	461021.6	2903458	50°36'33.372"E	26°15'1.404"N
	su 02	461048.1	2903462	50°36'34.344"E	26°15'1.548"N
	su 03	461049.9	2903446	50°36'34.416"E	26°15'1.008"N
	su 04	461050.4	2903442	50°36'34.416"E	26°15'0.864"N
	su 05	461072.1	2903444	50°36'35.208"E	26°15'0.936"N
	su 06	461074.9	2903428	50°36'35.316"E	26°15'0.432"N
	su 07	461076.2	2903424	50°36'35.352"E	26°15'0.288"N
	su 08	461063.1	2903422	50°36'34.884"E	26°15'0.216"N
	su 09	461064.7	2903412	50°36'34.956"E	26°14'59.892"N
	su 10	460974.1	2903389	50°36'31.68"E	26°14'59.172"N
	su 11	460968.3	2903417	50°36'31.464"E	26°15'0.036"N
	su 12	461022.6	2903424	50°36'33.444"E	26°15'0.288"N
	su 13	461020.6	2903437	50°36'33.336"E	26°15'0.72"N
	su 14	461024.4	2903438	50°36'33.48"E	26°15'0.72"N
	su 15	461023.7	2903443	50°36'33.48"E	26°15'0.9"N
Nūkhidhah House (property 14)	nu 01	461185.8	2903925	50°36'39.24"E	26°15'16.596"N
	nu 02	461193.1	2903926	50°36'39.528"E	26°15'16.632"N
	nu 03	461194.5	2903920	50°36'39.564"E	26°15'16.416"N
	nu 04	461187.8	2903917	50°36'39.312"E	26°15'16.344"N

Name of serial property	Point	UTM - AIN AL-ABD DATUM		WGS84 DATUM	
	Name	Easting	Northing	WGS84 Longitude	WGS84 Latitude
Siyadi complex: Siyadi House (15a) Siyadi Majlis (15b) Siyadi Mosque (15c) (property 15)	si 01	461348.4	2904018	50°36'45.108"E	26°15'19.62"N
	si 02	461365.4	2904016	50°36'45.72"E	26°15'19.584"N
	si 03	461369.5	2904017	50°36'45.864"E	26°15'19.62"N
	si 04	461387.4	2904018	50°36'46.512"E	26°15'19.656"N
	si 05	461387	2904024	50°36'46.512"E	26°15'19.836"N
	si 06	461395.4	2904024	50°36'46.8"E	26°15'19.836"N
	si 07	461403.9	2904013	50°36'47.124"E	26°15'19.476"N
	si 08	461398	2903999	50°36'46.908"E	26°15'19.044"N
	si 09	461366.6	2903997	50°36'45.756"E	26°15'18.936"N
	si 10	461364.4	2903998	50°36'45.684"E	26°15'18.972"N
	si 11	461361.4	2903998	50°36'45.576"E	26°15'18.972"N
	si 12	461363.6	2903982	50°36'44.648"E	26°15'18.468"N
	si 13	461344	2903977	50°36'44.964"E	26°15'18.288"N
	si 14	461338	2903991	50°36'44.748"E	26°15'18.756"N

1.f.ii Coordinates of buffer zones for serial properties:

Name of serial property	Point	UTM - AIN AL-ABD DATUM		WGS84 DATUM	
	Name	Easting	Northing	WGS84 Longitude	WGS84 Latitude
Maritime properties: Oyster Beds					
Oyster beds buffer zone Hayr Bū-l-Thāmah (property 1) Hayr Bū 'Amāmah (property 2) Hayr Shtayyah (property 3)	OB 1	495193.2	2976844	50°57'5.688"E	26°54'48.204"N
	OB 2	498856.5	2976171	50°59'18.528"E	26°54'26.352"N
	OB 3	500110.4	2972920	51°0'3.996"E	26°52'40.692"N
	OB 4	500195.9	2969394	51°0'7.092"E	26°50'46.068"N
	OB 5	502759.4	2963010	51°1'39.936"E	26°47'18.564"N
	OB 6	495889.9	2937890	50°57'31.428"E	26°33'42.048"N
	OB 7	492859.9	2934648	50°55'41.952"E	26°31'56.604"N
	OB 8	486084.3	2931047	50°51'37.26"E	26°29'59.388"N
	OB 9	477222.2	2929597	50°46'17.184"E	26°29'11.832"N
	OB 10	470875.1	2932138	50°42'27.72"E	26°30'34.02"N
	OB 11	466940	2936790	50°40'5.124"E	26°33'4.932"N
	OB 12	465614.8	2943649	50°39'16.56"E	26°36'47.772"N
	OB 13	470723.4	2965181	50°42'19.476"E	26°48'28.044"N
	OB 14	473840.4	2971821	50°44'11.904"E	26°52'4.08"N
	OB 15	476195.1	2973331	50°45'37.116"E	26°52'53.328"N
	OB 16	490773.9	2974203	50°54'25.56"E	26°53'22.272"N

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Name of serial property	Point	UTM - AIN AL-ABD DATUM		WGS84 DATUM	
	Name	Easting	Northing	WGS84 Longitude	WGS84 Latitude
Seashore properties					
Bū Māhir Seashore and Qal'at Bū Māhir buffer zone (properties 4 a and b)	ppse 01	461295.3	2902575	50°36'43.344"E	26°14'32.712"N
	ppse 02	461717	2902574	50°36'58.536"E	26°14'32.712"N
	ppse 03	462174.1	2902310	50°36'15.06"E	26°14'24.18"N
	ppse 04	461448.3	2901692	50°36'48.96"E	26°14'4.056"N
	ppse 05	460709.4	2902559	50°36'22.248"E	26°14'32.136"N
Urban Properties: Primary Protection Zones					
Al-Ghūṣ House (Property 5)	ppgh 38	461529.6	2902785	50°36'51.768"E	26°14'39.552"N
	ppgh 39	461546.3	2902715	50°36'52.38"E	26°14'37.284"N
	ppgh 40	461492.4	2902721	50°36'50.436"E	26°14'37.5"N
	ppgh 41	461488.4	2902780	50°36'50.292"E	26°14'39.408"N
Al-Jalahma zone Badr Ghulum H. (property 6) Al-Jalahma House (property 7) Al-Alawi House (property 8)	ppja 31	461437.2	2903125	50°36'48.42"E	26°14'50.604"N
	ppja 32	461479.5	2903103	50°36'49.932"E	26°14'49.92"N
	ppja 33	461500.2	2903049	50°36'50.688"E	26°14'48.156"N
	ppja 34	461505.7	2902967	50°36'50.904"E	26°14'45.492"N
	ppja 35	461455.6	2902909	50°36'49.104"E	26°14'43.584"N
	ppja 36	461392.7	2902973	50°36'46.836"E	26°14'45.672"N
	ppja 37	461368	2903080	50°36'45.9"E	26°14'49.128"N
Fakhro House (property 9)	ppfa 24	461203.3	2903252	50°36'39.96"E	26°14'54.708"N
	ppfa 25	461297.7	2903232	50°36'43.38"E	26°14'54.06"N
	ppfa 26	461322.5	2903189	50°36'44.28"E	26°14'52.692"N
	ppfa 27	461189.7	2903112	50°36'39.492"E	26°14'50.172"N
	ppfa 28	461100.8	2903089	50°36'36.288"E	26°14'49.416"N
	ppfa 29	461071.4	2903131	50°36'35.208"E	26°14'50.748"N
	ppfa 30	461087.4	2903187	50°36'35.784"E	26°14'52.584"N
Murad zone: Murad House (property 10) Murad Majlis (property 11)	ppmu 18	461495.7	2903424	50°36'50.472"E	26°15'0.36"N
	ppmu 19	461550.8	2903365	50°36'52.488"E	26°14'58.452"N
	ppmu 20	461511.5	2903327	50°36'51.048"E	26°14'57.192"N
	ppmu 21	461443.3	2903302	50°36'48.6"E	26°14'56.364"N
	ppmu 22	461425.6	2903351	50°36'47.952"E	26°14'57.948"N
	ppmu 23	461432	2903390	50°36'48.204"E	26°14'59.208"N
Suq zone: Siyadi shops (property 12) 'Amārāt complex (property 13)	ppam 13	461093	2903502	50°36'35.964"E	26°15'2.808"N
	ppam 14	461163.6	2903405	50°36'38.52"E	26°14'59.712"N
	ppam 15	461073.2	2903354	50°36'35.244"E	26°14'58.02"N
	ppam 16	460964.6	2903371	50°36'31.356"E	26°14'58.56"N
	ppam 17	460936.5	2903465	50°36'30.312"E	26°15'1.62"N

Name of serial property	Point	UTM - AIN AL-ABD DATUM		WGS84 DATUM	
	Name	Easting	Northing	WGS84 Longitude	WGS84 Latitude
Nūkhidhah House (property 14)	ppnu 08	461206.1	2903959	50°36'39.996"E	26°15'17.676"N
	ppnu 09	461157.8	2903944	50°36'38.232"E	26°15'17.208"N
	ppnu 10	461168.2	2903906	50°36'38.628"E	26°15'15.948"N
	ppnu 11	461196.3	2903884	50°36'39.636"E	26°15'15.228"N
	ppnu 12	461220	2903902	50°36'40.5"E	26°15'15.84"N
Siyadi zone: Siyadi House (15a) Siyadi Majlis (15b) Siyadi Mosque (15c) (property 15)	ppsi 01	461410.1	2904069	50°36'47.34"E	26°15'21.312"N
	ppsi 02	461428.4	2904024	50°36'47.988"E	26°15'19.836"N
	ppsi 03	461433.5	2903960	50°36'48.168"E	26°15'17.784"N
	ppsi 04	461348.2	2903940	50°36'45.108"E	26°15'17.1"N
	ppsi 05	461297.9	2903980	50°36'43.308"E	26°15'18.396"N
	ppsi 06	461301.9	2904050	50°36'43.416"E	26°15'20.664"N
	ppsi 07	461337.9	2904067	50°36'44.712"E	26°15'21.24"N
Urban Properties: Secondary Protection Zone					
Secondary Protection Zone	sp 01	461421.1	2904122	50°36'47.736"E	26°15'23.004"N
	sp 02	461472.6	2903924	50°36'49.608"E	26°15'16.56"N
	sp 03	461280.7	2903839	50°36'42.696"E	26°15'13.788"N
	sp 04	461186.9	2903611	50°36'39.348"E	26°15'6.408"N
	sp 05	461526.9	2903470	50°36'51.588"E	26°15'1.836"N
	sp 06	461634.6	2903337	50°36'55.512"E	26°14'57.552"N
	sp 07	461436.5	2903170	50°36'48.384"E	26°14'52.044"N
	sp 08	461584.1	2902775	50°36'53.785"E	26°14'39.335"N
	sp 09	461569.3	2902566.4	50°36'53.275"E	26°14'32.555"N
	sp 10	461419.9	2902561	50°36'47.891"E	26°14'32.393"N
	sp 11	461408.6	2902759	50°36'47.462"E	26°14'38.829"N
	sp 12	461383.7	2902866.6	50°36'46.555"E	26°14'42.294"N
	sp 13	461152	2903000	50°36'38.185"E	26°14'46.613"N
	sp 14	461028	2903192.5	50°36'33.695"E	26°14'52.852"N
	sp 15	461371	2903348	50°36'46.008"E	26°14'57.48"N
	sp 16	460946.4	2903320	50°36'30.708"E	26°14'56.904"N
	sp 17	460899.5	2903458	50°36'28.98"E	26°15'1.404"N
	sp 18	461029.2	2903642	50°36'33.66"E	26°15'7.38"N
	sp 19	461148.7	2903990	50°36'37.908"E	26°15'18.684"N

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1.f.iii Area of nominated property and proposed buffer zones:

No	Name of serial property	Area of property (ha)		Area of buffer zone (ha)	Total area of property and buffer zone (ha)
1	Hayr Bū-l-Thāmah	5659.13		95749.5	130833
2	Hayr Bū 'Amāmah	4854.77			
3	Hayr Shtayyah	24569.6			
4a	Bū Māhir Seashore	2.0228	2.0467	94.5793	96.626
4b	Qal'at Bū Māhir	0.0239			
5	Al-Ghūṣ House	0.0211		0.2921	0.3132
6	Badr Ghulum House	0.0424		1.6527	1.7812
7	Al-Jalahma House	0.0713			
8	Al-Alawi House	0.0148			
9	Fakhro House	0.204		1.8652	2.0692
10	Murad House	0.0967		0.6952	0.8129
11	Murad Majlis	0.0210			
12	Siyadi Shops	0.0564		1.6709	2.0736
13(a)	'Amārat Yousif A. Fakhro	0.2130	0.3463		
13(b)	'Amārat Ali Rashed Fakhro (I)	0.0780			
13(c)	'Amārat Ali Rashed Fakhro (II)	0.0427			
14	Nūkhidhah House	0.0056		0.2766	0.2822
15(a)	Siyadi House	0.0336	0.1532	1.1306	1.2838
15(b)	Siyadi Majlis	0.0739			
15(c)	Siyadi Mosque	0.0396			
Secondary protection zone				25.0371	25.0371
Total of serial property		35086.56		95876.7	130963.2

1.1.i The property boundaries

The nomination presented comprises 15 serial properties which can be divided into maritime, seashore and urban or architectural properties. The basic concept behind the selection of these 15 properties is the aim to include at least one example of all locations that can be termed representative of the human and economic system of Pearling. The individual properties are the physical testimony of the pearling grand narrative and can be considered as memory markers. Some of the 15 properties contribute two or more different components or buildings which reflect differing attributes of Outstanding Universal Value.

The boundary selection aimed at including all relevant attributes which reflect the Outstanding Universal Value. Since the individual buildings have a stronger memory association than their integration in the urban fabric, the urban surrounding was considered to support the attributes but not to contain attributes reflecting the Outstanding Universal Value and constitutes therefore the buffer zone.

1.1.ii The buffer zone

The buffer zone of the marine properties is designed as a circular extension of the properties with a radius of approximately 5 km. For *Hayr Shtayyah*, an additional circular area in the centre of the oyster bed formation is designated as buffer zone. The seashore buffer zone covers the area of sea and land that support the preservation of attributes identified as conveying the Outstanding Universal Value.

The buffer zone of the urban properties is divided into the so-called primary protection zone (orange) and the secondary protection zone (blue). The primary protection zone comprises the immediate surrounding of the properties which often contains additional valuable cultural assets and has strong influence on the visual experience and perception of the properties. The primary protection zone is controlled with regard to all future interventions to protect its proportions, character and urban design.

The background of the page is a photograph of a tropical building, possibly a school or community center, partially obscured by dense, lush green foliage and palm trees. The scene is brightly lit, suggesting a sunny day. The building has a light-colored facade and several windows. The overall atmosphere is serene and natural.

2

Description

"Thus, the necklace you are wearing, Madam, this necklace whose iridescence illuminates your beauty, is full of mystery and terror, to a greater degree than any other wonder of the world. Among its pearls some may be centuries old; others, perhaps have come from the highly modern office of a Paris dealer. They mingle around your throat. What are they saying, whilst you are congratulating yourself because they so perfectly fit with your complexion? Bought, resold, having been the means, perhaps, of saving their ruined owner from death, (...) in wearing these pearls you are wearing a fragment of the history of humanity. Do you ever think of the many sacrifices, the patient industry, the struggles and sufferings represented by this thing of beauty, which now rests its burden of light upon your lovely shoulders?" (Rosenthal & Dulac, 1920, p. 128).

Description of the historical context of the grand narrative of pearling in Bahrain

The 15 serial properties selected in the northern maritime waters of Bahrain and on *Muharraq* Island represent the culmination and final expression of around 7000 years of pearling history in the Arabian Gulf. As this millennia-long tradition is the backdrop that fostered the creation of the grand narrative of the Bahrain pearling economy, this introductory description of the historical context of pearling in Bahrain is considered essential to understanding the anchorage of contemporary narrative elements carried by the proposed properties. Individual awareness of these long-lasting historical processes is a strong component in the shared memory and historical experience and constitutes a central source of contemporary Bahraini identity.

Starting in the Neolithic (Late Stone Age), pearls were gathered in the Arabian Gulf for both local use and trade, and a large and organised industry was centred in Bahrain by the time of the Roman Empire. Global markets expanded during the medieval period, with Bahrain recurrently coming to the fore as a focus of the industry. A major structural reorganisation of the industry began during the 18th and early 19th centuries, when global demand grew to the extent that the entire settlement pattern of the region altered in response to increased specialisation in pearling. Rival towns appeared and old ones expanded along the Gulf littoral, but Bahrain maintained its position as the region's major pearling centre until the demise of the industry, with the largest fleet and a focal marketplace. The emergence of *Muharraq* as the premier pearl-diving settlement in Bahrain should be seen in the context of an expansion of coastal settlements oriented towards the pearl fishery. The pearling boom reached its apex in the last quarter of the 19th and the early years of the 20th century, a period to which the architectural





properties proposed largely belong. They therefore present a palimpsest of the industry at its peak. Further development was stymied by the complete collapse of the industry between the 1930s and the 1950s. The consequences for the properties are described in detail under *2b history and development*.

Earliest archaeological evidence of pearling

The earliest evidence for pearl fishing in the Gulf dates back to the Neolithic. Pierced pearls as items of jewellery are found at both coastal and inland sites in Kuwait, the United Arab Emirates and Oman from around 5000 BC (Charpentier, 2008 p. 127; Charpentier, Marquis, & Pellé, 2003 p. 14; Coppa, Macchiarelli, Salvatori, & Santini, 1985 p. 99; de Beauclair, Jasim, & Uerpmann, 2006 p. 176-177; Kiesewetter, Uerpmann, & Jasim, 2000; Phillips, 2002 p. 178; Santini, 2002 p. 155; Uerpmann & Uerpmann, 2003 p. 150-1). At that time an early maritime trading network connected the peoples of the Gulf region with those of southern Mesopotamia (Carter, 2006), and it has been suggested by several authors that Gulf pearls were traded for so-called *Ubaid* pottery from Mesopotamia (Carter, 2006 p. 60; Masry, 1997 p. 133; Oates, Davidson, Kamilli, & McKerrel, 1977 p. 233; Potts, 1998 p. 23; Uerpmann & Uerpmann, 1996 p. 135).

Following the Neolithic there appears to be a lapse in the history of pearling, perhaps enforced by the widespread depopulation of eastern Arabia during the later 5th and 4th millennium BC, caused by climatic deterioration (Uerpmann, 2003). Pearling does not appear to have been especially significant throughout the Bronze Age, but a growing number of pearl finds in Mesopotamia and Persia during the Achaemenid period, and Achaemenid finds from Bahrain suggest close connections at the time. Moreover, pearl finds from Bahrain suggest that a fishery there supplied the Achaemenid realms. Relevant discoveries of the first three quarters of the 1st millennium BC include pearls from *Qal'at al-Bahrain* (the ancient capital and harbour of Dilmun) and *Janussan* (Bibby, 1970 p. 165; Højlund & Andersen, 1997 pp. 154-155; Lombard & Salles, 1984 pp. 82-3).

Earliest historic descriptions of pearling

When Alexander's mariners explored the Gulf following his defeat of the Achaemenids, they did not specify Bahrain as the location of a fishery, though there are early Greek mentions from Theophrastus and Chares of Mytilene (via Athenaeus) of pearls being found around "certain islands of the Red Sea" (here referring to the entire western Indian Ocean, including the Arabian Gulf and the modern Red Sea), and "along the coast of Armenia, Persia, Susa, and Babylon" (Theophrastus, *De Lapidibus* 36: Eichholz, 1965 p. 71; Athenaeus, *The Deipnosophists* III, 93c-d: Olson, 2006 p. 509). Again in 26 BC, Isidore of Charax refers to pearl divers operating from numerous boats around "an island in the Persian sea", which is usually thought to refer to Bahrain (Athenaeus, *The Learned Banqueters* III.93d-e: Olson, 2006 p. 509).

By the time of Pliny the Elder, Bahrain, under the name Tylos, was firmly identified as the centre of a major pearl fishery. According to Pliny, Tylos was "extremely famous for its numerous pearls" (Pliny, *Natural History* VI.XXXII.148: Rackham, 1942 p. 449). There was colossal demand for pearls within the Roman Empire: they were rated as the most valuable of luxuries and coveted by people of all classes (Pliny *Natural History* IX.LIII.106: Rackham, 1940 p. 235).

We know little of the pearl markets within Persia under the Parthian dynasty, but it is likely that there was a considerable demand, leading on from earlier elite tastes. Moreover, it is probable that pearls from the Arabian Gulf passed through Persia on a trade route to the Mediterranean via the Black Sea. This route is well known from the Medieval Period. If Pliny is to be believed, the Roman craze for pearls was encouraged by Pompey's conquest of the pearl-rich kingdom of Pontus, and his subsequent triumph, at which the pearl treasures were displayed (Pliny, *Natural History* XXXVII.V.12: Eichholz, 1962 p. 173). Pontus is on the Black Sea coast of Anatolia, and is likely to have sourced most of its pearls from Bahrain or the larger Gulf via Persia.

During the Sasanian Period (ca. 224-632 AD) it is clear that Bahrain, and specifically *Muharraq* Island, was the centre for pearl fishing in the Arabian Gulf. The Babylonian Talmud (Rosh Hashana 23a), compiled around the 5th c. AD, refers to it as follows:

"There were three ports, two belonging to the Romans, and one belonging to the Persians. From the Roman side they brought up coral, from the Persian side, pearls. This [the latter] one was called the port of Masmahig" (Simon, 1938 p. 99).

The chief significance of this passage is that *Masmahig* refers to *Muharraq*, and is considered as equivalent to *Samahig*, the former name of the island. It is thus the first specific mention of *Muharraq* as the pearling centre, as opposed to Bahrain in general, or elsewhere in the Arabian Gulf. *Masmahig* at the time was a Christian centre, and was also the seat of a bishopric of the Church of the East (Beaucamp & Robin, 1983, p. 186-7). The Christian population of Eastern Arabia continued to be heavily involved in pearling until long after the arrival of Islam on the islands of Bahrain.

Early Islamic sources reveal the continuing importance of pearls which were treasured by the Umayyad and early Abbasid elites. The fishery of Bahrain is mentioned by Muqaddasi (985 AD) and Nasir-i Khusrau (1035-1042 AD), by whose time it was controlled by the Qarmathian, who taxed it heavily. Al-Biruni (1040-1048 AD) makes it clear that the best pearl banks were found off Bahrain, with the next best (known as *qaṭari*) being located between them and the Persian shore (see Chapter 3.c.ii Chronological Comparative Analysis and 3.c.iii Typological Comparative Analysis for full details). Al-Idrisi (1154 AD) describes the fishery of Bahrain in great detail, and although he gives the locations of other pearling areas (including *Julfār*, near modern *Rās al-Khaymah*), it is clear that the main fleet and pearl market were both located in Bahrain. From this time until the early 14th century, it seems that trade in Bahraini pearls was controlled by *Qays*, and that a significant portion travelled overland through Persia to the Black Sea and beyond, including to the Mediterranean, in the hands of Genoese merchants.

Bahrain became tributary to Hormuz in 1330 (Cole, 1987 p. 179), and the pearling industry stayed sporadically under Hormuzi control for nearly three centuries, albeit under the overlordship of Portugal between 1515 and 1602, at which point the Portuguese were expelled from Bahrain by the Safavids. The sources provide slim details, compared to the abundant information supplied by al-Biruni and al-Idrisi, but Ibn Battuta (1330 AD) reveals that divers and merchants from *Fārs*, Bahrain and *Qaṭif* fished the banks between Bahrain and *Sīrāf*. More than a century later Ahmed ibn Majid, the famous Arab navigator, makes clear that Bahrain had a major fishery in around 1490 AD, and had done so for centuries: "the island of Bahrain is there which possesses a pearl fishery where approximately a thousand ships have been used for diving for centuries and this place is not surpassed" (Tibbetts, 1971 p. 213).

Under the Safavids, who initially took control of Bahrain from the Hormuzi-Portuguese condominium in around 1602, pearls from the Gulf appear to have been used to finance a "vast extension of *Shi'a* religious institutions" that took place in Persia and in the Safavid

dependencies (Cole, 1987 p. 189). De Thevenot, who used information derived from a Portuguese source, stated that all the tax on pearling boats belonged to the mosques, with only the largest pearls being kept by the ruler (de Thevenot, 1687, Part II, p. 161). Cole speculates that this was a form of *al-khums*, the fifth which was mandated by 'Usuli doctrine to be given to religious institutions and the poor (Cole, 1987 p. 189), but de Thevenot's text is absolutely clear that the pearl revenues were based on an unspecified head tax on each pearl fishermen, and a flat boat tax of 15 *abassis* per year.

According to the Portuguese observer Teixeira, writing around 1603, Bahrain possessed 100 pearling boats, with 50 coming from *Julfār (Rās al-Khaymah)*, and another 50 from an Arab port on the Persian shore, *Nihhelu (Nakhilū)* (Sinclair, 1902 p. 176). Although he notes there was another major fishery in the Gulf of Manar (between India and Sri Lanka), he states that "this isle of Barhen is famous for the number and quality of the pearls fished up in its sea and thereabouts" (Sinclair, 1902 p. 175). Teixeira's boat count for Bahrain is rather small, given Ibn Majid's earlier estimate of 1000 for Bahrain, but a slightly earlier count of 300 boats in the Gulf for 1578 AD, by Le Blanc, appears to support it (Billecocq, 1995 p. 73ff). The figures suggest that there was a serious contraction of the industry some time between the late 15th century (Ibn Majid) and the early 17th century (Le Blanc and Teixeira), perhaps due to disruption caused by the Portuguese, or competition from New World pearls which had begun to flood the European markets at the start of the 15th century. Bahrain's industry had clearly recovered and expanded by the mid 17th century, however, with de Thevenot counting up to 3000 boats based there in 1665 (Cole, 1987 p. 189; de Thevenot, 1687 p. 161).

During the 17th century, and perhaps earlier (Cole, 1987 p. 181), the pearling industry of Bahrain was controlled by a local religious elite who, as leading members of the community, doubled up as pearl merchants and financiers of the dive. Shaykh Mohammed b. Sulayman al-Maqabi (d. 1674), was both a pearl trader and the Friday prayer leader in the village of *al-Qadam* (Reynolds, 2001 p. 190-1). He had an agreement with the villagers that he would buy the entirety of the yield of *al-Qadam's* fleet, and other merchants had to come to him to buy the pearls. In exchange, al-Maqabi provided advances to the villagers. This appears to be the earliest detailed and unequivocal articulation of the *'amil* system, whereby pearl divers were obliged to sell the entirety of their catch to the merchant who had provided advances to them.

The struggle for control of the Bahrain pearl market

The century between 1700 and 1800 was one of major turmoil in Bahrain and the rest of the Gulf region, as regional powers (Muscat, Persia, the first Wahhabi state), international powers (Holland, Britain, the Ottomans) and Arab tribes from both inland Arabia and the Persian shores struggled for dominance. The large revenues Bahrain derived from its pearling economy made it a particular source of contention, especially from the point of view of the Arab tribes. Of particular importance to Bahrain were the *'Utūb* (including the Al Khalifa branch) and their allies, whose descendants were to make up the bulk of the pearling population of *Muharraq* and Bahrain during the 19th and 20th centuries, the boom years of the industry.

The early years of the 18th century saw Bahrain fall victim to a series of attacks. A major invasion of Bahrain in 1717 by the Omanis was followed by the arrival of the *Hūwalah*, who conquered Bahrain some time after the final collapse of the Safavids in 1722 (Reynolds, 2001: 220). Subsequent attempts by the Persians to reassert control in the Gulf ended ruinously in the mutiny of Nadir Shah's navy in 1740 (Slot, 1993 p. 304). The Arab ruler of *Būshīhr*, Nasir al-Madkhur, with an unreliable ally from *'Bandar-e-Rīg'* then took Bahrain in 1751 and established power there after he had secured the support of the *'Utūb* and *Hūwalah*.

The relevance of this complex sequence of events is that its pearl riches were a key target in the struggle for Bahrain. Nasir al-Madkhur obtained the help of the *'Utūb*, a tribal alliance that initially came from the *Najd* to Bahrain and Qatar some time in the late 17th century, with a promise to allow them to fish the banks for pearls without taxation. The *Hūwalah*, meanwhile, continued to fish the banks off Bahrain themselves, and also failed to pay tax (Floor, 1979 p. 171-2). It was estimated that Nasir al-Madkhur's revenue was only one quarter of what it should have been because of these problems, and also because of the flight of merchants and agriculturalists to al-Qaṭīf and Basra in the face of the instability in Bahrain. Figures provided by Niebuhr for 1765 and Abbé Resnal for 1770 back this up. The former estimated the tax taken in by Nasir al-Madkhur on both pearls and dates at 300,000 livres, while the latter estimated the value of Bahrain's pearl fishery at a healthy 3,600,000 livres (Niebuhr, 1792 p. 152; Resnal, 1776 p. 312).

The opportunity to collect pearls without taxation was highly beneficial to the Arab pearl fishers, and the size of the fleet of the *'Utūb*, now based in Kuwait, grew steadily. According to an Ottoman document it numbered 150 in 1701, while Kniphausen counted 300 in 1756, and Niebuhr counted 800 in 1765 (al-Khalifa & Hussain, 1993 p. 301-2; Floor, 1979 p. p. 175-6; Haarman, 2003 p. 41). Soon the *'Utūb* were able to buy large ships from

India, becoming a trading power as well as leaders in the pearl trade (Abu-Hakima, 1988 p. 176). Tribes from among the *'Utūb*, including the Al Khalifa and the Al Jalahma moved to Qatar in the 1760s specifically to cultivate their pearling interests. According to Captain Robert Taylor, who gave an invaluable report in 1818, they made this move because "the purchase and sale of these [pearls] constituted the principal source of their riches, to endeavour to procure a share of that fishery for themselves, instead of continuing to purchase from other hands" (Hughes Thomas, 1985 p. 28). We know that the *'Utūb* had already been fishing the Bahrain banks, but this statement implies that certain sectors wished to extend their involvement. In a remarkably short period of time the Al Khalifa and their allies rapidly developed the town of *al-Zubārah* into a major trading city and well as a pearling centre, largely by making it a tax free port, and helped by the Persian blockade of Basra at the time, which attracted the merchants of that city (Lorimer, 1915 p. 146-7; Rahman, 2005 p. 18). *Al-Zubārah's* success rapidly attracted the hostile attention of the Omanis, the Wahhabis and Nasir al-Madkhur's descendants in Bahrain, still nominally the vassals of Persia. The upshot of one of the subsequent skirmishes was the conquest of Bahrain in 1783 by the *'Utūb*. It was probably when the Al Khalifa signed the General Treaty of Peace with the British in 1820 that they were fully established as a secure and sovereign power on the islands state. By this time, *Muharraq* had been settled and expanded by the *'Utūb* and their allies, and was already the most important pearling town of the Arabian Gulf, with the highest number of boats and men involved in the industry.

The emergence of the grand narrative

The emergence of *Muharraq* as a major pearling city goes back to a decision taken in 1800, when *Jaww*, the *'Utūb's* initial settlement on the east coast of Bahrain, was abandoned "for want of a sheltered port, and the inhabitants transferred to Muharraq" (Cook, 1990 pp. 158-9). By the end of the 1820s, the population of "Muharraq Island", which in Brucks' understanding excluded older *Baharna* settlements and effectively equates to the area of the modern town, numbered 6000 (Cook, 1990 p. 158). *Muharraq* town's population of 6000 is a significant number by the standards of the day and the region. In contrast, the population of *Rās al-Khaymah* was then estimated at 5000, with that of Dubai being estimated at 1000-1200, and as late as 1881 the population of Abu Dhabi stood at only 4000 (Anonymous, 1986, Vol. II, 1880-1 p. 4). Brucks' data makes it clear that Bahrain as a whole was then a major pearling centre, with a massive fleet of 2430 pearling boats (up from Taylor's 1818 total of 1400), comprising



Historic photograph of a lane in Muharraq

more than 80% of the whole Gulf fleet of 3000 (Hughes Thomas, 1985 pp. 566, 612).

In 1833 Colonel Wilson, formerly Resident in the Gulf, made it clear that not only the diving operations but also the pearl trade were almost entirely in the hands of merchants based in Bahrain: "At Bahrein alone, the annual amount produced by the pearl-fishery may be reckoned at from 1,000,000 to 1,200,000 German crowns (the coin current there)". Lorimer also states that Bahrain was the centre of the pearl trade following the 'Utūb conquest, and that its imports were paid in pearls, via Muscat: "the pearl trade of the Persian Gulf was at this period almost entirely controlled by the people of Bahrain; and their annual imports from India, valued at 10 lakhs of rupees, were paid by means of pearls, chiefly through the market at Masqat" (Lorimer, 1915 p. 841).

Clearly the 1830s saw a first apogee of Bahrain's dominance of the pearl trade, according to Brucks' value of the fishery and fleet figures, the latter repeated by Whitelock (Whitelock, 1836 p. 44). Their figure is certainly more likely to be accurate than Wellsted's even higher count of 3500 for 1835 (Wellsted, 1838a p. 265). With several ups and downs in the first half of the 19th century, *Muharraq* expanded its role as the pearling centre of the Arabian Gulf. While during critical phases *Muharraq's* younger rivals such as Abu Dhabi, Dubai and

Sharjah took a bigger share in the industry, during its peak times the city took a complete lead of the trade. It is important to note that despite temporal setbacks, *Muharraq* continued to maintain the largest pearling fleet in the Arabian Gulf until the collapse of the industry, and in most years produced a pearl yield equal to or greater than its rivals combined.

2.a Description of the proposed properties and their narratives

In this historical context the settlement of *Muharraq* and the pearl beds exploited by its inhabitants became the centre of an economic and human system which is at the base of the Outstanding Universal Value demonstrated in the properties in this nomination. The nomination as presented comprises 15 serial properties which can be divided into maritime, seashore and urban or architectural properties. The basic concept behind the selection of these 15 properties is the aim to include at least one example of all locations that can be termed representative of this human and economic system and can be considered as memory markers of its grand narrative. Some of the 15 properties contribute two or more different



Divers opening oysters during pearling festival in summer 2009

2.a.i Maritime properties: Oyster Beds

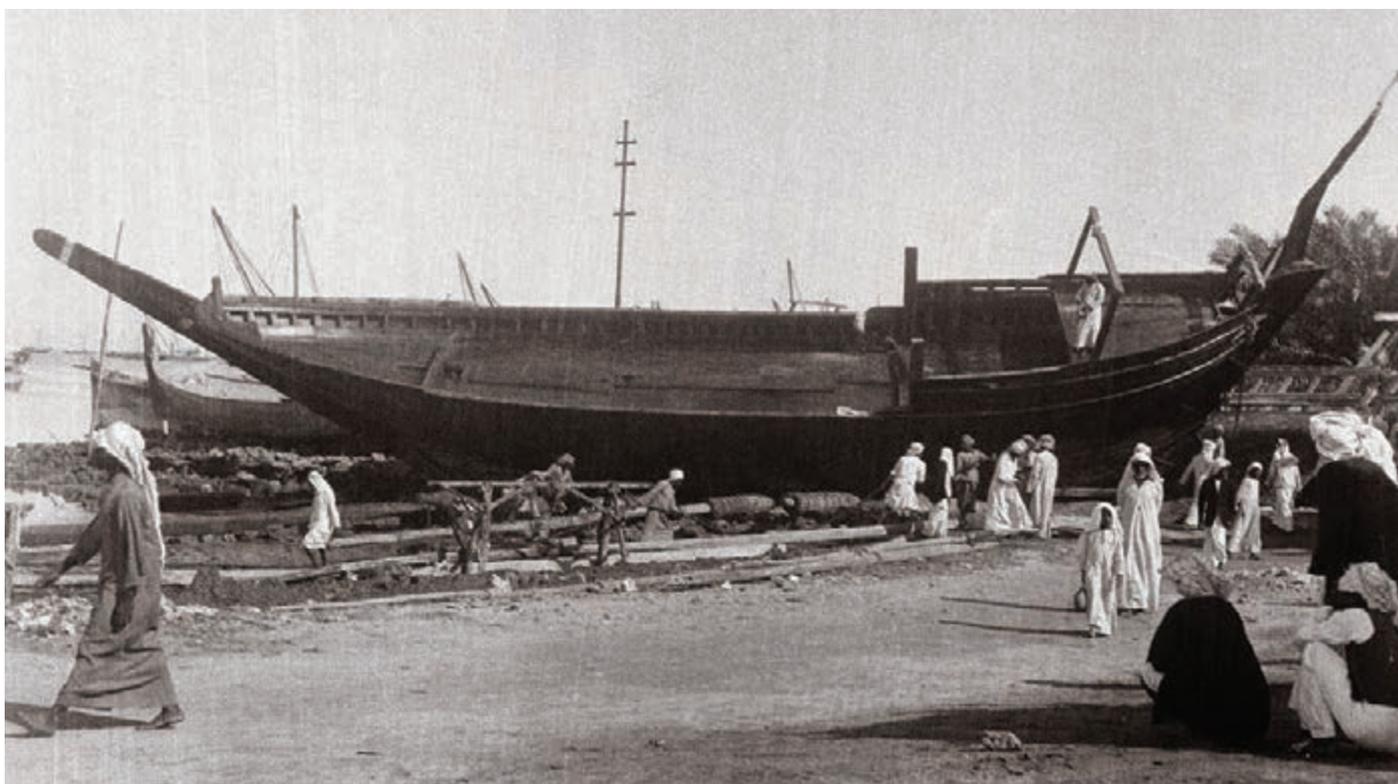
components or buildings which reflect differing attributes of Outstanding Universal Value.

In this chapter each of the properties will be described in three components: (1) the physical remains and testimonies proposed to the nominated, (2) the narrative aspects the properties represent, and (3) the larger themes of shared memory and historical experience that the properties evoke. These three aspects are introduced in combination for each property. The individual properties are described in a combined thematic-geographical order, designed to aid understanding of the interrelated system of the many different locations. Starting at the source of everything - with the oyster beds in Bahrain's northern maritime zone - the description will move via the seashore which acts as a transitional element to the 12 architectural properties located in *Muharraq* city.

The historical evolution of the activities and narratives of pearling in the Arabian Gulf in the second half of the 19th century will then be taken up again at the outset of the chapter on history and development of the site. It will thus act as an introduction to the history and development of the individual properties which are analyzed with regard to their contribution during the boom times of Pearling in *Muharraq* up to its collapse in the late 1930s.

Throughout the centuries, the oyster beds off the northern shores of Bahrain were described as the best, both in terms of the quality of their pearls and the density of oysters, and also of the high ratio of pearl discoveries made during the oyster collection. Since this fact was well known around the Arabian Gulf, not only the inhabitants of *Muharraq* and the main island of Bahrain but also pearl divers from neighbouring regions, such as *al-Qatif* or Qatar and even from as far as Kuwait and the South Persian Coast would visit the Bahraini beds. Literature reviews illustrate the large variety of superlatives attributed to the beds and the pearls they produced. These included "the richest" (Miles, 1919b, p. 415), the "purest and most perfect" and "most extensive" (Rihani, 1930, p. 275), and "the best" and "most productive" (Bowen, 1951, p. 166) - and many more.

The oyster beds of Bahrain were shared by pearling fleets from outside the Bahraini territories because the waters of the Arabian Gulf were considered the common property of the Gulf's coastal residents. Foreigners from outside the Gulf settlements, however, were strictly excluded unless they became members of one of the Arabian Gulf pearling teams. This fact is not only reported to us by Hay "They [the oyster beds] are open to all inhabitants of the Persian Gulf shores but others are excluded" (Hay, 1959, p. 51) but also



Historic photograph of dhow construction

confirmed by Pelly who reports in 1866 that “the beds along the Arabian Coast are held to be the property of the Arabs in common, for instance an Arab of Kuwait may dive along the Bahrain or Ras-ool-Khaima Coast and vice versa. But no person other the Coast Arabs is considered to have any right of diving” (Pelly, 1866 [1995], p. 7). Only with the final decision of the International Court of Justice in 2001 that ended the long-running border dispute between the states of Bahrain and Qatar, have the most important oyster beds, traditionally referred to as Bahraini, officially become Bahraini state territory (International Court of Justice, 2001, p. 163-89).

According to the historic records and literature, the distinctive qualities of the Bahraini oyster beds were the highest quality of pearls, the highest density of oysters per area and the highest ratio of pearls to oysters, as well as their popularity as a pearl diving location among the pearling fleets of the Arabian Gulf. The three oyster beds described below were selected to represent these particular features. *Hayr Bū 'Amāmah* and *Hayr Bū-l-Thāmah* are the oyster beds with an extremely high density of oysters combined with a very good state of conservation. While *Hayr Bū 'Amāmah* illustrates the highest ratio of pearls per oyster in general, *Hayr Bū-l-Thāmah* is known to have brought forth particularly large and famous pearls of highest quality. *Hayr Shtayyah* on the other hand is the most frequented of the Bahraini oyster beds. Since it was shallower than the other and therefore easier to dive to but also considerably closer to the shore, it was often the first choice bed to open the annual season, or the last before returning to Bahrain. The Arabic word *hayr* (plural *hayrāt*) refers to a pearl bank which spreads across what resembles an underwater plain, as opposed to submarine oyster formations on underwater mounts known as *najwāt* (sing. *najwah*). These mounts, of rather small extension, were less known or less relevant at the time of the pearling economy. They are therefore not included as properties in this nomination proposal.

Hayr Shtayyah

Hayr Shtayyah is located around 24 nautical miles (about 44 km) off the northern shores of *Muharraq* Island. It has a total surface area of approximately 24569600 ha. A recent survey, conducted in November, 2008, showed that the bed is still in good condition and that the density of pearl oysters varied from 4-30 oysters per square metre based on sample test counting at three stations (1: N: 2637387, E: 5052223; 2: N: 2635132, E: 5052655; 3: N 2635074, E: 5051190) (al-Khuzai, 2008).

The water depth of *Hayr Shtayyah* ranges from 8.0 to 12.0 metres, which is considered very shallow compared to most other oyster beds of comparable density. It is predominantly for this reason that the bed was so popular among the divers and frequented so often at the start of the season when the divers still had to get back to their best form. The bed topography could best be described as a dome-like structure with the centre at a water-depth of around 8 metres which lifts, as by centripetal force, the surrounding lower plain. Recent surveys have recorded that the density of oysters was higher in the deeper and exterior parts of the bed. The centre itself does not contain many oysters and therefore has not been indicated as part of the property proposed. Apart from the pearl oyster, the hard substrate of the seabed illustrates rich habitation, for example by fish, echinoderms, molluscs, corals and sponges.

Lorimer and other historic sources suggest that what is nowadays referred to as *Hayr Shtayyah* was according to a survey, conducted by Lieutenant Commander Rose at request of the naval authorities to the Foreign Department of the Government of India, considered a conglomerate of six separate oyster beds. These six, arranged in circular form around an area free of oysters (referred to above as the centre of the dome), are named as follows: (1) *Hayr Fisāqah*, (2) *Hayr Zahar*, (3) *Hayr 'Abyām*, (4) *Hayr Jarāwal*, (5) *Hayr Zariyah*, and (6) *Hayr Mudūwirah* (Lorimer, 1995a, p. 71). Since these names are no longer used today and did not recall many notions among our informants, the oyster bed will be exclusively referred to as *Hayr Shtayyah*.

Hayr Shtayyah was not only popular for its shallowness which promised easier dives and higher water temperatures but also because of the formation of its oysters. All three characteristics are still very much in evidence and will therefore be described as the attributes illustrating its Outstanding Universal Value. Firstly, it can still be considered one of the shallowest oyster beds, with the exception of some oyster formations on the fossilised coral reefs close to the shore that were never referred to as beds in their own right. The water depths of oyster beds in the northern Bahraini waters are as described by several authors and vary not so much in content but in the measures units used. Hope speaks of average depths of 8 to 15 fathoms [ca. 14 to 27 metres] (Hope, 1951a, p. 261), which seems to be in the same range of a maximum depths of 18 fathoms [ca. 32 metres] referred to by Lorimer (Lorimer, 1995a, p. 21). The 8 to 12 metres depths of *Hayr Shtayyah* obviously range at the bottom edge and bring with them the advantage of visibility. While in 1925 Boutan still described the visibility of the pure and transparent waters to be between 15 to 20 metres maximum on extremely calm days (Boutan, 1925, p. 198), the 2008 survey conducted identified a somewhat lower but



Pearl oyster at Hayr Shtayyah covered with sponge



Cluster of pearl oysters at Hayr Shtayyah



still sufficient visibility of between 10 and 12 metres (al-Khuzai, 2008). This allowed and shall allow divers on very calm days to visually judge the best diving location from the water surface.

A second aspect contributing to the popularity of *Hayr Shtayyah* as the first location of the annual season, or even as the destination of the pre-seasonal excursion, is the comparatively higher temperature of the water. The water temperature on the oyster bed, measured monthly between July 1987 and June 1989, ranged from a minimum of 15.2 degrees °C in January to a maximum of 31.5 degrees °C in August (Nayar & al-Rumaidh, 1993, p. 217). In the month of May, historically the start of the main season, *Hayr Shtayyah* already has a water temperature of up to 25 degrees °C, while the deeper oyster beds average around 22 degrees °C. For divers who spent up to two hours in the water without break, these three degrees made a significant difference.

Finally, the value of *Hayr Shtayyah* for the divers also lay in its oyster formations which are found in clusters. Several oysters clinging together rather than being attached to coral and other hard substrates are referred to as *tabrah* (plural *tabānī*). These were not only much easier and faster to collect, it was also believed that "such concretions are frequently pearl-bearing, and the discovery of a single rich Tabra will frequently make good the failure of a boat during a whole season" (Lorimer, 1995a, p. 22).

The pearl oyster

The oyster species which is predominantly found in Hayr Shtayyah and also in the other two oyster beds described below is the so-called Gulf pearl oyster or *Pinctada radiata* (Leach, 1814) of the family of pteriidae, which is also sometimes referred to as *Pinctada vulgaris* (Schuhmacher). The genus *pinctada* has a strong inner shell layer composed of nacre which is referred to as mother of pearl. All species within the genus *pinctada* share the physiological properties that can lead to the production of large pearls of commercial value. *Pinctada radiata* which is very common throughout the Arabian Gulf, has radiating flat scaly ribs often described as concentric growth lines. The base colour is light brown which is often heavily rayed with red-brown or dark-brown rays (Green, 1994, p. 91). Shells measure an average of 30–65 mm, or on rare occasions up to 80 mm along the coast. They become larger with further distance from shore and increased water depth (cf. Smythe, 1982, p. 89). "Internally the nacre which extends towards the margin, is 'brilliant', leaving a lip which can be variously coloured (from light-brown to red-brown or almost black)" (Green, 1994, p. 91).

The preferred ecological habitats of *Pinctada radiata* are described by Donkin to be waters between 5 and 20 fathoms with a firm foundation to which the oyster is anchored by a byssus (a bundle of tough threads) (Donkin, 1998, p. 35). Such a surface can, for example, be stone, coral or shell conglomerates and even wracks or dumped metallic items. It seems the oyster species is also very flexible regarding the salinity of the waters, as Donkin refers to their survival in comparatively high salinity environments above 37 ppt (Donkin, 1998), and recent surveys have confirmed a salinity rate of even 43 ppt at Hayr Shtayyah (al-Khuzai, 2008). They seem equally resistant to the rise in water temperature experienced in the Arabian Gulf, estimated by al-Khuzai et al. at 1.5 degrees C° since the year 1900 (al-Khuzai, Sheppard, Abdulqader, al-Khuzai & Loughland, 2009). A second species scarcely found in Bahraini waters is the Black-lip oyster or *Pinctada margaritifera* (Linnaeus, 1758). It is often larger than *Pinctada radiata* but contains fewer pearls and therefore became more important as a mother-of-pearl resource.



Pearl oysters with green algae growing on the sediment at Hayr Shtayyah

Pearl formation in the oyster

Pearls are considered as organic gems, created by living animals, predominantly by the species *pinctada radiata* (described above), known for the high quality of its pearls since ancient times (Southgate & Lucas, 2008). In the past, the origin of pearls was explained by legends, and the earliest accepted claimed pearls were formed by lightning striking the sea (Strack, 2008). More poetic explanations refer to pearls as the tears of angels (Rosenthal & Dulac, 1920) or as deriving from the 'fertilisation' of a raindrop: "Arab lore in the Gulf relates that the young shell-less oysters come to the surface when it is raining, or when the moon is full. The raindrop is the father of a good pearl and the oyster the mother, while the moon produced lustre. A poor season is attributed by many to a shortage of rain" (Bowen, 1951, p. 165).

However, modern explanations for pearl formation unanimously agree that pearls are produced in a kind of a natural defence process initiated by the animal under specific circumstances. Although the origination of the defence reaction is still disputed, the processes of the reaction are well researched. If an oyster is entered by a foreign particle (whether organic or inorganic) which cannot be expelled it will isolate this particle in a location near the mantle surrounding the soft body of the inner oyster. This mantle is composed of different types of epithelial cells which discharge a shell-like substrate aimed at encapsulating the intruder (Héctor & Southgate, 2005). The nucleus will then be covered with fine layers of nacre in a long process which, layer by layer, develops a more and more lustrous pearl. If movement of the nucleus is not restricted, the result would be a completely spherical pearl, the most desired by pearl divers. If the movement is restricted, however, pearl shapes vary and sometimes when the nucleus is attached to the mantle the pearl may not be separated from the shell. Such attached pearls are referred to as blister pearls. According to a new theory, what stimulates the mantle to produce the pearl is not necessarily a foreign body, but a direct response to a mantle tissue injury. This could be the result of an intrusion, but does not necessarily need to be (Taylor & Strack, 2008).

Since the early days of scientific oyster exploration, many marine biologists have suggested that rather than grains of sand, the foreign particle was a specific parasite. This theory was first established by Filippo de Filippi's demonstration in 1852 that the parasite *distomum duplicatum* formed a pearl in a freshwater mussel. His finds were confirmed by similar experiments carried out by Friedrich Kuechenmeister (1856) and Karl Moebius (1858) (cf. Donkin, 1998, p. 36). The marine biologist Herdman, who investigated this issue for the pearl oyster in Ceylon, reported that a tapeworm larva or cystoid was actually the parasite that attacked the oyster tissue and initiated the process of pearl formation (Herdman, 1903).

Pearls, as organic structures consist predominantly of calcium carbonate (calcite) with the more valuable lustre layers of slightly modified calcium carbonate (aragonite). The surface of the pearl is microscopically uneven, "reflecting and refracting light" (Donkin, 1998, p. 37). This composition is vulnerable to a variety of external influences, in particular mineral acids in solution or in the atmosphere or the organic acids produced by human skin (Donkin, 1998). Due to this vulnerability, pearls not only have a very poor record of survival in archaeological deposits but are also not considered eternal treasures and their slow deterioration is well-known.

The waters of Bahrain are said to be the best location for the *pinctada radiata* species to produce highest quality pearls. This is attributed in particular to the water condition, i.e. the various under-water sweet water wells. Depending on tides and currents the oysters are alternately exposed to streams of less salted sweet water and the comparatively highly salted regular waters of the Arabian Gulf. According to Rihani, the "pearls of Bahrain are the purest and most perfect in the world; and the reason for this is one of the marvels of natural phenomena in this island. (...) Authorities on the pearl agree that fresh water improves it (...) and the natural phenomenon I have referred to is the fresh-water springs under the water of the Gulf" (Rihani, 1930, p. 280-1). These freshwater springs are at the same time used as a water resource, and a skilful diver can collect sweet water from the sea floor of the Gulf (Herbert & MacCarthy, 1924, p. 86). As Ahmad ibn Majid, the famous Arab traveller and seafarer, noted in the early 16th century: "a man can dive into the salt sea with a skin and can fill it with fresh water while he is submerged in salt water" (Casey & Vine, 1993).

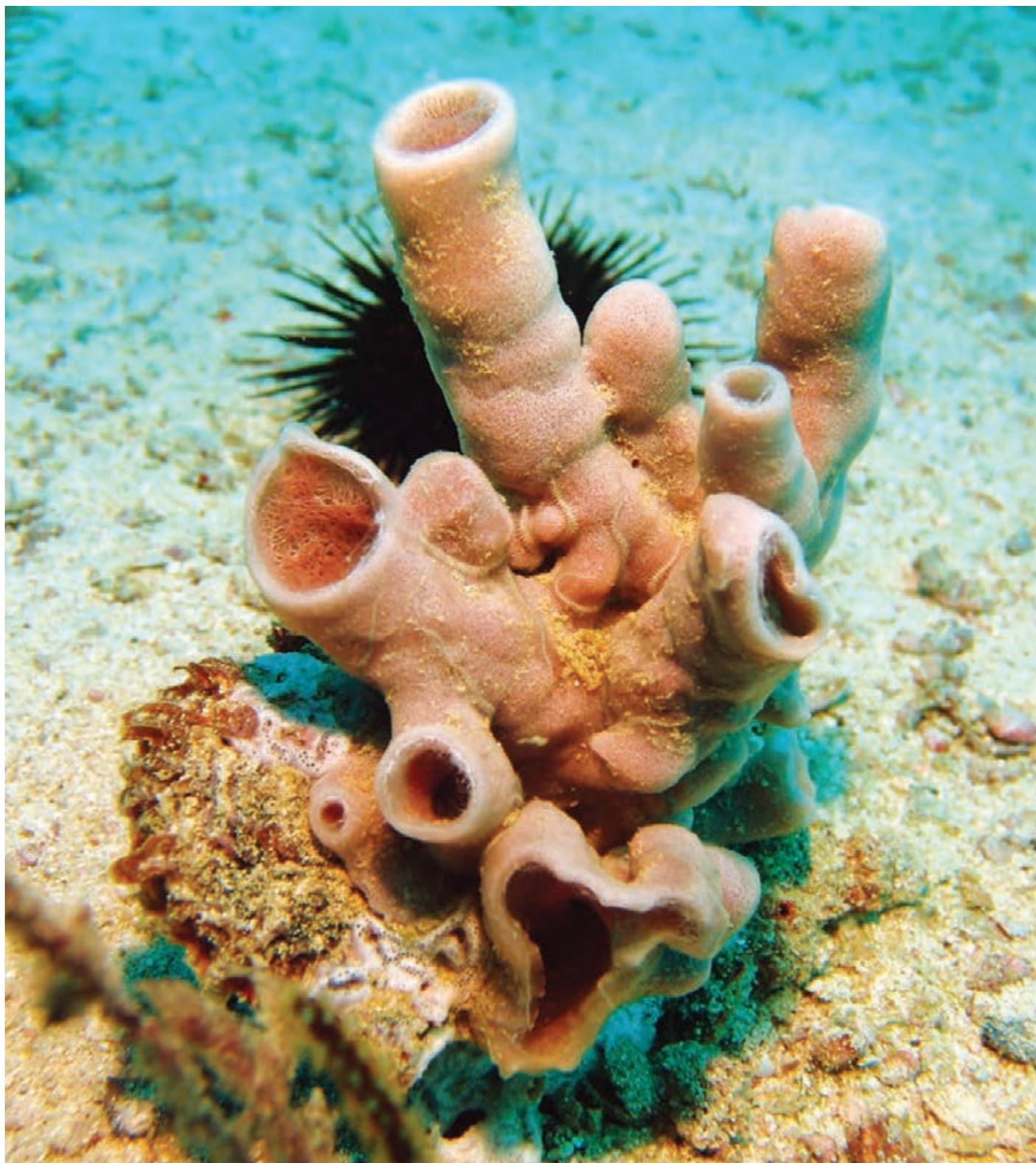
Hayr Bū 'Amāmah

The most popular and most often quoted oyster beds further north, and those frequented most during the main diving season, are *Hayr Bū 'Amāmah* and *Hayr Bū-l-Thāmah*. In the historic sources they are mentioned along with a third oyster bed, *Hayr al-Mayyanah* (Al Muraikhi, 1991, p. 77), which at present seems to have been compromised by extensive lobster fishing activities at least partly involving trawling techniques. While aiming to improve its condition by intensified monitoring on a national level, this bed has not been considered as property for World Heritage Listing.

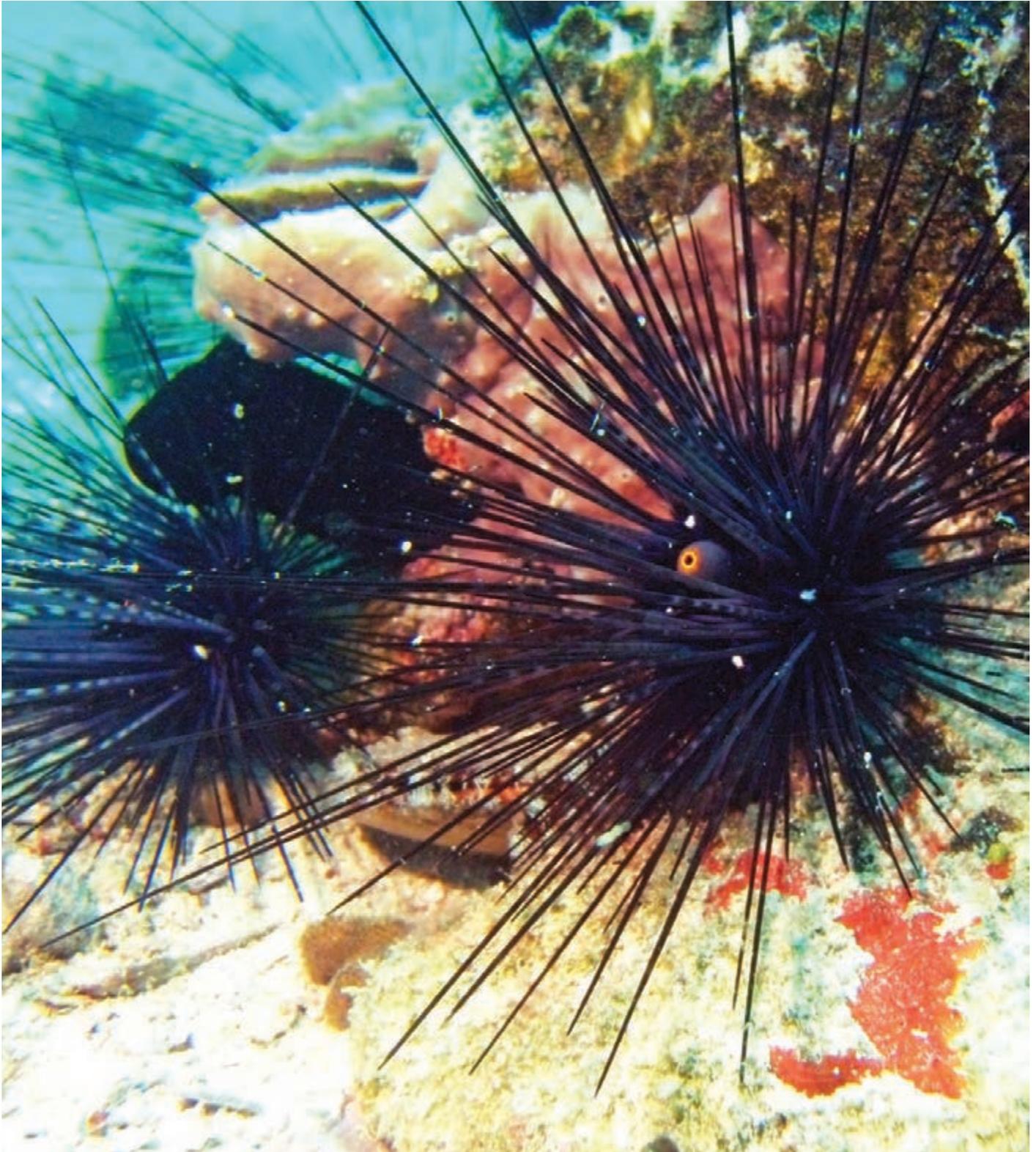
Hayr Bū 'Amāmah is located about 63 km to the northwest of *Muharrāq* Island. It is the most western of the important oyster beds with an area of approximately 4,854,770 ha. The water depth of *Hayr Bū 'Amāmah* is very constant at around 15 metres, and visibility in the plains of the bed averages around 10 metres. The seabed is characterised by a hard and even surface with very little sand, although some depressions with coarse sand can be found. The pearl oyster density ranges from 4-20 oysters per square metre, and previous surveys have estimated the total number of oysters on the bed at 482 million. The surveys describe the oysters as being in a healthy condition, "without much settlement of fouling or boring organisms over the shells" (Nayar & al-Rumaidh, 1993, p. 89). The surveyors further noted that the fauna of *Hayr Bū 'Amāmah* was fairly rich, and with a large variety of organisms at the bottom seeming to indicate further life underneath. Al-Khuzai in his most recent survey specifically identified several species of sea anemones, several echinoderms such as sea urchins, sea stars and feather stars as well as a variety of fish, molluscs, corals and sponges (al-Khuzai, 2008). With its colourful variety *Hayr Bū 'Amāmah* is also a fascinating place of discovery for scuba divers.

Hayr Bū 'Amāmah was probably the most popular bed during the main season and was heavily frequented by pearling dhows from a variety of places around the Arabian Gulf. With its extremely high ratio of pearl finds to oysters, it promised the divers good finds even at an average underwater density of oysters. Pearl ratios documented during test collections were up to 10.2 %, but 72% of the pearls ranged within the smallest two categories with up to 2 mm in diameter.

The high pearl ratio and the variety of species on the seabed, which remind of the many risks and challenges the divers faced underwater, are the attributes that reflect the Outstanding Universal Value. It is therefore important to carefully monitor the environmental conditions which provide the climate of such intense and active pearl growths. This seems particularly difficult on the basis of the historic experience that the richness of oyster and sometimes ratio of pearls varies for each bed from season to season as part of a natural process of oyster colony fluctuation at some location of the bed and increase at other locations. Lorimer, for example, reports that "the movements of the oysters are entirely uncertain, defying forecast; thus in the season of 1876 nearly every pearl boat in the Gulf was riding in the vicinity of the Sha Alum shoal and a magnificent haul of oysters was obtained in a very restricted area, while the following year the same locality – contrary to the expectations of the divers – proved almost barren" (Lorimer, 1995a, p. 27). The aim of preserving the high density and high ratio of pearl production is therefore aimed at long-term continuity rather than absolute continuity season by season (see also 6.a on monitoring key indicators).



Sponge colony attached to pearl oyster shell at Hayr Bū 'Amāmah



Needle spine urchin at Hayr Bü 'Amāmah

Practices of pearl diving

The annual routine of the Muharraq island society, and probably most of Bahrain, was dominated by the pearl diving season. During the hot summer, almost the entire adult male population of Muharraq was absent for four months and ten days as they toiled on the boats. The main dive, the *Ghūṣ al-Kabīr*, lasted from the end of May or beginning of June until the end of September (Dickson, 1949, p. 484). At this time, dhows with crews ranging in size from less than 10 men to over 100 drifted along oyster beds such as *Hayr Bū 'Amāmah* in their search for the best oysters.

There were three main types of pearling vessels, or dhows: *sambūk*, *shūwī'i*, *battīl* (Dickson, 1949) and also some *jālbūt* (Tweedy, 1952). Most dhows were crowded, sometimes so overcrowded that the pearling crew had to sleep on top of the collected oysters. The stench of dead and rotting oysters was overpowering, and the crew lived without privacy or comfort, eating little but rice, dates and fish. At the same time, the sight of a pearling fleet working the banks was said to be a magnificent one, as hundreds of vessels and thousands of men sailed and rowed from spot to spot, chanting and diving as they toiled. The spirit of companionship among the men on board the dhows was strong, united as they were by their shared hardship and endeavour. Sometimes the crews of a boat would be entirely from a single *farij* (quarter) or community, and sometimes they would incorporate men from all over the Gulf and beyond, both free men and slaves.

The boat crew was recruited and organised together by the captain (Arabic *nūkhidhah*, pl. *nūwākhdhah*), the chief of operations. The two other most crucial professions were the diver (Arabic *ghīṣ*, pl. *ghāṣah*) and the hauler (Arabic *sīb*, pl. *siyūb*), who were paired for the conduct of work. Work began around one hour after sunrise and ceased one hour before sunset (Lorimer, 1995a). For the actual dive, the divers worked in two shifts from around mid-morning to midday, almost on an empty stomach, and again from one hour after midday prayer to mid-afternoon. Some authors argue that the scarcity of food, consisting only of a few dates and a small portion of rice, was essential to enable the divers to remain underwater for a longer time (Tweedy, 1952, p. 65). Aboard, "breakfast consists of a few dates and coffee; lunch is a gourd of water; and supper may be caught fish, a little rice and tea" (Sanger, 1954, p. 144). The chief impediment to work was the loss of body heat brought about by prolonged immersion, rather than physical exhaustion. Dressed only in a loincloth, and equipped with a nose clip (*ftām*) to assist him to regulate ear pressure, each diver, according to written sources, each day made between 40 and 80 dives of up to two minutes (Sanger, 1954, p. 144). Most divers also used leather guards (*khabūt*) on their fingers and toes to protect them from the sharp coral edges when pulling off the oysters at the reefs (Clarke, 1981, p. 49). The diver (*ghīṣ*) used two ropes, one, *ḥabl al-zayban*, bearing a heavy weight (*hajar* or *ḥaṣāh*), which would be hauled up once he reached the bottom. It was the diver's responsibility to bring this rope and weight. The other rope (the *īdā*) was tied around his waist and attached to a basket (*diyīn*), which the diver would tug when he wanted to ascend. The hauler (*sīb*) would at this signal pull up the diver and basket, emptying the basket into the boat and returning it to the diver, who stayed in the water, typically resting by holding an oar. The *īdā* was a softer rope, to protect the hauler's hands, and it was the responsibility of the hauler to provide it for himself.

The diver would spend around a minute or two on the bottom, attempting to fill his basket with oysters. There are legends abound of individual divers who could stay in the water for much longer times. Although we can assume that Ibn Battuta's descriptions are exaggerated when he writes: "they differ in their endurance under water, some of them being able to stay under for an hour or two hours or less" (Ibn Battuta & Gibb, 1929), perhaps Hay is correct in reporting that he timed a grey-haired diver who stayed underwater just over three minutes (Hay, 1959, p. 65). Oysters were gathered on the boat and, except in the rare case of divers working independently, pooled together in large baskets or heaps to be opened collectively the next morning after the molluscs had died, using a special curved knife (*mifliqah*). The pearls would be handed to the captain, who would keep them till the end of the season, except for those he needed to sell in the interim to purchase supplies. The fleets comprised large communities of men, and service industries sprang up around them at sea, to supply them with water and food when required. Boats were usually provisioned in this way, by small vessels from their own ports.

Risks underwater

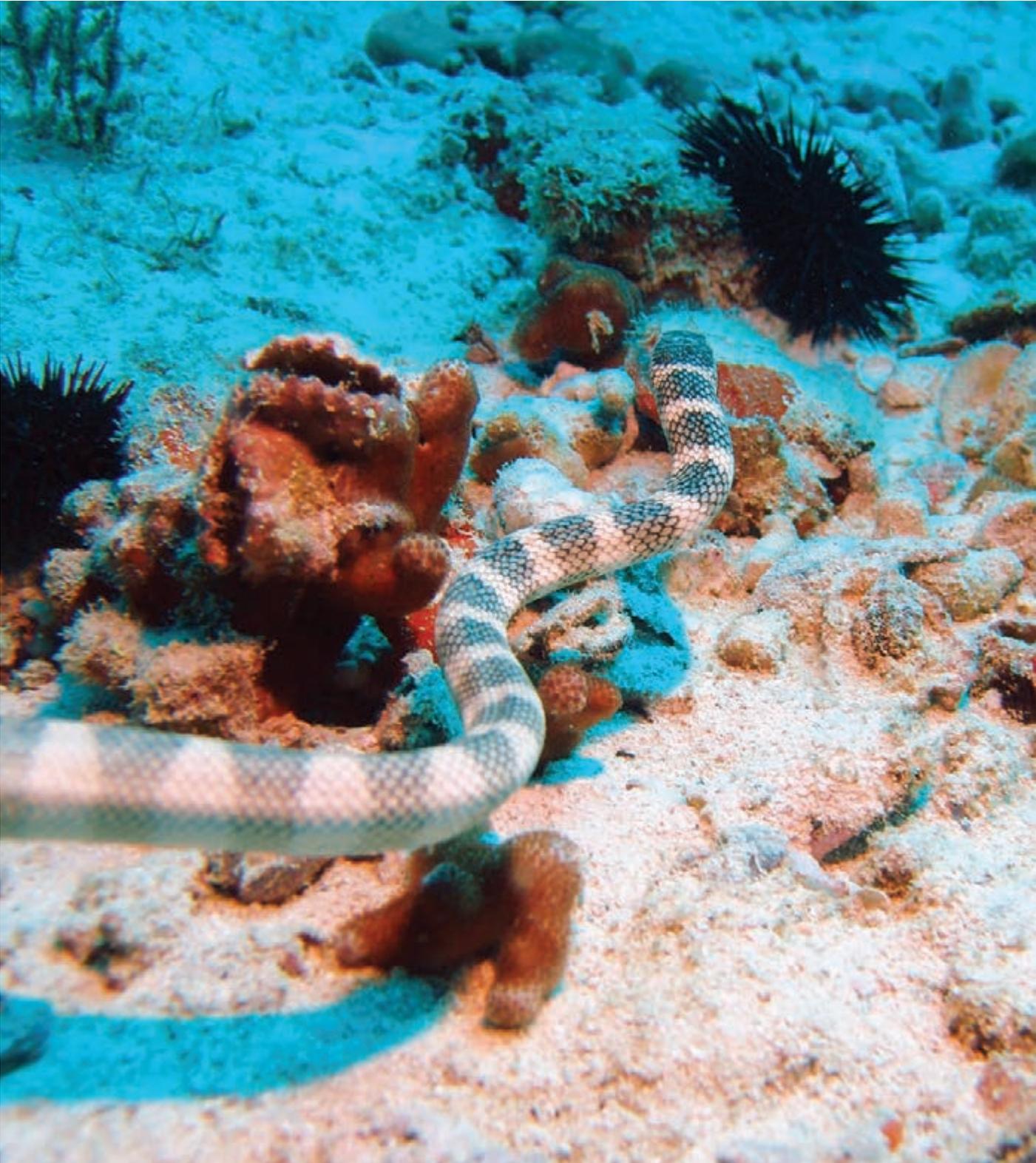
Pearl diving was a very dangerous profession with a variety of risks for the health and threats to the life of the diver. The diving practice required careful self-observation and good knowledge of the hauler. Divers who descended or ascended too fast often experienced burst eardrums, and were at risk of drowning if the hauler lost concentration and missed the pull-up signal. But even without the dangers of underwater ear and eye diseases, the continuous immersion in salt water and the lack of a sweet water bath at the end of a days work caused sores and skin diseases (Tweedy, 1952, p. 65). Also, the constant lack of air affected the lungs and pulmonary tuberculosis seems to have been a common phenomenon among the crew (Harrison, 1924).

More than these risks, however, the divers feared the threats concealed in the darkness of the oyster beds. The occurrence of sharks along the Bahrain oyster beds was very limited and they were considered much less threatening than in the easternmost parts of the Arabian Gulf. The two worst feared enemies were the sawfish, and the so-called fajlūl (jellyfish or mandil al-baḥr). Although perhaps Whitelock's account, quoted by Bowen, that the sawfish cut divers into two, may again be exaggerated, it seems well-established that on some occasions saw fish caused divers very serious and even life-threatening injuries (Bowen, 1951, p. 174). Far more frequent encounters for divers were with jellyfish which arrived in swarms on some days and were almost absent on others. If alerted to the presence of jellyfish, the divers would wear additional protective clothing: "(...) should the dreaded stinging jelly-fish be about he [the diver] will wear a crudely made black local bathing suit, which covers head, hands and feet, as well as body, leaving eyeholes alone through which to see" (Dickson, 1949, p. 487). But divers nevertheless encountered jellyfish without such protection and the poisonous tentacles left burns and unpleasant scars (Rihani, 1930, p. 280). A number of jellyfish stings could leave a diver seriously sick for several days, which sometimes happened if the diver was hauled up through a bypassing swarm of jellyfish. The images of manifold life forms around the edgy coral reef of Hayr Bū 'Amāmah including its occasional hosting of jellyfish swarms brings to mind most of the dangers the diver's feared during their time underwater.

In addition to the all dangers described, divers were also well familiar with a large variety of tales, myths and legends of underwater monsters and supernatural beings, which they feared perhaps even more. At the same times these tales enhanced their social status as heroes who fought the dark and evil forces of the grounds of the ocean. A synthesis of one of the most famous tales shall be quoted here:

"Once upon a time (...) there lived a certain princess, the daughter of the Khalifah. She had a wonderful large black pearl (...). One day she determined to try and get it matched and betook herself to the principal pearl merchant of the city and asked if he could sell her one like that. The latter, knowing who the distinguished lady was (...) said "No two pearls in the whole world are exactly alike, and yours is one of the most wonderful in existence, so there is little chance of another being found like it." (...) One day and in reply to her many importunities, he said to her, "There has just arrived a famous pearl diver from Bahrain (...), perchance he may know of a pearl like unto that you desire?" (...) On being shown the pearl the diver looked long and carefully at it, and at length replied: "Lady, I have seen this pearl before and I know whence it came, for it is the one my father brought up from the dread cavern at the bottom of the sea south of Bahrain, where dwelleth the most terrible spider-shaped monster in existence. My father had discovered during his many explorations of the deep that in this cavern lay the most wonderful pearl oyster in the world, each containing a beautiful black pearl. Determined to try and get one for your father, the great Khalifah, he dared all and went down to and fought the dread guardian of the submarine cave. His body was brought up sorely mangled; he had been done to death by the monster of the deep. In the dead man's hand we found a single oyster of great size, which on being opened proved to contain a black pearl of priceless worth. (...) The pearl you now show me is undoubtedly this very pearl, the gaining of which cost my father's life. Nor is there any other place in the world where such a pearl could be found, but it means death to him who again tries to gain access to the cave" (Dickson, 1949, p. 494-6).

As the story continues, the princess begs the brave diver to re-enter the cave. He agrees and has to fight the monster. He escapes holding a sole big oyster shell; it proves to contain the second black pearl.



Poisonous sea snake at Hayr Bū 'Amāmah

Hayr Bū-l-Thāmah

Of the three oyster beds proposed for nomination, *Hayr Bū-l-Thāmah* is the furthest to the east and located at around 65 kilometres distance from the northern shores of *Muharraq* Island. With a surface measurement of 5,659,130 ha it ranges between *Hayr Shtayyah* and *Hayr Bū 'Amāmah*. It is however considerably deeper than the other two, with an average water depth of around 20 metres and a maximum depth of 23.6 metres. The environmental condition of the oyster bed is excellent. Included as part of a marine protected area since 2007, it was therefore subjected to a higher level of scrutiny regarding the control of fishing and especially of trawling activities than the more recently protected oyster beds. The designation as a marine protected area was initially not so much aimed at the oyster bed than at the very diverse and well preserved active coral reef of the same name next to which the oyster bed is located.

Although the water quality is excellent, at only about 7 metres, visibility at *Hayr Bū-l-Thāmah* is limited compared to the other oyster beds. This could result from the additional water depth and the accordingly stronger current, but could also be due to the movements and the various inhabitants of the coral reef. Apart from coral structures, the seabed appears as hard and even surface covered by a film of fine sand with some rocky structures visible at irregular intervals. Apart from oysters and corals, there are starfish, gorgonians, parrotfish and carangids. Most of the oysters, like the hard substrate they are connected to, are covered with a thin layer of fine sand. Occasionally amphipods and extremely small crabs were observed as living on the shells, in rare cases small gastropods were also seen attached to the oysters.

The density of pearl oysters ranges from 4-20 per square metre and a previous survey on the basis of a wider sample of testing extrapolated that the total number of oysters on *Hayr Bū-l-Thāmah* is around 428.5 million. It is therefore estimated to be the oyster bed with the highest density of oysters (Nayar & al-Rumaidh, 1993, p. 106) in the Arabian Gulf. Although it has a higher density than *Hayr Bū 'Amāmah* the ratio of pearls to oysters is slightly less. Nevertheless, *Hayr Bū-l-Thāmah* was mentioned far more often by informants during interviews. It seems that a few particularly large pearls were found at *Hayr Bū-l-Thāmah*, earning the bed the reputation of bearing good chances of producing real treasures. And indeed, the comparative survey conducted by Nayar and al-Rumaidh confirms a 50% higher ratio of pearl finds above 5 mm diameter (Nayar & al-Rumaidh, 1993, p. 159). Probably this reputation also gave the divers the courage and motivation needed to dive to the bottom of the deepest of all Bahraini oyster beds.

Hayr Bū-l-Thāmah is often described as the most interesting bed with regard to its species diversity and in particular variety of living corals. As a testimony of the pearling economy the central attributes reflecting the Outstanding Universal Value are its high density of oysters and the high ratio of large pearl finds which seems to support the stories of large pearl finds in *Hayr Bū-l-Thāmah* still circulating among the former divers and captains. These would have often headed for *Hayr Bū-l-Thāmah* as soon as the divers were up to the water depth, hoping for a few *dānāt* (sing. *dānah*, particularly large and beautiful pearl) to appear.

Identification of the best diving locations

The Bahraini *nūwākhdhah* (sing. *nūkhidhah*, captain) were experts in finding the oyster beds and within them the locations with highest oyster density. While the identification of the oyster bed was based on personal experience and tools of the captain, the best and most dense area of the bed would be determined on a trial and error basis. Lorimer reports that the pearling fleets usually made direct voyages to the desired bed, guided "not only by the sun and stars and by bearings from the land when in sight, but also by the colour and depth of the sea and by the nature of the bottom" (Lorimer, 1995a, p. 30). Longer journeys were traditionally embarked upon at night to benefit from the guidance of the stars, while the exact location for anchoring was decided upon during daylight with the help of the water colour and ground visibility. From very early, the captains also depended on navigational maps of the oyster beds of Bahrain, or on a book with navigational descriptions published by Rashed bin Fadhel al-Binali in 1923 known as "the path of guidance" (al-Zayyani, 1998, p. 154). To illustrate the importance of pearling to Bahraini society, it should be noted that this was the first book printed in Bahrain following the introduction of a local printing press to the islands (Ismael, 2002, p. 34). The technique used most often for confirming the correct location was to measure the water depth with a plumb line and to examine sand that the divers brought up from the oyster bed. The captain would then analyse the haptic characteristics and the odour of the sand and confirm the exact location.

Al-Zayyani narrates the origin of a famous Bahraini saying, derived from the described examination of sand. The old, blind nūkhidhah Salem bin Ahmad Shurugi aimed at the beginning of the season for Hayr Shtayyah. His crew, wanting to play a trick on him, had brought sand from Rayyah, an area rich of wells, in the north of Muharraq Island. On arrival in Shtayyah, where the nūkhidhah requested the collection of a sand sample, the divers presented him with the sand brought from Muharraq. The captain is recorded to have said, “hayr al-hayr Shtayyah wa at-tin tinat Rayyah” (the bed is the bed Shtayyah but the sand is the sand of Rayya) (al-Zayyani, 1998, p. 155). This expression is still used in Bahrain today if somebody discovers a trick has been played on him.

The nūkhidhah would generally approach oyster beds which in past seasons had yielded good returns. On reaching the oyster bed, anchor would be dropped at the edge of the bed and the first test dives initiated. “When the divers begin to bring up only a few oysters, the boat is allowed to drift to a new position” (Bowen, 1951, p. 167) until it has moved completely across the bed when it would return the opposite edge to take a parallel drifting course.

Sometimes, formerly rich oyster beds are sterile for one or several seasons and therefore even the most skilled navigation knowledge of the captain could not always guarantee a successful season. Each nūkhidhah had his own strategies for deciding where to stay and when to leave a not very promising location. Olsen further reports coordination activities among several nūwākhidhah who followed an amir of the same pearling fleet (Rovsing Olsen, 2002, p. 90), especially at the very start of the annual season.



Pearl oyster at Hayr Bū-I-Thāmah

The pearling calendar

The main diving season, known as the ghūṣ or Ghūṣ al-Kabīr (the Great Dive), originally began in early June, and lasted until to mid September or early October, though its start date had been pushed back to mid-May in Lorimer's day (Lorimer, 1915 p. 2228). The timing was determined by the temperature of the water, which needed to be warm enough for prolonged immersion on the deeper banks where the finest pearls were found, and the calmness of the sea, so it was necessary to wait until the shamāl (strong seasonal northerly wind) had ended. The clarity of the water was also an issue, so the seas needed to have been settled with calm weather for sufficient time, as well as the length of the day, as prolonged brightness helped the divers in the exploitation of the banks in deeper water. The whole pearling fleets of each Gulf state would depart for this dive, each usually led by an experienced captain or "admiral", the amir al-ghūṣ, who would take the fleet to the place of his choosing. Usually this would be a collection of banks familiar to him and his people, and once they were fished, he would lead the fleet to the next suitable spot. This pattern of following an amir is seen as early as Idrisi in the 12th century (al-Idrisi, 1836 p. 374). If need be, the admiral would allow the boats in his fleet to split and seek rich banks according to their own instincts and experience of their captains. The very large boats of the latter decades, carrying more than 100 crew members, often went their own way.

Ghūṣ al-Kabīr was comparatively tightly controlled, with the fleet of each sovereign territory leaving on a date set by the ruler. This departure was known as the rakbah, and was preceded by around 10 days preparation, when the crews reported to their nūwākhdhah to ready and provision the boat. The families would line the shores to bid farewell to their men, who would be absent for around 4 months and 10 days, albeit sometimes with brief visits ashore. The date of the return was also officially determined, and those who left for home early could be sent back to the banks, as reported in the British records for 1905 (Anonymous, 1986 Vol. V, 1905-6 p. 87). The purpose of coordinating the start and end of the dive was to prevent captains from taking unfair advantage by leaving early for the best banks, or returning early to obtain better prices for their pearls before the market was flooded with the main harvest.

The return was known as the quffāl, and when it was announced on the banks, characteristically by a canon shot from the amir of the fleet, the boats were allowed to race for their home port (Hijji, forthcoming, Ch. 3). On arriving, virtually the entirety of the population would be at the docks to greet the pearl divers. It would be a time of great rejoicing and ululation, and haggling over the catches would start immediately in the houses of the merchants, the coffee shops and the streets of the sūq. In most cases the catches were pledged to the financiers, who had made the advances to the nūwākhdhah of each boat, but not all divers and captains were bound in this way, and not all merchants would choose to buy up the catches of their boats.

The main dive was both preceded and followed by shorter diving seasons, and also accompanied by year-round pearl gatherings by wading in the shallowest waters. The "cold dive" or Ghūṣ al-Barīd, (also khānjīyah), began in mid April in shallow, warmer waters, and lasted around 40 days (Lorimer, 1915 p. 2228). The sources are not clear on the numbers of boats involved in this. Following the main dive there was a three week return, al-raddah, for some of the boats. The more desperate divers then returned for a brief season even later, the ridīdah (Rentz, 1951 p. 399). There were breaks between these events, to allow the pearl fishers to return to their home ports to rest and re-provision. Pearls were also gathered in the winter in an untaxed practice known as the mujannah (Lorimer, 1915 p. 2229), more typically pronounced miyenni in some Gulf dialects. This involved wading and gathering oysters from the shallows of mainly the coastal coral reefs. Moreover, towards the end of the industry some divers travelled to the Sri Lankan and Indian fisheries to continue diving during the winter (Anonymous, 1986, Vol. V, 1905-6 p. 87; Burdett, 1995b p. 136).

2.a.ii Seashore property

The seashore had an important and strategic function during the pearling economy. It was on the one hand the transitional point of arrival and departure of the pearling fleet for the Ghūṣ al-Kabīr, the place to give farewell to the loved ones who would not encounter during the following four months. These occasions were therefore celebrated as the main annual festivals as is described below. On the other hand it was also the place of departure and arrival of visitors and traders outside the pearling season and therefore the location where goods from India or other parts of the Arabian Gulf arrived, where often a first trade was initiated and the place where diplomatic visits were officially welcomed and received. One last aspect was the strategic defensive function of the seashore which protected the *Muharraq* settlement, predominantly through its inaccessibility. Most of *Muharraq's* seashore was very shallow as a result of the shallow fossilised offshore coral reefs most of which have nowadays been turned into land by successive phases of land reclamation. Bent describes the situation in 1890: "The sea all around Bahrain is remarkably shallow. Two coral reefs run out of Bahrain and Moharek respectively, which shut in the harbour, and through which large vessels cannot pass; but the harbour is sufficiently deep for good-sized baghalows until quite close to the shore, which no boats can approach, and landing has to be effected on the backs of the celebrated white donkeys of Bahrain (...)" (Bent, 1890, p. 1).

A formalised harbour basin at his time only existed in Manama, constructed at the suggestion of the British residents. The harbour of *Muharraq* was an open area in the deeper water at the very southern tip of the island, the only location accessible to navigators without a very precise and detailed knowledge of the coral reefs. From there passengers and goods would be transferred into smaller rowboats which landed at the island's southernmost tip, the so-called *Bū Māhir* Seashore. Because of this strategic position as an arrival and departure point of the pearling fleets as well as international traders and visitors, *Bū Māhir* Seashore has been selected to represent the transitional seashore element for this nomination proposal. The proposed seashore property consists of two elements which contribute to the Outstanding Universal Value of the serial site. It combines firstly the beach itself, the physical point of embarkation, of the festivals of *al-rakbah* and *al-quffāl*, and of the official reception of international visitors, and secondly, *Qal'at Bū Māhir*, the fortress and defence structure which protected this only accessible seashore and the harbour basin located in front of it. Both elements are combined in the physical boundaries of one serial property but will be described separately below to highlight their different contributions and attributes reflecting the Outstanding Universal Value.

Bū Māhir Seashore

When *Ghūṣ al-Kabīr* commenced, the *Bū Māhir* Seashore was one of the last grounds the divers stood on in *Muharraq*. Similarly, when the pearling season ended, the shore was the first solid land the divers walked on after months at sea on the pearling dhows. It was, therefore, a very special place which carried the meaning of its transitional function. Almost like the location of a 'rite de passage', once crossing this shore, life changed for several months to come.

The festivals of the departure (*al-rakbah*) and the return (*al-quffāl*) were not the only public ceremonies celebrated at the seashore. Boat construction along the beach – which generally occurred further north of *Bū Māhir* Seashore – and especially the launching of new boats and the re-launching of repaired vessels were all accompanied by beachfront celebrations. The beach also served as a playground for youngsters, a site of folkloric beliefs and rituals, a place for playing folk music, and an open-air *majlis* (place of sitting together) where traditional food was offered.

In Arabic the *Bū Māhir* Seashore consists of *sif Bū Māhir* and *qirāḥ Bū Māhir* which – among the many different words used to designate seafronts – for the locals already includes its main characteristics. *Al-sif* (less frequently also called *al-yāl*) is used to signify the dry sand where the waves of the Arabian Gulf end. It does not include the uncovered seabed that is visible during low tide. This is distinguished from the always visible *al-sif* and called *al-qirāḥ*.

The seashore element proposed for nomination is 110 metres long and depending on the tides and location between 0.2 and 25 meters wide. It is surrounded by a further 130 metres of seashore that may have been formed only during the latest years of the pearling economy and are therefore not included in the property. The part of the property referred to as *al-sif* is at most 2.5 metres wide and in some locations non-existent, while the *al-qirāḥ* in the extreme low tides of early spring and late autumn expands up to 23 metres. It is located on the southernmost tip of *Muharraq*, once a secluded tidal island south of *Ḥālat Bū Māhir* that did not form part of the urban growth of the rest of the *Muharraq*. Today, a modern Coast Guard complex encompasses the former extension of the island and for security reasons the seashore has been inaccessible to the public. Following negotiations between the Ministry of Culture and Information and the Ministry of Interior, access to the seashore will be available once more from early 2011 with the completion of a small visitors reception building which separates the security concerns of the coastguard (for further information please refer to the management sections of this nomination dossier).

DESCRIPTION

2



View from Bū Māhir Seashore to the south-west (above) and historic photograph of two men collecting fish in ḥaḍrah (below)

A traditional *ḥaḍrah* is located in the western centre of the *al-qirāḥ* at about 24 metres from *al-sif*. *ḥuḍūr* (pl. of *ḥaḍrah*, best translated as fish trap) are “ingenious fixed stake nets located in the inter-tidal areas and traditionally constructed using the stems of palm trees spaces closely together and bound together to form a large enclosure” (Clark, 2009, p. 55). *Ḥuḍūr* supplied the majority of the Bahraini fish market and function according to a very simple technique. During high tide, fish swim inshore and enter the *ḥaḍrah*; once the tide recedes they are trapped and can be collected by the fishermen. The property also encompasses an area of deeper waters, formerly the harbour basin of Muharraḡ where larger vessels once anchored in the protected bay between the two main islands.

The property illustrates the attributes which reflect its Outstanding Universal Value in the three seashore sections described (harbour basin, *al-qirāḥ* and *al-sif*). The central attribute is the seashore topography and geomorphology, which has remained largely unchanged since the decline of the pearling economy in the 1930s. Additional attributes are the material characteristics of the sand surface of both the *al-qirāḥ* and *al-sif* which have become rare features around the coast of Muharraḡ and constitute the last authentic location of the festivals that took place for the pearling season. These attributes can be summarised as related to sources of information expressed in location (here especially topography and geomorphology), material (with regard to the natural sand formations), and setting along the seashore.

Landing and departing of fleets and visitors

The harbour setting and the Bū Māhir Seashore were dominated by Qal'at Bū Māhir (Bū Māhir Fort), the scene of arrival for traders and international visitors to Muharraḡ settlement. “Abu Mahir was an ideal fortress island, just off the shore of Muharraḡ town but connected to it at low tide by a sand bar. The fort stood on the island’s southern tip, at the end of a sandy point jutting out into Bahrain’s main harbour (...). It commended both the entrance of the harbour and Muharraḡ’s principal water source, an underwater spring, making it the most important fort in Bahrain” (Onley, 2004, p. 60).

The most detailed extant description of an arrival ceremony concerns the arrival of the first French diplomatic mission which landed on this particular seashore on 18th of January, 1842. The following excerpts are translations of the Commander’s log on the day of arrival:

“At day break, I sighted land and the mountains of Bahrain. I headed for anchorage with a small quantity of sail sounding for depths as I went. The bottom went gradually from 10 fathoms to 7, where I dropped anchor. (...) The launch and the large boat were in the water, so I went ashore in my boat. (...) I reached the beach carried by the sailors. I went to the fort standing at the southernmost point with its base in the sea. (...) The old Sheikh soon arrived; we saw him approach slowly. He was walking along the beach escorted only by a few guards. We introduced ourselves to him; at that point we were at the place where a fine baggalah was being built. (...) Then he took hold of one of my buttons and led me at a youthful pace towards the iron gate of his fortress, ordering and signalling away the guards who were coming too near. The gates opened before us. The courtyard we entered was nothing but a heap of manure and demolition works. To reach the platform of the fort, the Sheikh climbed on a piece of broken wall at the top of which was a ladder hanging precariously by a rope; he climbed slowly. We followed him in this perilous ascent. The fort is no more than a square wall, each corner of which is flanked by a round tower. On each of the towers stands a wretched hideout, a veritable pallet exposed to the winds, peeling and ruined, with a single mat as its only furniture. This was the stateroom, the divan where the Sheikh received us” (Beguin Billecocq, 2001, p. 31).

In the following conversation the Shaykh asserted that it was a great honour for the French visitors to be brought into this room. “When the English come, none of them sets foot in the tower. I receive them outside the gates; but I have welcomed you into my private quarters” (Beguin Billecocq, 2001). Apart from the British many other regional and international guests have landed at Bū Māhir seashore and were welcomed by the ruler at the beach. Few indeed entered the fort and most were soon guided onto the main island, if the tides would allow so. But the most important arrivals and departures for the population of Muharraḡ were those of the pearling fleet.



Dhow passing by Bū Māhir Seashore on its course to Muharraḡ Harbour



The festivals of al-rakbah and al-quffāl

The day of *al-rakbah* was traditionally announced by the Head of State about 10 days in advance of the actual departure. This period was intended to give the fleet time to prepare the boats, ensure provisions for the families left behind, and to finalise any last repairs and maintenance. The *nūkhidhah* who had in advance recruited his team for the season, would call the men together to haul the boat from the dry land where it had wintered (Dickson, 1949, p. 486). While the pearling boat was pushed into the sea, the women performed the *Mrād* songs, which would be repeated several months later when the boats returned at the end of the season. "The words of the song express the hope that the husbands and sons may return safely to the house of the family, and the women ask the sea to repent because it kills their children" (Rovsing Olsen, 2002, p. 156). In the water the boat would have been provisioned with food, water tanks (*fun ṭās*) and all other items required for the dive.

The initial day of *Ghūṣ al-Kabīr*, the day of *al-rakbah*, was one of great excitement where the entire population of Muharraq gathered along the shore. The men were allowed to bid a final farewell to parents, wives and families (Dickson, 1949) before embarking on the pearling vessel for several months. Women and especially children would wear special costumes for this particular day and the drum beats from the boats mixed with their hopeful songs for a safe return as the dhows set sail. This departure was an impressive sight, according to descriptions by many historic sources. Belgrave noted his impressions as he watched the hundreds of pearling boats set off from the southern Muharraq coast: "It was an unforgettable sight to see the fleet of big dhows, some with as many as a hundred men on board, leaving the port, either under sail, or if it was still day, using the long lines of oars, the crew singing songs – diving songs – as they rowed. It was a sight I used always to watch with pleasure, and it is one I shall never forget" (Belgrave, 1968).

With all the families and foreign observers gathered, the Head of State (*amir*) would come to the shore to give the signal permitting the boats to leave for the oyster beds. "The place is filled with festivities and good fellowship and hopes for a successful season" (Harrison, 1924, p. 72). The fleet was headed by the *amir* of the fleet, also referred to as *admiral*, usually one of the well-known *nūkhidhah* who had been appointed to take the lead. It was also his responsibility to determine the end of the season once the waters became too cold for continuous diving. "It is considered improper (...) for the *nakhoda* of any large vessel to leave the pearl banks before the *admiral* leaves" (Bowen, 1951, p. 170).

On the boats which have rowed out to some distance from the shore now the big sail is prepared and opened in the last evening sunlight and the *nahhām* (the song leader) starts the traditional songs of the occasion, the *Jarr al-Ḥabāl*, giving farewell to families and home, and repeating "He who stays alive will return to you, oh home" (Rovsing Olsen, 2002).

Similar festivities awaited the crews upon *al-quffāl*, the annual return from the main season. Initiated by a gunshot by the *admiral*, or on rare occasions by the ruler himself, the *quffāl* was announced on the beds and led to an almost immediate return to the island. The women and children, who assembled all along the beach as soon as the first sight of the fleet was announced, repeated the hopeful songs for the safe return of their loved ones. In trepidation they would watch out for the dhows on which their husbands, sons and fathers were expected to return, searching for the black flag which indicated that death had occurred on board and that the crew would not return complete. While those few who could not see black flags on the dhows in question started up enthusiastic songs of thanks and celebration, the majority of women had to wait until the boats slowly approached the coast and individuals became visible. The *quffāl* was the most important day in Bahrain during the pearling era, a day of both tragedy and celebration, and for the population of Muharraq may have been more important than the two main religious holidays of the year.

Qal'at Bū Māhir

Qal'at Bū Māhir is located on the southernmost tip of *Hālat Bū Māhir* and is immediately adjacent to the sif of the seashore property described above. At present the remains of the fortress are located in the *Muharraq* Coast Guard base and access to the public is restricted. To visit the fort, permission has to be obtained from the Ministry of Interior through the Ministry of Culture and Information. As described for the seashore, *Qal'at Bū Māhir* will also be open to the public with the completion of a small visitor reception building foreseen for early 2011 (for further information please refer to the management sections of this nomination dossier).

While the Coast Guard base comprises a surface area of 5300 square metres, *Qal'at Bū Māhir* covers only a 223 square metre area and is surrounded by a scattering of infrastructure buildings. The Coast Guard is a conglomerate of predominately two-storied structures, including personnel accommodation, training facilities, stores and boat repair shelters.

Of the originally four-towered Fort, *Qal'at Bū Māhir*, only one tower and its appendant defensive wing remain. These structures however are also heavily damaged and decayed and the upper parts are reconstructions dating to 1977-79 (Bumatai & Khalil, 2006)(see history and development). Behind a massive defence wall, the wing contains three small rooms accessible from the inner former courtyard area, located to the east of the remaining structure. The visible remains of the formerly existing north western tower and the northern defence wall's foundations provide testimony to the extent of these original structures. The massive walls of the single storey structure of the fort express its solidity. The squatness of the remaining southern tower slightly tapers to the top, which rises higher than the appendant defensive wing. The only openings in the tower are three square openings offering a visual advantage for sighting possible attackers approaching from the sea. The top of the tower is finished with decorative merlons, characteristic of the earliest period of *Muharraq* architecture (Yarwood, 2005, p. 50) which were classic elements on all Bahraini forts at the time and were reconstructed in their original extension.

The western defence wall attached to the tower façade is homogenously structured by its rather functional elements. Towards the top section of the façade, nine equally spaced timber spouts underline a row of five openings that offer a view onto the shipping lane between *Muharraq* and Manama. The defensive structure is topped off again with decorative merlons following the same style as that of the tower. The only confined spaces in the fort are the three rectangular rooms to the east of the defence wall. The central room houses the remains of a kitchen facility (washroom) indicated by a

one-step sunken area opposite the entrance and a high level stone structure at the northern end of the room. None of the rooms have openings for ventilation other than the entrance doors. The ceilings are constructed following the traditional technique of mangrove beams with a diagonal mesh of split bamboo, with clay and earth topping. The ceiling structure is traditionally painted in red and green.

The top section of the tower is accessible by a timber staircase encompassed on the right by the western defensive wing and on the left by a thick wall indicating the once-existing southern wing. On the interior wall the tower shows a decorative frieze surrounding the openings and another horizontal frieze - approximately two meters high - further accentuating its horizontality.

Qal'at Bū Māhir is closely linked to the national heritage of Bahrain, as many historic events of political importance took place in the fort or in its immediate vicinity. However, these aspects are not considered relevant in the constitution of its Outstanding Universal or used to justify its inclusion as an element in one of the serial properties. *Qal'at Bū Māhir* was essential for the pearling economy in two aspects. The most important aspect was its capacity for defending the historic settlement and for protecting the harbour basin and with it the prepared and equipped pearling fleet at the beginning and end of the season – an attractive target for pirates and opponents. In addition, the fort protected *Muharraq* city's main water supply, a sweet water source located in the sea which at present is only sporadically observed to be active. These characteristics become less relevant after the destruction of large parts of the fort by British Naval forces in 1868, after which the British Navy assumed some of the defence and protection of Bahrain. The second aspect which at the same time gained importance is the fort's integration in *al-rakbah* and *al-quffal* festivals. As one of the highest points along the southern coastal tip, spectators climbed up the ruins to get a better view of the arriving or departing fleet. Even today the fort provides views of the sea which lend an image of how *Muharraq's* female population must have felt on these occasions. A small stage area to be developed next to the planned visitor centre will further strengthen this memory in the future.

The attributes best reflecting the testimony of the pearling economy in *Qal'at Bū Māhir* are its exposed position at the southernmost tip of *Muharraq* Island, its accessibility to spectators observing the boat movements to and from *Muharraq* harbour and its physical solidity and military appearance, which provides a memory marker of the defence function it had for the *Muharraq* pearling society as well as for





Eastern façade of Qal'at Bū Māhir seen from the courtyard

the harbour basin. As the most important access and departure point to the single-product economy of Muharraq, it can be seen as the architectural gateway towards a unique pearling community. The attributes illustrating the Outstanding Universal Value could be

summarised as related to sources of information such as location (gateway character), setting (southernmost defence and viewpoint), form (solidity of defence structure), and views towards the sea (view axis of fleet arrival and departure movement).

Defence of Muharraq city

The island of Muharraq was fortified from all directions during the early peaks of the pearling economy. On the eastern side, there were towers such as the Qalāli Tower that served to detect any enemy approaching by sea, although entry to Muharraq was difficult because of the surrounding coral reefs. The only access route for ships was its eastern coast, passing by Khūr al-Jalī'ah to the south.

From this access point, however, the city of Muharraq had been well-protected by two forts - Qal'at 'Arād and Qal'at Bū Māhir (formerly Muharraq Fort) - since 1635, when the Portuguese recognised the strategic position and built these fortifications. In 1801, when the ruler of Muscat invaded Bahrain, he further strengthened the safety of the city by deploying powerful canons on top of these two forts and building a defence wall around the town (Brucks & Rogers, 1828).

Drawing on the information available (Walls, 1987) about the firing range of these canons, protection areas around each of the forts can be reconstructed using spatial analysis methods. The estimated area of protection is helpful for reconstructing the initial settlements of the rulers during the early peaks of the pearling economy in the first half of the 19th century. The first settlement on Muharraq Island accordingly must have been centered on Ḥālat Bū Māhir. Support for this assumption is provided by the fact that Ḥālat Bū Māhir (then Muharraq) was the only location well protected from all sides by defence structures. Of particular importance is the above mentioned Muharraq city wall, documented in maps of the early 19th century, which has to be seen as the preliminary defence against any incursion, while the canons positioned on the two forts provided the main defence against attacks from the sea as well as the protection of the harbour basin. Waly confirms this theory and notes that Muharraq was a city of strategic military importance and that "the starting point of Muharraq town urbanisation can be traced back to the building of Qal'at Abu Mahir" (Waly, 1993, p. 122).

The peninsula of Bū Māhir, located in a bay already defended naturally from the sea by its surrounding shallow coral reefs, was more ideal for protecting against piracy and attacks from other Gulf rulers than the exposed Jaw settlement. This was abandoned in 1800, probably in consideration of its lacking a sheltered harbour (Brucks & Rogers, 1828). In addition, the new settlement benefited from the nearby sweet water fountain of Bū Māhir which produced enough water for the needs of the entire settlement. The town was well organised, and each tribal community had its own zone (farij). But both the Muharraq Fort, which had become the seat of the shaykh, and the city wall were subsequently destroyed during the British attacks of 1868. The symbolic destruction of the defence structures emphasised the end of the reign of the ruler of the time. While Qal'at Bū Māhir was partly reconstructed in later years, the city wall has completely disappeared, so much so, that its former precise course is no longer known.

Following the destruction, the defence of Muharraq city was dependant on British protection which was granted comprehensively to the new ruler. This dependency initiated gradual changes in the historic structure of Muharraq which expanded beyond former city wall limits and reinforced its position as the world centre of pearling during the next decades.

2.a.iii Urban Properties: Architectural Testimony of the Pearling Heritage

The 11 architectural properties located in the city of *Muharraq* illustrate a variety of attributes contributing to the Outstanding Universal Value of the testimony of the pearling economy. As the environment of the male population's off-season life and the year-round centre of life of the female population, the architectural properties predominantly reflect the cultural and social aspects of the economic system. Proposed in the urban context of this nomination are 16 separate architectural structures combined in the 11 properties, all of which were identified in thorough architectural, anthropological and historical surveys as the buildings most accurately and vividly reflecting the peak era of pearling in Bahrain. They have also been indicated as the most relevant memory markers for the local community and therefore as the most referenced architectural transmitters of the pearling grand narrative.

Located in *Muharraq*, the architectural structures are surrounded by what remains of the pearling capital of the Arabian Gulf. The multifaceted history of the city is also narrated in many of the properties, which include private houses such as residences or *majālis* (i.e. guest rooms or separate guest reception buildings), commercial structures like shops or *'amārāt* (warehouses connecting the seashore to the market and used for storage and dhow construction), and religious structures. Most of the properties are still owned by several key families of the pearling community; they built the structures and have used them continuously since the pearling era. This traditional ownership is considered an asset contributing to the properties' value and protection, as the family memory and participation is ensured in the long-term preservation of the properties. These families, who are often at the centre of the value attributions, have become key partners in the preservation of the testimony of the pearling economy.

Muharraq – the pearling city

Muharraq is the predominate city of Bahrain's second largest island, located east of Manama. The capital of Bahrain from 1810 to 1923, the peak years of the pearling economy, the city sits just above sea level over an area of about seven square miles. *Muharraq* literally means "the place of burning", as opposed to Manama, "the place of sleeping": references to the different ancient burial rituals – cremation and mound burial – practised on the two islands (cf. Belgrave, 1928, p. 440).

Muharraq has existed since the Dilmun era some five thousand years ago (Larsen, 1983), but came to

prominence in historical records only during the era of Tylos (ca. 250 BC. –250 AD.), when Bahrain came under the domination of the Seleucid Greeks. The town's geographical position, abundant supply of underground water and convenient anchorage for ships made it an important natural gateway to Bahrain. The more dominant gateway at the time, *Qal'at al-Bahrain*, the ancient harbour and capital of Dilmun located on Bahrain's northern coast, was inscribed on the World Heritage List in 2005. By the fifth century, *Muharraq* was a centre of Christianity which had found a stronghold on the southern shores of the Gulf. The Nestorian church records shows that Bahrain was the seat of two of five Nestorian bishoprics on the Arabian side of the Gulf at the time of the arrival of Islam. Christianity left its traces in *Muharraq*, with names such as the villages of *Dir* (i.e. parish), *Samāhij* (used to be the name of a bishop), and *Qalāli* (meaning a 'monk's cloisters') remaining in use today.

Muharraq exhibits an underlying settlement pattern unique to Islamic cities consisting of tribal zones, each identifying with their mosque sited at the centre. The streets are often small alleyways, and the lack of open space and larger access roads is an aspect that came in for special criticism by British Residents, such as in the annual records of 1932:

"The style of Muharraq town is not conducive to road widening as most of the houses are two or three storied and the greater proportion of them are built of stone. The town is congested, surrounded on three sides by the sea, and as there has never been any room for expansion, the tendency of the past has been to reduce the width of the streets in order to make more room for houses. There are no maidans or open spaces in Muharraq town and it is partly for this reason that the heat in the summer becomes so excessive that many of the Muharraq people migrate to Manama during hot weather" (Anonymous, 1933, p. 381).

The anonymous British author was only partially correct in assuming that extreme heat motivated the move into summer camps in Manama. We learn from the collective memory of *Muharraq* that during the diving season the city turned into an almost exclusively female society, and that the remaining male population left for four months every summer to respect this female reign (see chapter *Muharraq* in summer – the city of women). At the same time, the citation illustrates that *Muharraq* – as distinct from many other Arabian Gulf cities at the time – was largely built of stone by the last decades of the pearling economy. This fact provides a unique opportunity for this nomination file. While several of the smaller pearling centres around the turn of the century, such as Dubai, were almost entirely *barāstī* settlements (temporary houses made of palm materials), the stone construction in *Muharraq* ensured the survival of significant elements which now constitute a unique testimony of the pearling societies of the Arabian Gulf (see comparative analysis).

As the stone construction indicates, *Muharraq* is not only the sole surviving pearling city, but was for many centuries the Gulf's most active and prosperous pearling centre. The largest number of pearl divers lived here, and *Muharraq* boasted the largest fleet of pearling vessels. It is often referred to locally as the city of the rulers, the rich pearl merchants (cf. Boveri, 1939) and the pearl divers, while Manama was the city of the British Residents and the traders (Hansen, 1968, p. 21). *Muharraq* was considered the more attractive city, as observed by Palgrave in 1868, "Moharek is far the prettier of the two to the eye, with its white houses, set off by darker palm-huts, the large low palaces of the *Al Khalifa* family, and two or three imposing forts close to the seashore" (Palgrave, 1883). The decline of the pearling economy saw *Muharraq's* role diminish, and it evolved as the less important and less developed of the two. Development pressures focused on Manama, located closer to the oil and gas resources and now host to Bahrain's new financial centre. This assisted *Muharraq* to retain much of its atmosphere. In 1975, Belgrave was still able to describe this atmosphere as almost genuine:

"Muharraq, despite the developments on its northern and western edges, still retains much of the atmosphere of an old Arab town, with tall, massive buildings and attractive courtyard houses. The town, although it was once the capital of Bahrain, the centre of the pearl industry and the focus of trade, has developed more slowly than Manama. (...) The high old houses which line the narrow streets have changed little during the last century, except where corners have been cut away to make passage for large American cars (...) Whilst Muharraq has changed greatly in recent years the older part of the town, its southern half, still retains much of the charm that once gave it the reputation of being one of the most genuinely Arab of the Gulf's sea ports. Massive-walled buildings, sparkling white, great carven teak doors, attractive mosques, all sights worth seeing before they give way to the concrete block buildings and Danish ready-made doors of today" (Belgrave, 1975).

Regrettably, by 2009 many of the concrete blocks and other modern constructions Belgrave feared have been realised, compartmentalising the former historic urban continuity. Fortunately, however, in most quarters of the city the street pattern remains the same and narrow alleyways, often of picturesque character, lead the contemporary visitor from property to property. Contemporary *Muharraq* stretches across territory formerly composed of three separate islands. The southernmost and by far the smallest, *Ḥālat Bū Māhir*, was introduced above. The most important and northernmost island, is still referred to as *Muharraq* island. Between the two was *al-Ḥālah*, the island thought to be the possible site of the earliest *Muharraq* settlement. *Al-Ḥālah* is the abbreviation of *Ḥālah (Bū Māhir)*, and the same name is often used for both islands. In the context of this nomination, however, the authors refer to *al-Ḥālah* for the former larger and to *Ḥālat Bū Māhir* for the southernmost tip of land. It should be noted here, that the three islands were connected in successive land reclamations, and it is difficult to identify all their former seashores and boundaries.





Historic aerial photograph of Muharraq in the 1960s

Muharraq – urban characteristics and the farīj system

Muharraq developed as a city from its early 19th century settlements, each based around tribal and family alliances. The urban pattern is therefore founded on a number of cores – the settlement of each family or tribal alliance – which over time expanded in circular or organically evolving centrifugal shapes. Separate quarters or neighborhoods established in this manner are referred to as fūrjān (sing. farīj), with the mosque, tribal majlis or the ma'atam constituting their respective centres (Waly, 1992, p. 22). Within this sub-cluster pattern, the extended family represented the smallest unit of kinship (Waly, 1992, p. 24), one in which social economic and political aspects were integrated as an harmonious whole. The farīj has also been the traditional identity reference of the Muharraq population: even today one of the standard questions remains "which farīj are you from". Because of this strong identity relation, the names and boundaries of the farīj are highly contested. Yarwood's theory that Muharraq was originally organised into 13 key fūrjān in the late 19th century is widely accepted (Yarwood, 2005, p. 17); their names, however, are disputed, and the emergence of several new fūrjān between 1900 and 1930 makes a clear contemporary definition almost impossible. While some of the tribes that initially gave names to the fūrjān lost influence or separated into individual families, others gained economic strength and reputation, and successively began referring to a cluster of family houses as their own farīj. During the research for this nomination, the high level of contestation meant it was impossible to draw a map of the fūrjān boundaries, or even to attribute the properties proposed to specific farīj. The urban sub-patterns, and their values related to the pearling economy, are therefore not included as part of the Outstanding Universal Value.

This does not mean that these urban quarters were not relevant social and cultural factors of the pearling era, however. On the contrary, during the anthropological research in the preparation of this nomination the authors discovered that the farīj structure may have been essential to the viability of the single product economy of pearling. The involvement of almost the entire adult male population in the diving activities meant the women were left on their own during the main summer season. In Islamic jurisprudence, women are generally supposed to be accompanied by a mahram – a close male relative. However the Islamic fiqh scholar Imam Ibn Malik, widely followed in Bahrain, allowed for one exception: he said it was allowable to leave the women behind alone, provided their safety could be guaranteed. This requirement could be satisfied if a woman was supervised by a guardian group of trustworthy women, and the female community of each farīj easily established such a trustworthy guardian group. It can therefore be argued that the urban structure provided the religious legitimacy for the Ghūṣ al-Kabīr to take place.

Architectural structures in Muharraq, as in other Islamic cities, attach great importance to privacy, internality and home life (cf. Yarwood, 2005, p. 11). The architectural expressions of Islamic ideals are modesty regarding the exterior, a separation of the interior without visual access, and a camouflage of separate dwellings. Sometimes it is impossible even to identify the boundaries of individual houses from the street.

The urban patterns illustrate a combination of the classic Islamic city with alleyways winding into the residential quarters, and larger axis streets connecting the centre of each farīj to the seashore and the market. This seems a particular feature of Muharraq and underpins the importance of market and seashore for the pearling economy.

The testimony of the pearling economy – architectural styles

A number of art historians have analysed the historic architecture of Muharraq but only very few have developed a chronological architectural stylistic catalogue of its development. The most quoted stylistic reference was developed in the late 1970s by John Yarwood, who divided the common architectural features into four distinctive periods. Yarwood refers to these as (a) the “early period” (up to 1850); (b) the “transitional period” (1850-1890); (c) the “middle period” (1890-1890), divided into four different styles - arcade, perpendicular, columnar and smooth; and finally (d) the “Late Period” (1930-40), the period of the decline of the pearling industry (cf. Yarwood, 1988).

“Early Period” buildings lean towards the massive, with straight, undecorated outer surfaces. Solids dominate over voids, and the few, often very small windows are located at very low levels in comparison to later architecture. Early period houses mostly evolved through a long-term building process, with elements added in subsequent years.

During the “Transitional period”, windows and voids increase in size, and columns become visible on the outer facades. The ground plans of the construction become more complex while remaining somewhat informal, and more elaborate ornaments such as pointed arches in rectangular frames, pilasters with roundels or spandrels and decorative friezes are introduced. In the later years of the “transitional period”, shutters, metal grills, loup and zigzag mouldings and three-step merlons become characteristic features.

In the “Middle Period”, according to Yarwood, houses become “increasingly formal, consistent and integrated” (Yarwood, 2005, p. 52). The ground plan is often arranged symmetrically around a central courtyard; façades are symmetrically composed, with rectangular projected bays and trefoil or semicircular incised panels above such elements. The consistency in the size of windows and proportional doorframes led to structural grids of considerable mastery. Yarwood provides an ample analysis for this sudden mastery:

“This was partly due to the increased wealth which allowed large building complexes to be conceived at one stage and executed without any delay or interruption. But surely this is not the whole story: an intellectual growth had also occurred. Designers were now able to hold more variables in their imagination and manipulate them with greater skill, even though no plans were ever drawn” (Yarwood, 2005, p. 52).

In the “Late Period”, the economic crisis becomes evident in its architectural structures. A lot of building activity takes place – organised in what would now be referred to as a job creation scheme – but the quality of execution suffers through the involvement of unskilled labour and the lack of supervising masters. The products are eclectic but often uncoordinated combinations of decorative elements, demonstrating a disappearance of fine details and craftsmanship as well as introducing occasional structural weaknesses into the predominantly vertical constructions. Muharraq’s architecture combines regional influences from Persia, especially in the woodwork for both ceilings and decorative panels which was sometimes carried out by Persian carpenters; and from India, particularly window and door frames imported through Indian trade routes. Decorative ornaments show influences from the Arabian Peninsula, Iraq and the sea trading nations of East India and East Africa (especially Zanzibar).

Since most of the decorative elements and ornamentation of Muharraq’s architecture are present in one or several of the architectural properties proposed, these will be described in the context of the individual property descriptions.

Al-Ghūṣ House

The so-called *al-Ghūṣ* House was the southernmost house on the island of *al-Ḥālah*, overlooking the passage that provided access to *Ḥālat Bū Māhir* at low tide. It functions in the contemporary urban fabric as a reminder of a location where official visitors would have passed by after leaving *Ḥālat Bū Māhir* on their way to the market or the ruler's palace. Older residents still recall that goods were sometimes stored in front of this house until the tide had receded far enough to allow passage to *Qal'at Bū Māhir*, and it seems that at times the entire house was used as a storehouse – perhaps for the same purpose (cf. chapter on history and development).

Al-Ghūṣ House is a developed name. It was attributed to the house only very recently in the context of its heritage designation. Most houses in *Muharraḡ* have names, as do the other 15 architectural structures presented in this nomination. The names are in most cases related to the inhabitants' family name, the original or most memorable owner's full name, or, in rare cases, to the inhabitants' or owner's profession. In the case of *al-Ghūṣ* House, the builder or commissioner is unknown, and ownership has changed several times between different families since the earliest known inhabitant was in residence in 1920. None of its former owners has left an unambiguous mark on the structure, and perhaps it is this lack of continuous personal identification that qualifies the house as a prototype rather than an individual testimony. The house has therefore been designated on the national heritage register as the early prototype of a middle- to lower-income family house, built in the first years of the 20th century. In this context it has been named *al-Ghūṣ* House, the house of the pearling profession or – more simply – the pearling house.

It would be brave to assume that the family of a diver (*ghīṣ*) or a puller (*sīb*) built such a house at the turn of the century. Most of the divers, and the even lower-paid pullers and helpers, lived in so-called *barāstī*, huts constructed from palm materials. But even for these, *al-Ghūṣ* House can still be representative in the sense that the *barāstī* had a very similar ground plan, with a few rooms occupying in most cases two sides of a shared but enclosed courtyard. Mabel Bent describes the *barāstī* she saw from her second storey guest room during a visit to *Muharraḡ* in 1889: "From our elevated position we could look down into a sea of bamboo huts (*barasti*), the habitations of the pearl-fishers: neat enough abodes, with courtyards paved with helix shells." (Bent & Bent, 1994, p. 10) *Al-Ghūṣ* House was most likely built by a slightly wealthier person, for example a captain (*nūkhidhah*) without ownership of a boat, or who owned only one or two boats; or perhaps a *mjaddimī*, the captain's assistant and second man on board; or even an *'ustādh* (master boat builder).

Al-Ghūṣ House is a single storey complex, originally of three closed rooms and an open *liwān* arranged around a central courtyard. Only the southern and eastern façades of the building are exposed while the

northern and western walls, traditionally shared with the neighbouring buildings, now border the more recent constructions adjacent to the property. The visible facades are built in the regular niche design, incorporating the proportional voids so typical of the architectural constructions of the middle period. Two entrance doors are integrated into the façades, one leading straight into the courtyard, the other through a *majāz* (entrance foyer) to either the *liwān* or a closed room that may have been used as a *majlis*. The entrance doors are made of double-leafed decorated timber panels which similarly express the style of the middle period, and probably date from the original construction.

The southern façade of the house is characterised by the courtyard wall section (the western two-thirds) and the exterior wall of the room in the south-eastern corner which contains window voids. All windows are constructed of internal double leaf timber shutters with vertical steel bars on the exterior, again elements popular in the early middle period. The inner courtyard façades differ in character. The northern façade shows arched niches in 'smooth style', while the eastern living complex is dominated by the typical column and beam structure of the *liwān*. The southern and western courtyard walls consist of deep rectangular niches mirroring those visible on the outer façade. The floor level of the northwestern *bangalah* (single decorated room) is slightly elevated. Most of the traditional ceilings are of mangrove beams. Both these and a diagonal split bamboo grid system topped with clay and earth roofing materials are still preserved, with the exception of the north-western *bangalah*. A solitary tree rises above the house and casts shade over the courtyard.

Al-Ghūṣ House contributes to the Outstanding Universal Value by providing a prototype of a simple and modest residential building constructed during the peak decades of the pearling economy. Situated at a crucial location - the passage to *Qal'at Bū Māhir* and the outer harbour - it also testifies to the former geographical relationship of the three islands. The modest structure is an expression of the new comforts that became possible with the enormously increased wealth the pearling economy delivered during the 1890s and 1900s. The attributes that testify to this Outstanding Universal Value are the prototype ground plan which combines all relevant architectural elements (*majāz*, *majlis*, *liwān*, *ḥujrah* (plain masonry room) and *bangalah* (room with plaster decoration) of the Bahraini house in the most modest and simple way. The ground plan, as mentioned above, in its simplicity also reflects the construction principles of the earlier *barāstī* structures in which many families still lived at the time *al-Ghūṣ* House was constructed. The Outstanding Universal Value is further expressed in the traditional building material - locally collected coral stone - which is largely preserved and testifies to the standard material used to build *Muharraḡ* residences. It is important to keep in mind that these stones were available walking-distance away and at

almost no cost. The most expensive elements of the houses in Bahrain have always been the windows and doors which explains their relatively small size in this residential structure.

The tree that overarches the courtyard creates an element of beauty in the simple residence, but also provides an opportunity to experience the climatic conditions of the residence before the introduction of electricity and air conditioning systems. The tree must therefore be considered as supporting the Outstanding Universal Value of the property in providing shade and a resting place during the hot summer months not only for the original inhabitants but also for contemporary visitors. The Ministry of Culture and Information is in the process of acquiring the house (to be completed in early 2010) which will be opened to visitors as a prototype house of the pearling era. The attributes illustrating the Outstanding Universal Value can be summarised as related to sources of information such as location (link to Bū Māhir island), design (the prototype ground plan of the building), material (the composition of local building materials available for low-income families), and atmosphere, especially with regard to the climatic conditions reflected when resting under the shadow of the tree in the summer months.



Al-Ghūṣ House seen from the south-eastern corner

The island life of the ghīṣ (diver) and sīb (puller)

In many industries, workers tend to be exploited to generate more wealth without ever receiving a share proportional to their effort. This principle was an absolute in the pearling industry in Bahrain; most of its workers, the divers, pullers and dhow assistants, never saw the enormous economic gains of the late 19th and early 20th centuries materialise in their pockets. On the contrary, divers and pullers would often be financially dependant on a nūkhidhah or ṭawwāsh as result of advance loans they could never repay (see financing and loans system). And although there was an element of glamour and honour attached to the profession of the pearl diver, financially, at least for him, the pearls were "...treasures without much future" (Morris, 1957, p. 235). Sometimes divers are even described as gamblers hoping to be on a boat where a very large and valuable pearl was found. This occasionally happened, for example in AH 1352 (1933-34) when one large pearl found by a small boat reaped 20,000 rupees, of which each diver received 600 rupees, more than enough to repay most debts. Unfortunately, however, these cases were very rare. The standard situation is summarised eloquently by James Belgrave in his reports on Bahrain:

"The pearl banks were productive and much money was being made but little of it went to the divers many of whom had involved themselves in a form of financial slavery to the nakhudas. Divers were given advances by the captains before the season, to provide for their families while they were at sea, and at the end of the season, while the sales of the pearls were being carried out. The result was that the captains gave advances far in excess of the money due to the divers at the end of the season and to repay these loans the divers were forced to work for the same captain in the following season. But each year the advances were again in excess of the divers' earnings and so they got deeper and deeper into debt to the captains. At the same time the latter were indebted to the shore merchants for supplies, for which they were charged high rates of interest, although this was contrary to Sharia Law. The captains passed this interest on to the divers, who thus paid a minimum of 50 percent of their original debt each year. Diving debts were bequeathed, sons of divers whose fathers died owing money to captains were forced to work for them, and a diver, if he became too old to work, was only released from diving if he was replaced by his son or some other relation. In addition to this, indebted divers were often made to work on land for their creditors, or were handed over as workers to merchants to whom the nakhuda owed money" (Belgrave, 1975, p. 55-6).

This situation equally applied to the siyūb (pullers), who usually earned less than the divers. Pelly reports in 1866 that as a general rule the seasonal earnings of a boat would be divided by 10. Three tenths would be assigned to cover expenses for provisions and would stay with the captain to be paid to the merchants; 2/10 of the profit went to the owner and/or captain; 3/10 would be divided equally among the divers, and the remaining 2/10 among the pullers (Pelly, 1866 [1995], p. 8). Not all divers and pullers on the Bahraini dhows were from Bahrain or spent the winter months on Muharraq Island. The crews included Arabs from Basra to Muscat, often reinforced by seasonal workers from Somalia and Ethiopia (Hope, 1951b, p. 262). The Bahraini divers, however, would receive higher advances and subsequently had stronger bonds to the nūkhidhah they worked for, including during the off-season. Historic sources describe the diver's life during the off-season as including tasks such as to "build the nakhudha's house, till his date garden, draw his water, and live skimpily on a small additional loan he provided (...)". About a month before the next season would start, all divers and pullers would again become full time employees of the nūkhidhah and assist in preparing the boat. While the divers prepared the equipment, the pullers and young assistants coated the dhow with shark or fish oil. The last four or five days were free to allow the men to arrange for their families' lives during their absence (cf. Rovsing Olsen, 2002, p. 89).

From the late 1920s onwards, the situation of divers and pullers gradually improved as a result of courageous diving reforms, implemented in 1924. These introduced more transparency regarding the profits gained during the season, and discarded the inheritance of diver's debts. The government's financial advisor's annual report of 1348 (1929-30) analyses the new situation of divers: "They frequently earn enough [!] to cancel their debts and so they can dive with whoever they wish to, and a quite large proportion owe only four or five hundred rupees which under the present system they should be able to pay off in three or four years. The merchants dislike the freeing of the divers very much indeed and I am sure that very shortly determined efforts will be made to revert to the old system" (Belgrave, 1929 [1986], p. 171).



Historic Photograph of divers opening oysters



Historic photographs of pearling dhows and divers during the Ghūṣ al-Kabir

The “diving reforms”

Increasing problems resulting from a sharp contraction of the industry after 1912 led the British authorities to encourage reforms of the system to mitigate the extent and effects of debt on the divers. Bahrain was at the forefront of these changes. In 1924, Sh. Hamad bin Isa Al Khalifa, who had recently been appointed Deputy Ruler at the suggestion and with support of Major Daly, the Political Agent in Bahrain at the time (cf. Belgrave, 1937 [1986]), introduced a series of changes focused on guaranteeing proper accounting for divers and *nūwākhdhah*, enforcing the impartiality of the Divers’ Court, and regulating the amounts that could be distributed as loans.

The initiative involved the proper licensing of boats and the provision of account books for divers and *nūwākhdhah* so that the record of debts and income from shares could be regulated. *Nūwākhdhah* were required to present their account books at the end of the season and these were expected to tally with the accounts kept by the divers. Eight clerks were employed to assist in the process. This offended the captains, who felt their authority was being undermined, but it appears that the system was eventually accepted. “The *Salafieh* Court, which consisted of certain notorious merchants and *nakhudas*, who were supposed to judge diving cases but who were invariably prejudiced in favour of their own class, was abolished, and diving cases were tried in the ordinary courts” (Belgrave, 1937 [1986], p. 49). It also became illegal to make divers work in the *nūkhidhah* or merchant’s house or garden in the off-season without additional wages.

The regulation of loans had mixed results. On one hand, the divers’ financiers appeared to accept the necessity of the reform, and in any case were unwilling to lend large sums they were unlikely to see returned. On the other hand, the divers were dismayed by the new limit on their (borrowed) income, and on occasion resorted to rioting as they felt they could no longer be guaranteed sufficient money to support themselves and their families. At the same time, the Political Agent in Bahrain estimated in 1929 “that the Reforms had enabled as many as sixty per cent of the divers to get out of debt” (Jenner, 1984, p. 32). Next to his indebtedness, the diver’s second struggle involved his health, or rather, the many debilitating diseases the diving profession brought with it. Obviously these were not improved by the diving reforms but a series of minor improvements was equally noticeable in the early 20th century.

Badr Ghulum House

While the divers suffered their from physically demanding labour, doctors, folk medicine practitioners and barbers were able to earn a decent income, and were the first after the captains, traders and boat builders to build stone houses. An example is *Badr Ghulum*, who gradually converted his *barāstī* to a coral stone house, a process he began in the late 1910s and did not complete until 1947. *Badr Ghulum* purchased the property with his barber colleague *Yousif al-Turabi* and divided it in two halves. Both houses are still attached and still owned by the descendants of the original owners.

Badr Ghulum arrived in *Muharraq* from Qatar in ca. 1912. Soon after his arrival, he offered his services as a barber and therapist in traditional folk medicine. In the absence of modern medical services in Bahrain, he became one of three medical consultants on the island and his residence, *Badr Ghulum* House, progressively gained the semi-public character of a small health clinic. Later, his wife *Bibi Hajji Hassan*, his son *Ghulum Badr*, and his wife *Sakina Hajji Ali* became equally qualified and supported the family business. Since both women and men were treated in the premises, the strict separation between public and private spheres typical of Bahraini houses, was not upheld rigidly. While the family’s living rooms

were somewhat detached in the western part of the house, its large courtyard with a refreshing water pool at its centre, was a semi-public zone of recreation and services. Only when it came to treatment did the men and women separate into the treatment rooms, and the family has shared memories of a difficult medical case involving a female patient, which saw *Badr Ghulum* issue instructions for treatment to his wife from the courtyard area.

The history of the property illustrates the expansion of the family business in several construction phases, up to the most recent, which saw the main treatment and consultation room rebuilt in coral stone. This room, still preserved today, from that point on also contained the apothecary where the herbal and mineral pastes and syrups used in treatments were prepared. This room therefore most closely testifies to the Outstanding Universal Value of the property and will be conserved to represent its former function. The architectural structures of the treatment rooms, which housed generations for treatment according to the medical recipes of the pearling economy, were locations offering relief from the enormous suffering from long-term diving diseases. As a place of treatment, care for physical needs and health improvement, the property is one of very few with a particularly positive shared memory for all different professions of the pearling

trade, including the divers and their families. For the *Ghulums* it rarely mattered whether their clients were wealthy or in debt, they would always try their best to improve the situation with Allah's guidance. The *Badr Ghulum House* was one of the very few locations in which everybody was welcomed equally and treated with complete dedication and respect.

Badr Ghulum House still shares its western outer wall with the neighbouring house of *Yusif al-Turabi*. The historic rooms attached to this wall on the *al-Turabi* side of the house are therefore considered part of the property and testify to the Bahraini tradition of attached construction, one that reduced costs and saved raw materials, and also assisted with interior climate control. The parts of *Badr Ghulum House* remaining from the original plan are three rooms at the western side of the house, a *liwān* towards the courtyard, close to the former entrance of the house, and the treatment room in the south-eastern corner. The areas adjacent to the northern and southern walls were built up with *barāstī* structures until the mid-1960s. Unfortunately these have not survived.

The house is embedded in a traditional urban pattern of meandering narrow pedestrian lanes framed by residential single- and double-storey buildings. The 340 square metre property, surrounded by a storey-high boundary wall, consists of the two-storey main building, a medical facility, and a garden. The double-storey complex is located along the shared western boundary wall, and adjoins the southern and northern property boundaries. The medical treatment facility is an elongated single-storied structure stretching along the southern border towards the eastern edge of the property.

The public façade is dominated by the full-height, single-storey boundary which, merely punctured by an entrance gate at the eastern corner, provides an impression of solidity. The southwest segment of the façade is the exterior wall of the double-storey residence, the earliest part built. This wall is divided by high-level, shallow, rectangular niches on the ground floor and full-height, deep, vertically-accentuated niches on the first floor. This makes the building appear lighter towards its roof. The façade blends in harmoniously with that of the *Turabi* portion of the building. The inner, western façade is dominated by a *liwān* of typical 'colonnade style', consisting of three octagonal columns placed on square bases topped with plain capitals. The column and beam structure carries the massive, plain wall of the roof terrace. The character of the upper façade section is defined by vertically emphasised window niches and *bādgīr* (ventilation channels). The rooms vary from a 5x3 bay to a 3x3 bay columnar grid system with full-height, vertically-accentuated, multi-levelled niches. The traditional ceilings, made of mangrove beams and diagonal grid split bamboo, are still preserved.

The medical facility, which covers approximately 17.5 square metres, is modest in nature and was one of the last facilities to be converted from a *barāstī* to a permanent coral stone structure. It has two doors in the middle, and windows equipped with internal double leaf timber shutters with external vertical steel bars on either side.

Badr Ghulum House contributes to the Outstanding Universal Value of the testimony of an island economy as the earliest remaining structure built for medical treatment. Medical relief is an important theme of the grand narrative of the pearling economy. Most divers consulted in recent interviews still vividly recall or continue to suffer the ailments that their work for the economy brought with it, and the shared memory would not be complete without a place for such remembrance. The attributes, which strongly recall the medical characteristics of the house, are the treatment room already outlined above and the garden with its shade trees and water pool, a symbol of the heavenly recreation. The trees were cared for by the family and visitors and the authors learned that each tree carries the name of a family member. Whether these were named by grateful clients or by the family members themselves remains unresolved, but the interplay of greenery and water, the comparatively cool air, the cushioned *liwān* to rest in, and the view on to the still water basin and up into the palm trees all contribute to this memory. The attributes reflecting the Outstanding Universal Value are therefore found in information sources such as the location and material structure of the treatment room, the green courtyard and its atmosphere of recreation, and the modest structure and design of the outer façade of the buildings which constitutes the memory marker in the urban context. The most important attribute, however, is the continuity of function. The house remains open to visitors and clients: simple medical treatments are still offered by family members, and the courtyard remains a place for relaxation and recreation.



Ali Badr Ghulum with the photo of Ghulum Badr





Badr Ghulum House treatment room (viewed from the north-west)

Medical conditions of the pearl divers

The most relevant health concerns for Muharraq's population were not the diving diseases but the epidemics that frequently swept the island. These included cholera, smallpox and bubonic plague, the latter probably the most prevalent during the pearling economy. Dr Stanley Mylrea, who practiced on the main island of Bahrain, reports of his stay between 1907 and 1912: "During my more than five years' service in Bahrain I went through two epidemics of bubonic plague and two of cholera" (Anthony, 1993, p. 66). An epidemic of plague was anticipated almost every year, and took a particularly heavy toll in 1903-5 and 1907, with 1889 recorded fatalities (Prideaux, 1908, p. 1), and in 1912, with an estimated 2000 fatalities (Lorimer, 1912, p. 1). Contemporaneous accounts reveal that cholera epidemics were even more terrifying than outbreaks of plague:

"They swept into Bahrain like a forest fire and people died by the hundreds within a few hours. A man would collapse on the street and in no time be in his grave. It was then the panic would completely undermine the public morale. There were instances where a family would be wiped out, and I was in more than one house in which there was not a single living occupant – just men, women, and children lying dead" (Anthony, 1993, p. 66).

The ravages of cholera were so severe that Lieutenant Kemball, who experienced cholera in Bahrain in 1839, considered it "the most unhealthy place in this quarter of the globe" (Kemball, 1845, p. 101). The remaining standard diseases were those caused by parasites or the diving profession. The divers probably suffered most during the main pearling season on the boats, and a number of deaths, which forced the dhows to turn to the nearest shore for burials, were recorded every year. Two main types of diseases occurred on board: those caused by diving, and those resulting from malnutrition and the lack of hygiene. Most divers suffered from ruptured ear drums, which Barrett reports as "almost universal, in fact men are not considered proficient until this has occurred" (Barrett, 1929). Nearly every diver also suffered from lung diseases such as chronic bronchitis, often caused by "ruptures of blood-vessels, as a result of the frequent pressure upon the respiratory organs" (Rihani, 1930, p. 280). Eye diseases were equally common, as a result of both pressure changes and saltwater exposure. C. Dalrymple Belgrave observed the prevalence of eye disease, especially among young male Bahraini: "one family of four brothers have five sound eyes between them" (Belgrave, 1928, p. 444). Many of the men later became blind which did not, however, prevent them from continuing to dive, and with success, as Kunz and Stevenson report: "(...) they usually do fairly well where the oysters are abundant on the reefs" (Kunz & Stevenson, 1908, p. 91).

Ailments that worsened as the season progressed included skin diseases such as sores and serious chafing, especially between the legs, causing the divers significant pain and discomfort at work. The lack of sweet water to wash with at the end of the workday exacerbated these problems – carefully collected and transported, sweet water was strictly for drinking. Finally, towards the end of the season it was "not uncommon for scurvy to make its appearance, and members of the crew affected have to be sent home in the water boats (...)" (Dickson, 1949, p. 488). Scurvy, caused by malnutrition and lack of vitamin C could have easily been avoided but many nūwākhdhah appear to have had a callous attitude when it came to the health of their divers.

Compared to the long list of ailments, provision of on-board medical services was severely limited. A few drugs were kept on the dhows, especially senna which was mixed with raisins and tamarind. According to one account, "burning with hot iron is the mode of cure most frequently attempted when the illness looks serious" (Durand, 1878 [1986], p. 33). On land, medical healers like Badr Ghulum offered a wider range of remedies. These included blood-letting to treat broken limbs, the use of sparks caused by striking two stones together to treat psoriasis and other skin diseases such as boils, as well as treatment of chest and lunge diseases. The Ghulums also developed specific treatments for eye diseases, burst eardrums, aching teeth and skeletal fractures. In very rare cases, however, a boat would return to Muharraq during the season to allow a diver to receive medical treatment before it was too late.



Historic photographs of pearl diver





Badr Ghulum House courtyard – view to the north



Detail of northern façade of Al-Jalahma House

Ghūṣ al-Kabīr hospital boat

Less merciful captains would leave sick divers at the closest shore, where according to Allah's will they would recover and make their way to the closest settlement, or die. To prevent this practice, in 1924 the ruler of Bahrain introduced a service that was well-received by divers - the hospital boat. The initiative of the deputy ruler Sh. Hamad bin Isa Al Khalifa, the boat was ordered from Kuwait with the assistance of the British Residents in Bahrain and Kuwait (cf. Daly, 1924, p. 329). Following some initial difficulties in identifying qualified surgeons, the hospital boat became fully operational in 1925 and spent the full pearling season near the oyster beds. The 75-foot teak būm was equipped with a cabin for the surgeon, a cabinet for drugs, a cabin with accommodation for up to 4 sick divers, and a small shelter for the boat crew.

The hospital boat which provided divers with free medical service when required, did not prove to be a success. Most nūwākhdhah, it seems, were reluctant to send their divers to the boat. Barrett observes: "They do not understand that temporarily to release a sick diver will be more profitable in the long run" (Barrett, 1929, p. 2). Three years after the launch of the high-cost service, the hospital boat's poor treatment statistics, led to questions about its efficiency. As a result, the hospital boat was soon sold and the service replaced by a medical motor launch, "which makes several trips to the pearling fleet and, when necessary, brings back sick men to the shore" (Belgrave, 1937 [1986], p. 52). The motor launch was scheduled to visit the pearling fleet three times a month and slightly more frequently during the last weeks of the season, when most cases of scurvy usually appeared. In 1930, the motor launch service was also stopped, and the nūwākhdhah resumed the traditional practice of depositing sick divers at the nearest shore. The replacement service involved regular inspections of the Muharraq shoreline and operation of a temporary hospital in Muharraq "(...) for four months during the summer for treating foreign divers who come to Bahrain in great numbers and are frequently when ill deposited on the shore by their nukhidha with no money or means of supporting themselves" (Belgrave, 1931 [1986], p. 293). The hospital was headed by Dr Bandakar, who had visited the oyster beds in earlier years (Muraikhi, 1991). It continued to operate for several seasons, but closed when the pearling fleet became too small to justify the cost of the service. Dr Bandakar continued to offer medical treatment in a small house near the market, until the construction of the new clinic for Muharraq in 1952 (Muraikhi, 1991).

Al-Jalahma House

Al-Jalahma House is the first *ṭawwāsh* house among the proposed properties but it is not for that reason that it is included in this world heritage nomination. Since al-Jalahma family acted in a large variety of professional roles, ranging from *ghīs*, *sib*, *nūkhidhah* and *tājir* to *ṭawwāsh* and landowner, their family residence does not specifically bear witness to any of these professional characteristics. It is rather a prototype of a large, complex family residence in which women – as a result of multiple or subsequent marriages – made up the most substantial part of the household. Their numerical majority in the household, combined with the social standing and reputation of the *Jalahma* women in the neighbourhood, invites exploration of the female perspective on the pearling economy.

The Outstanding Universal Value of Al-Jalahma House is conveyed in its ground plan which illustrates a complex arrangement of corridors, staircases, balconies and courtyards aimed at providing representative reception to male visitors while at the same time securing absolute privacy for female family members. Many family residences in Muharraq (including all other large family residences described in this nomination) constructed the *majlis* or guest reception room in either a separate building or adjoined to an outer wall

of the residence with a separate entrance. In these cases, the gender separation was easily achieved, as guests entered a separate building. In Al-Jalahma House, however, its most representative reception room, the so-called *ḥafiz*, is located in the very centre of the family residence. To guarantee privacy for the female members of the family, a very sophisticated system of *mashrabiyyah*, private staircases and entries was necessary. All these architectural and decorative features are equally attributes expressing the Outstanding Universal Value. The protection of female family members' privacy is a well-established concept in Islamic architecture, and perhaps does not alone justify Outstanding Universal Value. The unique element of Muharraq, well illustrated in Al-Jalahma House, is that the separated gender areas are seasonally invertible. The male-dominated areas, usually exposed and open, are equally private, and can revert to female domains once male visitors leave. The female parts of the house were as accessible and open as the male guestrooms, and could equally be used as places of guest reception, encounter and trade. The special feature of Al-Jalahma House, the *ḥafiz*, is located on the airy, elevated, first floor, and its *liwān* was the women's favourite place during the summer months when Muharraq turned into a female city.

Al-Jalahma House was built during the middle period and was used simultaneously as a private residence and a place of business. Before the age of land reclamation, the property was located on the northern tip of the city and was referred to as the northern entrance to *al-Ḥālah* Island. Today, the *Jalahma* residence is surrounded by two- and multi-storey residential apartment blocks. The last major modification to the building was carried out in 1915, when the pedestrian lane that had separated the properties in the past was bridged by a so-called *ṣabāṭ*. The *ṣabāṭ* led to the famous first-floor majlis or *ḥafiz*, surrounded by *lawāwin* and additional rooms.

The remaining core of the residence – at the peak of the pearling economy neighbouring houses were connected as extensions and service buildings – consists of two spacious courtyards separated by a narrow pedestrian lane. This lane divides the property on the ground floor into eastern and western wings. The combined property measures approximately 720 square metres, of which the ground-floor facilities cover more than 50 per cent of the indoor living space. The eastern wing of the property is structured around a central courtyard, while the western wing's living complex is situated in the northwest corner, with its courtyard located at the periphery.

Although the eastern wing of the property contains the guest *majlis*, the direct entrance from the narrow lane to the eastern courtyard would have been used mainly by servants and female family members, except on days of large celebrations, when the entire eastern wing turned into a male zone. Under its sophisticated scheme of gender separation, the eastern wing is designed as a three zone concept, in which each zone can be separated, either one zone separately or several zones in combination. Zone (a), the main guest room, is accessible through a *dihliz* (vestibule passage) in the west wing which leads into a small staircase leading up to the first floor. Here the visitor passes through a *liwān* to a *liwān*-like roof terrace, in the centre of which the *majlis* is located. The *majlis* uses a 4x5 bay proportioning system to promote a unique spatial experience. The walls are constructed of tall, arched, colour-glazed fanlight windows almost 3 metres high. The arched openings sit within rectangular recess panels to further accentuate the column and beam structuring element. Openings function as windows and doors and are equipped with full-length, double leaf, timber framed shutter/door systems. Above each opening is an incised gypsum decoration with an individual decorative pattern. The ceiling is constructed of a rectangular timber beam and flat plank ceiling board system set within a dominant cornice, giving the appearance of being set within a niche, slicing the corners at approximately 45 degree



Central guest reception room (so-called *ḥafiz*) of *Al-Jalahma* House

angles. The *majlis* is completely surrounded by a full-height *liwān* relying solely on the rectangular columns, timber tie beams and timber-louvered screening systems. As a result of carefully-placed, medium-height walls and *mashrabiyyah* screens, and the depths of the surrounding *liwān*, the visitor – although in the very centre of the building – cannot see the activities in the courtyard below.

The small room at the southeastern corner contributes to the architectural view obstruction but from inside has full visibility of the inner courtyard. It can be assumed therefore that this private room of a male resident was not accessible to most visitors. The second isolated zone (b) is accessible from a direct entrance in the main northern façade, and consists of a small *majlis* into which the guest enters immediately, and a larger, stretched rectangular sitting room. Both rooms can be served with hot meals from a kitchen area, behind which is hidden a very small passage leading towards the second half of the eastern courtyard. The third zone (c) is the southern half of the same courtyard – with access to the kitchen again with a separate entrance from its western door into the narrow alleyway passing the *ṣabāṭ*. Zone (c) has its one *majlis* with roof terrace in the south-eastern property corner and a bedroom underneath the *majlis liwān*. It can be assumed that this room and *majlis* may have been offered to male visitors

staying overnight. As mentioned above, all three zones can be used separately or combined to create gender-separated spaces.

A fourth separated zone (d) is located in the western building. This, the largest area, is however less flexible and remains a female domain as it includes most of the private rooms of the *Jalahma* women. It is however not less accessible. Through the *dihliz* that a male visitor would have taken to zone (a) and the main door which was probably open all day, a second door just before the staircase opens into the private courtyard. The courtyard is a prototype of a 'smooth style' period courtyard façade. Walls are articulated with low level large scale windows set within a shallow full height niche, allowing a large amount of light into the interior. The windows show the customary design of timber frame with vertical round steel bars and double leaf timber framed shutter.

Entering the courtyard, the façade of the southern *liwān* dominates the space with the use of massive columns and mangrove tie beams. The first floor façade highlights the 'middle period' additions with controlled use of the column and beam niche details. The western property is composed of elongated rectangular-shaped rooms opening towards an enclosed slender rectilinear courtyard. The surrounding walls are structural



Empty room in Al-Jalahma House

elements dating to the 'smooth style'. They enhance the feeling of enclosure.

Deep niches, the only form of decoration, are found only at a high level of the exterior and interior walls. Inside the rooms, the niches stretch from floor level up to the ceiling; however at the lower level, the niches are very shallow. On the first floor, above the ground floor *liwān*, is the ruin of what seems to have been the original first floor apartment, constructed with the customary 3x6 bay layout making full use of the arched fanlight windows and doors. The roof terraces show some remains of a *bādgīr* (ventilation system) for roof level sleeping which can be assumed to have run along the

entire outer perimeter wall. Like all other features of the house, this again is an element that provides privacy while directing air movement onto the roof terraces. Needless to say, these roof terraces are not visible from any other part of the residence.

The attributes illustrating the Outstanding Universal Value can be summarised as related to sources of information such as design (the prototype ground plan establishing a uniquely flexible gender separation model), the location (indicating the former gateway to *al-Ḥālah* Island), and the memory triggered (especially the female memories of the summer pearling seasons).

Family and privacy – Muharraq residential architecture

As in other Islamic cities, the Bahraini house design is organised around one or more courtyards that orient the house towards the inward, a design that "allowed the female and children to move freely inside the courtyard and maintained their privacy as required in Islam" (Kazerooni, 2002, p. 18). "The most important design considerations are privacy and territoriality" (Yarwood, 2005, p. 21). The predominantly male room of the house is the majlis, often located in a separate or annexed building, or the only room with external windows. Al-Jalahma House is an almost unique exception to this general rule. The majlis was accessed through a shared main entrance which led into a dihliz, a vestibule corridor or enclosure cut off the courtyard. The dihliz led to both the majlis and the courtyard, obstructed by a screen wall that blocked the view and acted as an off-limits indication of the private terrain. "The majlis room was distinct from the rest of the elements of the house by nature of its activities. It was presented as a status symbol in the community and was the pride of the house-owner who emphasized its importance through ornamentation" (Waly, 1992, p. 35).

A few houses used a double entrance system with a direct door into the male majlis and a secondary door for the use of female inhabitants and visitors or family members. This private entrance leads to the restricted family residence with a private majlis and liwān. The liwān, built into the internal wall was often the most characteristic element of the private quarters. It was here that women would spend most of their time in summer, receive their visitors and pursue their household tasks. Equipped with mats on the ground and cushions all along the walls, the liwān was the women's reception area, where the women would meet for dates and coffee, especially in the mornings. As they socialised, they would also work in kūrārah, a traditional gold-weaving technique that brought some additional income to the families. Often the floor of the liwān was higher than the courtyard to protect it from the occasional rains and insects. The ground floor rooms, mainly used in winter, have high ceilings and were called ghāfūd (qāfūd). The first floor rooms are used in summer and were referred to as bangalah. Each of these rooms was ideally connected to a private terrace or a semi-private terrace room known as ṣaṭaḥ (cf. Kazerooni, 2002, p. 19). Often the upper rooms and roof terraces were equipped with bādgīr to ensure both privacy and ventilation.

"Apart from the kitchen (al-matbah), stores and animal stalls (al-zariba), all rooms are multifunctional, but their utilization depends on climatic conditions" (Yarwood, 2005, p. 18), as well as seasonal needs. The kitchen stores and rooms of servants – where they exist – are often located close to the majlis, or with separate accesses to family and visitor zones. Majālis in separate buildings often include and separate servants and coffee kitchen areas. During the summer months, however, the majālis remained empty or were used by the women of the house, and male servants either joined the pearling fleet or followed their masters to the summer camp.



Hand carved door latch of Al-Jalahma House



Detail of Al-Jalahma House window elements





Bahraini girl opening door in historic Muharraq

Muharraq in summer – the city of women

The women's city of the Arabian Gulf, as one is tempted to call Muharraq in summer, is difficult to trace in the books and historical accounts published on the pearling era. The reason for this is that they were all written by men, who may have realised that Muharraq turned to a female domain every summer but could not experience the seasonal difference. This seasonal difference can only be reconstructed from the memory of the female inhabitants and the childhood recollections of some of the most senior in contemporary Muharraq society. The most crucial difference is probably best explained in the traditional Muharraqi saying quoted to us by many informants: "Women of Muharraq don't veil their faces when walking in public during the Ghūṣ al-Kabir because any man that did not leave the city was not considered a man that women would need to cover for." When they talk about the summer months, most women speak about the streets and markets. Many shops in the markets were closed because their owners had left the city, but some were kept open by elderly men and female family members.

The rulers spent the four summer months on the main island in Bilād al-Qadīm and the wealthier merchants, who did not participate in the pearling season, would follow with their families. Some merchant families not involved in pearl diving had summer camps in Arad or Hidd. Every male who was not involved in the pearling fleet left Muharraq city. Whether this was because of the intense summer heat, as the British Financial Advisor suggests (Anonymous, 1933, p. 381), or because they did not want to remain in a city of women is a matter for speculation.

The differences experienced in the summer depended on the social status and wealth of the family. The wealthiest women would feel little difference, as they were attended by their female servants all year round, except that perhaps they received more of visitors to their majālis. For the less wealthy everything changed, as they had to live on the advance budget provided by their husbands and carefully calculate their spending to ensure it lasted the full season. They were outside more often to purchase items and secure the daily needs of the remaining family. Some had to take over the lighter professions of their husbands and bake bread or go fishing. As a community, they had to defend themselves and take care of the old and the sick. Mubarak al-Amari, when asked about his summer memories, described women defending their property during his childhood:

"In the years of pearling and during the main diving season Muharraq was nothing but women population. The ruler had left to al-Qudaybiya, other al-Khalifa families to al-Jaboor, al-Bida, al-Shariba and they were followed by the security men and the families had strong ties with them. Other Muharraqi went to Arad. As a result only women were left in Muharraq. (...) In such climate and during the main season of diving a bidwan (nomadic man) from Arabia jumped into one of the Muharraqi houses to steal something. To his surprise, a group of women chased him from roof to roof and finally captured him. He was tied up for weeks until the Muharraqi returned from their diving time" (Mubarak al-Amari, 23 Nov. 2008 in his majlis in Muharraq).

The above experience seems to underscore that the women of Muharraq were sufficiently confident to take care of themselves, and in rare cases had to take over the most fundamental male responsibilities. Mr al-Sabbaq described to the authors a memory from his early childhood when he observed women conducting a full funeral service, a task which under normal circumstances and according to Islamic jurisprudence is conducted by men.

"When I was a young boy in the 1920s, I witnessed women of the farij washing a dead man. They wrapped him in white linen and carried him on a wooden board over their shoulders to the mosque. In the local mosque was an old man who could no longer participate in diving. He prayed Imam, but behind him were only women and boys. After that they carried him to the cemetery and the women excavated the grave for him and buried him" (Mr al-Sabbaq, 17 Sept. 2008 in a phone interview).

Other female informants shared their memories of fishing along the seashore, where their catch was sufficient for their needs, though often smaller than that the men would have brought in with their nets. They would continue to collect the fish in the ḥazārah, and if low tide fell during the night, they went as a group. The fish would be sold from a display near their houses, or handed over to one of the older women who had a stall in the central market. Other women preferred to work in the street in front of their houses during the summer. From here they could not only exchange news but also spot suspicious individuals.

Ten days before the quffāl, the female city would become extremely busy. In anticipation of the arrivals, new clothes had to be sewed, food prepared, make-ups prepared and houses cleaned. The children would then spend most of their time on the roof watching out for their fathers, uncles, and perhaps brothers, to return. "I used to sit on the roof of our house", remembers Lulwa al-Jalahma, "and watched the dhows approaching when my father returned with the darbīl (binoculars) he brought me from India." It must have been with happiness and relief when after the long summer the women of Muharraq welcomed their husbands, brothers and sons home again. But perhaps it was also with a tinge of regret that they moved back into the privacy and security of their homes.

Al-Alawi House

The *Al-Alawi House* is located along Abdurrahman al-Fadhel Avenue which follows the former edge of the bay dividing *Muharraq Island* from *al-Hālah Island*. It was one of the southernmost houses of the main island close to the passage, locally known as *al-dūsah* (the step) to *al-Hālah*. It is the latest construction among the properties presented in this nomination, or at least the latest commencement of construction, beginning in approximately 1932. The house was built on land reclaimed just before its construction. The two-storey building is the last remaining example of a once-frequent type of middle-class residence, consisting of a square structure surrounding a small central courtyard and with a corner wind tower. The wind tower at *Al-Alawi House* is the last remaining example of a functioning wind tower in *Muharraq* outside the palace of the former ruler, Sh. Isa bin Ali Al Khalifa.

The builder of the house, *Mahmoud Muhammad al-Alawi*, was a trader like his father and provided a variety of specific supplies to the pearling economy. His shop, only a few steps away in the nearby main market, sold tobacco, rope, anchors and fabrics for the dhows, and fish oil, ground gypsum and caulking for their construction. He also supplied appliances to divers and pullers, especially *ftām* (nose clips), *dīyīn* (collecting baskets) and *khabūṭ* (leather tips for fingers). In addition to his shop, Mahmoud al-Alawi operated sweet-water boats which

delivered fresh water, food items and tobacco to the dhows during the pearling season.

The house covers the entire square-shaped property and is arranged around a central courtyard. The decoration takes up elements from the 'Middle Period', especially the 'Columnar Style', and can be seen as one of its last examples, still built with a high percentage of qualified masons. From the southern side, the main door leads into a *dihlīz* which is at the same time the extension of a *majlis* in the western corner of the building. This area has a separate washroom – the original location of the residence's well. This entrance area remained separated from the inner courtyard and other parts of the house, and could therefore be used for male visitors. According to Mr. *Yousif Al-Alawi*, current owner and the son of the previous owner, guests sometimes stayed there for several months. With the door leading to the central courtyard of the 140 square metres property, one enters into the private family domain. The ground floor consists of two rooms used during the winter months, an open kitchen and a former *liwān* which has later been closed and used as a storeroom. Two staircases lead up to the second floor, the central one to the room above the *liwān* that used to be the wife's room and that still contains the marital wooden wardrobe in one of its large niches. This room is directly connected to the wind tower, and through it to *Mahmoud al-Alawi's* room - later used by his son as his office.



Western façade of Al-Alawi House

The architecture of the house makes use of columns and beams as a controlled repetitive structuring system, the main visual feature of the façades. The south façade is dominated by the *malqif al-hawā'* (wind tower) located in the southwest corner of the house. On the ground-floor level, the façade shows only a few small openings and the traditional double leaf timber door. Tall, deep niches on the first floor, with *buwwādgir* set between them and the tall openings of the wind tower on the top floor, place much emphasis on the verticality of the building.

The courtyard façades express a similar rigidity to the exterior façades but are somewhat altered by the use of large scale windows and doors. The windows are furnished with vertical metal bars on the exterior and doors constructed of double leaf timber panels with rectangular fanlights. The wind tower passively ventilates the first floor from its location in the southwest corner of the building. The other rooms on the first floor are also passively ventilated by *bādgir*, as is the roof terrace, which was used for outdoor sleeping in summer. The ceilings throughout the house are constructed of the traditional mangrove beams and diagonal split bamboo grid.

Al-Alawi House contributes to the Outstanding Universal Value of the testimony of the pearling economy as an example of middle-class residential architecture based on wealth derived from the supply trade. Traders such as *Yousif al-Alawi* were not involved in the financing systems of the pearling seasons and therefore were neither among the debtors nor among those that built up a fortune in pearls. For this reason, the traders established a social and economic position between the extremes of the groups immediately related to pearls and provided services to all of them. This merchant class was essential during the season to provide supplies to the boats, and they mostly lived along the shore to be able to service their boats during the summer months as necessary. The Outstanding Universal Value is reflected in the architectural design, which combines luxury elements such as a wind tower and decorative elements with rather modest property size and room volumes. The building material is mostly local, except for elements the owner imported during his trade visits to India and Oman. The main attributes to be preserved are therefore the layout and the original design of the building which can be seen as the prototype of a pearling supply trader residence, the testimony of its building materials and workmanship, and the experience of passive architectural acclimatisation in the rooms which are cooled by the wind tower and *bādgir*.



South-western corner of Al-Alawi House

Equipment for the Ghūṣ al-Kabīr

The equipment needed for pearl diving was minimal and could be provided by a single merchant. Often a nūkhidhah – especially when working independent – was related to one trader who would advance most of the equipment required and be paid at the end of the season. Items provided consisted of the equipment for the maintenance of the dhows, the equipment for the divers as well as water and food stuff. While the divers and pullers were generally responsible for their equipment, many nūwākhdhah offered such through their trader contacts as part of the seasonal advance given to the crew. Several informants further reported that tobacco and coffee were among the most desired other items that were never missing on board as a lack would have severely endangered the morale of the team. The equipment was requested by the nūkhidhah well in advance to ensure all items required were available before the main season started.

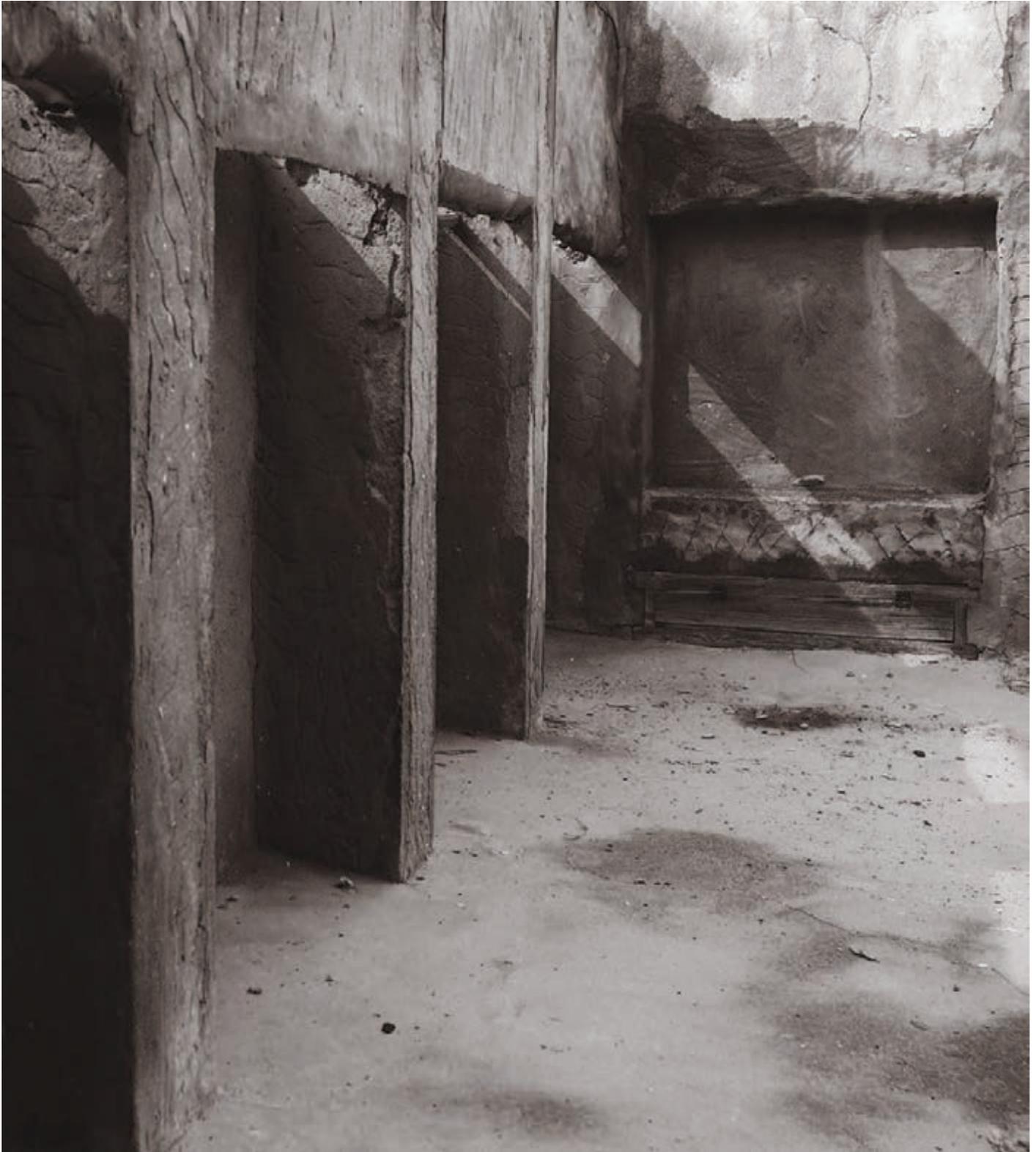
As Ghūṣ al-Kabīr drew near, the nūkhidhah called his boat crew together and instructed them to oil the upper hull of the pearling boat with evil-smelling shark-oil. The under-water portion of the boat was painted white, with a substance made from lime and sheep fat, to prevent fouling and to retard barnacles (Dickson, 1949, p. 385). Then the boat was dragged into the sea and equipped with foodstuffs and other commodities required for the pearl diving expedition. The expenses for these necessities were carried by the nūkhidhah himself, and then sometimes advanced by the trader, or by a wealthy pearl merchant, who was financing the expedition.

Normally the divers needed only a small loin cloth (shamshūl), a nose clip (fṭām) made from wood or horn, and leather tips (khabūṭ) to protect their fingers from the sharp edges of the oyster shells. Only at time when large numbers of devilfish or jellyfish were present, divers wore protective suits. Durand recounts that “In the case of a large number of devil fish being about [the diver’s] toilette is more finished, it then consists of a long white shirt to protect him from the burning embraces of these most unpleasant bath fellows” (Durand, 1878 [1986], p. 32). Similarly, Dickson relates that “should the dreaded stinging jelly-fish be about [the diver] will wear a crudely made black local bathing suit, which covers head, hands and feet, as well as body, leaving eyeholes alone through which to see” (Dickson, 1949, p. 487). However, the introduction of modern diving suits in the twentieth century was violently opposed by the divers and subsequently outlawed by the Ruler of Bahrain, for though they eliminated the worst dangers of diving, they discriminated against the divers too poor to afford them (cf. Bradley, 1964). Other equipment needed by the divers included a knife (miflaqah) to cut away the oyster shells from the sea bed and open those on deck of the boat, a cotton bag or basket (diyīn) hung around their necks to collect the oysters, and stones or weights (ḥaṣāh) to help divers descend into the sea. The weights were attached to diving ropes (ḥibāl al-zayban), which were fastened to the side of the ship and pulled up by the siyūb once the divers had reached the bottom of the sea. According to Durand there were “many different weights in the boat to suit the necessity of each diver who chooses a sinking stone that will neither be too light nor too heavy for his comfort” (Durand, 1878 [1986], p. 32).

As regards foodstuffs, Roving Olsen writes that the nūkhidhah bought rice and dates for consumption during the months on the boat, and also coffee. Everything else, including tea and other kinds of food, had to be acquired and brought to the boat by the crew themselves (Roving Olsen, 2002, p. 89). Wellsted equally reported on the scarcity of food resources in 1840, “The fare of these poor fishermen is very miserable: dates, such fish as they may be able to catch, and water” (Wellsted, 1838a, p. 124). Indeed, divers’ meals were strictly rationed by the nūwākhdhah, as too much food was “supposed to render them unfit and spoil the divers’ wind,” (Dickson, 1949, p. 487). Also Tweedy elaborates that “to be able to remain under water for any length of time the divers must eat sparingly; only a little water and a small ration of rice and dates comprise the frugal fare permitted” (Tweedy, 1952, p. 65). The lack of fresh vegetables made the sailors susceptible to scurvy, even when their diet was enhanced through the catching of fish, which was usually done by putting down traps at night. However, the most abundant resource, pearl oysters, was apparently never eaten (Wellsted, 1838a, p. 119).



View into the wind tower of Al-Alawi House



Architectural detail of buwwādgir in Al-Alawi House

Sweetwater boats

During the Ghūṣ al-Kabīr, water for drinking and cooking was stored in large wooden tanks (funṭās) on board the dhows. If a boat's water supply was exhausted, fresh water could be obtained from one of the many underwater springs in the Gulf or was delivered together with food resources by special delivery boats operated by the Muharraḡ merchants. The freshwater springs were of different strength and quality, and with increasing water-depth required more skillful divers for extraction.

"One of the most curious features of the pearling industry is the manner in which the fishermen secure supplies of drinking water. In the vicinity of Bahrein, numerous fresh-water springs exist at the bottom of the gulf in depths of two or three fathoms, and the fishermen dive into the depth of the salt water down to where the fresh water is springing forth and there fill a skin or other suitable receptacle which they bring to the surface. By running a pipe down near the bottom in the vicinity of one of these springs, an abundance of fresh water may be pumped into the boat" (Kunz & Stevenson, 1908).

Even in deeper waters, "men dive daily for fresh water, which they bring up in skins. The water is good, though an unskillful diver may allow it to become mixed (...)" (Herbert & Maccarthy, 1924, p. 86). However, in some areas the resources available from underwater springs were limited and in deep water exhausted the divers and hence limit the number of dives for pearls they were able to carry out. On the other hand, returning to shore for sweet water and foodstuffs was time-consuming and equally prevented diving for pearls during this period. A well-organised nūkhidhah would therefore be the client of a merchant operating sweet-water boats, which would deliver supplies to the dhows on sea at regular intervals. Most traders used the transport ships that carried timber and other goods from India and Kuwait. These vessels specialised solely in water, food and tobacco delivery during the Ghūṣ al-Kabīr and were known as sweet-water boats.

The main boats used for carrying cargo and deep-sea travels were the baghlah and the būm, although local tradition has it that the baqqārah and the battil were also used as deep-sea boats in earlier times. The baghlah, a large boat whose name is derived from the Arabic word for 'mule' – a sign of the boat's durability, endurance and strength – was the traditional deep-sea boat of the Gulf and could stow up to 500 tons of cargo. Towards the end of the 19th century, the būm was invented and replaced the baghlah as the preeminent deep-sea boat of the Gulf, due to its better cargo space, greater speed and better performance in a following sea. The būm is a durable ship, and up to 100 tons was sturdy enough to cope with winds and waves (Agius, 2002, p. 69), but a larger version could also carry additional loads. It also costs a little less to build than a baghlah, although it lacked the decorative carvings that distinguished the former (Al-Hijji, 2002; Bu Hassan, 2002; Dickson, 1949).

Sweet-water boats would serve the oyster beds at biweekly intervals. Besides water, dates, rice and tobacco they also delivered new diving suits and food treats which were handed to the divers on special occasions. Lorimer reports, "on the occasion of a tabrah [a group of oysters clinging to each other, which is said to be most frequently pearl-bearing] being discovered by a diver he receives a new suit of clothes from the Nakhuda, and the rest of the crew too become entitled to receive a present" (Lorimer, 1995b, p. 33).

Only nūwākhidhah not linked to the supply merchants would need to return to shore during the season to re-stock their provisions. In rare cases, such dhows would be re-stocked by pearl merchants (ṭawāwīsh) visiting the fleets, who would have a purchase advantage with a nūkhidhah in need of supplies. These ṭawāwīsh would have then paid for the pearls they obtained either in money or in water, dates and other required food items. The nūwākhidhah often preferred the latter arrangement as it saved them the trouble of going ashore whenever their stock of provisions was exhausted (Rihani, 1930, p. 280). It also reduced the risks associated with storing a large amount of money on board.

Fakhro House

Fakhro House was built by *Yousif Abdurrahman Fakhro*, a well-established merchant of timber and construction materials with additional major interests in boat construction and commissioning. A prime example of the wealth to be gained from the industries that supplied the pearling economy, *Yousif Abdurrahman Fakhro* constructed a residence the size and detail of decoration of which is comparable to the houses of *tājir al-lū'ū'* (refer to *Siyadi Complex*). The house was built in several - most probably four - successive stages and organised around four internal courtyards. Of these, only the earliest building phase around the central courtyard remains to give testimony to the years of the massive pearling boom at the very beginning of the 20th century. The other three stages have been traced as foundations during archaeological excavations of the residential complex. These remains will be integrated into a public garden and *majlis*, to be built as a gift of the *Fakhro* family to the local community. With its successive extensions, *Fakhro House* also provides a unique example of a family residence that gradually expanded towards the sea as need required. Yarwood acknowledges that, "*Fakhro House* represents one of the most significant lessons concerning evolution, growth and expansion. (...) The westwards growth has enabled the eastern court to split off as a separate unit, and the original function of the courts has changed as possibilities were created" (Yarwood, 2005, p. 116).

Fakhro House, like *'Amārat Yousif Abdurrahman Fakhro* (see below), is built on reclaimed land and parallel to its architectural extension phases. It demonstrates the traditional technique of land reclamation in *Muharraq* from the 19th century onwards. The archaeological excavation is therefore presented with reference to the varying soil materials. As the owner of a fleet of up to 50 boats, *Yousif Abdurrahman Fakhro* had his own dock adjacent to his residence and could watch his fleet landing and departing from the windows of his private room and his seaside *majlis*, built adjacent to the property's dock during its latest extension phase. The property's total area is approximately 3000 square metres, of which nearly 50 per cent is built structure.

The surviving architectural structure is arranged around a central courtyard and divided into two halves, separated according to their state of conservation and current use. The eastern half is still inhabited by the *Fakhro* family and remains in use as a private residence. This part was renovated and adapted to contemporary living standards, with the addition of new bathrooms and air-conditioning systems. The western half is of greater interest to the nomination. Although in urgent need of restoration and stabilisation, the remaining structure is unchanged since it was vacated by the *Fakhro* family in 1954, following the demise of *Yousif Abdurrahman Fakhro* two years earlier. Despite its condition, it therefore presents authentic testimony of a luxurious residence at





Southern façade of Fakhro House



Apartment (a) (first father's apartment) in Fakhro House



the time of the late pearling era. The division between the two halves is currently most obvious from the outer southern façade which clearly illustrates the historic characteristics on the left and the modern adaptation on the right. Since the decorative elements consist of merely surface treatment it is envisaged to remove part of the adaptation of the eastern façade to return to its original appearance.

The house is an example of the 'Middle Period' of *Muharraq's* architecture. The surviving western part is currently accessed through a shared *dihliz* that leads from the northern door to the central courtyard. It can also be accessed through a southern door that once led to the second courtyard gate, or to a gate to the property's garden - the location of the archaeological excavation - an access route that exposes the ornamented façade. Although traditionally this entrance was used only as a private connection for the family to the property's extensions, it will now be reinstated as a public entrance to secure the privacy of the family living in the eastern section. The ground floor rooms were used mainly as storage facilities, or as living rooms for the residence's domestic staff.

The first floor contains the partly ruined remains of three apartments. The first is an early apartment of *Yousif Abdurrahman Fakhro*, who later moved with the extensions (leaving his apartment to his oldest son *Abdallah*) to ensure he could view the sea from his room and. This is referred to as apartment (a). The other two apartments were inhabited by his sons *Ahmad* (apartment (b)) and *Rashid* (apartment (c)), and are located opposite each other on the southern side of the property. The apartment may be a misnomer for what were originally one-room structures. Each of the rooms was later extended, or else walls were added around a former *liwān* to create a private washing room. The so-called apartments are therefore complexes of one room each, with a private *ḥammām* (washroom) and a *liwān* or open-roofed terrace. Two further surviving rooms were inhabited by grown female daughters and unmarried sisters.

From its outside façade, it is clear that the western segment (apartment (b)) is the most decorated and detailed. It grows from a very solid ground floor with minimal decorative elements to a rigidly vertically accentuated structure in the first floor. Tall, narrow windows are set within deep rectangular niches showing trefoil arches in the upper panel. The windows have double leaf internal timber shutters with fretted timber screens on the exterior. Windows culminate in arched fanlights decorated with multicolor stained glass. At roof level, the traditional timber box-shaped spouts protrude from the wall with a two-tier coping that elegantly completes the façade's rise.

The eastern segment of the historic southern façade belongs to apartment (c) which is linked to the western segment by a traditional roof terrace with *bādgir* walls. Like the western part, the eastern segment grows from a solid mass ground floor into a more articulated first-floor façade. Square windows are placed in shallow niches, with highly-decorated, arched, stained-glass fanlights. Above each window a trefoil arch incised panel decorates the wall. The room has a flat roof with decorative three-step merlons placed on each corner.

The focus of the western façade, which is visible from the garden and excavation area, is the large-scale highly decorated first-floor apartment (a). It is composed of a large-scale arch on each end with several smaller arched openings topped with decorated incised plaster trefoil arches. The openings consist of tall, slender timber windows with double leaf timber shutters. The windows are topped with arched fanlights with highly decorated stained glass. From the north, the large arch that forms the *liwān* dominates the more solid ground floor façade.

Fakhro House contributes to the Outstanding Universal Value of the grand narrative of the pearling economy not only as an architectural structure but also as a narrative expressed by the architectural and archaeological testimony. It is the narrative of a successful boat and timber merchant with a considerable fleet who needed his dhows to dock as close as possible to the centre of his trade but who also desired to be near his family. This required a seafront residence with direct boat access to the shore. As no such property existed, he created the *Fakhro* property with one of the earliest large-scale land reclamations in *Muharraq*. His wealth and his family grew simultaneously, and soon extensions to the property became necessary. The residence was located in an already densely-populated neighbourhood, with the result that the property could only expand westwards through successive land reclamations. Because he wanted to retain a view of the dock from his private apartment, and with it detailed knowledge of the arrival and departure of his fleet, the family head had to move with every extension. This makes *Fakhro* House unique and illustrates the importance of sea access for the boat and timber merchants. Other merchants' residences tended to grow mostly concentrically around the room occupied by the head of the family, which rarely changed position. In a late building stage, a sea *majlis* was constructed along the quay, offering the family head an additional quarter for inspecting the activity at the dock. This strong relationship with the sea is still well documented, though of course due to successive land reclamations the sea is nowadays missing from the picture.

The attribute that reflects the Outstanding Universal Value of *Fakhro* House is the ground plan, illustrated in the material remains of the successive building phases both in their architectural and archaeological legacy. Here especially the architectural structure of the three remaining early apartments in the west wing of the first building complex will be highlighted in their design, workmanship and structure. In addition, the contribution of *Yousif Abdurrahman Fakhro's* legacy within the proposed site is further strengthened by the inclusion of his *'amārah*, a few hundred metres to the north where the dhows of his fleet were constructed. This complex, equally an archaeological site, contributes the narrative of seafront appropriation through land reclamation (see *'Amārat Ali Rashid* and *Yousif Abdurrahman Fakhro*).



Detail of window elements in Fakhro House



Historic photograph of a dhow heading towards the oyster beds

Timber import and dhow types

Dhow building is not only one of the ancient crafts of Bahrain, but was for many centuries one of the island's most important pearling support industries. The word 'dhow' is used by Arabs and non-Arabs as a general term for an Arab sailing vessel with one or more lateens. However, the origin of the term is unclear, and it is not an Arabic word. Sailing was required to collect pearls, and therefore sailing and the building of sailing vessels is an ancient tradition as old as the search for pearls. According to James Belgrave, "there is no doubt that the people of Bahrain have been sailors for at least as many centuries as the pearl industry has been in existence and their stitched boats not only sailed the Arabian Gulf but entered the Indian Ocean" (Belgrave, 1975, p. 69). During the pearling era, metal nails were available and stitching of boats was no longer necessary. The key timber traders, such as Yousif Abdurrahman Fakhro, imported all the raw materials required and offered these for sale in the 'amārāt. They regularly commissioned boats to be built to dispose of surplus stock, enlarge their own fleet or profit from selling a completed vessel.

The timber required for building the boats was imported mainly from the Malabar Coast of India, and consisted mostly of teak which was used for making the keel, stem, stern planking and masts of the larger boats. Other types of wood imported from India and used in boat building included Benteak, Jack wood, Pali wood, Indian Laurel, and Poon (Al-Hijji, 2002, p. 38ff; Hay, 1959, p. 53; Miles, 1919a, p. 412; Nasser, 1998, p. 12; Nowell, 1999). Additionally, 'meet' wood was imported from places such as Iran, Iraq and Somalia, and was used to form the ribs and knees (Al-Hijji, 2002, p. 38ff; Nowell, 1999). During the late pearling economy, timber was almost exclusively imported by a handful of specialised timber merchant families and transported in large cargo boats of the *baghlah* or *būm* type (Al-Hijji, 2002, p. 19; Bu Hassan, 2004, p. xviii). The cotton sails for the boats were produced locally from fabric imported from India and Karachi, and were famous in the Arabian Gulf for their high quality. The ropes necessary for boat building were typically also imported from India, and were made from coconut and palm leaves (Bu Hassan, 2004, p. xix; Miles, 1919a, p. 412; Nowell, 1999).

Depending on their particular characteristics, it is possible to distinguish several different types of the boats that were constructed in Bahrain, and more generally, the Arabian Gulf. Each boat was built to serve one or more specific function (such as pearling, fishing or shipping), which defined the boat's peculiar size and shape. The type of boat most commonly used for pearling was the *sambūk*, a vessel of between 15-20 metres in length, with a bent front, a square stern, two masts and a divided deck. Described by al-Hijji as "the pearling dhow par excellence," it was rarely used for other purposes. The *sambūk* was the boat preferred for pearling because of its speed and manoeuvrability while searching for pearling locations (Al-Hijji, 2002, p. 16; Belgrave, 1975, p. 66; Bu Hassan, 2004, p. xviii; Dickson, 1949, p. 477). Other types of boats that were commonly used for pearling in the Arabian Gulf were the *battil*, a large boat known for its immense speed and one of the most ancient types in the Gulf; the *baqqārah*, the *jālbūt*, and the *shūwīī*. According to Dickson, boats of the *būm* type were hardly ever seen at the pearl banks, except as a sweet water or dealer's (*ṭawwāsh*) boat (Dickson, 1949, p. 477). However, shipwrights in Kuwait built a number of special pearling 'abwām (sing. *būm*) in the beginning of the twentieth century, which may or may not have visited the pearl banks of Bahrain (Al-Hijji, 2002, p. 19). In addition to the types of boats mentioned above, there were various other small to medium-sized boats used for such purposes as fishing, coastal trade, passenger trips between islands and transportation between ports and larger boats.

Beginning in the 1920s, boats were increasingly fitted out with marine engines, and sailing boats slowly began to be replaced by motor launches. When the first motor launches were used for *ṭawwāsh* work of purchasing pearls during the 1928 season, a large number of Bahraini *ṭawwāsh* signed a petition to the ruler requesting that motor launches be officially prohibited. The petition was signed by many who either owned or could easily afford motor launches, but preferred to uphold the centuries-old tradition of *ṭawwāsh* work:

"Bahrain entirely depends on the pearl trade which provides livelihoods for the rich and the poor. People who go out to the banks have equal chances of buying. If launches are used the owners will gain a great advantage over those who have none. They will be able to move from place to place with greater rapidity, on a calm day, they will be able to go out and to buy up all the pearls as the sailing boats will not be able to move if there is no wind" (Belgrave, 1928 [1995], p. 419).

Following a decision by the British Resident not to intervene with regard to legislation on the launches, and pressure from Kuwait and al-Qaṭīf, who perceived the launches as a progressive development that strengthened the industry, motor launches soon became the standard of *ṭawwāsh* work. At this time, boat building was a thriving trade in Bahrain and motor launches as well as sailing craft were exported to various Gulf ports (Belgrave, 1933 [1986], p. 420). However, the slump in the pearl trade severely affected the boat-building industry. In the Bahrain Government's Annual Report for 1353 (1934-1935) it is stated that "The boatbuilding industry is in a state of depression, consequent upon the depression in the pearling industry" (Belgrave, 1935 [1986], p. 578). Jenner assessed in 1984 that boat building in Bahrain "naturally followed the decline of pearling". He notes, however, that "fishing and trans-shipment have managed to keep the industry alive (...) Orders are received from elsewhere in the Gulf and some young men are learning from their fathers the art of assembling a ship without plans, measuring tapes or welding equipment" (Jenner, 1984, p. 111).

Dhow building

The tradition of boat building has been passed from generation to generation as a well-honored and respected profession (cf. Bu Hassan, 2004). Kunz and Stevenson wrote in 1908 that “The boats from Bahrein are of excellent construction made by native workmen using local materials, with home-woven sailcloth and rigging of twisted date-fiber” (Kunz & Stevenson, 1908, p. 91). Boats were used in Bahrain both for trading voyages and for the localised pearling and fishing industries. Additionally, Bahraini boats were manufactured to satisfy international demand, particularly from the Arabian Gulf region. Most of Bahrain’s boats were employed in former days as pearling vessels, and while other shipyards in the Gulf may have built larger boats, “it was natural that Bahrain, (...) the center of the pearling industry, should have its own yards” (Belgrave, 1975, p. 65). Although Bahrain’s best-known locales for boat building have for a long time been ‘Al-Naeem’ and ‘Ras Rumman’, on the main island, an important place of construction was also the coast near the entrance to the town on Muharraq (Bu Hassan, 2004, p. xviii; Nasser, 1998, p. 12). Today most of the yards in Bahrain are located in Muharraq, although not in their original locations along the western coast. Since the yards are not considered immovable, and have always utilised different coastal positions at different times throughout the centuries, their current location has not been included in this nomination as a property, but is pointed out as an additional place of interest to site visitors.

Boats were constructed and repaired by specialist boat builders known in local dialect as *galāf* (plural *galālīf*) using carpentry tools such as manual drillers, saws, axes, chisels, hammers, plumb bobs, tapes, levels and ropes. The boat builders used their own terms and expressions, resulting in a lexicon others could barely understand. At the beginning of the traditional boat-building process, the *galāf* determined the boat’s dimensions in terms of length, width and height, and obtained the necessary timber from a local timber merchant. In the 20th century, the wood and other supplies for building a ship could for instance have been purchased at the ‘amārāt of Abdurrahman Yousif Fakhro or Ali Rashid Fakhro. Sometimes, the shipwrights were also supplied with the timber necessary for building a specific boat by the *nūkhidhah* or timber *tājir* commissioning the ship. Once the timber was obtained, the *bīṣ*, the backbone of a boat, was laid and the arc-shaped ribs were made in different sizes from the aft to the fore ends of the boat. Each pair of ribs had to be of equal size and weight. Once the ribs had been attached to the *bīṣ*, wooden boards were fastened to the ribs with locally made nails, and the upper deck and mast were fixed. Spaces between the boards were filled with sesame oil-dampened cotton gauze to prevent water penetration. Finally, the outside upper surface of the structure’s body was coated with a special fat known as *ṣull*, which was traditionally extracted from the dolphin liver. The bottom surface was protected with tallow, acting mainly as an insulating material (Al-Hijji, 2002; Bu Hassan, 2004, p. xviii; Nasser, 1998, p. 12).

“After paying for the timber and its freight (...), the merchant or dhow captain would approach one of the master shipwrights, show him the timber and ask him to build him a certain type of dhow of a certain keel length. The master would then begin by choosing from 10 to 18 shipwrights, and start laying down the keel. The dhow owner or merchant would commit himself to providing the team with the morning breakfast (at 10 am) and the midday meal (at noon) for as long as it took to build his dhow. He would also pay them their wages on a daily basis, the master getting double the amount that an ordinary shipwright got, working six days a week from dawn to dusk, with just the two meal-breaks. Work was always hard (...) and called for great skill and endurance, and gave the shipwrights enormous pride in the finished product. A medium-sized boum (of about 225 tons burthen) used to take two months to build. This included the construction of two boats, three water tanks and a fire-box, besides the preparation of masts and yards” (Al-Hijji, 2002, p. 142).

Two celebrations on the seashore were conducted to honour a newly built ship. The first one, *al-Galfāt*, was exclusively for the boat owner and the boat builders. It was celebrated on the occasion of driving a cotton rope soaked in coconut or sesame oil into the seams of a dhow’s sides to prevent water penetration. For *al-Galfāt*, which did not demand physical strength, many *galālīf* from other boat construction projects were invited to give *fazá*, free-of-charge assistance. The cotton ropes were inlaid with the aid of hammer and a small chisel, following special songs performed only during *al-Galfāt*. The owner of the boat would order a traditional breakfast for all participating *galālīf*. The breakfast was served at around 9 o’clock in the morning and included Arabic coffee, *halwah*, *rahash*, *khanfarūsh* and brown bread. The owner was also expected to offer roast lamb with rice for lunch.

The second event, the ‘*Ushār*, celebrated the launching of a new boat into the water. For this event, the owner of the ship had to select the times of *māyat hilāl*, the spring tides of the full or new moon, during which the high tides are very high and the low tides are very low. During the grand high tides, the shoreline migrates inwards, reducing the distance the boats needed to be pushed. *Rajyān*, the act of heaving a boat to a floating position in the water, demanded the strong arms of many men. On deciding the *rajyān*’s date, announcements were made in mosques, calling upon people to give *fazá*. The owner *nūkhidhah*, *ṭawwāsh* or *tājir* and his staff would be present. A paid traditional singer accompanied by musicians playing *jirbah* (bag-pipe), *ṭabl* (large cylindrical double-headed drum with carrying sling) and *ṭār* (frame drum) would add to this celebrated event and perform *ṣangalī*, a song of joy and happiness (Rovsing Olsen, 2002, p. 102). Young girls would perform dances on the deck of the boat, an act believed to bring good luck. While conducting the *rajyān* ceremony, the new ship would officially be transferred to its owner.



Galāf constructing pearling dhow



Wood preparation for dhow construction



Timber logs stored along Muharraq shore



Mr Khaled Murad in the courtyard of Murad House.

Murad House and Majlis

The owners of new ships such for which these many celebrations took place would either be merchants, captains, or the pearl traders, the so-called *ṭawwāsh*. *Ṭawwāsh* is the broad name given to the profession of pearl trader and includes both the sea and land merchants. The working methods of these two groups differed quite considerably. The intermediate trader, *ṭawwāsh al-bahr* (lit. pearl merchant of the sea) would spend the season at sea, circling the dhows in a bid to be the first to gain access to a dhow after an important find was made; meanwhile the grand-merchants, often referred to as *tijār al-lū'lū'* (the pearl traders), would await the return of the intermediate merchants at the end of the season and buy complete collections rather than single pearls.

Murad House and *Murad Majlis* (guest reception room) are two properties facing each other on two sides of a small public square and separated by a mosque. They belong to the *Murad* family, for many generations a *ṭawwāsh* family, and are the best-preserved and most authentic remaining example of the residence and guesthouse of a *ṭawwāsh*. As the Outstanding Universal Value of these two properties is closely interlinked and based on attributes present in both architectural structures, they will be described together. The *Murads* migrated to Bahrain in the late 19th century under the guidance of Jassim *Murad* who arrived with his cousins Yousif and Salem, his son Ahmad and his wife Hessa Fakhro. On arrival, they were warmly welcomed by the ruler, Sh. Isa bin Ali Al Khalifa, who offered them a property of their choice, on which the residence was constructed. The property, only 50 m from the shore, was ideal for the *ṭawwāsh* who established a lasting friendship with the ruler. After Jassim's demise, his son Ahmad continued the *ṭawwāsh* activities and with local builders from the adjacent *farij al-bannān*, the neighbourhood of builders, constructed the current *Murad House* and *Majlis* at the turn of the century. The family profession and supervision of the household was continued by *Abdallah*, son of *Ahmad Murad* and even the current owners, *Aburrahman, Khaled* and *Lulwa Murad*, observed their father practicing his *ṭawwāsh* activities, a profession they say requires patience, good measure and many intuitive skills learned only through many years of apprenticeship within the family. The house and *majlis* bear witnesses to these activities and testify to the particular architectural requirements of a *ṭawwāsh*. The *Murad House*, located in the corner property of two small alleyways and inaccessible to vehicular traffic, is a classic courtyard house with all rooms arranged around a large central open courtyard. On its 664 square metre ground plan, it is a predominantly single-storey structure, consisting of just one room; roof terraces are second-storey features. The house is entered from the south-western corner, where a *dihliz* creates a vestibule passage protecting the privacy of the inner courtyard. All rooms are arranged around the central courtyard without further opportunity for

gender separation in favor of a large open and airy space shared by the family. To receive male guests, the *ṭawwāsh* therefore required a *majlis* which was located outside the functional unit of the residence and was constructed as a separate building. The construction of *majlis*, which are physically separated from the family residence and can therefore also be used for overnight visitors, is a particular feature of *ṭawwāsh* complexes. The *Murad House* is structured into 8 historic rooms which were mainly used as living and bedrooms. The most representative room is to the left of the entrance to the house and belonged to the head of the family, who observed the movements of the family members and had direct water access through the *dihliz*. The internal design of all rooms is characterised by deep niches and narrow structural columns and beams. Each room was divided into a sleeping or living area, with a *ḥammām* (washing room) separated by a low wall for privacy and a direct connection to the courtyard for water delivery. At the south-eastern corner, a room on the second storey allows for airy and shaded seating in summer, and formerly provided a good view towards the sea and the family's *bānūsh* (small boat used by many *ṭawwāsh*). For the *Murads*, it was convenient to live in view of the shore and their boat, but not essential to have a seafront property, as for the timber trading families with large fleets of boats. Other interesting features of the ground plan are the *khanjiyyah*, a food storage chamber, the *ḥuṭah*, an integrated animal barn at the far end of the courtyard, and the family's head room, containing a safe (*tjūr*) which stored the household's valuables, and among them pearls.

The house's public façades have no window openings. They are rigidly structured by repetitive arched and rectangular-shaped niches on the ground level, and by *bādgir* (passive ventilation system) openings within the *wāriṣh* (roof level balustrade wall) of the roof terrace on the upper level. The *wāriṣh* culminates in a three-step merlon which runs its full length. On the ground floor, there is a large main entrance the family refers to as "*bāb bū farkhah*". The entrance is the focal point of the external façade and creates the symbolic connection to the opposite entrance of the *majlis*, with both dominating the small square. The existing door is larger than the traditional, double skin door and consists of double leaf timber with a half circle arch fanlight of radiating circular steel bars.

The courtyard façades offer a true reflection of the architecture of the period. Each room is structured using a rigid repetitive pattern of piers and full height half circle niches, with windows and doors set within. Above the full height niches are square niches with a trefoil arch set, a popular characteristic of the 'Perpendicular Style' within the 'Middle Period'. The eastern façade is dominated by the open structure of a *liwān*, a simple construction of columns and timber

beams with a traditional ceiling, and the preferred place of the *Murad* women who would meet here with their neighbours to share coffee and handcrafts.

The *Murad Majlis* was built at the same time as the residence and follows the 'Smooth Style' of the 'Middle Period'. The 73 square metre building consists of a *dihliz* and a large guest room connected through a small courtyard with service facilities dating to a later period. The *majlis* is an elongated rectangular 3x7 bay space, with a high ceiling and deep niches. The interior of the *majlis* has a high degree of authenticity, with the exception of the furniture, which was added after the decline of the pearling era. The original low-level rectangular windows on the courtyard façade, and the many vertically aligned deep niches immediately above it, remain. Incised decorative plaster panels above further accentuate the verticality of the room which is finished with a ceiling constructed of traditional mangrove beams and a diagonal grid of split bamboo.

The street façade is plain, yet very impressive because of its structure of tall, deep arched niches. Towards the eastern corner of the façade, a large rectangular opening with an inserted decorative steel grid can be observed. The courtyard façade is arranged symmetrically, with the entrance door as the central focus. On either side of the timber door are three square low-level windows,

with double leaf timber shutters. An arched niche is placed above each window mirroring the niche design of the street façade of the building. The *Murad Majlis* is still in use in its traditional function as a guest reception room, and regularly hosts male and female *majālis* (open-invitation guest receptions which are still important social institutions in *Muharraḡ*).

The Outstanding Universal Value of both properties is expressed in their space, luxury and representation, features which document the professional needs, wealth and prominent position of a *ṭawwāsh* in *Muharraḡ's* pearling society. The architectural and decorative structure of the *majlis* is relatively simple – at least when compared to the very prestigious guest reception rooms of the grand merchants – and therefore credibly documents the status of a *ṭawwāsh*. In its architectural proportions, the window height testifies to the *majālis* tradition of sitting at floor level – a tradition no longer considered convenient by contemporary *Murad* users. The change to seating furniture however is not recent. It was documented in 1937 by Belgrave, who wrote: "Formerly a few mats and one or two carpets were sufficient furnishing for the Meglis of a [pearl] merchant, but now, in most middle-class houses, there are chairs, tables, window curtains (...)" (Belgrave, 1937 [1986], p. 54). The *dihliz* into the courtyard protected the *ṭawwāsh* in his negotiations inside from the curious



Interior view of Murad Majlis.

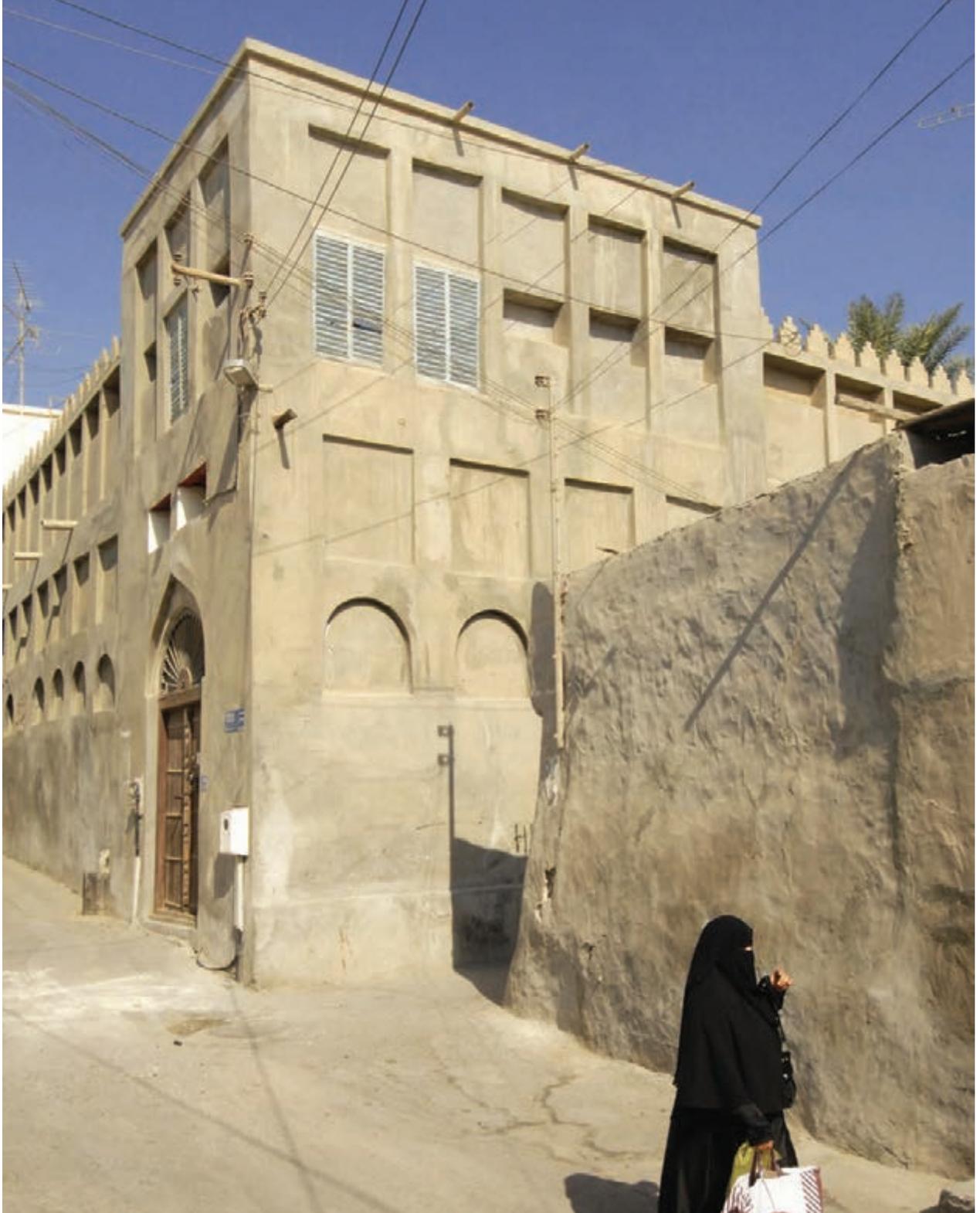
views of unexpected visitors; this prototype feature of *ṭawāwīsh majālis* can be compared to the *majālis* of other traders which mostly avoided windows towards the street. Privacy was an important safety feature when presenting and inspecting pearls during the sometimes-lengthy negotiations.

The construction materials used illustrate both local materials such as the *farūsh* stone applied for all constructions in Muharraḡ and also the ability of the *ṭawwāsh* to incorporate imported material from India, in particular for ceilings, windows and doors. The safe, still preserved in the room of the family head, seems to convey the memory of all the precious pearls stored inside through generations. The welcome the Murad family continues to offer visitors maintains a long tradition of hospitality which nowadays is extended even to the formerly strictly private residence. The family is very enthusiastic about nurturing this concept in the context of a World Heritage Site. The attributes illustrating the Outstanding Universal Value can be summarised as related to sources of information such as space and design (especially the concepts of generosity and privacy as expressed in the architectural structure), material (the combination of local coral stone and the prestigious imported decorative materials), function and use (in particular the continuous use of the *majlis* but also the continuing concept of hospitality in the residence), and memory (with its, many narrative

elements that the local community is able to share and enjoy when walking by the historic walls of the house), in particular the memory of the *ṭawwāsh*.



Dihliz of Murad House with main entrance door



View of Murad House from south-western corner



Southern street façade of Murad Majlis



Alleyway leading west of Murad House in primary protection zone

Tawāwīsh activities during Ghūṣ al-Kabīr

The profession of the *ṭawwāsh*, in contrast to the diver, was a year round occupation, though Ghūṣ al-Kabīr is the key period of purchase. Shortly after the commencement of the main dive, the *ṭawwāsh* prepared their boats to follow the pearling dhows to the oyster beds to purchase pearls directly from the *nūwākhdhah*. The contrast between the simple overcrowded dhows of the divers and the vessels of the *ṭawwāsh* must have been significant. "The pearl merchant's launch was the antithesis of the diving dhow. It was carpeted with Persian rugs and provided with cushions" (Clarke, 1981, p. 50). Once they reached the oyster beds, the merchants would drift in the proximity of the pearling dhows, waiting anxiously when the pearls were opened every morning for some kind of signal or shouts of joy indicating a significant pearl find. They would then race towards the dhow to be the first to seek the welcome of the captain. "According to custom, when a Tawwashah buyer has boarded a boat none other can interrupt his bargaining with the Nakhuda. Other prospective buyers have to lie off till the deal is finished" (Barrett, 1929, p. 3). The *ṭawwāsh* would be waiting at a distance, as Yousif as-Sabagh explains:

"It was part of the diving industry tradition to never allow a tawwash boat to come in close vicinity of the pearling-vessels. Such could have blocked the divers' movement during diving or even put their life at risk. Accordingly, the tawwash boat anchored at safe distance. The tawwash disembarked onto a rowboat (locals refer to it by the names of ghal or hoori) which was specifically for the purpose of sailing to the divers' vessels." (Mr. al-Sabbaq, 17 Sept. 2008 in a phone interview)

The *ṭawwāsh* had a team of four to eight strong oarsmen to ensure he could indeed reach the dhow first when a find was made. Many *ṭawwāsh* also had 'secret agents' on the pearling dhows, i.e. divers who they paid to give an agreed signal as soon as an interesting pearl find was made. The *ṭawwāsh* were allowed on board a dhow only after the daily opening of oysters had been completed and all pearls had been handed over to the *nūkhidhah* for safe storage. The signal indicating this had taken place was usually the divers getting up from their seated positions to prepare for their daily dives. Yousif al-Sabagh described the arrival of the *ṭawwāsh* to the pearling dhow:

"The tawwash drew his ghal closer and stabilized it parallel to the diving vessel with a rayd (a piece of wood to help the tawwash bridging to the vessel). He would then salute the nukhidha loudly: 'Salam Alaykum! Do you have "fal" (a generic reference for pearls)?' Not all nukhidhas were willing to sell their yield since some of them were bound to give the season's collection to a financier. In such case the nukhidha replied 'We don't have fal, but come have some coffee.' The tawwash would then mostly decide to not waste time but look for another boat. If the nukhidha was the owner of the vessel or authorized by the owner or the financier to sell, he would reply: 'Yes, fal is available, welcome have some coffee' and thus the Tawwash embarks the vessel." (Mr. al-Sabbaq, 17 Sept. 2008 in a phone interview)

What followed was a ritual exchange of product presentation and negotiation that could continue for hours. The *nūkhidhah* would then get his *bishtakhtah*, a small chest containing the valuables on board (Bu Hassan, 2004, p. xxi), and present the pearl collection to the *ṭawwāsh* in bundles of red cloth (Kay, 1994, p. 40). The tools that the *ṭawwāsh* would have brought with him included "a magnifying glass, a small hand balance, weights and a set of brass screens for grading the pearls" (Bowen, 1951, p. 177). With the aid of set of brass or copper *ṭāsah* (plural *ṭūs*, sieves with holes), the pearls were sifted into sizes. Initially, a collection of pearls were placed into the top of a set of up to 24 sieves (Durand, 1878 [1986], p. 623) nested into each other. Shaking the sieves repeatedly caused those pearls smaller than the holes of the first sieve to fall into the next sieve, with slightly smaller holes, and so on until all pearls were graded into different-sized groups. The *ṭawwāsh* would then place the pearls of a certain size on the scale and weigh them against the standard weights. "The best weights are shaped in agate, which is not so liable to alter as are those made of metal" (Durand, 1878 [1986], p. 624). A cooper *qafshah* (caddy scoop) was used to shuffle the pearls to avoid touching them with bare hands. Knowing the size and weight of the pearls, the *ṭawwāsh* would refer to a conversion table book called *al-'achwā*, also called *chaū* book. Pearls were weighed in *mithqāl*, while the market prices were calculated in *chaū* (Dickson, 1949, p. 489). The conversion rate was based on a complex mathematical formula, and in absence of calculators the *chaū* books provided reference tables. The *chaū* values could differ between regions: historic sources indicate that the Arab *chaū* was equal to approximately four Indian *chaū*. The *ṭawwāsh* needed to know the current *chaū*'s price which fluctuates frequently within a season in order to offer an adequate purchase price. Apart from their *chaū* value, pearls could possess individual value for a *ṭawwāsh*, who was often collecting for a necklace of a particular size and color. A pearl fitting exactly into such a collection may not be of great value to another *ṭawwāsh* but is almost irreplaceable for the one searching for it. After what could often run to hours of unhurried inspection, measuring and calculation, accompanied by several cups of coffee, the *ṭawwāsh* would direct the conversation towards the price and the bargaining would start.

Tawwāsh bargaining techniques

*Discussing the price did not mean the time was right to begin talking in terms of numbers. As with the earlier pearl inspection, the negotiation was introduced by an almost ritual exchange in which “the captain would stress the beauty of the pearl and the paucity of fine pearls taken that year” (Kay, 1994, p. 40). He would offer a detailed explanation of how difficult it was to find those pearls, and how he and his crew had had to endure exaggerated *tisqām* expenses to finance the current expedition. In return, the *ṭawwāsh* would mention that prices of the current season were very low and the market demand weaker than the previous year. After this or a comparable introduction, he would name the price of his initial offer.*

*The *nūkhidhah* would not consider this offer even for a moment, but would immediately respond that his collection was worth far more, reciprocating the complaints of the *ṭawwāsh* that the increased food and transport expenses equally concerned him and his crew. This discussion would go on and on. The *ṭawwāsh* would reweigh the pearls and repeat his calculation several times; the *nūkhidhah* would stand up and look at the faces of his crew and plea to the *ṭawwāsh* to have mercy for his crew. After this staged part of the negotiations, followed by the *siyūb* on board, the *ṭawwāsh* and the *nūkhidhah* would continue to negotiate the price to be paid in private. “The usual form of sale is by packets, and pearls of a particular size being chosen out, the value of the rest of the packet will be depreciated” (Durand, 1878 [1986]). The secret negotiation would be based on one or several pre-selected bundles of pearls, and proceeded hidden, as Villiers describes:*

*“If he really intended to buy the pearls, (. . .) [he] would at last grab a spare piece of his red flannel, throw it over his right hand, grasp the right hand of the *nakhuda* beneath this flannel, and conduct the final negotiations by manipulation of fingers according to some ancient code, in solemn and complete silence. Sometimes he varied the procedure by grabbing his brother’s hand in the same manner, and working on his fingers, but this was when he wanted to get his brother’s idea of the value of the parcel he was considering. I could not get the hang of this finger manipulation but they were experts and it was, I was told, commonly practiced among the Gulf pearl-merchants” (Villiers, 1969, p. 201).*

*Unfortunately, there are no written accounts explaining the technique of price indication and informants who tried to teach it to the authors of the nomination dossier failed in conveying the complex system of touching and pressing with different strengths on different fingers and their joints. Once the negotiation reached the stage of hidden agreement, the *nūkhidhah* and *ṭawwāsh* would again openly discuss whether a down payment or full payment should be made immediately, often depending on whether they had previous purchasing experience and established trust. During most of the pearling economy, the *nūkhidhah* could decide the price he wanted to sell the pearls for and none of the crew on board would ever learn the figure (Arrayed, undated). Later however, after the reforms of 1928, at least two witnesses from the crew had to be informed and had to agree with the purchase price (Anonymous, 1981, p. 92; Belgrave, 1975, p. 54). The *ṭawwāsh* would then start counting out the bags of coins he had brought with him until he had reached the amount to be paid. Mohamed Bu Hijji remembers the financial resources on his grandfather’s *ṭawwāsh* dhow:*

*“My grandfather used to always have a few sacks fully packed with pieces of coins. There were five-thousand-rupee sacks and others of ten thousand rupees. As the amounts were relatively large, my grandfather used to have two bodyguards accompanying him. Moreover, there also was a concealed agent among the dhow’s crew and who was not supposed to take any defensive action or intervene except in case of riots, piracy or theft attempts. Normally, the *tawwāsh* used to wear a small pistol to defend him(self) and the guards who accompanied him were armed as well. The pearls and money used to be kept in a small box called *bishtakhta*, a small movable wooden box with locks, which guaranteed easy rescue in case of drowning.”*

*The negotiations on board the pearling dhow would never last more than about half a day. If other *ṭawwāsh* were waiting at distance for their opportunity to board the boat, the *ṭawwāsh* negotiating would become nervous and try to buy everything available (al-Zayyani, 1998, p. 110). The *nūkhidhah*, well acquainted with this phenomenon, then usually asked for a higher price - and had a considerable chance of success. If he was able to wait until the end of the season, he enjoyed a similarly favourable negotiating position: he then took his pearls to the *ṭawwāsh* and middlemen on shore and could collect competing offers for the same collection of pearls. In such cases both sides were obdurate bargainers and the sales were rarely completed under a month or six weeks.*



Historic photograph of ṭawwāsh inspecting pearls

Siyadi Shops

Siyadi shops are a series of storehouses and shop structures contained in three building complexes located in *Muharraq's* commercial centre along Al-Tijjar and Bu Maher Avenues. Two of these are proposed as a combined property to be listed as part of the serial site, while the third, to the north does not illustrate additional attributes contributing to the Outstanding Universal Value and is therefore designated as a primary protection element in the buffer zone. The two complexes are described together, and will be referred to as the western and the eastern *Siyadi* shop, although in fact both incorporate several shops. The shops were built by *Isa* and *Jassim bin Yousif al-Siyadi*, with the exception of the southernmost structure, built by *Yousif bin Mohamed Siyadi* in around 1860. The north-eastern part was added by his sons in the 1880s, and the later, eastern complex in around 1905. The two shop complexes have been in continuous use by the family, being passed on one generation to the other. Today, *Abdallah bin Hassan Siyadi*, the great grandson of *Isa bin Yousif*, waits for customers every day in his office in the northern shop of the western complex.

Selling goods from the shops was the day-to-day business of the grand merchants. It did not provide as much income as the trade and sale of pearls, but it offered daily occupation and an opportunity to socialise. The *Siyadi* brothers, *Ahmad* and *Jassim*, sold grocery items, specifically dates, rice, sugar, tea and coffee during periods when there were no important pearl merchant visitors interested in inspecting their collection. However, people interested in buying pearls would have no trouble finding their way to these shops were the *Siyadis* could always be found. As *tijār al-lū'lū* they would not socialise with the *ṭawwāsh* in the coffee shops, but would consider potential offers in their discreet apartment on the first floor of the western complex. They would also take their meals in this room, and rest here during the early afternoon.

The property consists of a shop area of 533 square metre shop area, with apartments occupying an additional 210 square metres. The western complex is a cluster of shops built in back to back typology with a large central storage facility and living units above. In its current division, which appears the authentic, four shops and one storehouse face Al-Tijjar Avenue and five shops are oriented towards the eastern side. The main façade facing Al-Tijjar Avenue makes use of a rectilinear niche system with a slender column proportion, characteristic of 'Middle Period' architecture. The dark timber doors are the main structuring elements of the white façade. The façade of the upper apartments is accentuated by vertical niches, while slender piers indicate the building's origin in 'Perpendicular Style'. The large, rectangular windows are composed of a double leaf timber panelled shutter system with vertical metal bars on the exterior. In the interior, the niche system or





Women passing in front of eastern complex of Siyadi Shops

rather the column-and-beam structuring system of the 'Perpendicular Style' is even more apparent. The entire shop complex is structured with the use of repetitive full height niches reaching approximately 5 metres high. The niches are intersected by evenly- proportioned beams at a height of approximately three metres, the height of all the openings in the façade.

The eastern complex facing Bu Maher Avenue is a small cluster of six, 20 square-metre units. It is built on a relatively steep slope which dictates the visible difference in floor levels. From the exterior, the cluster has a heavy appearance that reminds of the squatness typical of 'Transitional Period' architecture, despite the fact that it is the later-built structure. The entrance of each shop is composed of two double-hinged doors about three metres high. The façade on the mezzanine level of the shops is either sealed or has a small ventilation opening. The shop façades clearly show the traditional roof construction composed of mangrove beams covered with a bamboo grid, rubble and clay, protruding at times as much as one metre, to provide the shop fronts with shade. In the interior of the shops, much emphasis is placed on a framed verticality. The shops measure an average width of three metres and depth of six metres. This high volume is broken only by the timber mezzanine accessible via a timber ladder. The shop entrance is set within a frame of solid piers or slight recesses that have a width similar to the piers.

The *Siyadi* Shops complete the narrative of the grand merchant that is also expressed in the *Siyadi* Mosque and *majlis* and in the house described below. As a place of occupation, the shops underline that pearl merchants did not just sit idly in their *majālis* waiting for an international trader to purchase the season's collection, but also participated in the social life of the busy *Muharraq* market. At the same time, the *Siyadi* shops contribute a prototype shop structure of the pearling city to the serial site. Shops, as can be seen in this example, differed from the '*amārah*' warehouses along the shore and typically followed the back-to-back construction style. For this reason, most of *Muharraq's* '*aswāq*' consist of two parallel streets, with shops aligned on both sides. Only at the end of the street, a one-sided shop complex, sometimes with an attached storeroom, would complete a certain sector of the market. The eastern complex is an example of such a market edge, in this case the southern end of *Qaysariyyah* market.

In summary, the *Siyadi* shops contribute to the Outstanding Universal Value as the location of the grand merchants' commercial occupations beyond their *majālis*, and at the same time illustrate the typology of *Muharraq's* market architecture, arranged in two parallels along the shore. At the same time, the first-floor apartments were the scene of the grand merchants' negotiations, and where financial transactions of high value took place. Attributes illustrating Outstanding Universal Value are the layout and architectural design, the continuity of use and function as shops, offices, storerooms and places of public access, as well as the continued family ownership of *Siyadi*. The owners have been very cooperative for many decades in the protection of their family heritage which survives as a unique example of the pearling economy in *Muharraq*.



North-western corner of the western Siyadi Shop complex



Set of *tüs*, the sieves with holes to categorise pearls

The Bahraini pearl market

Although many pearls were purchased by the *ṭawwāsh al-baḥr* on the dhows, the bulk of sales occurred after the return to shore. The negotiations involved not only local *ṭawwāsh* and *tijār al-lū'lū'* but also major international dealers, mainly Indian merchants from Bombay, who travelled to Muharraq to make their purchases. "Bahrain is a purely commercial centre, its outlook is towards Bombay and the stock markets of the world on which it depends to sell its pearls. The people who come there and shop are largely the wealthy merchants of Paris and Bombay" (Biscoe, 1930 [1993], p. 600). Local Arab pearl merchants would sell to them, or sometimes, if the merchants were of sufficient substance, take their purchases to Bombay to sell there. Manama was the first main market for Bahrain's catch, which equalled that of all the Lower Gulf states combined. Lingeh, across the Gulf on the Persian shore, pooled the pearls of the states of the Lower Gulf. The Lingeh market collapsed during the first decade of the 20th century after the Persian Government began to impose customs duties on pearls. From this point, Dubai became a smaller clearing house for Lower Gulf pearls (Lorimer, 1915 p. 2236). It should be noted however that Bahrain's pearl market exceeded by far any of the other cities in the region. Comparative data makes clear that from at least 1890 it was the Gulf's leading market, in competition only with Bombay.

Most historic sources, unfortunately, do not specify whether the trade activities they document were based in Muharraq, or in Manama, on the main island. As Manama did not constitute a single product economy to the same extent as Muharraq, and not all of its population was involved in pearling. However pearl trading activities certainly took place in Manama, where several grand merchants were based and which had more direct access to the international port established there in the late-19th century. Considering the two cities together, it is clear that a large majority of the Arabian Gulf's pearls were traded through Bahrain. Wilson, in 1833, calculates a turnover of 90 per cent of the Gulf trade (Wilson, 1833, p. 284), while Lorimer provides data for 1904-5 that corresponds to 97.3 per cent (Lorimer, 1995a, p. 59) (for further analysis of pearl markets please refer to the comparative analysis). From Bahrain, the majority of pearls went to Bombay, eventually ending up in Paris, often described as the world's pearl emporium (Bowen, 1951, p. 177). Beginning in the early 1890s, more and more Bahraini merchants make their way directly to Paris (Knox, 1923 [1993], p. 72).

In the early years of the documented pearling era, pearls were also traded directly to Turkey and Persia. Brucks estimates for the year 1824 that about 30 per cent of the Bahraini pearls were shipped to Būshihir, Persia and Turkey, with the remaining 70 per cent exported directly to Bombay (Brucks, 1856). From the early-20th century, these routes were almost abandoned and all pearls were sold either to Bombay, or directly to European merchants. The trade routes to Europe expanded in the early-20th century, when Paris, alongside Bombay, became the main European trade centre for pearls, a hub where buyers from the east and the west gathered. Tweedy describes the international market there:

"The demand for the variety of pearl differed with each country. America took only the first quality, Great Britain and France the best and second quality. Spain specialised in reddish coloured stones when buying the third quality; and Italy, buying the fourth quality, made up for having only ordinary stones by ordering vast quantities chiefly of blue and reddish tones. In India seed pearls 'sold like hot cakes' as one of the dealers described it" (Tweedy, 1952).

The small contemporary Bahraini pearl market caters exclusively for Bahrain. The demand for Bahraini pearls exceeds the available supply, and some merchants have started to reimport Bahraini pearls sold to India. Although unmet demand seems to have stabilised prices, many merchants would like to see diving activity encouraged to boost the supply of pearls available for sale.

Financing the pearling economy

Pearl diving in Muharraq and most other settlements in the Arabian Gulf, was financed by a chain of loans. The msaqqum, would advance loans to the nūwākhdhah, the captains of the boats, who would use the money to maintain, equip and provision the boats, and to advance further loans to the divers. In practice, the role of msaqqum would sometimes be taken by wealthy Indian or Arab merchants who may have had interests other than pearling tijār, or ṭawāwish. It is reported by Lorimer that the proportion of Indian Banyan financiers, who appear to have dominated this aspect of the trade in earlier centuries, was being reduced in favour of local merchants, such that three quarters of the trade was in local hands by 1905 (Lorimer, 1915 p. 2236).

Most divers took shares of the profits of the boat, once expenses had been deducted, and poor harvests tended to result in debts remaining unpaid, which tied the captains to their financiers, and in turn tied the divers to their captains. Customary law, 'Urf, determined that it was not permitted for divers to escape their debts by moving to another captain without obtaining a barwah, a letter stating that the diver was free to work for another captain and specifying any debt (Burdett, 1995c p. 396). Sometimes divers would be taken on by another captain, who would settle the debt, or an arrangement would be made to divert a portion of the divers shares in the profit to his earlier nūkhidhah. If a barwah was not forthcoming, an indebted diver was obliged to return to the same captain year after year. To western observers, this was seen as almost akin to slavery, to the extent that questions were raised in the British House of Commons in London in 1929 (Burdett, 1995c p. 597).

The loans system was closely regulated by customary law, as were the returns due to the creditor. The advance systems, sālafiyah, were regulated by a Divers' Court, headed by a former nūwākhdhah who relied on donations from active captains for his services. It was intended to settle disputes between nūwākhdhah and divers over debts and shares from the fishery, but was inherently stacked in favour of the nūwākhdhah. Three types of loans were made to the divers and nūwākhdhah: The first is tsiqām, which was taken for the off-season, two months after the end of the main dive, for the maintenance of the diver and his family when there was no other income. The second loan is called salaf and was taken at the start of the dive, to maintain the families of the diver during his absence. And thirdly, there was kharjiyyah, a mid season loan, taken if necessary to supplement the salaf, or in the event that extra money was required to support the boat during the dive.

There were different ways of the arranging payment of the loans from the financier, and delivering him a profit while avoiding the Islamic prohibition on charging interest. For those few with existing capital there were systems which avoided the need to be tied to a financier. These are cited in various sources (Burdett, 1995c p. 391, pp. 532-6; Lorimer, 1915 p. 2232-4), and can be divided into four systems. Madyan (or mudayyanah), implies that the pearls could be sold to anyone. Interest was accrued by selling provisions for the boat, or other goods and services needed by the nūkhidhah, at an inflated rate (customarily 20% extra to repay the tsiqām, and 10% for the salaf). In the 'amil system, the financier forwarded money to the nūkhidhah at no interest, but had the option to buy all the pearls of the catch at a price lower than the market rate (customarily at a 20% reduction). The khammās, in which no advances were made, was based on shared ownership of the boat by a consortium of divers and haulers, one of whom would act as the nūkhidhah, who kept the accounts and got a slightly greater share (an extra 10% of total profits). This was apparently used more on the mainland (al-Qaṭīf), but an increase in khammās divers was seen in 1936, perhaps in response to reforms instituted in the previous decade (Anonymous, 1986 vol. IV, 1936 p. 43). In the fourth system, 'azzāl, the diver funds himself independently and kept his own catch, opting out of the shares system and paying the nūkhidhah 20% of his profits. This was apparently used only under khammās system.

The origins of the loans and shares system were probably ancient, with reports of divers being in debt to merchants as early as Ibn Battuta in the 14th century (Battuta, 1929 p. 409), though the system is first clearly described in British reports of the early 19th century (especially Taylor in 1818, who noted much higher rates of interest than those allowed in the early 20th century, and Wilson in 1929) (Hughes Thomas, 1985 p. 40; Wilson, 1833 p. 285). Although it superficially seems to have few advantages, some positives can be seen. Firstly, it allowed any newcomer to the industry to begin diving without possessing the capital to maintain his dependents during the long four-month season, as he could take a loan to cover their living costs. Its dominance may therefore relate to the centuries-old pattern of tribes, families and individuals migrating to the Gulf coast in order to seek their fortunes from pearling. Secondly, the shares system, as opposed to individual ownership of one's own catch, allowed all the crew to benefit from the recovery of a particularly valuable pearl, and spread the risk of not finding any good pearls over the season. Both aspects are potentially bountiful in times of an expanding industry with growing profits, but catastrophic under the conditions of a contracting industry.



Pearls found by a diver during the summer festival 2009

'Amārāt Ali Rashid and Yousif Abdurrahman Fakhro

The group of three 'amārāt (sing. 'amārah, building, storehouse) of the *Fakhro* family is located immediately to the west of the *Siyadi* Shops, on the opposite side of Al-Tijjar Avenue. The three 'amārāt are included in this nomination collectively, as each contributes different aspects to the Outstanding Universal Value. The two northern 'amārāt were initially owned by *Ali Rashid Fakhro*, who only used the southern part, south of lane 1551, himself. The northern part, across lane 1551, was mostly rented out to other merchants. The remains of the southern 'amārah which was gradually extended seawards facilitated by land reclamation, is named after its builder, *Yousif Abdurrahman Fakhro*, who also owned *Fakhro* House, described above.

'Amārāt *Yousif Abdurrahman Fakhro* remains only as a ruin, partly excavated by archaeologists, partly surviving as a ruined architectural structure. This 'amārah, several remains of which were only demolished during the 1990s, illustrates not only the sudden decline of the pearling era but also the lack of attention given to the architectural testimony of the pearling era until very recently. 'Amārāt *Ali Rashid Fakhro* (I), in contrast, is preserved as a building though it has not been used since the early 1980s. The only continuous element is the traditional coffee shop inside, the so-called *qahwah*, and a few shops along the northern façade which are still in use. However, the expansion of the *qahwah* has altered the architectural structure, which in many other parts requires urgent intervention to ensure its long-term stability. The 'Amārāt *Ali Rashid Fakhro* (II) is the only historic 'amārah in the market still used in its traditional function. With few changes, it is the most intact of the 'amārāt, and is used by merchants located in the shops between the two 'amārah for storing groceries and food items.

The 'Amārāt *Yousif Abdurrahman Fakhro* is in a total state of ruin, located in the commercial centre of *Muharraq* facing Al-Tujjar Street. The archaeological remains of the building and historical documentation testifies to a linear 'amārah, constructed around a long central axis walkway that connects the commercial road to the *bult* (private quay). The linear central axis used to be partially roofed and traces of the storage areas that flanked either sides of the axis are still visible. Following typical 'amārah typology the remains of the smaller storage rooms are located near the commercial street while the rear end of the 'amārah housed the large scale stores composed of an open plan grid system of columns and beams. The central axis culminated in an entrance door with an administration office on both sides, probably to control visitor and client access.

The commercial entrance to this 'amārah was at an end of a narrow lane perpendicular to Al-Tujjar Street an extension of the central axis. Unlike the neighbouring 'Amārāt *Ali Rashid Fakhro* (I) this 'amārah did not have shops

towards the commercial street but a stubby *malqifal-hawā'* (wind tower). The building can be divided into 3 phases of expansion, which developed westwards. Each phase is architecturally separated by a wall with gate which constituted at the respective phase the sea entrance.

After the decline of the pearling era the building changed from its original function as an 'amārah for boat building material towards a facility for the large scale production of date sirup. The *mdbasah* flooring system is visible in almost each storage room located on the eastern portion of the property. To accommodate a yet later change in function in the 1960s, the *mdbasah* was covered with a timber flooring system and the rooms were used for the storing of engine parts, mills and contemporary building material. The western portion of the 'amārah after continuing reclamation activity was disconnected from the sea and the empty land was scattered with temporary structures. The north-west portion of the 'amārah was converted into an enclosed 'barn' for the containment of livestock.

The 788 square metre 'Amārāt *Ali Rashid Fakhro* (I) is a linear 'amārah constructed along a long central axis leading from the main commercial road in the east to the seashore in the west. Two massive doors, one at each end provide equal access to the storehouse from the former seashore and the market. The central corridor is framed from east to west by two walls dividing three small shops or offices to the right and two shops to the left, with pairs of columns stabilising the roof structure. The shops along lane 1551 are separated from the 'amārah interior, and with exception of the corner shop towards Al-Tijjar Avenue, can only be accessed from the outside lane. In addition, four rooms formerly used as inner storerooms, so-called *bakhhār*, or offices, are accessed from the central axis.

The interior of the 'amārah surprises with its generous proportions. The traditional ceilings which cover parts of the storage area are placed at a height of 5.5 m, while the central corridor is partially covered with a ceiling 6.5 m high. The eastern section contains the 'amārah's office facility and the small-scale, lock-up, double leaf door storage areas. Since one of the functions of this 'amārah was, like a present-day bank vault, to store clients' valuables, this portion was locked behind two doors and only accessible through the main axis. The western storage facility was used for storing larger items such as timber imported from India and Iran and paints. Parts of the roof were covered with mangrove poles, carried by a 6m- grid of coral stone columns.

The 'amārah appears to have been constructed in two major phases. The eastern part of the building, from Al-Tijjar Avenue up to the second entrance off Lane 1551, appears to have survived from an earlier phase

of the building of the *'amārah* and is characterised by the 'Perpendicular Style' of the 'Middle Period'. The remaining western part appears to be a second phase extension of shops, which continues to the western boundary of the property. In this part, the slightly later 'Columnar Style' of more-sculpted façade characteristics is notable. Here, the column and beam detail becomes more prevalent, with the typical vertical accentuation that seems to make the scale appear more impressive. It is assumed that both phases were constructed within a few years, probably in the 1890s.

The eastern large traditional entrance door is the central focus of the street façade towards Al-Tijjar Avenue. Vertically arranged above it are two openings with traditional timber frames and round steel bars. The only visible decorations on this façade are two trefoil arches set within a slightly recessed rectangular niche on the northern portion. The long façade along Lane 1551 shows additional elements of the 'Arcade Style', ornaments of smooth appearance which lay emphasis on the constructive features of the wall. This façade can be separated into three portions. The eastern part of the façade is a solid wall with only one opening to the corner shop. The middle portion is more articulated, with the integrated shutters of the four shop units and a second door to the central *'amārah* store. The last portion is divided by rectangular niches and further shop entrances which follow the structural core of the building.

The *'Amārat Ali Rashid Fakhro* (II) is smaller, measuring only 430 square metres. The building is of the same typology as *'Amārat Ali Rashid Fakhro* (I) with a central axis clerestory corridor that runs down the full length of seven storage bays on the left, and the shops facing the *sūq* on the right. It was probably built slightly later than the first construction phase of the *'Amārat Ali Rashid Fakhro* (I), but also belongs to the 'Middle Period'. The ground plan is very simple. The southern part of the building is separated from the central storage area and divided into seven shops. The division seems far later than the rest of the architectural structure and there may have been a different number of shops in earlier times. Almost all the shops facing the *sūq*, except the corner shop, are currently divided in the same proportions, averaging a floor area of 15 square metres. The corner shop has double the floor area of the standard shop, with approximately 30 square metres. The two additional entrances from the west lead into the central storage area and one additional shop oriented towards the west. The central storage area is very spacious inside, as is typical for this *'amārah* typology. The high, traditional ceilings are carried by massive columns. Above the shop front we find additional storage rooms which have the same traditional ceiling constructed of mangrove beams and split bamboo diagonal grids.

From the outside, only the shop façades are visible, with one shop per constructional bay. On the upper level there is a series of rectangular niches with every alternative niche framing a high level window. The shops only have one entrance, which allows access and ventilation to the shop and storage areas directly above with a separate shutter. The ceiling heights of the shops and the storage spaces above, in partnership determine the traditional street façade and height of the *'amārah*.

All three *'amārāt* traditionally fulfilled very similar functions. They were used as storehouses for timber logs, construction materials, dhow equipment and food items, especially dates. Despite the previous similar use, the three architectural structures now carry different aspects of the grand narrative, and with this illustrate very different attributes of the Outstanding Universal Value of the serial property. *'Amārat Yousif Abdurrahman Fakhro* as a ruined structure uniquely illustrates the decline of the pearling economy. It was abandoned, while still in use, and archeological excavations have traced the use of every internal shop due to merchandise that was buried under a thin layer of debris.

The ruined pillars and the two walls framing the gateways illustrate, like no other building in Bahrain, the abandonment and neglect of the physical testimony of the pearling economy until its value and witnesses to a shared identity was very recently rediscovered. The attributes reflecting the Outstanding Universal Value are the ruined landscape character and atmosphere of the former storehouse, including the architectural elements that constitute these ruins and the archaeological traces including merchandise remains of the former use and structure of the *'amārah*. In addition, the archaeological excavation analysed the consecutive stages of land reclamation that provided land for several extensions of the *'amārah*. It therefore provides uniquely researched evidence of the tradition of land reclamation during the pearling era, a tradition that remains integral to Bahrain's urban development and identity. The property is therefore a reference resource of at least four consecutive stages of dated land reclamation and the composition of reclamation materials used at the respective times.

'Amārat Ali Rashid Fakhro (I) remains as a prototype of architecture. Its contribution to the Outstanding Universal Value of the testimony of the pearling economy lies in its ability to convey all architectural features of this essential commercial structure. The *'amārah* typology combines different merchandise in a centralised store, bearing similarities to the contemporary concept of supermarkets. Such wholesale structures are not traditional features in the markets of Islamic cities, but can emerge in a single product

economy environment in which all other merchandise is reduced to supply chains, or marginalised. In the single product economy of pearling, location in relation to the seashore was of major importance for trade and efficient delivery, and constituted the second principle of *'amārah* architecture. *Amārat Ali Rashid Fakhro (I)* contributes all architectural features to understand the building typology and its importance for the pearling economy. The attributes that reflect this Outstanding Universal Value are the architectural design, both in ground plan, elevations and spatial proportions, as well as in the integration of the structure into the local market neighbourhood. Another important component is the traditional ownership by the *Ali Rashid Fakhro* family, which is very concerned about the building's preservation and presentation. In addition, the *'amārah* houses one of the longest continuously operating coffee shop in *Muharraq*, the *Qahwat Bu Khalaf*. Although this coffee shop has shifted its location inside the *'amārah* several times since its opening in the 1930s, it is an important functional contribution to the Outstanding Universal Value in reflecting an important social market institution during the pearling era.

The third *'amārah*, referred to as *Ali Rashid Fakhro (II)*, equally connects to this concept of functional continuity. In this case, the use and function of the *'amārah* has continued in the same locations, and the *'amārah* is continuously used as a storehouse and sales office. Its contribution to the Outstanding Universal Value, besides its counterpart link to the second *Ali Rashid Fakhro 'Amārah*, is therefore the special atmosphere in the storeroom which seems a direct witness of the pearling era. This finds expression in its use, function and atmosphere.





Interior of 'Amārat Ali Rashed Fakhro (I)



Detail of ceiling in the remaining part of 'Amārat Yousif Abdurrahman Fakhro

'Amārāt – multifunctional storehouses

The 'amārah was initially a workshop for building and maintaining ships but later played the role of a store that traded excess timber to other workshops when it was in demand. The typology expanded to offer other merchandise, first all kinds of hardware and equipment for boat building, and later general items such as building materials, textiles and groceries. Some of the products were pearling-specific, such as sull (shark or dolphin grease used to paint the ship's hull to protect it from worm infestation, unusual saltwater clams with reduced shells notorious for boring into and eventually destroying wooden structures immersed in seawater, such as boat hulls).

Especially in Muharraq, the 'amārāt developed a high level of specialisation and division of economic activities. As the coastline shifted due to land reclamation, some 'amārāt did not retain seashore access and often had to move into less specialised lines such as textiles, grocery items or general hardware and tools. Those 'amārāt along the shore that remained in the specialised business of shipbuilding materials would often also provide construction and maintenance services at the beach in front of their gates (cf. Lorimer, 1912, p. 2).

Most 'amārāt in Muharraq were constructed along the south-western seashore which became accessible to dhows following reclamation of the shallow coral reef and the removal of additional farūsh (local coral stones). Ibrahim al-Doe explained to the authors why the seashore location was so important:

"We need to keep in mind that mechanical cranes were unavailable during the pearling time and quite often a single important keel-plank, used for building the vessels, may have weighed above a hundred kilograms. Can you imagine the horrendous efforts of the longshoremen that were needed to carry heavy lumbers to the merchant's amarah if it was inland? Sensibly the distances were cut to a minimum when the Muharraqi decided to construct their amarat along the sea. Coast access enabled ships to directly dispatch imported goods after custom clearance and almost each amarah had its small quay known locally by the name of bult [pl. bulut]. Each bult was like its private dockside. If the size and weight of the loaded ship allowed, it would dock at the bult that belonged to the importing amarah or anchor as close as possible to it. Hired workers would then drop the planks and logs from the vessel into the sea, while the longshoremen would lash the floating piles of wood together. The floating lashed timbers reached the amarah through a khirs, a seawater canal leading into the storehouses." (Ibrahim al-Doe, personal interview, 17th May 2009)

It was believed that the seawater in the khirs helped to sterilise the wooden logs from insects and fungus; a new delivery remained in the khirs for approximately three months before it was heaved into the log stores. Even the logs of 'amārāt that were not equipped with khirs would have been left floating for several months tied to the bult. After the planks and logs had absorbed enough water, they were lifted out and placed on display on the floor adjacent to the canal for customers to purchase. Smaller planks and logs were stored in the bakhkhār (smaller storeroom). Amarat with more than one bakhkhār developed a more sophisticated product compartmentalisation, with each category of items placed in a designated separate bakhkhār. When wood logs were purchased, they were usually thrown back into the khirs and floated towards the sea. They were pulled through the sea in bundles to the seashore location where the new boat was to be constructed.

The sea front of 'amārah linked it to busy stevedoring activities. Yet was from its street side that the order for the imported merchandise was initiated. All 'amārāt had an office towards the street front. Here the timber merchant would receive clients such as 'ustādh, galāf, nūkhidhah, and ṭawwāsh. Usually the owner of the ship under construction was responsible for purchasing the required material. The owner, an astute nūkhidhah, ṭawwāsh or tājir, would involve an 'ustādh or galāf in selecting the best timber for the construction of the vessel. The power entrusted to the 'ustādh and galāf, who influenced the decision of the buyers, encouraged the timber merchants to maintain regular social contact with them. Sometimes unwanted timber, so-called dead-stock piled up in an 'amārah. The dead-stock often consisted of either poor quality logs, or logs that did not have the strength or hardness demanded by local galāf. In such cases, the timber merchant would commission his own ship to be built. The completed boat would either be sold or rented for seafaring and pearling activities.

Until the establishment of the Bahrain's first bank 1920 (Dickson, 1920, p. 2), the 'amārāt functioned as banks, credit institutions and safe deposits. Most 'amārah offices had a safe in which clients could deposit their valuables, currency, property certificates and contracts. The 'amārah owners, often rich merchants, would also advance credit for pearling expeditions and boat construction projects.



Historic photograph of Bahraini men sitting in the market



Ruins of 'Amārat Yousif Abdurrahman Fakhro

Qahwah, the traditional coffee shop

Despite the name *qahwah* (coffee houses), most *qahāwī* (plural of *qahwah*) served tea, while coffee was served mostly by so-called *muqahwī* (a person who serve Arabic coffee). The freelance *muqahwī* walked through the *sūq* offering coffee to merchants and clients in shops and, oddly, also to the customers of the *qahwah*. From the early pearling period up to the late-19th century, *qahāwī* would be furnished only with wooden benches which were used both for seating and as a place for items such as *istikānah* (the traditional tea glass) and *gidū* (traditional clay water pipes with a bamboo inhaler). Only at a later stage of the pearling period were wooden tables introduced, including a special table for the *gidū*. This was round, with a circular opening into which the base of the tobacco pipe could be placed.

The owner of the coffee shop played a pivotal social role in the local community. He knew almost everyone and could bring people together for business interactions. He would greet his customers upon arrival and place them at their favourite tables. Table reservation was not practiced, but some wealthy customers used to arrive at regular hours and their favoured tables would be offered to them. Each *qahāwī* had a working area located at the rear where the tea, *zatar*, dried lemon and sugar were stored. A few large *ghūrī* (kettles) were placed on a charcoal stove outside the working area. The Bu Khalaf coffee shop in 'Amārat Ali Rashid Fakhro (I) kept three goats, whose milk was offered to customers.

Most *qahāwī* served a limited range of teas, always produced with loose tea leaves in a large kettle. Alternatives were tea with milk, *zatar* tea, or in some *qahāwī* tea with dried lemon flavor. In addition to teas, some *qahāwī* served warm milk flavored with ginger during the winter season. *Hıbb* (clay water containers) were used to cool water, served free-of-charge with each order of tea. Traditional *qahwah* offered *gidū*, either with - or for customers who brought their own - without tobacco. Charges were often only applied for the tobacco, while the water pipe and a quantity charcoal was provided for a token fee or free-of-charge. The *gidū* was often smoked with second-grade tobacco that the locals referred to as *khākah*, tobacco leaves broken into small pieces.

Qahāwī were not just important social but also business meeting places. Belgrave describes them as the 'clubs' of Muharraq, "They are important institutions in Bahrain, and take the place of clubs or cafes in Europe" (Belgrave, 1937 [1986], p. 55). Some *Qahāwī* were frequented particularly by *ṭawāwīsh*, and one, *Qahwah Bin Hamdan* at the northern end of *Sūq al-Qaysariyyah*, even had a second-floor private room for *ṭawāwīsh* negotiations (Muraikhi, 1991, p. 145). Other *qahāwī* were the meeting places of those who did not have their own *majālis*, such as *nūkhidhah* searching a crew for the forthcoming season or a small trader presenting a new product. However, most *nūwākhdhah* of standing entertained at their own *majālis*, essential for fostering business relations with current and potential future employees and business partners.

Nūkhidhah House

The so-called *Nūkhidhah House* is, to be precise, the *majlis* of the *Nūkhidhah Jassim Ajaj* which included a few guest accommodation rooms for divers arriving in Bahrain prior to the *Ghūṣ al-Kabīr*. It was the key location for business conducted by the *nūkhidhah*, who in his *majlis* would have received regular visits from his crew as well as from prospective new divers coming to negotiate the advances provided upon being hired. The *majlis* was close to the house of *Jassim Ajaj*, located a few metres away on the other side of a small alleyway. The separation of the *majlis* from the family residence, as in many other cases, ensured the privacy of female family members. The house of a *nūkhidhah* had little relation to his occupation and did not differ greatly from the houses of small traders. The nomination therefore selected just the *majlis* of a *nūkhidhah* to contribute this aspect of the grand narrative.

The *Nūkhidhah House* is located in the northeast of the historic settlement of *Muharraq* and dates back to the late 'Middle Period', with an estimated construction date of the late 1920s. It is embedded in the comparatively dense historic fabric of Sh. Abdullah neighbourhood, within a network of pedestrian paths. This modest building sits on a site of approximately 55 square metres, and is surrounded by paths on the western, northern and eastern sides.

The ground plan is functional, allowing visitors to enter through a small inner court into a lower level room, the original function of which remains somewhat unclear. It may have been the room where divers who arrived from the region before *Ghūṣ al-Kabīr* were hosted, but it could just as well have served as a store room, or a second *majlis* used in winter only. This room has only one window, towards the west, probably a later addition,



North-eastern corner of the Nūkhidhah House

and is decorated merely by internal niches on the northern and western sides. The thick walls store the warmth of an indoor charcoal burner during the colder months. The other side of the small courtyard housed the service room for the preparation of coffee and food items, and the later addition of a small sanitary unit. A staircase leads up to the first-floor roof terrace and a second room above the ground-floor room. This was the main *majlis* where visitors were received, a particularly enjoyable place in summer when the *buwwādġir* to the north and west provided fresh air.

Viewed from the outside, the *Nūkhidhah* House has an organic appearance due to its thick, uneven walls. The lower portions of all three exposed façades have no openings except for the entrance door on the eastern façade, and a tiny window on the western façade which seems to have been an addition. Well-proportioned rectangular niches decorate most of the public façade. On the lower portion of the façade, the niches are almost square and very shallow, whereas on the upper portion they are deep and combined with *buwwādġir* for ventilating the inside space. Both larger rooms, the storeroom and the first-floor *majlis*, have the same 5x2 bay proportion accentuating the column and

beam structuring system. The ceilings are made of the typical mangrove beam and diagonal split bamboo grid system, with earth and stone roofing material.

The *Nūkhidhah* House contributes to the Outstanding Universal Value of the testimony of the pearling economy as a unique reference to the business environment of a *nūkhidhah*, the location where the crew of a dhow was formed for the forthcoming season, and where comradeship and friendship between the crew was established. Since the environment on board the dhow required an extreme degree of team spirit, the crew usually kept close contact all year round through regular attendance of the *nūkhidhah majlis*. The guestroom therefore has to be seen as the key reference of the camaraderie of the crew of each dhow as manifested outside the *Ghūṣ al-Kabir*. This is most vividly reflected in the architectural features of the building, especially in the first-floor *majlis*, and is expressed in a variety of attributes such as architectural design, continuous possibility of use as a guestroom, and traditional family ownership. The *Ajaj* family is one of many families in the neighborhood with a close relationship to the building, and supports its preservation and presentation.



Historic photograph of Bahraini men in a majlis

Majālis – a social institution

The professional success of a *nūkhidhah* or a *ṭawwāsh* was strongly dependant on his social network and relationships, or on his ability to establish these. A *nūkhidhah* was always eager to attract the most successful divers to work on his dhow; the *ṭawwāsh* equally sought cooperation with the most successful *nūkhidhah*. Assessing the performance of the different dhows and their individual team members required close contacts in every crew who would provide the required information. These contacts were established through a sophisticated system of local gatherings held at different houses. Each *nūkhidhah* and *ṭawwāsh* had their own gathering places, the *majalis*. *Majlis* (plural *majālis*) is the name of both the gathering and the room in which the gathering takes place.

The *majlis*, as described above, is separated from the family section of the house to host male visitors from different social and economic backgrounds. Generally, guests of a *majlis* have similar social and economic status to the owner, but in some cases, such as the *nūkhidhah*, visitors were potential subordinates. The *majlis* of a man was a status symbol in the pearling community; the larger, more visited and more decorated it was, the more important its owner. Many *majālis* emphasised this importance through precious furniture, gypsum ornamentation and engravings in doors and windows, often imported works of great craftsmanship from India.

The prestige of a *majlis* could be expressed in different ways. The most important element was the number and the importance of the *majlis* visitors - and the *majālis* owners would welcome all visitors generously. However, lavish architecture and decoration often helped to create a noble atmosphere, and attention was given to its size, the finishes applied, special decorations, availability of seating cushions and back support pillows, mirrors, ornaments on the wall shelves, size of the coffee burner, number and the size of *dlāl* (sing *dallah*, copper coffee pot), *maqābis* (sing *miqbas*, incense burner), and *mrash* (rose water container). The quality of service products such as the incense used in the *majlis* and the aroma of the freshly ground coffee contributed to the overall evaluation.

The *majlis* of a *nūkhidhah* was essential for his business but usually simple, and most of his guests belonged to his crew. If the *nūkhidhah* lived in a *barāstī*, the *majlis* would be a wooden bench placed in front of the dwelling and used in the afternoon as an outdoor *majlis*. A wealthy *nūkhidhah* would construct a single external *majlis* near or next to his *barāstī* or house. Sometimes the *majlis* would be built in stone before the family home was converted. Simple *majālis* usually featured a raised floor level to keep insects away and were fully or partially covered with *mdād* (sand) or *ḥaṣīr* (palm fiber mats). The more prestigious stone *majālis* of *nūwākhidhah* were also mostly covered with *ḥaṣīr*. Seating cushions, long enough for three or four guests, were placed on the floor opposite the entrance. At the entrance, a small *manqalah* (movable coffee container with charcoal) awaited the visitor, who was served Arabian coffee and dates. Not all visitors of the *nūkhidhah* were invited to sit on the cushion next to the host, and only those invited to, or who desired a private conversation, would approach the cushioned seats. Some guests, mostly crew members, would volunteer to sit next to the *manqalah* and serve coffee to the other visitors.

The *majlis* of a *ṭawwāsh* was visited by a broader range of guests, ranging from other *ṭawwāsh*, *nūwākhidhah*, his own crew, and members of the community. The floor of the *ṭawwāsh* *majlis* was fully covered with *ḥaṣīr*, and partially covered with a Persian carpet. Most of the *ṭawwāsh* *majālis* had seating cushions with back supports on three sides of the *majlis*. Near the door a large copper *manqalah* and a *fanāyil* (a water jug with metal cups) would await the visitor. As in the *nūkhidhah* *majlis*, seating on cushions required an invitation but most of the visitors were invited to sit near the *ṭawwāsh*. Also here, some members of his crew would volunteer to serve warm coffee to the *ṭawwāsh* and his visitors. Depending on the importance of the guest, and occasion, the incense burner would be circulated in the *majlis*.

The *ṭawwāsh* *majlis* was often richly decorated with perforated gypsum panels, carved doors and windows, and sometimes even decorated ceilings. The cushions were upholstered in colorful fabric, and the carpets also established a sense of prestige. In some of the niches around the room, the *ṭawwāsh* would display artifacts or musical instruments. *Miqbas* and *dlāl* and a few *mrash* were typical items used to beautify the setting, and one or two mirrors with a peacock imprint would complete the presentation, especially when placed on the far wall where they reflected the light when visitors entered. The *ṭawwāsh* and grand merchant *majālis* also pioneered the introduction of higher, sofa-like seating and tables in the 1920s (Belgrave, 1937 [1986], p. 55). Once again, this modernisation from floor seating to chair level seating was perceived as confirming the high status of the *ṭawwāsh* in the community, while the *nūkhidhah* maintained his status, especially at sea.

Hierarchies on the pearling dhow

Depending on the size of the boat, the crew of a pearling dhow ranged in size from less than 10 to more than 100 men. A large pearling ship typically carried 60-80 sailors, every one of which was associated with a different profession or rank, and had a special role and responsibility. The dhow was commanded by the *nūkhidhah*, who was responsible for organising and bringing together the crew, navigating the ship and giving the orders at sea. In earlier centuries, the *nūkhidhah* had also been the boat's owner and financier. However, during the pearling boom of the late 19th and 20th centuries, many *nūwākhdhah* either hired their boats from one of the wealthy pearl merchants or were employed by these merchants, who often owned not one but several pearling dhows. Many *nūwākhdhah* borrowed money from a wealthy merchant on shore to finance a season's pearling expedition and to make the customary advance payments to the crew (Arrayed, undated, p. 3; Belgrave, 1975, p. 54; Rihani, 1930, p. 279). In the 19th century, pearling expeditions were often financed by merchants from India (referred to as *musajjim*, or *būniyyah*), while in the 20th century this role was increasingly fulfilled by local merchants from Bahrain. Captain E. L. Durand reported in 1878:

"The Nakhoda is either 'khali' (free from debt), the actual owner of the boat, and rich enough to conduct operations and provision his boat and crew without having recourse to a 'Musaygum,' or he owns the boat, but has not money enough to do this, or, lastly, he has merely hired the boat at the usual rate of 20 per cent on the value of the season's gains. In either of these latter cases he is emphatically no longer free as he falls into the hands of the Musaygum. Once in that gentleman's books it is not easy to make hauls large enough to get out of them again or do more than gain a bare subsistence. The crew of course is as entirely in the Nakhoda's books as he himself is in those of the Bunneah" (Durand, 1878 [1986], p. 31-32).

At sea, the *nūkhidhah* was assisted by the *mjaddimī* (captain's assistant), who was considered the head of the sailors and was next in authority to the *nūkhidhah*. Among other things, the *mjaddimī* was responsible for finding a good anchorage at the pearl banks. The sailors mainly consisted of divers (*ghīṣ*, pl. *ghāṣah*) and an equal number of rope-pullers (*sīb*, pl. *siyūb*). Additionally, there were puller-assistants (*riḏīf*), who assisted the *siyūb* in their work, and a number of young boy apprentices (*tabbāb*). The *tabbāb* fulfilled tasks such as catching fish, helping with cooking, and carrying food, water and tobacco around the boat. Depending on the size of the boat, there were also between one and three singers (*nahhām*), and one or more cooks (*ṭabbākh*). Kunz and Stevenson also speak of a "general utility man, known as *el musully*, literally the 'prayer-man,' who, in addition to various other duties, relieves those *sebs* who stop to pray" (Kunz & Stevenson, 1908, p. 85).

The exact distribution of proceeds from a pearling expedition depended among other factors on whether the *nūkhidhah* owned and financed the boat himself (Barrett, 1929, p. 2; Durand, 1878 [1986], p. 33). Throughout the whole system it was always the grand merchants, and to a lesser degree the self-financed *nūwākhdhah*, who made the biggest profits. A diver would usually receive a larger share than a puller, which Durand considered "fair as his work is infinitely the harder" (Durand, 1878 [1986]). Puller-assistants normally received half the share of a puller. The apprentices, according to Hope, got "a few words of encouragement, if deserving. Usually it is considered that free food and the opportunity for learning the craft are enough reward, but if the pearl catch has been exceptionally good, a small bonus may be granted" (Hope, 1951b, p. 263).

In the days when the pearl trade was flourishing, "pearl merchants and *nakhudas* were the monied classes," as Sir Charles Belgrave noted, "and their money gave them great power, which they did not scruple to use for their own benefit (...) [They] were, in many cases, self-made men (...) and, though most of them could neither read nor write, they were the people who mattered in Bahrain" (Belgrave, 1937 [1986], p. 55). However, Villiers considered the benefit to be almost exclusively with the merchants when writing that "Whoever was going to make a fortune out of pearls, it rarely was a *nakhoda* and never a diver" (Villiers, 1969, p. 202).



Pearling dhow at sea



Detail of southern façade of the Siyadi Majlis

The *Siyadi* Complex: Mosque, *Majlis* and House

Siyadi complex is a property consisting of three interrelated architectural structures: the so-called *Siyadi* House, a family residence built by *Abdallah bin Isa Siyadi*; the so-called *Siyadi Majlis*, a second family residence with a very impressive guest room built by *Ahmad bin Jassim Siyadi*; and the *Siyadi* Mosque, donated by *Isa* and *Jassim bin Ahmad Siyadi*. The three buildings are interrelated as an architectural complex created by one of the leading *tājir al-lū'lu'* families, the grand pearl merchants. The central difference between a *ṭawwāsh* and a grand merchant is the economic potential of the latter which allows for different methods of financing, purchasing and trading. While the *ṭawwāsh* had to go to sea and approach *nūwākhdhah* to bargain for a good purchase, the *tājir al-lū'lu'* owned his own fleet of dhows and was guaranteed of securing the catch collected by his pearling fleet at the end of the season.

Siyadi family arrived in Bahrain from Qatar with Al Khalifa and settled in *Muharraq* in the early 19th century. The *Siyadi* complex is therefore located close to the rulers' houses in the Sh. Abdallah neighbourhood. While the first two generations of the family who moved to Bahrain, *Yousif bin Muhammad Siyadi* and his son *Ahmad bin Yousif Siyadi* were less specialised traders and transported food items, building materials and fabric, the *Yousif's* sons, especially *Isa bin Yousif* and *Jassim bin Yousif Siyadi*, dealt exclusively in pearls. The wealth the family had already established through its trading business enabled them to establish as *tijār al-lū'lu'* without first establishing themselves as *ṭawwāsh*. It is for this reason that they and their sons were able to build the *Siyadi* complex which is not only a unique architectural testimony of the pearling economy in *Muharraq* but also, at least in part, a very early and precious one.

The oldest part of the complex is *Siyadi* Mosque, donated to the community in 1865 by *Isa* and *Jassim bin Yousif Siyadi*, the family's first *tijār al-lū'lu'*. The original building was later revised under the supervision of *Jassim's* children. The current building, according to Yarwood, dates to 1910 (Yarwood, 2005, p. 160). As well as being the first mosque donated by pearl merchants, *Siyadi* Mosque is also the oldest preserved mosque in *Muharraq* city. Located on lane 905 in the north of *Muharraq*, the mosque is accessible from a larger open square to its west. The revision of 1910, mostly preserved today, is apparently a detailed reconstruction of the original structure built in the 'Transitional Period'. While the architectural details remind of other 'Transitional Period' buildings due to lack of documentary evidence concerning the earlier building, the quality of reconstruction cannot be judged.

Seen today, the mosque is a modest, single-storey courtyard mosque built on a property of approximately 400 square metres. About 45 per cent of the property's surface is built up with architectural structures. The

haram or prayer room is comprised of a closed hall to the eastern edge of the property, predominantly used in winter, and an adjacent *liwān* hall towards the courtyard for open-air prayers during the summer months. Both halls cover 117 square metres. The functional elements of the mosque are arranged around the central, tiled courtyard, the entrance gate towards the east, ablution facilities to the north and a minaret in the southeastern corner. The minaret is a simple conically shaped structure about 10 metres high. The minaret can be climbed by means of an inner staircase; it has five windows but no exterior balcony or ornaments.

The external appearance of the mosque's outer façade is simple and integrates only two windows in the southern part. Three doors open towards the *liwān* or portico of the outside prayer area. The roof structure of this *liwān*, together with the neighboring wall of the *Siyadi Majlis*, generate an elegant visual surrounding for the mosque visitor. The roof rests on eight columns, each framing the doors and windows of the prayer hall behind. The columns currently hold a temporary structure to enlarge the capacity of the mosque during winter and hot summer months when the area can be acclimatised. The boundary wall of the mosque complex is two metres high but allows visual access to the courtyard via its large timber lattice inserts.

Siyadi Mosque is the earliest and best preserved expression of the integration of Islamic religious values into the pearling economy, and vice versa. Its Outstanding Universal Value lies in the fact that the *Siyadi* family's religious donation to the community was based on the economic benefits it derived from pearls. The strong link of the family and the religious endowment is illustrated in both the location and setting of the mosque and in the continuity of its function and name after its *Siyadi* family founders. The Outstanding Universal Value as a synthesis of pearling wealth and Muslim community values is best reflected in its continuous use and function and the simple architectural features which derive special beauty in the contrast of the highly ornament façade of the neighboring *Siyadi Majlis*.

Siyadi Majlis was constructed in two phases. The ground-floor apartments are structures of the earliest stone *Siyadi* house in *Muharraq*, built by *Jassim bin Yousif Siyadi* in 1850, and therefore like the early mosque in the 'Transitional Period'. However, the pearl of the building and probably symbolically speaking the pearl of the pearling testimony is the *majlis*, after which the building is now named. The *majlis* and the upper-storey rooms were constructed in 1921 by local Bahraini merchants. The interior woodwork was imported from Shiraz in Persia. The size of the property is approximately 340 square metres.



Northern façade of the Siyadi complex



The main entrance to the complex, from Lane 910 to the north of the property, is dominated by a highly decorative door and canopy. The visitor steps through the decorated door with semicircular fanlight into an entrance passage of 5 metres height leading to attached rooms on both sides and to the visitors' courtyard at the far end. The ground plan of *Siyadi* house is a complex product of the many architectural and functional modifications that became necessary with the addition of the enormous *majlis* 70 years after its original construction. The main difficulty it created was that privacy of the women of the house could not always be guaranteed while guests were present, a predicament dealt with by an extension of the house towards the north.

Siyadi Majlis is the only four-storey building of the pearling era, with its ground, mezzanine, first and second floors. The floor levels of each storey vary in different rooms most of which are interconnected by several staircases, which add to the complexity of the architectural structure. The visitors' courtyard is very small, especially when compared to the dominant façade of the *majlis* that borders it. It is surrounded by two apartments and a *liwān* for residential use. One can walk through a passage from the *liwān* into a second *liwān* with a private, even smaller, courtyard that was reserved for the women.

To fully appreciate the different architectural expressions found in this building, the property can be divided in two horizontal levels that do not necessarily correspond to the floor levels. The first level consists of 'Transitional Period' architecture, setting the architectural tone around both courtyards, while the second level is characterised by the 'Middle Period' architecture of the *majlis* that dominates the surrounding skyline. The centrepiece of the property is the towering structure of the first-floor *majlis*. The façade design emphasises the verticality, lightness, spaciousness and order typical of the 'Middle Period', but implemented here with sophistication. It is structured by tall, slender timber framed, windows topped with arched incised plaster panels and four rows of rectangular incised plaster panels. The windows consist of timber double leaf full height internal shutters and intricately decorated external screens. Above the windows are four decorative (varying in pattern) incised plaster panels placed precisely above each other, accentuating the rigid verticality. The corners of the towering element are chamfered and decorated with unique plaster mouldings that evolve into slender incised plaster bands wrapping around the building. The roof is decorated with merlons.

The ground-floor rooms reflect the pearling testimony of the 'Transitional Period'. Walls form the major



Women room with elevated view into *Siyadi Majlis*

structural elements with relatively small windows and high level niches with slightly smaller decorated incised panels above each. The walls are topped with a typical traditional cornice detail that frames the system of mangrove beams and diagonal split bamboo grids; these in turn are topped with clay and earth roofing material. On a higher level directly above the old *majlis*, a room bears the remains of a 'Transitional Period' internal façade. It has low, rectangular windows, above which are two levels of smaller decorated niches. The unique balance between the horizontal frieze and the vertical placement of windows and plaster panels illustrates the architectural ideal of this period.

The windows and niches of a mezzanine-level room below the central *majlis* are larger, the incised decorative plaster panels similar in proportion to accentuate the verticality. This room provides the first, even if discrete, evidence of its construction during the later 'Middle Period'. The main *majlis* above is subdivided into three different spaces: the male *majlis*; the *mukhtaşr* (private *majlis* extension); and the fourth-level, screened, female *majlis* or viewing room. The main *majlis* is, an almost square, double volume space approximately six metres high. The walls are highly decorated with incised plaster panels, motifs and fine horizontal friezes, the ceilings composed of colourful timber panels. Windows and doors have the same proportions: slender and capped

with the popular arched stained-glass fanlights; refined timber panelled shutters to block out the light; and highly decorated external timber screens to maintain internal privacy. The decorative panels are similar in width to the windows and together accentuate the vertical expression of the period. The horizontal friezes wrapping around the room are clearly defined but do not compete for attention. They allow the verticality to be experienced.

The *mukhtaşr* is accessible via an external door, or through the almost floor-level windows in the dividing wall of the neighbouring *majlis*. The screened viewing room is accessible through a narrow spiral staircase fitted into the size of the standard openings. It is decorated using the same architectural and decorative details. However, the *mukhtaşr* has a mirrored ceiling throughout, creating the illusion of a large endless volume, with mirrored doors and panels in the walls. This was *Ahmad bin Jassim Siyadi's* negotiation room, a room of the utmost luxury with an almost mystical atmosphere of mirrored infinity. It is no surprise to find a safe hidden behind one of the mirrors in the wall.

The *majlis* and the *mukhtaşr* are at the centre of the Outstanding Universal Value contributed by *Siyadi Majlis* to this serial nomination. It is an architecturally unique and the last remaining example of a *majlis* in which a



Internal courtyard of Siyadi House

tājir al-lū'lū' received pearl merchants from as far away as India and Europe to present his special pearl collections and negotiate purchasing prices. It is in the *majlis* where a contemporary visitor can best understand the wealth gained by the *tājir al-lū'lū'* and the social and economic contrasts that the pearling society entailed. The attributes that best reflect the Outstanding Universal Value are the architectural decorations of the *majlis*, in particular the outside façade decoration and the interior wood and gypsum work, as well as the mirrors in the *mukhtaṣr*. The complex and inconsistent structure of the ground plan and the four main building levels further testifies to the evolving wealth of a grand merchant's family, one which owned one of the earliest houses in *Muharraḡ* - one that expanded to become one of the most beautiful. The *Siyadi Majlis* has been owned by the Ministry of Culture and Information for several decades and following completion of restoration work will house a museum of pearls.

The third architectural structure in *Siyadi* Complex is *Siyadi* House, a private residence still inhabited by *Abdallah bin Hassan Siyadi*, the grandson of the builder *Abdallah bin Isa Siyadi*. *Abdallah bin Isa Siyadi* was an extremely wealthy grand merchant; following his death in 1934, his son *Hassan* inherited 900 indebted divers and dhow crew members. As it is a private residence inhabited by the owner and his family, *Siyadi* House is not accessible to the public and will not be in the near future, except perhaps on special occasions. *Siyadi* House is a large-scale, two-storey building divided by the narrow alley 914 from *Siyadi Majlis* and *Siyadi* Mosque. The 450 square metre residence follows the typical courtyard typology of the 'Late Period', and, characteristically for this period, borrows many elements from the preceding periods, especially, from the 'Middle Period'. The building was constructed at the time of increased building activity that coincided with the economic crisis of 1931.

Approaching the building from all sides, it appears refined in its construction: straight lines and sharp edges make it appear almost as if it was built later using modern technology. However, on closer inspection, the building's edges and skew walls reveal its handmade nature. The exterior façades are impressive in size and proportion. The ground floor has almost no openings or niches, and the walls taper wider to the bottom. It gives the impression that the building is sitting on a solid plinth with only the entrance door offering access to the inner private domain. The upper level is constructed with a rhythmic use of slender niches and *bunwādgir* which are prevalent throughout the façade and accentuate its verticality. The niches are decorated with arched trefoil plaster panels.

The inner courtyard façades are each composed of different elements, yet harmonise together. The upper floor appears much lighter than the ground floor. The ground-floor façade is scattered with only a very few small rectangular windows and standard doors. The upper floor façade shows additional architectural elements such as the slender coral stone columns of a *livān* on the western façade, and tall, slender, arched windows and doors set back deeply and ending with pyramid cappings on each of the four corners of the building. On the northern façade, a timber covered walkway shades the two metre tall slender arched windows and doors. The outer boundaries of the building constitute a footprint that seems organic, as if the building had grown gradually with each room added arbitrarily to a central structure. In fact, the rooms are tightly packed around the inner courtyard, opening up only slightly at the intersections to provide room for staircases and service yards. The rooms are mostly elongated rectangular-shaped spaces, which are further distinguishable between living and storage - depending on the volume or ceiling height.

Siyadi House contributes to the Outstanding Universal Value of the serial property in two different ways. First, it contributes to a unique ensemble of architectural structures from a *tājir al-lū'lū'* family. From the southern perspective, this ensemble offers an architectural silhouette that seems unchanged since the pearling era. As an individual architectural structure it further outlines in its size, building technique and decoration two aspects essential to the grand narrative of the pearling economy. It illustrates the wealth of a *tājir al-lū'lū'* even at a late date of the pearling economy when it was already suffering from both the economic downturn and very low market rates for pearls, and it is an outstanding structure testifying to the quality of workmanship of the building works in 1931 when many members of the pearling crew participated in building activities to ensure the financial security of their families. Despite the very large size of the property and its many decorative elements, the building in this context illustrates a relatively low quality of design and workmanship. The attributes that express this Outstanding Universal Value include design, workmanship and in particular the view and setting constituted by the three *Siyadi* Complex buildings when viewed from their main, southern façades.



Interior view of Siyadi Majlis

Tijār al-Lū'lū' and the value of pearls

The *tijār al-lū'lū'* (grand merchants) were without doubt the princes of the pearling economy. Most of the profits gained would remain in their hands; they were usually spared the hard time at sea during the *Ghūṣ al-Kabīr* and lived in large and luxurious residences (Harrison, 1924, p. 86). Grand merchants had prestigious *majālis* for welcoming local *ṭawwāsh* and international traders who came to buy and sell only one product - pearls. The *majlis* of a *tājir al-lū'lū'* was fully cushioned; fine carpets were laid out and personnel often employed to serve the visitors and ensure their comfort. McConnell describes the Bahraini grand merchants during his visit in the 1930s:

"I was told to go to the wealthy pearl merchants, the local princes of the trade. In Manama and over on the nearby island of Muharraḡ, they had built their homes, small castles according to the Arab view. In the main, these men were conservative and exclusive, a guild of limited membership. These were the men to whom the better pearls quickly found their way. These were the brokers, the contact men with the outside world who, with a few important European buyers, controlled the flow of the product to Europe, to India, and to China beyond. These men could show me the pearls of value" (McConnell, undated, p. 4).

Some merchant families expanded their networks and had family representatives in Bombay and several cities around the Arabian Gulf. Through these networks, also referred to as pearling dynasties (Kay, 1994, p. 41), they were not only kept well-informed about current market prices but could also purchase and sell at the best price location. In addition some of the grand merchants had the privilege of at least basic knowledge of foreign languages and could therefore negotiate with the Indian and European merchants visiting Bahrain. "The biggest buyers are the continental merchants, Messrs. Rosenthal and Pack, Mohamedali Zainal and his partner Bienenfeld, and one or two Indian and Persian merchants" (Barrett, 1929, p. 3).

Professional success of a *tājir al-lū'lū'* was dependant on large international, social and professional networks, negotiation skills and, above all, very detailed knowledge of pearl qualities and prices. "They became such experts in pearls that they could recognize a pearl they had handled many years earlier; for them pearl trading was more a highly skilled profession than a mere commerce" (Kay, 1994, p. 41).

Pearls are sorted according to price and quality and then designated a specific name. Over 30 different pearl names exist in Bahrain, and these names appear to differ from names used in other markets. Separate studies on the naming of pearls are currently underway, and this nomination does not attempt to anticipate the results. Exceptionally large and fine pearls are bought and sold singly and there does not seem to be any standard method of assessing their value (Lorimer, 1995a, p. 39). The price probably depends in large part on whether the pearl matches a potential counterpart already existing in a collection to form a pair, or whether colour and size contribute to a necklace collection. Prices of medium and smaller pearls depend on weight, size, shape, quality of luster and colour.

Initially, the pearls are sorted through *ṭūs* (pl. *ṭāsah*, perforated sieves) into different size groups. Following that, the weight is calculated in *mithqāl*, and the value defined in the assessment unit *chaū* (pl. *'achwā*). The calculation for *chaū* results from squaring the weight in *mithqāl* and multiplying it by 330. The only difficulty involved in this calculation is that the *mithqāl* values differ locally and that the *chaw* value is always dependant on where the *mithqāl* was calculated. The four most used valuing systems were in "(...) Bahrain, Qatar, Bombay or Poona Chaus according to the weight of the pearl as was expressed in Bahrain, Qatar, Bombay or Poona Mithqals" (Lorimer, 1995a, p. 41). Following the determination of the *chaū*, the pearl is grouped according to its size category and other qualities. "Pearls of superior quality are completely round, clear, translucent, free from any blemishes and defects" (Muraikhi, 1991, p. 77). Each quality category is then related to a market price per *chaū*.

Admittedly the system is confusing, something that served to advantage the *tijār al-lū'lū'* as opposed to many *ṭawwāsh*, who were well versed only in the local specifics of *chaū* values and pearl names. "(...) consequently a merchant who is versed in all the systems, and provided with the means of working by each, has a great advantage over a man who understands and practices only one of the four" (Lorimer, 1995a, p. 43).



Pearl merchants weights and chaü book





View of Siyadi complex from mosque courtyard

Pearling Jurisprudence

The single economic system of pearling brought with it pearling jurisprudence, an important legal basis of social relations, financial transactions, import and export. Pearling jurisprudence can be divided into two categories. The first consists of regulations concerning the conduct of pearling activities and financial transactions. The judicial institution for these was the Sālīfah Court which was reconstituted during the pearling reforms described earlier. The second category consists of legal regulations aimed to protect the Bahraini pearl market from foreign diving teams and cultured pearl imports which it was feared would ruin market rates.

The Sālīfah Court was an institution established to rule on any disputes, in particular financial disputes, between the crew members and the nūwākhdhah. "The 'court' had consisted of one very venal old man, who received no salary for his duties & depended for his livelihood on the subsidies paid by the Nakhodas themselves" (Daly, 1925, p. 263). Daly further remembers that during the three years he observed court cases, he could not remember a single judgment in favour of a diver (Ibid.). The British Resident, well aware of the unjust situation created by this court, strongly supported the deputy ruler Sh. Hamad in the implementation of the diving reforms (see chapter above). "There is no doubt that grave abuses have arisen and that very often divers cannot obtain justice from their Nukhidhas, who are not obliged to keep accounts, and who are unduly favoured (...)" (Trevor, 1922, 667). Being aware of this, many divers preferred not to bring their cases to the court's attention but tried to win over influential members of the community to defend their interests towards the nūkhidhah.

Most diving rules were customary rather than legal edicts issued by an authority. The only exception was the exclusion of European boats during the pearling season, requests from which were ruled against a number of times in Bahraini courts or by the rulers. The cases recorded include requests by Watson (1857), Smith and company of London (1873), E.W. Streeter of London (1889), M. Steinberger of Paris (1891), and M. Dumas and Castelin of Marseilles (1903) (Lorimer, 1995a, p. 48-55). It was only when modern inventions such as the technology of diving suits, motor launches and cultured pearls threatened customary laws that new regulations had to be introduced. After intense debate, motor launches were permitted for ṭawwāsh work, following the pressure of the rulers from Kuwait who had already permitted their merchants and thereby created a strong advantage over the ṭawwāsh from other cities. Diving equipment such as goggles and suits were not permitted, based on the assumption that not every diver could afford the new equipment and that unacceptable inequality would be created.

Most decisive, however, was the legal intervention regarding the import of cultured pearls. Although this law has been revised several times, it remains valid at the time of writing. Immediately after the first larger cultured pearls arrived on the Bahrain market in the last years of the 1920s, the *tijār al-lū'lū'* became very concerned:

"The pearl merchants of Bahrain, believing that no really large pearls could be produced by artificial means, were not at that time disturbed at the possibility of cultured pearls being occasionally foisted on them. The situation, however, has now completely changed. It is realized that many cultured pearls are of considerable size and there is much apprehension among pearl dealers in Bahrain regarding the possibility of their importation, and that their fears are not groundless is shown by the fact that one of the Ruling family was recently proved to have sent two Japanese pearls out to the Banks for sale" (Biscoe, 1930 [1995], p. 549).

The local rulers banned the the import of cultured pearls in 1924 (Anonymous, 1986, Vol. VIII, 1924 p. 60), and were followed by the British, who enforced the ban in 1930. The King's regulation under article 70 of the "Bahrain order in Council, 1913", was published on June 19, 1930 signed by King George V's Political Resident in the Persian Gulf. Later cited as the Traffic in Cultured and Tinted Pearls Regulation, 1930, the regulations established in article one a rule that is still valid: "The import into, and the transport, sale, possession or manufacture in Bahrein of cultured or tinted pearls is prohibited" (Burdett, 1995c, p. 558). The latest decree concerning the import of cultured pearls was issued in 1990, but merely introduced further specifications along the same principle. It rules:

"Article 5: Trading in cultured pearls shall be prohibited, even if they are inlaid in jewellery items; (...) Article 9 a) A prison term of not more than 1 year (...) shall be imposed on any person who: 1- Sells, offers for sale or possesses cultured pearls for the purpose of trading" (Kingdom of Bahrain, 2005, p. 35-36).

The authors consider that this legislation supports the Outstanding Universal Value, including the integrity and authenticity of the pearling testimony in Bahrain, the unique location globally where every pearl offered is a natural pearl grown in the depths of the ocean without human intervention. This concept is important to Bahrain and the law quoted above is strictly enforced. Only in June, 2009 was a Chinese couple sentenced to imprisonment followed by immediate deportation for trading with cultured pearls (Toorani, 2009, p. 15).



Interior of Siyadi Mosque

2.b History and Development of the proposed properties and their narratives

In many cases, the history and development of the testimony of the pearling economy as a result of the commercial and social activities of an island community has already been described in previous descriptions of the properties. This is especially the case for the architectural testimony, construction circumstances and historic development during and with the decline of the pearling era, which constituted part of the property's Outstanding Universal Value and were described above in this context.

The following section on History and Development is therefore focused on two additional aspects which complete the information required to understand each property in its historic and contemporary context. The first is the continuation of the general history and development of pearling from where it concluded in the previous chapter with the emergence of the grand narrative of the pearling economy in the mid 19th century. It was the authors' intention to introduce the peak period of the pearling era in the first instance through the narratives carried by the individual properties proposed in this nomination. These descriptions have already given the reader an insight into the complexity of an island economy focused entirely on a single product, pearls. However, as the

larger social and political framework for the pearling economy, which strongly depended on pearl market values, successful seasons and political stability, also influenced the individual properties, the larger picture is provided here in the general history and development of pearling from the 1850s to the 1940s.

The second section emphasises the history and development of the individual properties following the period which established their Outstanding Universal Value. This analysis provides background information on their contemporary state of conservation by introducing their use and in some cases developments following the decline of the pearling economy in the 1930s. These descriptions are divided into maritime, seashore and urban architectural properties, as in the description above, and focus only on those aspects relevant to the understanding of the recent historical testimony of the pearling economy.



Details of gypsum ornaments in Murad Majlis

General history and development of pearling (1850s to 1940s)

Despite some fluctuations in the 1830s and 1840s, which were most likely a result of political regional instability, the pearling industry began to recover by 1854 (Hughes Thomas, 1985 p. 291). The figure of 1500 dhows given by Pelly for 1866 represents the aftermath of the earlier crises (Pelly, 1868 p. 33). Full stability returned to Bahrain during the long-time reign of Shaykh Isa bin Ali Al Khalifa (r. 1869-1932). British Administration records of the first four decades of his rule report repeatedly and with satisfaction on the tranquillity of the islands. Bahrain's pearling industry responded with a period of prolonged and steady expansion, particularly during the mid 1880s according to the trade figures in the Administration Reports, which include annual estimates of the value of Bahrain's pearl fishery from 1873 to 1905 (Anonymous, 1986 Vols. I-IV). These detailed trade returns, kept by the British since 1873, show consistent and accelerating growth up to 1900, followed by a dramatic but irregular explosion in value.



Historic photograph of street in Muharraq

Between 1900 and 1912, the value of Bahrain's pearl exports increased six-fold, from around Rs. 50,00,000 to Rs. 300,00,000, notwithstanding steep falls in 1907 and 1908. This appears to have been the result of a steep but temporary drop in the size of the harvest. This decline was brief, and soaring European demand, coupled with improved harvests, soon took the value of Bahrain's pearling industry to unprecedented heights in 1911 and 1912. This represents the peak of the industry, with pearls worth over a million pound sterling being exported from Bahrain, all directly to Bombay. A corresponding influx of wealth, albeit unevenly distributed, fed back into the economy. Capt. Mackenzie, the British Agent, remarked on the expanding use of luxuries in 1910:

"The increased use of luxuries during the last few years has been noticeable (...) among the richer inhabitants of Bahrein, no doubt consequent upon their visiting Bombay in connection with pearl transactions. Among the poorer classes no such symptoms are visible (except perhaps as regards food)" (Burdett, 1995c p. 82).

With a population of 20,000 in 1905, *Muharraq* was one of the largest cities on the Arab shore of the Gulf, being bigger than each of the towns of Trucial Oman (UAE) and Qatar, and surpassed regionally only by Kuwait and the growing settlement of Manama, the latter only a stone's throw away. Lorimer said of *Muharraq* city that by then "trade is considerably less than at Manamah; but the pearl diving proportion of the community is many times greater". Notwithstanding its specialisation as a pearl-diving centre, it contained a broad range of supply professions - and it had the only market on *Muharraq* Island. Its population included "general merchants, shopkeepers, pearl merchants, pearl divers, sailors, fishermen, boatmen, bakers, barbers, butchers, tailors, shoemakers, masons, carpenters, tin-workers, water-sellers and washermen" (Lorimer, 1908 p. 1271). Most or all of these professions existed to service the pearling economy. Lorimer's study gives a picture of pearling in the Gulf and Bahrain shortly before its peak. The annual fishery was a vast, community-wide endeavour. Bahrain provided the Gulf's largest pearling fleet, with *Muharraq* Town, the third largest town in the Gulf, providing the largest fleet of any single settlement and the highest number of actual pearl divers and haulers.

Remarkably, pearls, which represented the vast majority of Bahrain's exports, appear not to have been taxed in customs. In 1854, according to Kemball, there were no duties on any imports or exports whatsoever, and as late as 1928 it was remarked that there was no duty on pearl exports (Anonymous, 1986, Vol. VIII, 1928 p. 58; Hughes Thomas, 1985 p. 291). The supposed income generated from pearl taxes in Lorimer's day was a tiny Rs. 12,000 from taxes on boats and divers (compared to a total revenue of Rs. 3,00,000 for the Ruler, of which





Historic aerial photograph of Muharraq in the 1960s

1,50,000 was from customs duties on other goods) (Lorimer, 1908 p. 251). No doubt the absence of duties on pearls was partly a pragmatic acknowledgement that they would easily be smuggled if there were any attempt to tax them, and also recognition that taxation would simply cause divers and merchants to move their business elsewhere, with catastrophic results for the local economy. This occurred at 'Bandar-e Lingeh' on the Persian coast, formerly the main market for pearls collected in the Trucial State. Lingeh's trade returns plummeted after 1902, a crisis at the time attributed to the strict imposition of customs duties in Lingeh by the Persian authorities (Lorimer, 1908 p. 456). In response, the market, the merchants and many diving families switched their base to Dubai. The Al Khalifa, having experimented with tax-free ports since the 18th century, recognised that the economic advantage of keeping Bahrain's premier industry effectively untaxed was that it encouraged trade. It is clear from the trade returns that the profit from pearling was ploughed back into Bahrain's consumer market, with the value of imports closely shadowing the value of exports.

As Bahrain became a major transshipment centre for eastern Arabia during the 19th century, both *Muharraq* and Manama traded in other goods in addition to pearls. However, pearls always accounted for the majority of the value of Bahrain's exports. Bahrain's trade returns

show its economy was dominated by pearls until the 1880s, with the value of Bahrain's pearl exports hovering around 70% of the total until that time, and peaking at 74% in 1877.

The boom that followed the turn of the century was fuelled by global demand, particularly in Europe and the United States, which supplemented the traditional markets of India, Persia and the Middle East. This aroused the interest of European merchants, who started to explore whether it would be cheaper to buy their pearls directly from source (Bahrain), rather than from India. Scrutiny of the trade returns suggests that the direct export of pearls to France and the rest of the world achieved significance in 1905, with Rs. 3,09,000 in pearls exported to Paris, peaking in 1909 at Rs. 40,00,000. The 1909 figure represents 36% of Bahrain's pearl exports, an extremely significant proportion of the market. The British Agent, Capt. Mackenzie, noted that a single French firm was responsible for these direct sales to Paris (Burdett, 1995c p. 83). In 1910, direct exports to Paris stopped and the whole of Bahrain's pearl exports reverted to Bombay; the value of the fishery, however, continued to rise. In 1911, the Frères Rosenthal of Paris, like others before them explored the option of obtaining a concession to fish for pearls in the Gulf (Burdett, 1995c p. 513). They were discouraged by the British administration,



Historic photograph documenting the transition from barasti to stone houses in Muharraq

however, which was concerned enough to instruct the British Agent, Prideaux, to warn Shaykh Isa of Bahrain and other rulers that entering into such an agreement would be against their best interests (Burdett, 1995c p. 519). Cartier himself visited in 1912 (Anonymous, 1986, Vol. VII, 1912 p. 110) and French, British and later American jewellers and pearl merchants continued to take a close interest in the Bahrain fishery, and those of the other Gulf states, in the hope of bypassing the traditional route to Bombay by buying them at source. This was at the industry's apex, when European and American appetites for pearls surpassed all previous demand. Nine foreign pearl merchants visited Bahrain in 1913, including: Messrs. Marx and Wiggins, from a London company; Messrs. Habib and Rosenthal, of Rosenthal Frères; Messrs. Rosanis, Pack and Pack, from another Paris firm; and Messrs. Reinhorn and Dermer, also from a Paris company (Anonymous, 1986, Vol. VII, 1913 p. 123).

Despite the influx of European merchants from London and Paris that year, the boom of 1912 was not carried over into 1913. The market seemed overpriced and sales began to fall. One of the merchants, M. Habib, acting on behalf of the Rosenthal Brothers of Paris, bought pearls at above the market rate, which the others refused to do (Anonymous, 1986, Vol. VII, 1913, p. 123). As a result, the sellers held on to their stocks and would not sell

to other buyers - in the hope they would match M. Habib's prices. Before the market could correct itself, war was declared in Europe. The resulting loss of the European markets, in particular the Parisian market, caused a catastrophic drop in sales and prices. The value of Bahrain's pearl exports in 1914 (Rs. 11,97,105) was lower than it had been for more than 100 years.

This was only the start of a series of catastrophic crashes in the value of Bahrain's fishery, each followed by a slight recovery, and followed in turn by a new collapse. Instability had already been indicated by a slump in 1908, when the value had dropped from Rs. 169,39,000 in 1906 to Rs. 53,30,000 in 1908 (less than a third of the earlier value). The reasons for the 1907-8 crash are uncertain, but at the time it was attributed to poor harvests caused by removal of the oysters for the growing mother-of-pearl market in the west, as opposed to throwing them back in the sea to 'fertilise' the beds.

In 1910, after returns had started to recover strongly, the *nūwākhdhah* were complaining of a 40% reduction in oyster numbers over the previous 8 years (Burdett, 1995c p. 499). The slump may also have resulted from human disease: in 1909 it was reported that Bahrain had been quarantined due to plague (Burdett, 1995c p. 33), and it is possible, that this affected the harvest if this outbreak had begun in 1908 or earlier.



Historic photograph of pearling dhow, taken while divers were under water

Another crash, from which the market never truly recovered, took place in 1914, with the outbreak of World War I. The value of Bahrain's exports plummeted from nearly Rs. 305,00,000 in 1912 (ca. £2,000,000) to Rs. 11,97,105 in 1914, just 4% of the former value. Although the value had already fallen to just under Rs. 217,70,000 in 1913, perhaps because of M. Habib's destabilisation of the market, this crash was the result of the outbreak of war and the loss of the western markets. Despite the war, there was a small recovery, peaking again at the end of hostilities in 1918, when prices rose 50% (Anonymous, 1986, Vol. VII, 1918 p. 56). A further crash then occurred, with export values reaching a new low of Rs. 6,33,930 in 1921 (ca. £63,000). This was the lowest value Bahrain's pearl harvest had seen since Manesty and Jones's estimate of Rs. 5,00,000 in 1790. The causes of this crash are uncertain, but the pearl trade was reported to be "dull" in Europe in 1920 and prices fell in 1921 (Anonymous, 1986 Vol. VII, 1920 p. 70, Vol. VIII, 1921 p. 64).

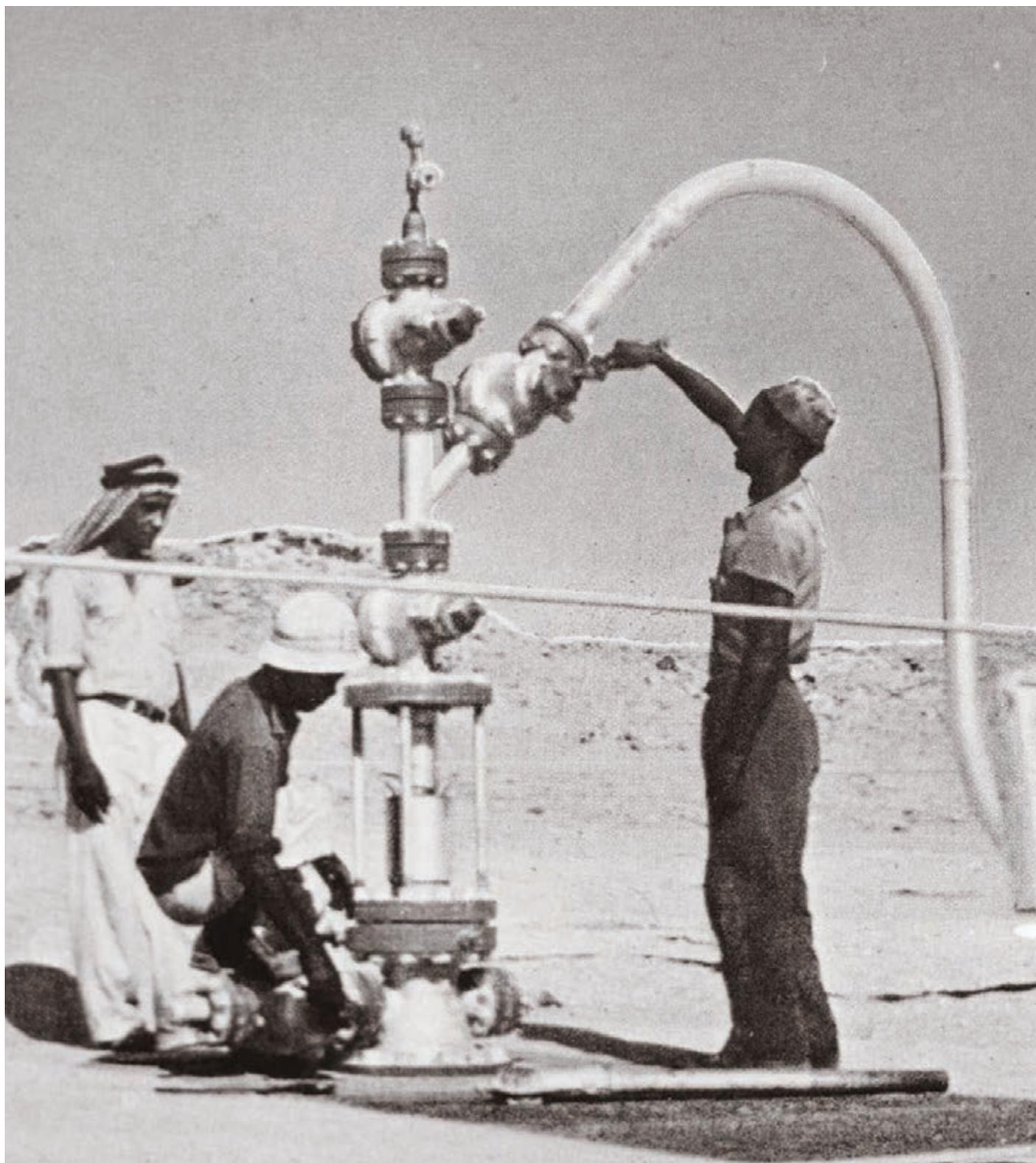
Again there was a very brief recovery, but a further crash occurred in 1924, perhaps due to the first reports of Japanese cultured pearls being introduced illegally into batches of pearls in Bahrain. The cultured pearl first became a concern in 1924, when it was noticed in Bombay that Rs. 2,00,000 worth of cultured pearls had been mixed in with the pearls purchased from Dubai (Burdett, 1995c p. 467). In Bahrain, an immediate ban was imposed on the import of cultured pearls (Anonymous, 1986, Vol. VIII, 1924 p. 60). In 1928, it was observed that cultured pearls cost only a third of the value of natural ones, and that it was impossible to distinguish them without "elaborate electrically worked apparatus" (i.e. x-ray machines) (Burdett, 1995c p. 545). By 1934, it was recognised that the problems of the industry were now largely due to the competition of the Japanese cultured pearl (Anonymous, 1986, Vol. IX, 1834, p. 58). In 1935, two men were jailed in Bahrain for bringing them in (Burdett, 1995d p. 262). Even if these measures discouraged the import of cultured pearls, the uncertainty surrounding their identification certainly depressed pearl prices.

The final phase of the economy commenced in 1929, when the Wall Street Crash caused a world-wide recession and a reduction in the market for luxuries and only half the pearls taken to Bombay were sold (Anonymous, 1986 Vol. VIII, 1929, p. 50). Most of those involved in the business had no option but to continue to invest in diving operations in the hope of an upturn; instead their money was lost. "Some bankruptcy and distress" was reported among the smaller traders in 1926 (Anonymous, 1986, Vol. VIII p. 35), while the wealthy merchants soon began to fail and default on their now considerable debts, as reported by Belgrave in 1930: "a pearl merchant of some eminence has just failed for Rs. 80,000 and it is feared many others will

follow" (Burdett, 1995c p. 564). In 1931, the British Agent estimated that "two-thirds of the pearling capital in Bahrain has disappeared into the sea in the last three years, and men who had capital of ten or fifteen lakhs have nothing left except pearls for which there are no purchasers" (Anonymous, 1986, Vol. IX, 1931 p. 49).

Inevitably, these problems affected the poorer members of society to an equal or greater degree as the merchant community, and this was reflected in unrest on the streets of Bahrain. The first serious divers' riot occurred in December 1926, when divers looted the *sūq* in Manama, and also the stores of a "usurer" in *Muharraq*, i.e. a *msaqqum* or *tājir* who provided the loans that enabled pearling boats to be equipped, and the loans forwarded to divers by the *nūwākhdhah* to provide for their families. This was not taken particularly seriously by the British authorities, who airily described the affair as "a little very light looting" and recorded that "the divers seemed to have behaved like naughty schoolboys rather than men determined to be nasty" (Burdett, 1995c p. 403). The immediate cause was the pearling reforms and the resulting low level set for the *tisqām*, or winter loan, that year, leading to reluctance by the financiers to advance money which they had little hope of getting back, coupled with concerns from the authorities to limit the indebtedness of the diving community during times of evident difficulties in the pearling industry. If they had paid more attention to the trade figures, they might have observed the very serious long-term reduction in revenues in pearling over the previous decade and a half, and concluded that the protests were triggered by the seemingly irreversible poverty of men tied into a dying industry. A more serious riot occurred in May, 1932, this time triggered by the low level set for the *salaf*, the loan taken to tide the divers' families through the season, but once again symptomatic of desperate economic conditions. An initial protest over the loan had resulted in the imprisonment of a diver, and attempts by 1,500 comrades from *Muharraq* to free him had resulted in a riot and conflict with security forces, leading to the deaths of two divers and the injury of three or four others (Burdett, 1995d p. 55-61).

Bahrain's pearling industry never recovered from these setbacks. The ongoing entry of cultured pearls into the Gulf, and their acceptance by the pearl-buying elites of the western world, meant that prices never recovered. The number of boats going to the fishery declined steadily from 1910 onwards, and rises in the price of goods during World War II meant that the surviving boats found it difficult to equip themselves for the diving season (Anonymous, 1986, Vol. X, 1942 p. 5). Lastly, the advent of oil industry prevented the continuation of pearling in Bahrain, even in reduced form, and provided an alternative source of income. In 1936, it was reported that divers were taking employment with



Discovery of oil brought new economic prospects to Bahrain

Bapco, and that those with continuing debts with their *nūwākhdhah* were paying them Rs. 5 per month out of their salaries.

By 1944, the number of boats going to the fishery was noted to be particularly small because of the amount of labour shifting to the oil industry, and by 1947, a very significant nearly 7 m tons of oil was being exported from Bahrain (Anonymous, 1986, Vol. IX, 1936 p. 43, Vol. X, 1944 p. 6; Burdett, 1995d p. 694). In the same year, the Indian market was closed down, and all pearl imports into India prohibited (Burdett, 1995d pp. 555ff). Although the ban was rescinded in 1948, the ongoing erosion of the independence and wealth of India's Maharajas and other princes, as their states were absorbed into India and Pakistan, removed the last significant sector of the market. With this, the last remains of the formerly flourishing pearling economy of Bahrain ceased to exist. Those, who until then were still involved in pearling, turned towards other occupations, and with their new professional roles, customary laws and social hierarchies also began to shift. Some of the former champions of pearling succeeded in establishing themselves in new trades, such as automobiles and electronic devices or construction materials; often using their still strong international contacts. Others, who had speculated too much and were left with large stocks of pearls, had to sell far below their purchase prices and emerged with little more than their luxurious residences.

With the collapse of the pearling economy a new Bahrain emerged. New values were imported with the oil exploration companies and technologies. Modernisation became a new quality. While the desire for renewal has certainly destroyed a large part of the architectural testimony of the pearling era, many social values related to the economy are still strongly anchored in its society.

2.b.i Maritime properties development: Oyster Beds

The maritime properties have undergone the least development or change since the peak of the pearling economy and have also suffered least from its decline and ultimate collapse. However, they do suffer the resulting lack of harvesting and oyster collection. Although a few divers still continue to collect pearls during leisure diving activities and sell their finds to the local pearl merchants, harvesting of oysters has been at a virtual standstill for the last 60 years. According to ecological experts, the current density of the oyster population in some locations reduces its opportunity for growth, and along with that the size and quality

of pearls. This surely does not matter much as long as these pearls are not desired or collected. However, if economical exploitation is again envisaged in a larger context as promoted in the management plan for the property, then several oyster beds would need to be harvested intensively during the first years to create improved growth conditions for the oysters and potentially improved harvests during the following seasons.

Although environmental conditions have changed slightly since the late 1930s, the influences on oyster growth and seabed quality are negligible. The rise in sea surface temperature, resulting in an average of 27.1 in 2009 compared to 26.4 in the 1930s (al-Khuzai, Sheppard, Abdulqader, al-Khuzai, & Loughland, 2009, p. 143), does not seem likely to affect the oysters in the proposed oyster beds, as oysters of the same species grow in far warmer waters in the shallow coastal intertidal zones. The continuously practised tradition of land reclamation has certainly affected some northern marine habitats in Bahrain. Dredging activities in particular lead to silting processes, creating sediments which settle slowly, resulting in reduced underwater visibility. However, environmental studies have shown that the impact of these activities is noticeable for a distance of up to approximately three kilometres from the source, and no dredging activities have as yet reached within 10 km of the oyster beds proposed for World Heritage listing. To secure the three kilometre impact zone of potential future dredging activities, the oyster beds are provided with a five kilometre-wide buffer zone in which dredging is prohibited throughout.

2.b.ii Seashore property development

The *Bū Māhir* seashore has changed slightly due to the rising sea level and continuous erosion. However, in its material composition and use, especially regarding the fishing *hadrāt*, it has remained unchanged. At the same time it needs to be emphasised that the original seashore of approximately 110 metres has now been enlarged on both sides by land reclamation activities which have created several hundred metres of seashore. The reclamation can be dated to the early 1970s. The beach was closed to the public in 1980, when His Highness, the late Amir of Bahrain, Shaykh Isa bin Salman Al Khalifa, inaugurated the *Muharraq* Coast Guard Base (General Organisation of Seaports Bahrain, 2008, p. 98) which henceforth entirely surrounded the proposed property. Up until this latest conversion, the property had been used as a quarantine station from November 19 1930. Charles Belgrave noted

this occasion in his memoirs: “We started to build a quarantine near a caliph Fort, which was bombed in the past and we did not dare to demolish the tower because it is a historic milestone. I would regret if it was demolished” (Belgrave, 1960).

Most of the changes however affected the *Qal'at Bū Māhir*. On September 6, 1868, *Muharraq* and Manama were besieged by British battleships (Clyde, Hirose, and Vigilant). *Qal'at Bū Māhir* was heavily bombarded at a distance of 300 yards by these battleships, which led to its almost total destruction, only one tower remained (Al-Khalifa, 1996). Following the closure of the quarantine station in 1977, the fort was repaired and excavated by the Directorate of Archaeology of the Ministry of Education. These archaeological excavations revealed the existence of the foundations of the remaining towers, which had been destroyed by the British battleships as mentioned previously. Buildings dating between the 16th and 17th centuries were discovered, and represent the period during which *Qal'at Bū Māhir* is believed to have been built. Additional finds included pottery dating to the quarantine period and eight iron canons, three on the western side and five on the southern side.

The remaining damaged tower was repaired during the 1977 intervention and the three adjacent rooms were reconstructed. These structures may not in all details reflect the historic fortress destroyed earlier but were mostly rebuilt according to the traditional techniques of the pearling era. At present *Qal'at Bū Māhir* is without function and integrated into the Coast Guard Base. Through an agreement between the Ministry of Culture and Information and the Ministry of Interior, *Qal'at Bū Māhir* and the adjacent seashore will in the course of 2010 be separated from the Coast Guard Base and made accessible to public once more. For further information on the project please refer to the Management Plan.

2.b.iii Urban Properties: Architectural Testimony of the Pearling Heritage

The urban fabric and the proposed architectural properties of *Muharraq* reached their apogee during the boom years between 1900 and 1912, when good harvests, voracious international demand and high prices saw the value of pearl exports increase five-fold in just over a decade. This was in addition to the prevailing upwards trend which had already resulted in a four-fold increase over the previous century. The accelerated growth must have resulted in the rapid influx of a huge amount of money into Bahrain and *Muharraq* between 1900 and 1912, which is indeed





Historic photograph of Qal'at Bü Mâhir in 1936



Historic aerial photograph of Muharraq in the 1960s



reflected in the architectural legacy and the houses of traders, aristocrats and grand merchants, mostly built or expanded during these years. Many of the buildings proposed in this nomination are from the two peak phases of pearling in the late 19th and – as mentioned above – early 20th century.

The second phase of high building activity was in the 1930s when construction works provided what can now be referred to as a “job creation scheme” to provide employment to divers who could no longer live from their reduced incomes. The two houses of this phase included in the nomination are *Badr Ghulum House* and *Al-Alawi House*. Several of the other structures, such as *Yousif Abdurrahman Fakhro House* and the *'amārāt*, were also extended during this period. It is equally interesting that after this employment scheme decade building activity slowed down considerably and the next building boom only started in the 1970s when large scale land reclamation took place and the concept of apartment buildings was introduced into the historic single-household residence context. It was this introduction that caused most damage to the aesthetic appearance of historic *Muharraq*.

The following text provides a brief overview of major events and developments during the recent history of the architectural properties. The influence and physical remains of these are described in *Chapter 4a: Present state of conservation* and are discussed in greater detail in the management plan (*Chapter 2: Management Strategies, Strategy 5: Physical Conservation and Development and Chapter 3: Site Analysis and Action Plans (2009-2013)*).

Al-Ghūṣ House has constantly been inhabited, except for short periods when it was used as a store for construction materials. In the 1950s, the property was purchased by the local soccer club (*Muharraq Club*) and used as a clubhouse. The addition of two small storage rooms and the bathroom facility attached to the western wall may have been carried out during or just after this time. In the last decades, the house has been used as a family home and, more recently, as an immigrant labour accommodation. During this time, some of the traditional walls, in an attempt to beautify the facility, have been plastered and painted and traditional ceiling boarded up with contemporary ceiling boards.

Badr Ghulum House continued to be a residential facility after the decline of the pearling era, but is presently used only as a summer house for the family and a temporary storage. The main entrance, originally located on the southern side of the property, has been relocated to the east. A contemporary kitchen, bathroom and a separate outbuilding were attached to the southern and eastern boundary wall by the family in the 1980s. In the past years, medical services

continued to be offered occasionally and will now be provided on a more regular basis.

Although, *Al-Jalahma* House continued to be the residence of *Al-Jalahma* family even after the decline of the pearling economy, it gradually became vacant in the 1960s and has not been in use for several decades. In 2009 it was purchased by the Sh. Ebrahim Centre for Culture and Research and will, after its restoration, be open to public access. *Al Alawi* House was inhabited until the 1990s when the property owners moved into a modern residence. The property owner still uses one room of the house as an office space and several others as storage areas. Contemporary toilets and a balcony have also been added on the first floor level.

The western part of *Al-Fakhro* House was deserted by the family soon after the decline of the pearling era. While the eastern portion, which is still inhabited by members of the family, has undergone several maintenance phases, a part of the western portion of the building has collapsed due to neglect. In 2009/10, archaeological excavations were conducted which unearthed the complete original plan and foundations of these parts.

The members of the *Murad* family who previously inhabited the *Murad* House have recently moved out of the property to initiate its conversion into a traditional guesthouse. Most of the rooms are at present left empty, used as storage or being prepared for restoration measures while merely two rooms on the first floor still contain private belongings of the last inhabitants. In the 1950s, a portion of the house was modified to gain better access to a newly acquired *majlis*. The position of the second entrance was shifted and new rooms and a *liwān* were added. The historic fabric of the northern wing was altered at the time. In the 1980s, the 1st floor was modernised; the traditional kitchen on the ground floor was rebuilt and used as store; a raised terrace was introduced in front of the *liwān*; and an apartment was added within the courtyard at the entrance and in the far south-east corner of the property; the traditional water pool was filled in to ensure the safety of the small children who were left to play alone in the courtyard. *Murad Majlis* and *Siyadi* Shops have been in use continuously since the 1930s and have retained their general layout. In both cases slight modernisation works were carried out for adjusting the existing structure to the users' modern requirements.

'Amārat Yousif Abdurrahman Fakhro today consists of ruins and archaeological remains. After the decline of the pearling era, the *'amārah* was used for the production of date juice and, later, for trading of dates and other grocery items. It was gradually abandoned in the 1960s and stood empty for at least three decades. In the late 1990s most parts of the building collapsed and today, only its picturesque

ruins are visible. Archaeological excavations have uncovered the foundations of the different building extensions and numerous findings illustrate the different uses of the building during its recent history, which contribute to its cultural significance. Most of the shops of the *'Amārat Ali Rashed Fakhro (I)* continue to be used. The public facades have been maintained and slightly modernised, with surfaces being plastered and painted. The administrative office in the south-eastern corner has been converted into a fruit and vegetable shop and the shop on the north-eastern corner has been merged with the neighbouring store to its west. *Amārat Ali Rashed Fakhro (II)* remains unchanged in its use as a storage facility and underwent slight modernisation treatments which did not affect the overall character and atmosphere of the warehouse facility.

The Nūkhidhah House has constantly been inhabited by different tenants until present. Its historic fabric has suffered from the attempts of its last tenants to make the house more comfortable. These include introduction of timber boards, metal windows and steel posts which reduce the overall aesthetics of the place. After the tenants move out of the property in 2010, these introductions will be reversed as part of the preparatory phase of the planned restoration measures.

Siyadi House and *Siyadi* Mosque have remained in use continuously since the 1930s, in the first case as a private residence of *Siyadi* family and in the second, as a public place of worship. Modernisation measures, such as introduction of electricity, air conditioning units, or renewal of water and sewage system, were undertaken at both places. Some measure, such as plastering and painting works, had an impact on the aesthetic appearance and may need to be reversed, or their impact reduced, as part of future conservation and maintenance activities.

The *Siyadi Majlis* has been vacant since at least the 1960s and was presumably already in a state of neglect when it was purchased, in 1974, by the Ministry of Municipalities and Agriculture. Subsequent questionable conservation efforts were later suspended and the ownership was transferred to the Ministry of Information (today named Ministry of Culture and Information). A reinforced concrete staircase attached to the historic facade was introduced in the courtyard, which remains in use until today and provides access to the upper storeys. Based on investigations and material analysis, an alternative conservation concept has now been developed which aims at reducing the impact of the conservation works implemented in the 1970s and 1980s and stabilises the remaining historic substance.



Historic photograph of Abdurrahman Murad in the courtyard of Murad House

3

Justification for Inscription



3.a Proposed criteria

In the context of the justification for inscription and the significance presented in this nomination dossier, the property has potential to meet three of the cultural heritage criteria: (iii), (v) and (vi). In order to emphasize its Outstanding Universal Value as a unique testimony of a cultural tradition and an outstanding example – throughout centuries – of a single product economy based on a sea-use, the Kingdom of Bahrain wishes to nominate its inscription under criterion (iii) and (v) only.

(iii) be a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared;

Criterion (iii), for long time the criterion recognizing the testimony of ancient civilizations, has more recently been reinterpreted to acknowledge the relevance of unique testimonies of more recent cultural traditions, both living and relict. In several cases it was recognized to best reflect symbolic significance and unique aspects that constitute the cultural identity of a people. In other cases it reflected the last remaining testimonies of faded cultural traditions. Both of these previous interpretations support its application for the testimony of the pearling economy with the following formulation:

(iii) The spatial and architectural testimony of the pearling economy in Muharraq and the northern waters of Bahrain reflect the culmination and final expression of more than six millennia of pearling history in the Arabian Gulf, the global centre of natural pearl collection. It is the last remaining, and therefore outstanding, example that represents the complete narrative of the cultural tradition of pearling, which dominated the Arabian Gulf between the 2nd and early 20th century, and the related human system established in a single-product island economy. While the economic system subsided, the remaining testimony continues to carry the grand narrative it produced, which is still the most significant source of Bahraini cultural identity.

(v) be an outstanding example of a traditional human settlement, land-use or sea-use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change.

Criterion (v) was revised several times in the history of the convention and has more recently expanded its predominant focus on types of human settlements towards larger human systems related to land- and sea-use, the latest only included in the course of the criteria revision in 2005. It is interesting to see that the sea-use component has so far not been utilized in the criteria description of World Heritage properties and “Pearling, testimony of an island economy” may become the first World Heritage Site to base its Outstanding Universal

Value on an economic system founded on sea-use. The formulation of criterion five is proposed as follows:

(v) Pearling, and the testimony it brought forth in Muharraq is an outstanding example of traditional sea-use and human interaction with the environment, which shaped the economic system and cultural identity of an island society. The oyster beds and the architectural testimony of this socio-cultural and economic system are representative of a tradition that became vulnerable and was gradually abandoned in the 1930s. The collapse of the international natural pearl market value in face of the global economic crisis and the introduction of large-scale cultivation of pearls have irreversibly impacted the system’s viability and vitality.

The authors of the nomination dossier refrain from proposing criterion (vi). The living traditions, ideas, place and family names, legal forms and literary works (including poetry and songs) related to the testimony of a single product economy are manifold and will regularly be referred to and presented in the nomination file. They support not only the significance but also the management of the proposed serial property and are vital to the reaffirmation of contemporary cultural identity. However, the authors felt that the significance of the surviving socio-cultural traditions is often linked to and represented through the spatial and architectural testimony proposed under the other two criteria and thereby covered under the socio-cultural system presented under criterion (v).

3.a.i Criterion (iii):

Justification of criterion

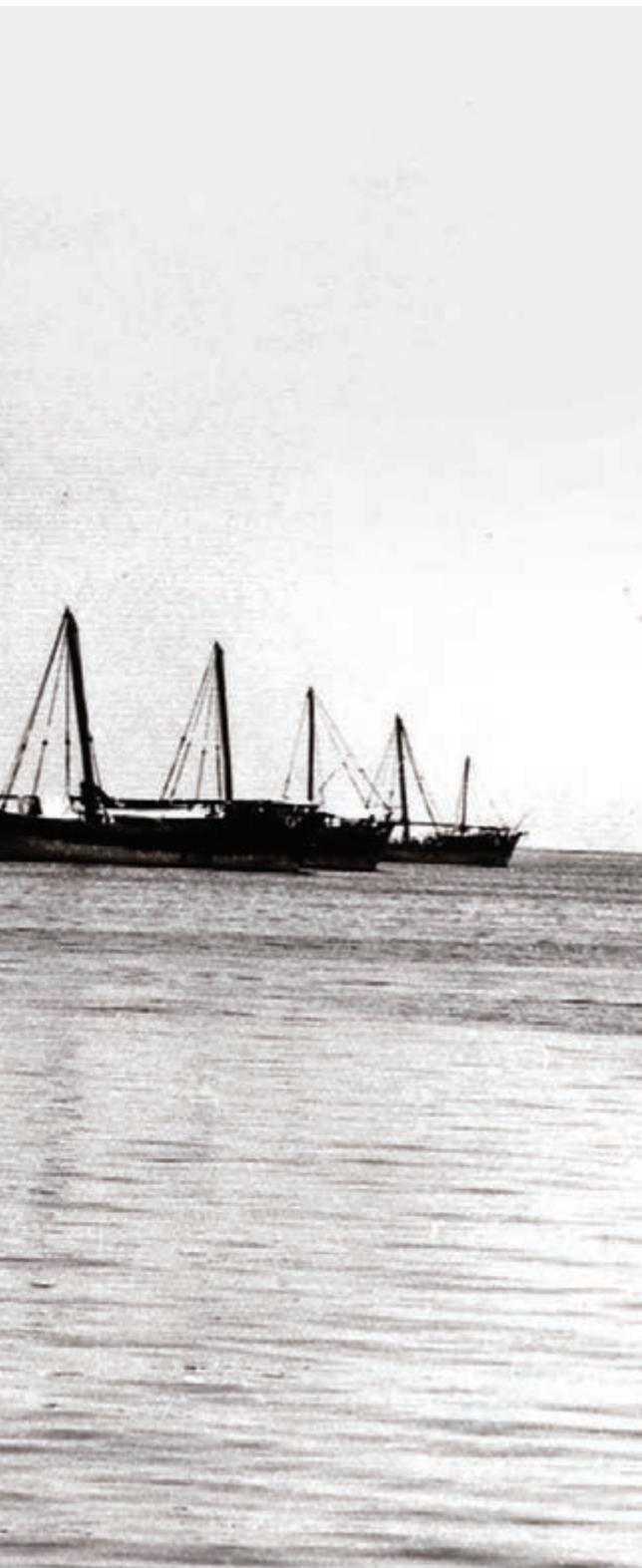
(iii) The spatial and architectural testimony of the pearling economy in Muharraq and the northern waters of Bahrain reflect the culmination and final expression of more than six millennia of pearling history in the Arabian Gulf, the global centre of natural pearl collection. It is the last remaining, and therefore outstanding, example that represents the complete narrative of the cultural tradition of pearling, which dominated the Arabian Gulf between the 2nd and early 20th century, and the related human system established in a single-product island economy. While the economic system subsided, the remaining testimony continues to carry the grand narrative it produced, which is still the most significant source of Bahraini cultural identity.



Historic photograph of boy in streets of Muharraq



Historic photograph of dhows anchoring south of Muharraq



The social, economic and cultural tradition of pearling has for millennia had strong impact on the cultural identity of the people settling around the Arabian Gulf. In some coastal cities of the Gulf pearling was one among several occupations of land and sea exploitation or trade, while *Muharraq* Island constitutes the only pearling single product economy linked to an island community which was completely and exclusively dependant on the income derived from export of pearls. *Muharraq* City contains outstanding examples of historic architectural legacies left behind by pearl merchants, pearling dhow captains, divers and other members of the community, which testify to the cultural tradition of pearling in the Arabian Gulf. In addition they testify to the prevalent influence of pearling on the island and to architectural features and elements which were developed to serve the particular social, economic and cultural needs of the human and economic system.

When questioning if pearling can indeed be referred to as a cultural tradition, it is worth to explore the concept of cultural tradition as implied in the World Heritage Convention. The term 'cultural tradition' has several interpretations in the various professional fields involved in the preservation and management of World Heritage Sites. While archaeologists often speak of a cultural tradition when similar tools or technologies have been traced in different excavations of a region, anthropologists prefer to speak of a cultural tradition if people in a community refer to similar value concepts and narrative references, sometimes in dependence on the cross-generational continuity of these.

The term 'cultural tradition' appears not yet clearly defined in the World Heritage context. It is not included in the text of the convention and appears only once in the Operational Guidelines in the formulation of criterion (iii). However, considering that the World Heritage Convention aims at preserving and protecting "sites which are of outstanding universal value from the historical, aesthetic, ethnological or anthropological point of view" (UNESCO, 1972, art. 1), it can be assumed that a definition needs to be holistic enough to incorporate the different disciplines mentioned. It is therefore understood in this nomination dossier that 'cultural tradition' refers to the social, economic and cultural references and related behaviours of people which are characteristic for a certain way of living at a certain period of time and are continued over several generations. A cultural tradition includes as well the material cultural testimony these ways of living have produced. Following such definition pearling has to be considered a cultural tradition of regional scope and universal importance, which was practiced more intensely on *Muharraq* Island than in any other settlement at the time.

The physical testimony that reminds us today of the cultural tradition of pearling contains houses of key social figures of the tradition, commercial and production sites of supply industries that nurtured the tradition as well as strong memory markers to the cultural narrative which are still relevant to the cultural identity of Bahrain's contemporary society. The grand narrative of the cultural tradition of pearling is not addition but explanation to the remaining physical testimony proposed for listing and will be preserved through the preservation of its physical expressions. It relates to the comprehensive shared memory and explanation of historical experience and traditional knowledge, and constitutes an essential element to fully embrace the Outstanding Universal Value of its spatial and physical testimony. The uniqueness of the physical testimony of Muharraq lies in the fact that it is the only testimony which combines all the different commercial and residential structures of a single economic pearling society in the Arabian Gulf that has survived to an extent that can still narrate the practices of the cultural tradition and thereby preserve its memory to future generations.

Summary of attributes reflecting the criterion

The testimony of the cultural tradition of pearling is preserved in a grand narrative which is carried by physical properties. The architectural and spatial remains, which constitute this physical testimony of the pearling economy, act as illustration and memory marker and continue to define Bahraini cultural identity. The central attributes informing about the Outstanding Universal Value of the pearling testimony are four, which apply in different scales to the different serial sites proposed. They are (i) architectural design and workmanship which illustrates the structures that were produced for particular functions required by the pearling economy; (ii) continuity in use and function, which illustrates the integration of the physical testimony into daily life during the pearling era as well as today, (iii) Location, visual appearance and views which act as memory stimulators and evoke the shared memory of the grand narrative of the cultural tradition; and (iv) representation and feelings generated by this testimony which constitute the pride of the elder generations, the personal childhood memories of their children and the somewhat abstract and detached value reference of the younger who now start finding it difficult to pass the grand narrative on to their children. The cultural identity of the fourth post pearling generation strongly depends on the protection and preservation of the physical memory markers to comprehend the shared memory at the foundation of the island's pearling identity.

3.a.ii Criterion (v):

Justification of criterion

(v) Pearling, and the testimony it brought forth in Muharraq is an outstanding example of traditional sea-use and human interaction with the environment, which shaped the economic system and cultural identity of an island society. The oyster beds and the architectural testimony of this socio-cultural and economic system are representative of a tradition that became vulnerable and was gradually abandoned in the 1930s. The collapse of the international natural pearl market value in face of the global economic crisis and the introduction of large-scale cultivation of pearls have irreversibly impacted the system's viability and vitality.

The traditional sea-use acknowledged in criterion (v) and its related human interaction with the environment is the basis on which the cultural tradition, the testimony of which was recognized under criterion (iii) above, was established. Several millennia BC the population of a group of small islands in the Arabian Gulf recognized the precious natural resource in the waters surrounding the archipelago, pearls. Civilizations arrived and left, wars were fought between foreign rulers to gain power over the economic potential at the ground of the sea and a society formed which lived from, with and for this very natural resource. Until the 1930s the only things that really mattered on *Muharraq* Island were God, life, death, love and pearls, not necessarily always in this order.

A community developed over centuries whose cultural values and traditions were related to pearl diving, the professions associated, the seasons of harvest and pearl collection, the international trade relations required, the financial dependencies established and the belief in Allah's precious gift placed in the 'two seas', the sweet and salt water in the sea. The dependence on the only relevant natural resource shaped the economic system on the island as much as the social relations and cultural practices all of which formed a unique cultural tradition, nowadays referred to in one word, pearling. The term pearling implies more than the collection of pearls by divers. It encompasses all aspects of the cultural tradition, its cultural practices, songs, laws, architectural and urban features and beliefs. It is for this reason that the history classification in Bahrain and the neighbouring regions of the Arabian Gulf refers to the 'Pearling Era' as a historic period in its own right comparable to the era of Dilmun and Tylos. Dating of the pearling period is not always agreed upon – since pearl diving was practiced in Bahrain since ancient



*Historic photograph of pearl divers in the water,
photograph provided by Abdullah al-Khan*

time – but it is mostly used to designate the time of the expansion of the pearling settlement *Muharraq* from the late 18th century to the early 1940s, when every household depended on the pearl market value.

It was this exclusive dependency which made the economic system vulnerable to change which finally occurred in the early 1930s. The world market prices for pearls had already decreased massively during the First World War but they recovered slightly during the 1920 when pearls came back en mode in Europe. However, the international distribution of cultured pearls produced according to technologies developed in Japan in the 1920s which coincided with the Great Depression led to a complete recession of the international market. The Bahraini merchants could no longer find clients for their stocks. Accordingly they would no longer purchase new stocks or finance new expeditions and the number of pearling dhows was reduced to less than half within the first three years of the new decade. The remaining economic system totally collapsed at the end of the decade when the Second World War preparations reduced the international interest in luxury items such as pearls to an ever low. The island community of Muharraq had lost its only economic basis for centuries within less than a decade. Poverty and depression resulted and it is difficult to imagine what may have been the result if oil had not been discovered on the neighbouring island in 1931 and exploitation been commercialized at the end of the very same decade.

At present only few divers collect pearls on an individual basis rather than in organized seasons and the few remaining pearl merchants regret the lack of supply. The pearling economy remains present only in the grand narrative of the cultural tradition which still constitutes the cultural identity of Bahrain. This is further supported by pearling legislation, which is still valid and enforced today. Bahrain is the only country into which import of cultural pearls is strictly prohibited and persecuted. Together with state-of-the-art laboratories for pearl testing which analyse every pearl sold in the kingdom, the Bahraini pearl market guarantees that every pearl offered is a natural pearl collected of the island shores.

Summary of attributes reflecting the criterion

The traditional sea-use and human interaction with the environment of the pearl collection and trade is captured in three key attributes expressed in the properties proposed. These attributes are present to different degrees in the individual serial properties and not all are valid to each. First, (i) the oyster beds

and their remaining economic potential enable to document the Outstanding Universal Value of the traditional sea-use during the pearling era. This value is linked to the continuous preservation of the underwater topography and geomorphology which support the growth and high density of pearl producing oysters. It has to be highlighted that the pearls collected are still of exceptionally high quality in size, shape, color and luster and are of great interest to the local pearl market. Another attribute (ii) is the material used for the construction of the architectural testimony. It illustrates the trade routes that exported pearl and imported especially the wooden building materials but also the effective use of local resources, such as coral stones, the removal of which at the same time created quays and coastal access points for the pearling dhows. In addition (iii) the design and layout of traditional commercial and residential buildings, which was already mentioned as a relevant attribute to criterion (iii) testifies to the Outstanding Universal Value. It specifies how the traditional sea-use and the human interaction with the environment established a human and economic system with specific architectural types and needs related to the sea-use practice. This does not only apply to the commercial structures, which constructed and equipped the pearling dhows but also the gender separation flexibility of residences which allowed alternative uses during the female dominated summer months, when all men had left towards the oyster beds. At the same time these designs reflect the religious anchorage of the pearling tradition in Islamic ethics, jurisprudence and beliefs.

3.b Proposed Statement of Outstanding Universal Value

The following Statement of Outstanding Universal Value is proposed for the property:

Factual summary

Pearling, testimony of an island economy is a serial nomination of 15 sites. These encompass 3 oyster beds as marine sites located in the northern territorial waters of Bahrain, one seashore site located at the southern tip of Muharraq Island and 11 architectural properties, encompassing 17 architectural structures, embedded in the urban fabric of Muharraq city. In terms of categories of cultural property set out in article 1 of the 1972 Convention, the serial site consists of 4 sites, 9 monuments and 2 groups of buildings.



Rare examples of dark and black natural pearls



Pearling dhows on the Muharraq seashore in winter

Brief synthesis:

Pearling is an outstanding example of a traditional sea-use, which shaped the single product economy and cultural identity of an island society. This millennia-long practice is the most significant example globally of a natural pearl-collection tradition and is based on the Arabian Gulf oyster beds north of Bahrain, which are the best-known source of pearls since ancient times.

Although the pearling economy collapsed as a result of irreversible economic change in the 1930s, many of its characteristic features and practices survive. The natural resource remains in the surviving oyster beds *Hayr Bu-l-Thamah*, *Hayr Bu am'amah*, and *Hayr Shtayyah*. The architectural testimony in *Muharraq* is the last remaining example which comprises residential and commercial structures that are tangible manifestations of all major social and economic roles and institutions associated with the pearling society and acts as a memory marker for the cultural identity it produced and still maintains.

Beyond the World Heritage context place names, family names, social hierarchies, surviving legal systems, songs, stories, poetry, festivals and dances are associated with these physical resources and assist in transmitting the grand narrative of the pearling economy.

Criterion (iii): The spatial and architectural testimony of the pearling economy in *Muharraq* and the northern waters of Bahrain reflect the culmination and final expression of more than six millennia of pearling history in the Arabian Gulf, the global centre of natural pearl collection. It is the last remaining, and therefore outstanding, example that represents the complete narrative of the cultural tradition of pearling, which dominated the Arabian Gulf between the 2nd and early 20th century, and the related human system established in a single-product island economy. While the economic system subsided, the remaining testimony continues to carry the grand narrative it produced, which is still the most significant source of Bahraini cultural identity.

Criterion (v): Pearling, and the testimony it brought forth in *Muharraq* is an outstanding example of traditional sea-use and human interaction with the environment, which shaped the economic system and cultural identity of an island society. The oyster beds and the architectural testimony of this socio-cultural and economic system are representative of a tradition that became vulnerable and was gradually abandoned in the 1930s. The collapse of the international natural pearl market value in face of the global economic crisis and the introduction of large-scale cultivation of pearls have irreversibly impacted the system's viability and vitality.



Integrity and authenticity:

As a serial nomination, the site conveys a complete understanding of the cultural tradition of pearling and the related human system established in a single product economy. The oyster beds and architectural properties selected represent the testimony of this economic system and are of adequate size to contain all major features required to embody the grand narrative it produced. The site's integrity suffered from adverse effects of insensitive housing development and neglect for decades. This is now counteracted by a special zoning arrangement which ensures the compatibility and control of new developments and urban upgrading schemes which reduce the negative impact of earlier additions.

The authenticity of the site is related to its ability to convey the shared memory and historical experience of all major social and economic roles and processes that constituted the human and economic system of pearling. While the oyster beds truthfully testify to the outstanding quality of pearls and have maintained the potential of economic pearl collection, the architectural properties are credible memory markers of the grand narrative. In maintaining reference to the traditional uses and functions and in illustrating traditional building techniques and designs, the architectural properties demonstrate an acceptable degree of authenticity. Over time elements of these structures were modified or changed, but later additions show architectural continuity with earlier buildings. Since the authenticity of the attributes acting as memory triggers is considered fragile, the management system gives special emphasis to their preservation and promotion.

Management and protection requirements:

The management of the serial property is governed by a Steering Committee which comprises 12 different governmental bodies as well as representatives of the property owners and businesses in the buffer zones. The day-to-day management process is, following the directives of the Steering Committee, translated into strategies by five technical and thematic subcommittees and implemented by task forces in different departments under the practical coordination of a site administration unit in the Ministry of Culture and Information. The participatory and transparent character of the management system ensures adequate cooperation between all stakeholders.

The marine properties are in the process of designation as marine protected areas under the Decree (2) of 1995 with respect to the Protection of Wildlife. The seashore and architectural properties are registered as monuments under the Decree Law No. (11) of 1995 Concerning the Protection of Antiquities.

The urban setting is regulated through the stipulations of a "Special Protection Zone" established by the Ministry of Municipalities and Agriculture in line with the Resolution no. 28 of the year 2009 regarding the specification of the regulatory stipulations for the development in different areas in the Kingdom. In addition the Ministry of Culture and Information and the mostly private traditional owners of the architectural properties have signed legal agreements covering the long-term understanding of use and conservation requirements. Conservation and restoration projects are underway for several of the properties and are guided by an integrated conservation plan as part of the management system. They are predominantly aimed at improving the presentation and interpretation of the sites and their narratives.

3.c Comparative analysis

3.c.i Introduction to the comparative analysis

The comparative analysis for the testimony of the pearling economy is centred on comparing the elements, attributes and themes that contribute to the Outstanding Universal Value of the testimony of the pearling economy. This comparison is presented in three separate sections which shall be referred to as 'chronological comparative analysis', 'typological comparative analysis' and 'thematic comparative analysis'. Each of these analytical components applies varying comparative approaches and different sources and methodological frameworks.

The chronological analysis compares pearling economies on a global scale and within the Gulf region. In this initial section, the oyster beds and the collection activities of the Arabian Gulf are compared to other local economies, which were sustained by the collection of natural pearls. Examples from the Indian Subcontinent, Australia-Pacific and Latin America are considered. After establishing that the Arabian Gulf is the only significant and continuous location of large scale pearling activities, both in the exclusiveness of dependence on pearls and the economic impact of their trade, different pearling settlements in the Arabian Gulf are compared to identify the most remarkable and unique location reflecting the testimony of the pearling economy. For this purpose, the chronological analysis compares archaeological data, historical government records and, in particular, trade statistics as well as other historic sources such as traveller accounts.

The typological comparative analysis is focused on Bahrain and the pearling testimony remaining on the archipelago. This analysis establishes that *Muharraq* is indeed the most significant settlement reflecting all key aspects of the human and economic system of pearling. Additionally, this section illustrates that the individual properties selected constitute the most representative and outstanding examples of the *Muharraqi* pearling economy. The typological analysis compares the properties selected with all potential alternative choices that could have been made for each theme contributing to the grand narrative. To this end, the selected properties are juxtaposed to other oyster beds and architectural structures related to the pearling economy. The properties' environmental and architectural features, as well as historical and anthropological information relating to the grand narrative of the pearling economy, are considered.

The third section, the so-called 'thematic comparative analysis', expands beyond the theme of pearling while continuing to emphasise its economic and social characteristics. Pearling constitutes a cultural tradition that was the exclusive economic focus of a region over several centuries. The isolated single product economy based on the collection and trade of pearls, in *Muharraq*, produced—social, cultural and economic—aspects that are uniquely adjusted to the needs and specificities of a pearling settlement. The thematic analysis is centred on a comparative study of existing World Heritage Sites that are thematically related to the proposed World Heritage Site, "Pearling, testimony of an island economy". It is based on sources such as World Heritage nomination dossiers, Advisory Body Evaluations, past decisions of the World Heritage Committee, and promotional materials. While the theme of pearling is not yet reflected on the World Heritage List, comparisons can be made at a more general level on the basis of the key aspects of this nomination, i.e. traditional sea-use, exploitation and trade of high-value natural resources, single product economies, and narratives of specialised economic activities.

3.c.ii Chronological Comparative Analysis

The chronological comparative analysis presents a comprehensive survey of the historical evidence pertaining to the fisheries of *Muharraq*, Bahrain and the Arabian Gulf, and compares the data to evidence from other pearl fisheries and markets on the global scale. Historical and statistical information, provided by international travellers, local observers and colonial administration reports, allows the following key points to be made:

- the Arabian Gulf has the oldest known pearl fishery yet identified anywhere in the world, dating back over seven thousand years;
- the pearls from the Gulf, and specifically the Bahrain banks, were historically renowned as the finest in the world;
- the Arabian Gulf provided the vast majority of the world's pearls, and indeed was the only regular and substantial supplier of pearls to the world's markets throughout history, except for brief interludes during the 16th and late 18th/early 19th centuries AD;
- Bahrain was the centre of the Gulf fishery, and was almost unrivalled until the early/mid 19th century, after which it faced emerging competition from newer centres in the region;
- Bahrain nonetheless continued to maintain the largest fleet in the Gulf, and produce the most valuable pearl harvest of any Gulf state, up to and during the boom years of the early 20th century. As the largest producer, and as the largest pearl emporium in the Gulf, Bahrain accounted for over half the value of total pearl exports from the region;
- *Muharraq* was the centre of Bahrain's pearling economy, and *Muharraq* City was the largest pearl-diving centre in the Arabian Gulf.

Earliest evidence of the Arabian Gulf fisheries

According to the archaeological evidence, the Arabian Gulf possesses the most ancient large-scale pearl fishery in the world, beginning in the Neolithic Period. Archaeological pearl finds are known throughout the Gulf, from Kuwait to the UAE. The world's oldest known pierced pearl was found in Kuwait, at the Neolithic site of H3, As-Sabiyah, dated to between 5300 and 4800 BC (Carter, 2005 p. 162-3, fig. 2). Numerous other Neolithic pearls have been found elsewhere in the Gulf, usually in burials, with over 60 being found at the collective graveyard at Jebel al-Buhais 18, Sharjah, UAE (de Beauclair, Jasim, & Uerpmann, 2006 p. 176-7). It is hypothesised that Gulf pearls were traded with communities in Mesopotamia (southern Iraq), in exchange for painted pottery (Carter, 2006 p. 60; Masry, 1997 p. 133; Oates, Davidson, Kamilli, & McKerrel, 1977 p. 233; Potts, 1998 p. 23; Uerpmann & Uerpmann, 1996 p. 135). This is difficult to prove, but it would be the earliest example of an international trade in pearls.

Following the end of the 5th millennium, there is a lapse in the evidence for pearling in the Gulf, perhaps largely due to the widespread depopulation of eastern Arabia in the face of the onset of climatic aridity. Pearls do not appear to have been highly valued during the subsequent Bronze Age. There are isolated finds of the later 4th millennium from Uruk (southern Iraq), with further examples probably dating to the late 4th/early 3rd millennium found in cairn tombs in Kuwait (Heinrich, 1936 p. 42, Taf. 37 p. top; Limper, 1988 p. 57, no. 71, Taf. 7; Wojnarowicz, 2009: 17). Significantly, none of the thousands of excavated Early Dilmun burial mounds in Bahrain has produced any pearls, though 14 unpierced examples were recovered from the settlement at Saar, dating to the first quarter of the 2nd millennium BC (Moon, 2005 p. 180, fig. 5.8o-q). It has been argued that the “fish-eyes” mentioned by Mesopotamian texts of the early 2nd millennium, which were imported by the Dilmun traders, may have been pearls, but this is disputed (During Caspers, 1987; Howard-Carter, 1986; Oppenheim, 1954 p. 7, n. 6).

It is clear that by the 1st millennium BC the prestige of pearls had been restored, with pearls turning up on jewellery from the Assyrian and Neo-Babylonian capitals (Donkin, 1998 p. 46; Koldewey, 1911 p. 46; Layard, 1856 pp. 505, 507). A particular market was found amongst the Achaemenid elites of Persia, demonstrated by lavish jewellery finds in tombs at the royal cities of Pasargadae and Susa (de Morgan, 1905 pp. 51-2, fig. 80, Pls. II, V; Moorey, 1994 p. 93; Stronach, 1978 pp. 168, 172, Pl. 156c). It is certain, albeit unproven, that the Achaemenid elites obtained most or all of their pearls from the Arabian Gulf.

Earliest evidence of the Indian/Sri Lankan fisheries

The pearl fisheries of both the Arabian Gulf and India/Sri Lanka were known to the ancient Greeks, who first penetrated the region during Alexander’s campaigns from 326 BC. The fisheries are described by Theophrastus and later Greek authors, though Bahrain is not specifically named as a pearling centre until the time of Pliny in the 1st century AD (Theophrastus, *De Lapidibus* 36: Eichholz, 1965 p. 71). Pliny specifically names Bahrain (Tylos) as being “extremely famous for its numerous pearls” (Pliny, *Natural History* VI.XXXII.148: Rackham, 1942 p. 449). He notes that the finest pearls were from the Arabian shores of the Gulf:

“The most productive is Taprobane [Sri Lanka], and also Stoidis [an island in the Lower Gulf, perhaps Lavan/Abu Shuaib], as we have said in our circuit of the world, and also the Indian promontory of Perimula; but those round Arabia on the ... Gulf of the Red Sea are especially praised” (Pliny Natural History IX.LIII.106: Rackham, 1940 p. 235).

It should be noted that Pliny describes the fisheries of Sri Lanka, India and the Arabian shore of the Gulf as the most productive, but it remains ambiguous whether the Arabian fisheries are praised for their even higher productivity or their quality. At this stage the Indian fisheries were certainly better known to the Romans than those of the Gulf, which was largely the domain of rival imperial powers and smaller kingdoms on the fringes of Roman influence and knowledge.

There is no archaeological evidence for early exploitation of the major fisheries of southern India and Sri Lanka during the prehistoric or later ancient civilizations. In later centuries, pearling activities were located in the Gulf of Manar, i.e. the straits which separated the southern tip of India and the north-western tip of Sri Lanka to the south of Adam’s Bridge (a line of shoals linking the two land masses), and also the Palk Strait, on the north side of Adam’s Bridge. There is textual evidence for pearl-fishing in this area from around the 4th c. BC, but there are no reports of pearls from Neolithic or Chalcolithic contexts in the Indian Subcontinent. For the Bronze Age, although shell and coral jewellery is known from various sites of the Indus Valley civilization (3rd-early 2nd millennium BC), no pearls are reported. The earliest pearls known from the Indian subcontinent comprise a few examples from Taxila in the Punjab (about 1,100 km from the coast), in contexts dating to around the 2nd or 3rd century BC (Donkin, 1998 p. 57-8).

There is no question that the Indian and Sri Lankan fisheries were important. They are described (albeit in garbled form) by Megasthenes, the Greek ambassador of the Seleukids at the court of Chandragupta, the Mauryan Emperor (ruled 320-298 BC), and were also mentioned by Theophrastus, Nearchus and Chares of Mitylene. Indian sources most notably include the *Arthashastra*, a treatise on statecraft compiled in the 2nd century AD but containing material dating back to the time of Chandragupta. This treatise lists the places where pearls were found, including several spots around the southern and southwestern tip of India and the north west side of Sri Lanka (Donkin, 1998 pp. 61-2 and Map 14). These places border the Gulf of Manar, which was the major source of Indian and Sri Lankan pearls until the 20th century AD, though its output was sporadic (see below). Other sources, which do not appear to have been so significant in later centuries, are named in the west of India around the mouth of the Indus, and on the east coast at Mahendra, on the coast of Orissa. Further information on the southern fisheries is added by the Mahavamsa, the Great Chronicle of Sri Lanka, which recounts how pearls were presented as gifts to the King of Pandya in the 5th c. BC, and the Mauryan emperor Asoka in the 3rd c. BC (Donkin, 1998 p. 64).

Earliest evidence of the other fisheries

The East Asian pearl fisheries are also late to provide archaeological evidence, compared to the Arabian Gulf, with the single exception of the so-called “Jomon pearl” from Japan. This is said to date back 5,500 years (i.e. ca. 3,500 BC), and is therefore around 2000 years more recent than the oldest examples from the Arabian Gulf (Joyce & Addison, 1992 p. 58). In China, the earliest archaeological pearl finds are of the 5th and 6th century AD, though it is clear from much older texts that pearls were known and valued as early as the 5th c. BC (Donkin, 1998 p. 66-8). It appears that freshwater pearls were known first, but marine pearls were exploited around Canton by the 3rd century BC and the island of Hainan by the 2nd c. BC.

The pearl fisheries of Europe were all based on freshwater mussels, and were historically important in Britain (particularly Scotland), parts of France, Germany, Scandinavia and north-western Russia. Almost nothing is known of their early exploitation, though the Roman invasion of Britain was said to be partly inspired by reports of rich pearl fisheries. The quality of British pearls was questioned by Tacitus (100 AD), though Origenes (ca. 246-248 AD) ranked them second after India (Donkin, 1998 p. 257). There is no evidence that there was an international market in European pearls before the Roman period, and their contribution henceforth was dwarfed by that of the fisheries of the Arabian Gulf and India/Sri Lanka.

Data on the fisheries of South and Central America is also thin for most of the prehistoric period, though jewellery derived from marine shellfish, particularly *Spondylus* shell, was highly sought after in Pre-Columbian times. Donkin lists 14 Pre-Columbian sites which bore pearls in Central America (Donkin, 1998 p. 307, Table 12). The sites fall within the Classic Maya horizon, thus ca. 250-900 AD. At this stage nothing is known of the fisheries of South America, including the Venezuelan sources which were highly significant following the arrival of the Spanish (see below).

Pearl fisheries in manuscripts and traveler accounts

Pearling in the Gulf flourished during the Sasanian Period, and does not appear to have been disrupted during the transition to the Islamic Period. The immense wealth of the Umayyad and Abbasid caliphs included numerous pearls (Shalem, 1997), and the sources are explicit that pearl fishing activities flourished, being continued by the surviving Christian communities of the Gulf at least until the 9th century AD (Beaucamp & Robin, 1983 pp. 186-7). By the 11th century AD, the Gulf was recognised as both the most productive source of

pearls and the provider of the finest pearls (Al-Biruni – see below). Moreover, by this time, and probably since long before, Bahrain was the centre of the fishery, both as the major market and home of the main pearling fleet (Al-Idrisi – see below). It maintained this position throughout the subsequent centuries, except for periods of extreme disruption.

Sources of the Sasanian period mention the pearl fishery on Muharraq (*Samahij*), as well as a pearl market or centre on the Persian coast at ‘Rishahr’ (Bushehr) (Simon, 1938 p. 99). No other places in the Gulf are specifically named in the ancient sources with regard to the fishery, but it has been suggested that demand for pearls at this stage also led to the foundation of new settlements or pearling camps along the Persian shore (Williamson, 1971-2 p. 29-30). The demand for pearls was very great, with main markets in Iran and the Byzantine Empire. It is not easy to assess the relative contribution of Gulf pearls at this time, as opposed to those from India/Sri Lanka or the Red Sea, but by the time of the early Muslim scientists and historians, Bahrain was repeatedly named as the centre of the fishery. There is even a mention in the Qur’an itself to pearls coming forth from the two seas (refer to the initial quote of this dossier):

“In the Name of Allah the Most Gracious, the Most Merciful; He has made al-Bahrain (the two seas) flow freely (so that) they meet together. Between them is a barrier which they cannot pass. Which then of the bounties of your Lord will you deny? There come forth from them pearls, both large and small. Which then of the bounties of your Lord will you deny?” (Al-Quran, Surat-ul-Rahman, 19-23).

Bahrain means “two seas” which creates the association with pearls as an indirect allusion, although the Qur’an is perhaps not explicitly referring to Bahrain. The Bahrain fishery is also mentioned by Muqaddasi (985 AD), along with the Kharg Island fishery off the coast of Iran in the northern Gulf:

“Pearls are found in this region on the coasts of Hajar. They are obtained by diving into the sea for them opposite Uwal (Awal), [the main island of Bahrain] and the island of Kharak” (al-Muqaddasi, 1994 p. 93).

Muqaddasi further mentions that pearls were traded at *Sirāf*, the major entrepôt on the Persian shore, which would have given access to markets in Mesopotamia, Iran and as far as the Mediterranean and China. Between 1035 and 1042 AD, Nasir-i Khusrau passed through eastern Arabia, still in Qarmathian hands, and referred to pearls being fished “from the sea of Bahrain” (Khusrau, 1970 p. 230). Al-Biruni, who wrote an extensive digression on pearls and pearl fishing between 1040 and 1048 AD, notes that the best and most plentiful pearls are found in the Gulf, with the finest banks off Bahrain, and the next best being between them and *Sirāf*:

"The best maghasat [pearl banks] are in the ... Gulf. The maghasat of Bahrain are especially of high quality, as they promise more profit and less loss, and are superior to the others. Next are those maghasat that are close to them, and are situated between them and Siraf. Their pearls are known as Qatari" (al-Biruni, 1989 p. 122-4).

Around a century later (1154 AD), al-Idrisi gives more details on the Bahrain fishery. He makes it clear that there were pearling centres elsewhere: "There is a route by which, following the coast, one can travel from Oman to Bahrain. It passes Sohar, Damar, Muscat, al-Jabal and *Julfār*, places where there are pearl fisheries" (al-Idrisi, 1836 p. 157). Al-Idrisi also specifies that the best fisheries were in the Gulf, being more productive than those of India (in which he presumably includes Sri Lanka) and the Red Sea:

"It is in the Gulf that nearly all the pearl fisheries exist. Around 300 are frequented and renowned...The fisheries of the Gulf are richer and more productive than those in the seas of India and Yemen" (al-Idrisi, 1836 p. 377).

Moreover, al-Idrisi makes it clear that Bahrain was the centre of both the fishery and the major pearl market of the Gulf:

"The seafarers who engage in the pearl fishery live in this island [Awal]. They inhabit the town, to which wealthy merchants come from all parts of the world, staying throughout the months of the diving season" (al-Idrisi, 1836 p. 373).

Thus, by the mid 12th century, Bahrain was explicitly recognised as the main centre for the world's most productive pearl fishery. The diving techniques and mercantile practices used in Bahrain, which are fully described by al-Idrisi, largely correspond exactly to those known from later centuries, up to the 20th century AD. Al-Idrisi additionally provides the information that the Bahrain fishery was taxed by *Qays*, a merchant state based on a small island on the Persian side of the Gulf. *Qays* had an exclusive trading relationship with Genoa, and many of the pearls from the Gulf travelled through Iran on Genoese caravans to the Black Sea via Tabriz (now in Iranian Azerbaijan), and thence to Italy and the western European market. Indian pearls were also entering the international market at around this time or soon after. The testimony of Marco Polo suggests that Indian pearls were entering Iran through Hormuz, the great trading rival of *Qays*, and also passing to Tabriz, where they were bought by "Latin" merchants (Moule & Pelliot, 1938 pp. 104, 123). As well as the Genoese these included Venetians such as Marco Polo himself, but also Florentines and Siennese (Wink, 1996 p. 21). *Qays* was decisively defeated by Hormuz in 1330, and control of the Bahrain fishery then passed to the latter (Cole, 1987 p. 179).

Ibn Battuta (1330 AD) reveals that divers and merchants from *Fārs*, Bahrain and Qatif fished the banks between Bahrain and *Sirāf*. The ruler of Hormuz, or perhaps the Jarwanid governor of Bahrain, apparently took one fifth, and the rest were bought by merchants who travelled there by sea (Battuta, 1929 p. 122). The location of the major terrestrial pearl market may have temporarily shifted from Bahrain at this stage.

A lesser pearling centre located at *Julfār* (near the contemporary *Rās al-Khaymah*) had also been mentioned by al-Idrisi in the 12th century as a place where pearls were found, and it remained a pearling centre during the Hormuzi period. It is no coincidence that, together with Bahrain (and perhaps Qatif, which was usually overshadowed by its near neighbour Bahrain), *Julfār* is the only permanent settlement on the Gulf coast, with a significant population backed by an extensive agricultural hinterland. *Julfār* was a major town and entrepôt from the early/mid 14th century onwards (Kennet, 2003 p. 118). This guaranteed its status as a pearling centre, perhaps more than proximity to the pearl banks. With its hinterland and other trade activities, however, it was never exclusively focused on pearls like Bahrain.

The famous Arab navigator Ahmed ibn Majid pinpointed Bahrain as the centre of the fishery in around 1490, with 1000 ships:

"The island of Bahrain is there which possesses a pearl fishery where approximately a thousand ships have been used for diving for centuries and this place is not surpassed. Around Bahrain are a number of other islands, inhabited or not, with pearl fisheries" (Tibbetts, 1971 p. 213).

Pearl fisheries documented in European colonial records

The Portuguese entered the Gulf in 1507, conquered Hormuz in 1514 and took Bahrain in 1521. Both Bahrain and *Julfār* were well known to them and other western sources. In 1508 the Italian traveller di Varthema had already mentioned a pearling location 3 days from Hormuz, which may refer to the banks off *Julfār* (Billecocq, 1995 p. 57). Albuquerque himself stated that the pearls of Bahrain were chosen to be sent to the royal court in Portugal, on account of their quality: "for they are better and more lasting than any that are found in any other of these parts" (de Albuquerque, 2001 p. 187).

Bahrain and *Julfār* were then named jointly as sources of the best and most abundant pearls in the Gulf by Duarte Barbosa (1513), Andrea Bacci (1543), Vincent Le Blanc (ca. 1578) and Gasparo Balbi (1580) (Billecocq, 1995 pp.

60, 64, 73, 86). Barbosa is particularly informative about Bahrain, and reveals that it was a central pearl market, as well as being a major fishery and a source of revenue to the rulers of Hormuz:

"Merchants of many parts reside in this island [Bahrain], and many ships with great merchandise sail to it; and here and in the neighbourhood much seed pearl and many pearls are produced, and they fish them on the island itself, from which there is great profit to the inhabitants; and the king [of Ormuz] draws from this island and from all the others large revenues. The merchants of Ormuz go to this island of Baharem to buy the pearls and seed pearl for India and other parts where they find it profitable, and for the kingdom of Narsinga; and also those of Persia and Arabia go there to buy them, and in all this sea of Persia these pearls are found, but not in such quantity as in this island of Baharem" (Barbosa, 1866 p. 37-38).

Soon after, in 1521, Piri Reis mentioned that "all the trade in pearls takes place in Bahrain", underlining its role as a pearl market. Le Blanc described those of Bahrain and *Julfār* as "the whitest, the biggest and the roundest" (Billecocq, 1995 p. 73). Balbi also provided a list of numerous other places where pearls were fished, many of which later developed into pearling centres (including Dubai, Sharjah, Ajman and Umm al-Quwain), though it is clear that at this time they were not yet significant centres or pearling towns (Pinto, 1962 p. 121).

Portuguese hegemony over both Bahrain and *Julfār* (exercised through their vassal, Hormuz) and coastal India (controlled from Goa) makes it difficult to assess the relative contributions of each fishery to the global market at this time. It appears that nearly all the pearls destined for the European market, and perhaps also the internal Indian one, passed through their hands at Goa. The exact source of pearls and the organisation of the fishery around Bahrain are also obscured by the role of the city of Hormuz, which remained the major entrepôt at the entrance of the Gulf, and through which almost all goods passed, including pearls. The rivalry of *Julfār* was also significant, and *Julfār* even provided a word for the Portuguese language, the word *aljofa* being used to describe small round pearls in the mid 16th century (Billecocq, 1995 p. 77). It seems that Bahraini pearl merchants suffered under the Portuguese habit of diverting Bahrain's pearls onto their own boats for shipping to Portugal, whereas previously the merchants of Bahrain had sold their pearls themselves in Hormuz and India (Cole, 1987 p. 183). The Bahrainis, therefore, had key markets taken out of their hands, and possibly could only sell locally to the Portuguese.

A few pieces of information indicate, however, that Bahrain was still most important fishery in the Gulf, or had regained its position by the late 16th century. In 1583, the English merchant Ralph Fitch described the riches and trade of Hormuz, mentioning that the

town had a "great store of pearls, which come from the island of Baharim, and are the best pearls of all others" (di Varthema, 1863 p. 94 Note 1). This shows that at the very least, the pearling fleets were fishing around Bahrain, even if they were not based there. Then, in around 1596, the Dutch visitor Jan van Lindschoten explained that the Portuguese factor in the Gulf based himself in Bahrain solely because of the fishery:

"The principall and the best that are found in all the Orientall Countries, and the right Orientall pearles, are between Ormus and Bassor in the straights, or Sinus Persicus, in the places called Bareyn, Catiffa, Julfar, Camaron, and other places in the said Sinus Persicus, from whence they are brought into Ormus. The king of Portingale hath also his factor in Bareyn, that stayeth there onlie for the fishing of pearles. There is great trafficke used with them, as well in Ormus as in Goa" (Billecocq, 1995 pp. 92-3).

This shows that Bahrain was again the main pearling centre within the Gulf. Secondly, by 1603, Teixeira makes it very clear that the main fishery was at Bahrain, which was "famous for the number and quality of the pearls fished up in its sea" (Sinclair, 1902 p. 175). Teixeira names Bahrain as one of the two "great fisheries of pearls and seed pearls", along with the fishery of the Gulf of Manar. Teixeira gives a count of the boats in the Gulf fishery, enumerating 100 from Bahrain, 50 from *Julfār* and 50 from *Nakhilū*, a port of the Persian shore, while a little earlier Le Blanc counted 300 in the Gulf in around 1578 AD (Billecocq, 1995 p. 73; Sinclair, 1902 p. 176).

Notwithstanding the superlatives given by Portuguese and other observers, and Bahrain's continuing role as the centre of the Arabian Gulf fishery, it is clear that the pearling industry of the Gulf had suffered considerably under Portuguese rule. Teixeira's total of boats is considerably smaller than that given by Ahmed ibn Majid in around 1490. It is unlikely that this is because of inaccurate estimates by one of the two. Ibn Majid was local of the Gulf and more familiar with its fleets than any other observer, so he should not be lightly accused of exaggeration. Teixeira's low count, however, is supported by that of Le Blanc (300 boats in ca. 1578). It seems likely, therefore, that the Gulf fishery had undergone a contraction between 1490 and 1578.

Moreover, according to Teixeira's testimony, at this stage the fishery of the Gulf of Manar was about twice the size as that of the Gulf, yielding a million and a half in gold each year (1,500,000 ducats), and involving 4-500 boats each with 60-90 men, and with 50-60,000 men in total, the pearl markets and the administration (Sinclair, 1902 pp. 177-8). In contrast, Teixeira estimates a total of 200 pearling boats in the Gulf, yielding 600,000 ducats (Sinclair, 1902 p. 176).

The contraction of the Gulf fishery was almost certainly caused by the discovery of vast quantities of pearls in the New World at the start of the 16th century, particularly off the coast of Venezuela, around the island of Cubagua. These fisheries unleashed a massive flood of pearls into Europe, equal to or greater in value than the fisheries of the Arabian Gulf and the Gulf of Manar. The coast of modern Venezuela, in particular, was found to be famously rich in pearls, and the names given to parts of this region indicate that pearls were the major point of interest (i.e. the island of Margarita, and la Costa de las Perlas – the Pearl Coast). Columbus first noticed the abundance of Venezuelan pearls on his third voyage, in 1498, and significant quantities of pearls began to be sent back to Spain in 1500 (MacKenzie, Troccoli, & León, 2003 p. 8-9; Perri, 2009 p. 132). In 1509 a settlement was founded on the island of Cubagua, and re-founded in 1528 as Nueva Cadiz, which was intended to be the regional pearling centre. The most important pearl markets in Europe were said to be Seville and Amberes in Spain, Venice, and Lisbon (MacKenzie, Troccoli, & León, 2003 p. 11). The heyday of the Cubagua fishery was between 1530 and 1535, with a peak of 1,380 kg of pearls being shipped from Cubagua in 1527. An average of 800,000 pesos worth of pearls was shipped annually from there to Europe (equivalent to ca. £160,000 sterling) (MacKenzie, Troccoli, & León, 2003 p. 9; Perri, 2009 p. 135). The value of the Gulf or Bahraini fishery at exactly this time is unknown, but Teixeira's figure for pearls sold at Bahrain's market 70 years later, when the Gulf market was probably at its lowest ebb since the Bronze Age, was 600,000 ducats, equivalent in value to around £100,000 or £125,000 (Ovington, 1929 p. 245 n. 4).

Clearly there was significant competition from the New World, but it did not last for long, and it was recognised that the quality of the pearls was less than that of the Gulf and India (Donkin, 1998 p. 319). Nonetheless, it is estimated that the fisheries of Venezuela (Cubagua) and Columbia (Cabo de la Vela) poured more pearls into circulation between ca. 1515 and 1545 than at any comparable period of time before or since (Donkin, 1998 p. 319). This led to a sharp drop in prices, recorded in Seville between 1535 and 1545 (Donkin, 1998 p. 319).

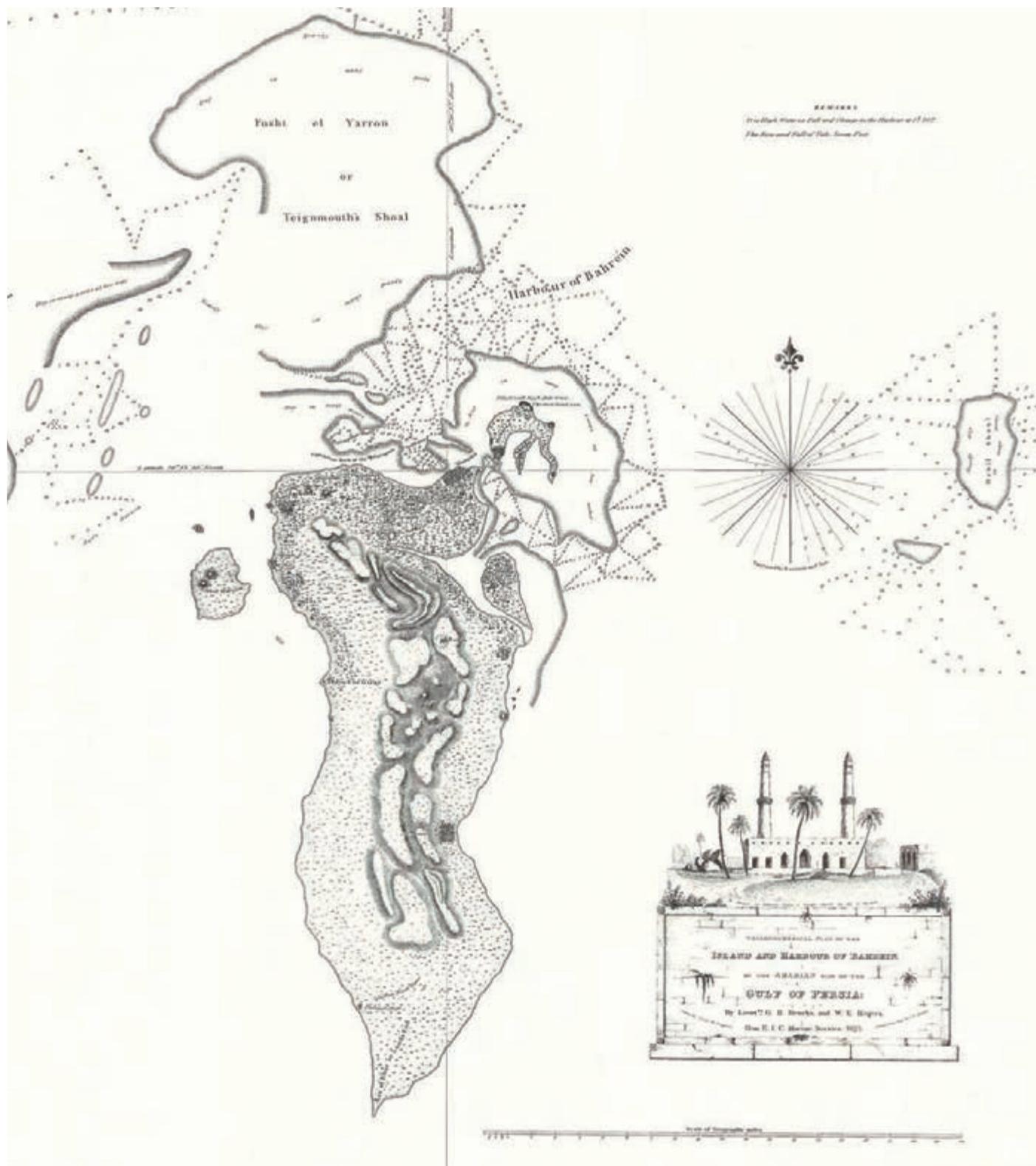
Overfishing and poor treatment of the enslaved native pearl fishers rapidly depleted both the fisheries and skilled labour force in Venezuela (MacKenzie, Troccoli, & León, 2003 pp.10-11). The Cubaguan fishery was in decline by the 1540s and Nueva Cadiz was abandoned in 1545, but other fisheries had already been established in Columbia, off the Pacific coast of Panama, in the Gulf of California and off Mexico (MacKenzie, Troccoli, & León, 2003 pp. 1, 11). Harvesting off Venezuela was renewed in the 1570s, but rapidly fell off, and was not significant again until the mid 19th century (MacKenzie, Troccoli, & León, 2003 p. 11). Records of the quinto,

the fifth of the harvest taken by the Spanish Crown (thought to be an underestimate because so much of the harvest was smuggled out secretly to avoid the tax) reveal a sharp rise, peak and drop in the value of the harvest of Cubagua between 1520 and 1540, with the overall harvest of the Indies recovering briefly in the 1560s, then again peaking dramatically in the 1580s, followed by a drop to almost nothing in 1600 (Donkin, 1998 p. 324 fig. 72).

The destruction of the New World beds may have been accelerated by use of dredges by the Spanish to collect the pearl oysters (Perri, 2009 p. 137-8). It appears from Thevet's account of 1575 that dredges were also used around Bahrain by the Portuguese in the 16th century (Thevet, 1575), and this may also have been the reason for the above noted contraction in the Gulf fishery. It remains to be explained why these problems did not affect the fishery in the Gulf of Manar as much as they did the one of the Arabian Gulf. Partly, it may be because the coasts of India and Sri Lanka were able to maintain a significant population independent of the pearling industry, and that there would always therefore have been people and boats in place to exploit the beds when a good pearling season occurred (see below for a full outline of the unpredictability of these beds). In contrast, the population of the Arabian Gulf littoral grew or shrank according to the availability of currency through pearling and trading activities. A prolonged period of poor returns from pearling, caused for example by lower prices during the period of influx from the New World, would have resulted in the uptake of nomadic pastoralism and migration to population centres in inland Arabia, Oman, Mesopotamia and Persia. The Gulf's population and pearl fishery were therefore sensitive to economic fluctuations, and subject to rapid contraction during difficult times.

The Safavid conqueror of Bahrain, Shah Abbas, explicitly counted Bahrain as his most valuable conquest "on account of its magnitude and vicinity to the pearl banks on the coast of Arabia" (Malcolm, 1829 p. 347-8). He used the tax from Bahrain's pearl fishery to support the religious institutions of his domains. In 1614 Sir Robert Sherley, the British ambassador and military advisor to Shah Abbas clearly considered Bahrain as the source of the best pearls in the world:

"Bareyne is an island upon the coast of Arrabya, 40 leagues off the coast of Perscia. It yields no profit for commodity, except only the fishing of pearls, which are esteemed to be the richest and best in the world. This island the king of Perscia took from the Portingals and keepeth a garrison of 800 horse thereon" (Anon, 1896 p. 146).



Historic map of Island and Harbour of Bahrain illustrating the shallow coral reefs around Muharraq island, by G. B. Brucks and W. E. Rogers, 1825

British merchants noted, in 1616, that Shah Abbas prevented the best pearls from travelling to India, hoarding them for himself rather than letting them enter the possession of his Moghul rival (Ferrier, 1976 p. 203). Accordingly, great gain was said to be made from selling fine pearls to the Moghul Emperor (Jahangir), though attempts by other British entrepreneurs to profit from the pearl market in India were not hugely successful. Moreover, they noted that the pearls of Bahrain were “the better and more oryent generally then the Pearles of any other partes”, “orient” referring to its iridescence rather than simply colour or lustre. According to Tavernier, who listed Bahrain first among his descriptions of the world’s pearl fisheries (Tavernier, 1925 p. 84), a single pearl from the Arab Gulf, said to be the finest ever found, was bought by the King of Persia “from an Arab who had just received it from the fisheries at Katif” for 32,000 toman, equivalent to 1,400,000 French livres, or around £100,000 (Tavernier, 1925 p. 103).

The pearls of the Arabian Gulf and Bahrain were now very well known to European travellers, scientists and jewellers, who frequently named them as producing the best pearls between the mid 17th and mid 18th centuries. Examples include Abbeville in ca. 1652 (“the pearls of the island of Baharem are greatly prized, both for their size and their roundness”); Murchio in 1656 (“it is there [Bahrain] that the finest pearls in all the orient

are fished”); Chardin in 1660 (“the fishery of pearls, which is all along the Gulph of Persica, but particularly round the Isle of Baherin. This fishery has a prodigious plenty, and produces more than a million pearls a year”); Chapuzeau in 1665 (“the most significant pearl fishing ground is on the coast of Arabia Felix, between the towns of Julfar and Catif”); de Rosnel in 1667 (“the most perfect are fished in the Gulf, between the island of Ormuz and Basra, in the area of Catyffa, Camaron [Gombroon, i.e. Bandar Abbas] and Iulfa”); Fryer in 1676 (“the best are found in this Gulf...between the Island of Ormuz and Byran [Bahrain]”); Careri in 1693 (“the most esteemed, that is to say those of the most beautiful water and the clearest, are found at the island of Bahrain, and on the coast of Qatif”); Gimma in 1730 (“the most beautiful are found at Iulfa, a port situated in the Gulf, in Bahrain, Catifa, Comorin and in other ports in the same sea”); and Jeffries in 1751 (“the pearls of the Gulph are next in importance to diamonds”) (Billecocq, 1995 p. 153; Chardin, 1724 p. 85; Gemelli Careri, 1719 p. 295). Regarding the comment by Jeffries, it echoes that made by Pliny, that pearls ranked second after diamonds, a status that was to be maintained until the advent of cultured pearls in the late 19th and early 20th century AD.

The most interesting of such statements, which explicitly compares the quality of pearls from the Gulf



Local inhabitant informing the site anthropologists about individual pearling histories

with those of Sri Lanka and India, is given by the British gemmologist Thomas Nicols in his Lapidary of 1652:

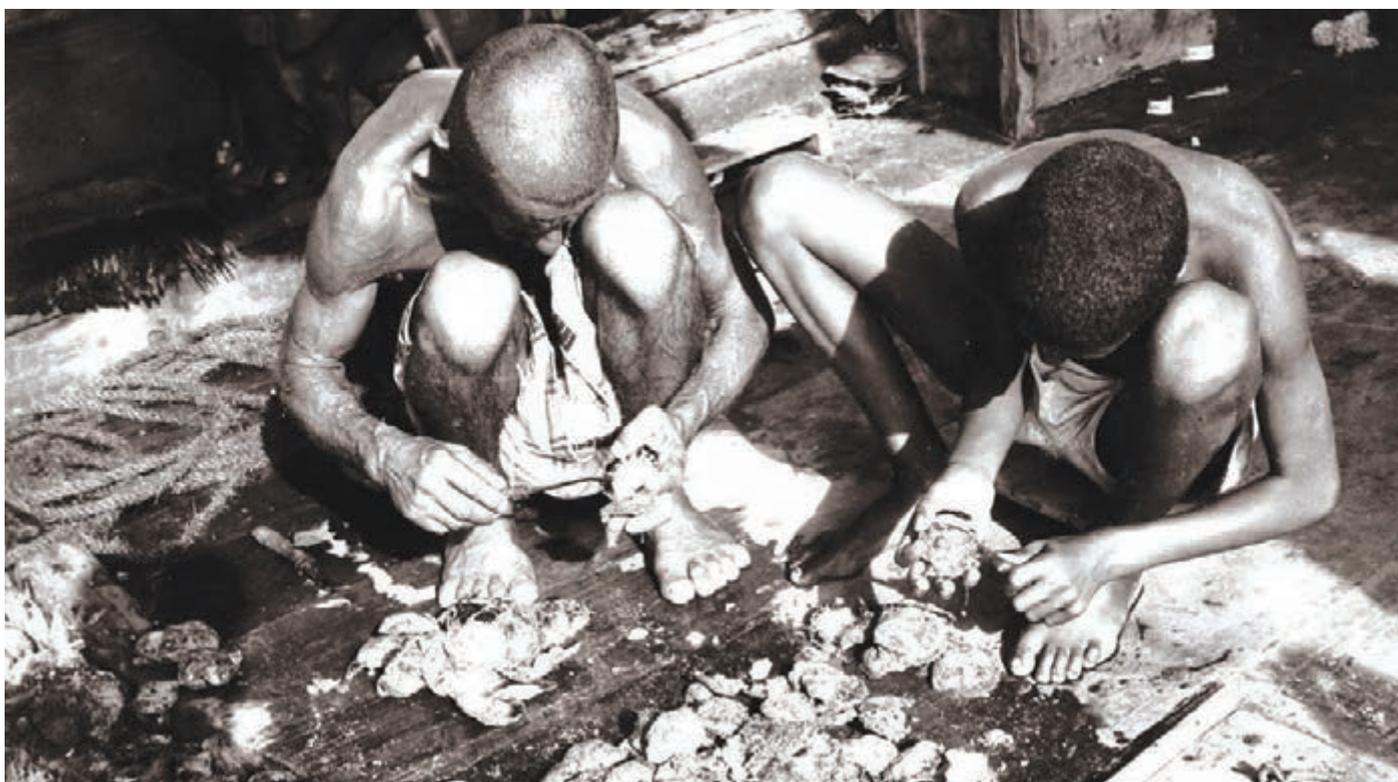
"The best are found in the ... Gulf, betwixt the island of Ormuz and the Bassoram, that is, about Barayn, Catyfa, Julfa and Camaron, and are thence brought into the Island of Ormus. For the excellent beauty of these it may well be said of them that 'If all the world were but one ring,, Ormus should the Union bring.' They are also found betwixt the Promontory of Comorin [the southern tip of India] and the island of Zeilan [Ceylon, i.e. Sri Lanka], but these are not to be compared with the Persian ones" (Nicols, 1652 p. 78).

Nicols also mentions fisheries around Sumatra, Borneo and Hainan, and between India and Java. The exact source of the two lines of poetry he quotes are hard to pin down, but it appears that it originated as a local saying in the Gulf, as described by Albuquerque: "The Moors hold Ormuz to be such an important place that they say 'The World is a ring and the jewel in it is Ormuz'" (de Albuquerque, 2001 p. 186). In Nicols verse, the reference to the Union is a pun combining a Latin term for the pearl (*unio*), with the joining of the two ends of the ring at the gem.

This global fame related directly to the recovery of the pearl fishery of the Gulf and Bahrain, from their low point in the 16th century. By 1659 the Gulf fleet numbered around 2000 boats according to Murchio, ten times the size half a century before (Billecoq,

1995 p. 137). Soon after, in around 1665, two to three thousand pearling boats were based on Bahrain (Cole, 1987 p. 189; de Thévenot, 1687 p. 161). This is dramatically higher than the figures given by Teixeira for 1603 (100 boats in Bahrain's fleet, 200 total in Gulf) and Le Blanc for 1578 (300 pearling boats in the Gulf). From the mid 17th century onwards the Gulf was and remained unrivalled as the major supplier of pearls to the world markets.

The renewed value of the Gulf fishery attracted the interest of foreign imperial powers, particularly as the Safavid state began to crumble. The Dutch East India Company (VOC) became involved in the Gulf during the 17th century, establishing a presence in Gombroon (Bandar Abbas) in 1623. In 1643 they began to take an interest in the pearl fishery of Bahrain, sending two merchants, Waelckaert and Costerus, to the island with an experienced Banyan merchant to investigate, and buy pearls with a modest sum of 25,000 laris (equivalent to 312.5 toman) (Floor, 1982 p. 210, p. 220 Note 12). The Dutch director at Gombroon, Carel Constant, compiled an account of this, mentioning that pearling fleets set out from Bahrain, *Julfar*, Congo ('Bandar-e Kung') and Qatif. Note that according to Constant the centre for pearling on the Persian shore appears to have moved from *Nakhilū* to 'Bandar-e Kung' since Teixeira's day, though the later testimony of



Historic photograph of pearl divers opening oysters, photograph provided by Abdullah al-Khan

Abbé Carré (1672-4) indicates that *Nakhilū* was still very significant, with a pearling fleet of 200 dhows or 400 trankeys (Carré, 1948 p. 829). The mission was not a success as Costerus was robbed of the money on the Persian coast before he could get to Bahrain, and other matters soon occupied Constant's mind. In 1662 and 1663 further investigations were made, with a Banyan merchant being sent to Bahrain to buy pearls, and the market at 'Bandar-e Kung' being explored (Floor, 1982 p. 211). Again, these came to nothing. The Dutch once more became involved in 1690, sending the merchant Hoogcamer from 'Bandar-e Kung' with 10 boats to fish for pearls himself in the vicinity of Bahrain. He reckoned that barely one of his boats was able to make good his costs, and complained that his divers tried to steal pearls throughout the trip (Floor, 1982 p. 211).

The most concerted effort by the Dutch to profit from pearling was made in the mid 18th century by von Knipphausen, the irrepressible but bungling VOC factor, who set up a base at Kharg Island in the Gulf, following his expulsion from Iraq. In 1754 he persuaded the Governor General in Batavia (Jakarta) to propose a Dutch invasion of Bahrain to the VOC directors, noting the instability of the region following the final collapse of the Safavid state in 1722, and observing the riches of the pearl fishery, whose tax revenues he assessed as Rs. 240,000 in the days of Nadir Shah, who briefly consolidated the Persian domains in the period following the Safavid collapse (Floor, 1984 pp. 132, 136, 139). The British resident in Basra was worried enough to voice his concerns that the Dutch would take control of the fishery (Floor, 1984 p. 134). The directors voted against the plan, but Knipphausen was not deterred. In 1757, he hired divers to fish around Kharg Island. Like Hoogcamer, Knipphausen did not trust his divers and was unable to make a profit (Floor, 1982 p. 214), indicating the difficulties experienced by outsiders trying to penetrate the pearl market and fishery. He also attempted to fish the pearl beds using diving bells imported from Batavia in 1758, but, unfortunately, the directions for assembly and use were not included in the shipment, and they could not be used (Floor, 1982 p. 210).

The main pearl markets from the 17th century onwards

Although it was clearly the centre of the fishery, it appears that Bahrain was not yet able to reassert its role as the central market-place for pearls in the region. Hormuz, the main purchaser of pearls from Bahrain prior to the Portuguese, and the major pearl emporium following their arrival, suffered a catastrophic decline, as reported by British merchants in 1616 (Ferrier, 1976). Bandar-e Kung rose in its stead as the local Gulf emporium. Pearls

destined for the Persian and Russian markets were sold at 'Bandar-e Kung', while others were taken to Basra (Tavernier, 1925 p. 85). By the time of Careri in the 1690s, 'Bandar-e Kung' was still said again to be the main pearl market within the Gulf and sold the pearls gathered from around Bahrain (Gemelli Careri, 1719 p. 287). Careri's estimate of the value of the fishery (110,000 scudi, i.e. dollars, thus Rs. 220,000) seems very low (around a fifth or less than previous and subsequent estimates), and is more likely to be its value in tax or customs revenue; alternatively, a large number of pearls were bypassing the town, as they had in Tavernier's day.

Soon afterwards, however, the principal pearl market within the Gulf shifted again, to Kangan, another port on the Persian shore, after 'Bandar-e Kung' fell victim to repeated Omani attacks. Most of the pearls fished around Bahrain were sold at Kangan according to Alexander Hamilton, who traded in the region 1688-1723, (Hamilton, 1727 p. 91). It also appears that some Arabian pearls travelled from Muscat to Goa for the Indian market, though it is unclear whether this includes Bahraini pearls (via Kangan) or just local Omani product (Hamilton, 1727 p. 281). Hamilton noted that "the two Islands of Baren...belonging to the Crown of Persia, have the best Pearl Fishing in the World". Hamilton also remarked that "the honest pearl fishers" had deserted Bahrain after the Omani interventions of the late 17th and early 18th century, but had since "returned to their Industry, and continue their Fishery" (Hamilton, 1727 p. 73). From around the middle of the 18th century, Bahrain fully recovered as a pearl market. According to Knipphausen all the pearls recovered from the Gulf were taken to be sold in Bahrain or Qatif in the mid 18th century (Floor, 1982 p. 214). By 1790, Manesty & Jones reported that the pearl fishery "engages the Attention of many rich Arabian Merchants resident at Bahreen, and it gives Employment to many industrious People of the lower Class belonging to that place" (Saldanha, 1908, Vol. 1 p. 407). Henceforth, Bahrain retained its role as one of the two major pearl emporia of the Arabian Gulf, shared with Bandar-e Lengeh from the 1820s to 1904, and then shared with Dubai.

Outside the Gulf, Goa was the major global pearl market during the period of Portuguese dominance. Tavernier, who visited the region in the 1630s, named Goa as the global centre of the pearl trade, not only for pearls from Bahrain and the Gulf of Manar, but also for New World pearls (Tavernier, 1925 p. 95). Goa was soon eclipsed in tandem with the fortunes of the Portuguese, however, and Surat came to the fore in its stead. By 1770 Abbé Resnal noted that the best pearls went from Bahrain to Surat, with others going to Basra (Resnal, 1776 p. 312). In 1790, Manesty & Jones reported that most of the pearls from the Gulf went from Bahrain to Surat, with some instead going from Bahrain to Muscat, Bushehr, Sindh and Calcutta (Saldanha, 1908, Vol. 1, p. 408).

By the time of Morier (visiting in 1809), the trade had centred on Muscat, which shipped its pearls to Surat, though it must be assumed that Muscat was an intermediary market between Bahrain and Surat (Morier, 1816 p. 63). Pearls were still passing through Muscat in 1835, though by this time the destination was Bombay (Wellsted, 1838a p.21). It therefore appears that Bombay overtook Surat as the main international pearl market some time between 1809 and 1835. Bombay retained this position, unchallenged, until the decline of the pearling industry from the 1920s onwards.

New rivals and arrivals in the Arabian Gulf

From the late 17th century, a series of migrations occurred, which saw Arab tribes coming to the Arabian littoral from both inland Arabia and the Persian shores. They came specifically to exploit the oyster beds, in view of the growing value of the pearl fishery, which was beginning to boom in response to expanding international and particularly Indian demand for pearls. They were able to establish power bases on the coast, due to the weakness of the Persian state from the end of the 17th century onwards, which was only able to exercise sporadic control over Bahrain through unreliable and disloyal proxies. The most significant of these migrations, from the point of view of Bahrain, was that of the *'Utūb* (compare *Description of the historical context of the grand narrative of pearling in Bahrain*).

As far as the rest of the Gulf is concerned, the influx of Arab tribes from the 17th century onwards triggered the widespread foundation of new pearling towns, frequently on the sites of earlier pearling encampments or villages mentioned by Balbi. Major new foundations and re-foundations between 1700 and 1820 include:

- Kuwait. Re-founded and expanded by the *'Utūb*, probably around 1716 (Slot, 1998 pp. 110-112, 117), who changed it from a staging post on the land-route between *al-Ḥasā* and Basra, into a major trading and pearling port.
- Zubarah. Founded or expanded by the *'Utūb* of Kuwait in 1766, specifically "to procure a share of that [pearl] fishery for themselves, instead of continuing to purchase from other hands" (Hughes Thomas, 1985 p. 28, reproducing Captain Taylor's report of 1818). Became a major pearling and trading port, but was abandoned in the early 19th century following a series of devastating raids.
- *Jaww*. Another *'Utūb* town, founded from Zubarah on the east coast of Bahrain. Later abandoned in favour of Muharraq, in 1801.
- *Muharraq* Town. Re-founded by the *'Utūb* and their allies in 1801 (see below), which became the most important pearling town of the Gulf.
- Hidd. Yet another foundation by the *'Utūb* and their allies, on *Muharraq* Island, comprising a pearling town of 8000 people by 1905 (Lorimer, 1908 p. 1267-1269).
- Doha. Founded as *al-Bid'ah*, and probably represented on Niebuhr's map of 1765 as "Gattar", though misplaced. Present on Colebrooks map of 1820 as "Guttur, or Ul Budee" (Rahman, 2005 p. 3-4). Several smaller pearling towns, most of which survive to the present day, also appear in Qatar by the 18th and 19th centuries AD.
- Abu Dhabi. Founded by the *Bani Yas*, hitherto a bedouin confederation of interior Arabia, as a pearling town in 1761. Within two years 400 houses had sprung up, and by 1793 the leader of the confederation had transferred his headquarters from Liwa to Abu Dhabi, and a fort was built (Heard Bey, 1996 p. 262; Hughes Thomas, 1985 p. 463).
- Dubai. First mentioned by Balbi as a "place where pearls are found", represented at the signing of the General Treaty of Peace in 1820 with the British, though subject to Abu Dhabi, and described by Houghton as a modest town with a fort and around 1000 *Bani Yas* inhabitants in 1822 (Cook, 1990 p. 115). The fort is reputed to have been built in 1799. Expanded by a fresh migration of *Bani Yas* in 1833.
- Sharjah. Another "place where pearls are found" according to Balbi, and in the process of superseding *Rās al-Khaymah* as the headquarters of the Qawasim at the signing of the General Treaty of Peace in 1820. Had the largest fleet of pearling vessels outside Bahrain in 1922 (300 boats) (Cook, 1990 p. 114).
- Ajman. Mentioned by Balbi and unexpectedly singled out by Morier as possessing an extensive and lucrative pearl fishery in 1809 (Morier, 1816 p. 53). Signatory to the General Treaty of Peace in 1820.
- *Umm al-Quwain*. Mentioned by Balbi and signatory to the General Treaty of Peace in 1820. May have been more significant in the 18th century than the 19th and 20th, as it was described as a considerable town, recently abandoned, by Houghton in 1822 (Cook, 1990 p. 110).

It was during the 18th century, and the first quarter of the 19th, that the modern urban configuration of the Arabian side of the Gulf came into being. At the start of the 18th century, both the settlement pattern of the region and the location of its pearling centres corresponded to an ancient pattern, with single centres at Bahrain, Julfār and one on the Persian coast or islands. By 1820, a new constellation of towns existed along the Arabian littoral, most of which survive today and are still ruled

by the families and tribes which came to prominence between 1701 and 1820. The most significant feature of this reconfiguration in the Gulf is that it was almost entirely driven by pearling revenues. Not only were the new towns founded and swelled by people explicitly in search of revenues from pearling, but the majority of the income of the shaykhs was derived from pearling revenues. In 1824, for example, 97% of the value of Bahrain's exports were pearls, the vast majority going to India (Hughes Thomas, 1985 p. 568). In the second most significant pearling town of the time, Sharjah, the majority of the ruler's income was derived from taxes on the pearl fishery in 1822 (Cook, 1990 p. 114).

Pearling settlements in the Arabian Gulf

"Pearl fishing is the premier industry of the Persian Gulf; it is, besides being the occupation most peculiar to that region, the principal or only source of wealth among the residents of the Arabian side. Were the supply of pearls to fail, the trade of Kuwait would be severely crippled, while that of Bahrain might - it is estimated - be reduced to about one-fifth of its present dimensions and the ports of Trucial 'Oman, which have no other resources, would practically cease to exist; in other words, the purchasing power of the inhabitants of the eastern coast of Arabia depends very largely upon the pearl fisheries" (Lorimer, 1915 p. 2252, footnote to Annexure 1).

By Lorimer's time, approaching the peak of the industry, around 74,000 men and nearly 4500 boats fished the banks of the Arabian Gulf annually, with labour provided not only by the towns of the Gulf littoral, but also flooding in seasonally from as far away as *Ḥaḍramawt*, and a significant shortfall being taken up by slaves. In terms of boats, manpower and output of pearls, Bahrain was the most significant contributor in the region, providing just less than a quarter of the boats, manpower and pearl harvest, and exporting around half the Gulf's pearls, being also the leading pearl market of the Arabian Gulf by the middle of the first decade of the twentieth century. It was also once again "the principal pearl market of the Persian Gulf" by 1905 (Lorimer, 1908 p. 245).

Muharrāq was the major pearl-diving town within Bahrain, but was also a major town in the Gulf in its own right, and can accurately be described as the largest pearl-diving town in the Gulf. Lorimer's count of 20,000 people in *Muharrāq* Town in 1905 indicates that it was then the third biggest town in the Gulf, after Kuwait (35,000) and Manama (25,000), just a few hundred metres across the straits (Lorimer, 1908 pp. 1269-1271, 1051, 1158). Of the larger towns, around half of Kuwait's income and workforce was involved only in the carrying trade and not concerned with pearling. Manama was more of the

mercantile capital than a diving centre, as stated clearly by Lorimer. Sharjah (15,000) also played a major role in the carrying trade, and Rās al-Khaymah (16,000) was sustained as much by its agricultural resources as its maritime activities. The only major towns which were as centred on pearling as *Muharrāq* were the smaller towns of Doha (population 12,000), Dubai (10,000), Abu Dhabi (6,000), and Umm al-Quwain (5,000).

It is possible to trace the pre-eminence of Bahrain back in time using the numerous descriptions of the fishery and statistics which were gathered by succeeding generations of British intelligence gatherers and administrators. These provide detailed information on the value of the fishery in various places, the size of the fleets, and the relative importance of the various ports involved in the industry. This data is mostly presented in: The Persian Gulf Précis; The Persian Gulf Administration Reports 1873-1947; The Persian Gulf Trade Reports 1905-1940; The Records of the Persian Gulf Pearl Fisheries 1857-1962, all published by Archive Editions; The Arabian Gulf Intelligence, a compendium of data originally published in 1856; and Lorimer's invaluable Gazetteer of the Persian Gulf and Oman (Anonymous, 1986, 1987; Burdett, 1995a; Hughes Thomas, 1985; Lorimer, 1908, 1915; Saldanha, 1908).

The statistical data presented indicate Bahrain's central role in the Gulf, showing that it was the home of the largest fleet, the largest producer of pearls, and the most significant pearl market in the Gulf. In 1908, near the height of the global pearling boom, Kunz & Stevenson described Bahrain as "the centre of the greatest pearl fishery in the world". Evaluations of the fishery of the Gulf and Bahrain are given sporadically from the 17th century onwards, picking up in frequency in the early 19th century as the number and interest of British observers increases. Between 1800 and 1873, statistics on the values of the pearl fisheries of Bahrain and/or the Gulf or other ports are given by: Malcolm (for the year 1800); Taylor (1818); Brucks (ca. 1824); Wilson (1832); Wellsted (1835); Kemball apparently citing Hennell (1839); and Pelly (1866); the latter perhaps simply using Wellsted's figure rather than formulating his own estimate (Hughes Thomas, 1985 pp. 17, 22, 105, 567-8; Lorimer, 1915 p. 164; Pelly, 1868 p. 34; Wellsted, 1838a p. 265; Wilson, 1833 p. 284). Regarding the period prior to the advent of regularised trade returns in 1873, Brucks' figure for the Gulf is derived from his totals for Bahrain (1,600,000 crowns, i.e. dollars, equalling Rs. 32,00,000) and Lengeh (2 lakhs of dollars, i.e. Rs. 4,00,000) added together (Hughes Thomas, 1985 pp. 568, 600). Wilson provides similar estimates shortly after for Bahrain (1,000,000 to 1,200,000 crowns/dollars, i.e. Rs. 24,00,000) and the Gulf (1,500,000 crowns/dollars, i.e. Rs. 30,00,000) (Wilson, 1833 p. 284). Both therefore suggest that the

majority of total value of pearls coming from the Gulf were provided by Bahrain.

Detailed trade returns specifying the annual value of pearls exported from and imported into the Gulf ports are then available for the years 1873 to 1904 in the Administration Reports. The first year of these, 1873-4, gives a breakdown of the value of the pearl fishery for Bahrain and each of the ports of Trucial Oman (UAE), as well as values for Bushehr and Bandar-e Lengeh. Kuwait and Qatar are omitted, being outside the orbit or on the fringes of British control and mercantile interests, apart from a figure for Kuwait's pearl exports (by steamer) for the 1904 season. Trade returns between 1874 and 1904 combine the value of the fisheries of the Trucial Coast. These figures allow a comparison of the values of the pearl exports of Bahrain, the Trucial Coast and Bandar-e Lengeh. However, the figures for pearl exports are not the same as the value of the pearl harvest from each port or area, as some of them, particularly Bahrain, but also Lengeh and increasingly Dubai, acted as clearing houses or markets for the pearls of other areas. Thus, for example, it appears that the pearls Qatar and perhaps Kuwait were marketed through Bahrain. Records are also available for Bushehr and Bandar Abbas, but the quantities of pearls there are so low that they are irrelevant for this comparison.

Additionally, Lorimer provided a figure for the whole Gulf fishery, which he obtained by adding the export figures of each port together, excluding Trucial Oman until 1902, on the grounds that all of its pearls were exported through Lengeh for those years. In 1902, only half of Trucial Oman's pearls went to Lengeh, with the rest going directly to Bombay, and in 1903, only 1/5th went through Lengeh. The demise of Lengeh as a pearl market, which had rivalled Bahrain since the 1820s, can be directly apportioned to the imposition of customs duties on pearls by the Qajar authorities, at 5% for export and 25% for import (Kunz & Stevenson, 1908 p. 366; Lorimer, 1908 pp. 456, 1098; 1915 p. 2236). The result was simply that the merchants moved to Dubai. After 1904, the value of pearl imports into Bahrain sometimes surpasses 50% of the value of total exports, suggesting that at times, most of the pearls being exported from Bahrain originated from the fleets of other areas. In 1905, for example, pearl imports totalled Rs. 118,18,000, while exports were Rs. 161,94,000, the former being equivalent to 73% of the latter. Assuming that most pearls travelled to Bombay, and were not consumed in Bahrain, this indicates that Bahrain was a very major transshipment market for pearls. A similar role was played by Bandar-e Lengeh, which was the market for pearls from Trucial Oman between the 1820s and early 1900s, again mainly forwarding them to Bombay but also the Persian markets. Dubai became the major transshipment centre for pearls from Trucial

Oman following the collapse of Lengeh in the first decade of the 20th century.

Figures for the year 1873, the only time when a breakdown is documented for the pearl exports of the emirates of Trucial Oman, indicate that Bahrain's contribution to the Gulf fishery was rather low in that year (31% of the estimated total Gulf exports). It is nonetheless around twice the total for the Trucial Oman coast, and over three times greater than the exports of its nearest rival, Sharjah. Dubai supplied less than half the amount in comparison to Sharjah, and Abu Dhabi even less (Anonymous, 1986, Vol. I, 1873-4 pp. 61-80).

The amount of Lengeh's exports is remarkable, being still very significant once re-exports from Trucial Oman are taken into account. It is possible that some of the pearls from Turkish Arabia (including Qatar) and Kuwait were going through Lengeh at this stage rather than Bahrain, and that some of Bahrain's pearls were passing through Lengeh. The trade returns show Lengeh's pearls coming from "The Arab Coast and Bahrain" at this time, without distinguishing the two. The picture then becomes more complicated, with Bahrain apparently importing proportionally less pearls, but exporting a greater share of the Gulf's output between 1895 and 1901. It may have had a run of excellent harvests.

Nearly all the pearls were exported to India in 1873, with a small proportion heading north to Kuwait, Basra and Baghdad. By 1875 Bahrain's pearl exports nearly matched that of Lengeh, and it is likely that Bahrain had re-established itself as a direct supplier to Bombay, with Lengeh henceforth marking pearls from Trucial Oman only.

Figure 1 shows the amount of pearling boats in the Arabian Gulf for 1818 to 1905 in graphic form. It demonstrates how Bahrain enjoyed near-total domination of the industry until the 1830s, after which it was forced to accommodate competition from the new ports founded in the 18th and early 19th centuries AD. The table shows that by 1878 Dubai had come close to rivalling the fleet of Bahrain. A further breakdown in 1880, however, which lacks figures for Bahrain, gives the total for the Trucial Coast as just 1182 boats, with 450 at Dubai (Anonymous, 1986, Vol. 2, 1880-1, p. 4). Further figures given for 1889-90 and by Lorimer for 1905 continue to show Bahrain with the largest pearling fleet in the Gulf, with Qatar now being Bahrain's greatest rival.

	Bahrain	Whole Gulf
Taylor 1818	32,000	40,000
Brucks 1829	30,000	
Whitelock 1836	22,000	29,000
Pelly 1866	50,000	
Durand 1878		35,000
Lorimer 1905	17,633	73,566

Table 1: Counts of Men in Pearling, 1818-1905

It is also instructive to look at the number of men involved in the pearl fisheries of Bahrain and the Gulf (Table 1). Pelly is an unreliable witness. His figure is certainly an overestimate and should be ignored. The key trends are that, up to the time of Whitelock, Bahrain provided the majority of the manpower, which was clearly not the case by the time of Lorimer; and that an impressive expansion of the industry is apparent between the observations of Durand and Lorimer, which was certainly a response to the expansion of the global market and progressive price increases from the mid 19th century onwards.

Finally, it is worth assessing the role of *Muharraq* Island within the pearl fishery of Bahrain. The figures given in 1878 indicate that more than half of Bahrain's fleet (57%) was based on the island. The next reliable breakdown is given by Lorimer, for the year 1905, when 917 boats were counted in Bahrain, of which 597 were from *Muharraq* (65%). In terms of manpower, *Muharraq* provided 11,765 pearl fishers in 1906 or 67% of the total in 1905. It is therefore very clear that *Muharraq* Island was the focus of Bahrain's pearling industry, and that *Muharraq* Town was the major pearling centre on the island by the early 20th century AD.

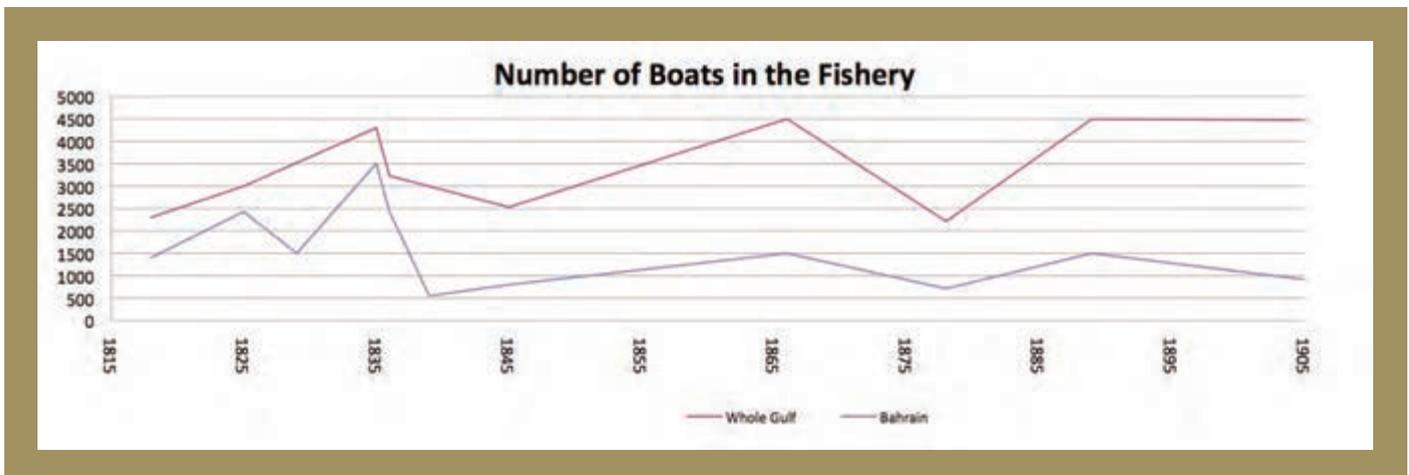


Figure 1: Number of pearly boats in the Arabian Gulf 1818-1905



Historic photograph of Bahraini pearl merchants, photograph provided by Luna Abd'el Karim

The global pearl markets in the 19th and 20th centuries

There was no doubt in the minds of observers in the early 20th century, at the peak of the global pearling boom, that the Arabian Gulf possessed the finest and most valuable fishery: "The pearl fisheries of the (...) Gulf are the most famous and valuable in the world" (Kunz & Stevenson, 1908 p. 85). This opinion was not new, and numerous 19th century statements can be found which underline the primacy of the Gulf fishery, many of which also stress the significance of Bahrain. Bahrain and the Gulf did not only produce the finest pearls, but also provided the largest and most reliable harvests of any of the world's pearl fisheries. This is with the exception of the first three decades of the 16th century, when the Venezuelan fisheries flooded European markets with pearls, and a brief period in the late 18th and early 19th century AD, when the Sri Lankan fisheries enjoyed a dramatic but short-lived upturn. Bahrain and the Gulf provided the vast majority of the world's pearls.

A full understanding of the volume and direction of international trade is inhibited by the very low incidence of reporting of both pearl imports and exports from Bombay, the undisputed main global pearl market. Thus, for example, in the year 1912, at the peak of the market, the total listed value of pearls imported into Bombay (according to the Annual Statement of the Trade and Navigation of the Presidency of Bombay) was just Rs. 102,56,942 (Anonymous, , 1912-13). The value of Bahrain's exports alone that year was assessed in the Gulf at nearly three times that amount, or Rs. 304,99,995, nearly all of which was said to have been exported to Bombay (the records of which counted just Rs. 53,60,400 of pearls exported from Bahrain, or less than a fifth of the actual value) (Ibid.).

The low incidence of declaration was not necessarily sinister. Pearls were not subject to tax by the British authorities (Kunz & Stevenson, 1908 p. 366), and neither were they taxed by the Arab rulers of the pearl-fishing states, who instead obtained their revenues from taxes on pearling boats and personnel. Thus, although British administrators in the Arabian Gulf were diligent in collecting estimates of the value of the harvest, prompted by the knowledge that pearls were the mainstay of the local economy, once the harvest left the Gulf, it tended not to be reported. There was no obligation to declare the value of the harvest to customs. If there had been an obligation, it would have been easy to hide the harvest with the person and in the luggage. It therefore appears that outside the Gulf itself and even in some countries of the Gulf (i.e. Kuwait), the value of pearl imports and exports was only known from declarations of cargo values travelling by registered steamers. Pearls carried by merchants (probably the majority of the harvest) or in their luggage were not declared.

A few clues to the structure of the international pearl trade can, nonetheless, be picked out of the Annual Statements of the Trade and Navigation of the Presidency of Bombay, as well as the trade returns from the Gulf. Thus, for example, direct exports of pearls from Bahrain to France first appear in the Persian Gulf Trade Reports in 1905, and peak in 1909 at Rs. 40,00,000. This amount corresponds to 36% of Bahrain's exports value that year; a very significant amount. Records for subsequent years are patchy and unreliable. For example, in 1911 the text of the trade report announces that between Rs. 40,00,000 and Rs. 75,00,000 were exported to Europe from Bahrain, but the exports table registers only pearls going to India.

In Bombay, pearls from the entire Gulf were sometimes lumped together, but when more specific origins are given (e.g. Muscat, Persia), Bahrain is sometimes not even listed as a source of pearls (in contradiction to Bahrain's own trade returns), e.g. in 1900-01 or 1905-6. Bahrain's figures may have been lumped in with Muscat, which appears to export an unusually large amount. The sources from the Gulf, however, indicate that Bahraini pearls went straight to Bombay, not via Muscat. At the times when Bahrain is listed as a source of pearls, it provides the biggest share of Bombay's pearls, albeit usually around a third of the actual quantity of its exports to Bombay. Table 2 shows pearl imports into Bombay for the boom years of the industry (1906-1912).

	1906-7	1907-8	1911-12	1912-13
United Kingdom	0	0	0	257
Aden & Dependencies	4,93,050	3,45,000	12,69,000	8,82,000
Bahrain Islands	48,86,700	45,52,100	46,60,850	53,60,400
Ceylon	0	0	0	0
Hongkong	10,510	8,020	0	0
Zanzibar & Pemba	0	0	0	0
Germany	3968	1,185	560	1,053
Belgium	0	8,220	120	0
France	0	7,200	300	900
Austria-Hungary	22,093	3,500	2600	7,172
Turkey, Asiatic		7,200	0	0
Turkey, Asiatic – Red Sea		0	12,800	12,385
Turkey, Asiatic-Persian Gulf		0	5,02,650	6,63,150
Muscat or Oman	24,69,400	15,55,700	15,66,100	18,85,500
Other native states in Arabia	34,400	30,750	0	0
Persia	5,27,875	5,40,400	8,88,000	13,12,700
Italian East Africa [Somaliland and Eritrea]		0	20,000	1,31,425
Other countries	275	180	715	0
Egypt (1906 only)	1000			
SUM	84,49,271	70,51,243	89,23,695	102,56,942
Bahrain's Contribution	58%	65%	52%	52%

Table 2: Origin and value of pearls imported into Bombay (Rupees), 1906-1912

It can be seen that Bahrain supplied over half the (declared) imports into Bombay in those years. Note that the main rival to the Gulf fishery, that of Sri Lanka (Ceylon), contributed nothing during these years. Its fishery was very sporadic and its most significant contribution was in 1905-6 (the best year ever for its fishery according to Kunz & Stevenson), when it provided Rs. 2,00,000 of pearls to Bombay. Bahrain was not listed that year, and was probably subsumed into Muscat, which apparently provided over 30 times the value of pearls compared to Ceylon (Rs. 61,88,150).

As far as exports from Bombay are concerned, even less of the true value appears to have been declared in the trade returns. In 1866 the UK was the biggest importer from Bombay (Rs. 2,91,000), while in 1873 it was China (Rs. 80,870). Significant quantities of pearls sometimes went back into the Arabian and Gulf markets. For example, in 1900 nearly all Bombay's pearl exports (massively under-reported as just Rs. 4,02,210) appear to have gone back to Muscat and Persia. In reality, a very much higher quantity would have fed through to Paris, London and the USA, with a significant amount also being consumed in India. The records from the Gulf indicate that Rs. 67,85,033 were exported by the Gulf that year (a third less than the previous year), mostly to Bombay. In 1905, the largest importer of Bombay's pearls was Austria Hungary, with just Rs. 13,945 (out of a tiny declared total of Rs. 54,622).

The discrepancies between the Bombay import and export records and the value of the pearls supposedly fished in the Gulf renders these comparisons almost meaningless. A better idea of how the fisheries of Bahrain and the Gulf compared to those of the rest of the world can be obtained by examining each other fishery in turn, starting with the most important.

The Gulf of Manar: Sri Lankan and Indian fisheries

The most significant rival to the Arabian pearl fishery was that of the Gulf of Manar, being the western straits between southern India and Sri Lanka. It was widely recognised, however, that their yield was unpredictable, and that they were inferior to those of the Arabian Gulf. Tavernier remarked that the Gulf of Manar furnished almost no large pearls, "the majority being only pearls to be sold by the ounce and ground into powder" (Tavernier, 1925 p. 93). Kunz & Stevenson underlined their sporadic yield: "Second in extent to those of Persia only [i.e. the Persian Gulf], are the intermittent and uncertain fisheries of the Gulf of Manaar" (Kunz & Stevenson, 1908 p. 99). This fishery was largely in Sri Lankan hands, though there were some important

beds on the Indian side. By the late 19th century the Sri Lankan oyster beds were producing enough for Arab divers to travel there in the winter months and fish in its warmer waters. Concerns were noted in Sri Lanka about Arab divers coming to dive there in 1890 and 1891, while it was noted that 3000 divers went, from Kuwait, to dive off Sri Lanka in 1905, and 4090 in 1906 (Kunz & Stevenson, 1908 p. 113). The numbers of divers travelling to Sri Lanka declined to 400 by 1907, following a bad season in 1906. There were no divers making the trip to Sri Lanka in 1909-10 (Anonymous, 1986, Vol. V, 1905-6 p. 87; Hijji, forthcoming Ch. 3).

The unpredictability of the yields in the Gulf of Manar was a recurrent feature, and in many years no oysters were to be found at all. For this reason, it had been customary to check the beds with a test dive each year (Kunz & Stevenson, 1908 p. 108), prior to investing in a full expedition. If the test dive was not productive, no fishing occurred. Edwin Streeter, a major pearl merchant who visited both the Bahrain and Sri Lankan fisheries in the 1880s, noted that "the yield of the fishery is very uncertain", and, notwithstanding some famously productive years, recorded that there was no fishing at all in the years 1732-46, 1768-96, 1820-27 and 1837-55; Kunz & Stevenson noting further gaps in 1810-13 and 1815-16 (Kunz & Stevenson, 1908 p. 103; Streeter, 1886 pp. 186-194). When Streeter was writing, the last successful season was in 1881, and the next good one is estimated to be in 1888 and 1889. Streeter also noted that in the 17th century, the Dutch only fished the banks of Manar every 3 years.

Useful comparative statistics are sparse, as profits rather than estimates of the fishery's overall value tended to be recorded. It is written that a Tamil merchant from Jaffna, Candappa Chetty, rented the Sri Lankan fishery for £110,000 in 1797, a famously good year, and for £140,000 in 1798 (Streeter, 1886 p. 187). The total value of the fishery is not recorded, but the figures indicate that the merchant expected to make a profit of over £110,000 and £140,000 respectively, after expenses had been deducted. In comparison, the entire value of the fishery of the Gulf was estimated to be worth £100,000 in 1800 (Lorimer, 1915 p. 164, footnote). This estimate, however, was down from £157,000 in 1770, which is in contrast to a value that subsequently increased to £360,000 by 1824 (Hughes Thomas, 1985 p. 568; Resnal, 1776 p. 312). These figures and Streeter's summary indicate that in a good year the Sri Lankan fishery could exceed the output of the Gulf, but these years were exceptional. Long stretches of time could pass, sometimes exceeding two decades, when the Sri Lankan fishery was entirely barren. In the reckoning of Kunz & Stevenson, the last four years of the 18th century were in fact the only ones in which the primacy of the Arabian Gulf was challenged in that century: "Except for the last four years, when the Ceylon fishery was very

productive, throughout the eighteenth century the (...) Gulf was almost the only important source of supply for pearls" (Kunz & Stevenson, 1908 p. 87).

Thus, in 1801, profits from the Sri Lankan fishery were only £15,022, but rose to £84,257 in 1808 and £105,187 in 1814, when the fishery was said to be very good (Kunz & Stevenson, 1908 p. 103). This period of sporadic high returns from the Sri Lankan banks, in the last decade of the 18th century and first two decades of the 19th century, coincides with a marked drop in the value of the Arabian Gulf fishery, indicating that a good year in the Gulf of Manar could have serious effects on the industry of the Arabian Gulf. Following the first decades of the 19th century, it seems that the Sri Lankan beds were less productive, averaging £30,000 profit in 1828-37, and not reaching £60,000 in any year until 1881 (at £59,868, the best year since 1814). Another peak was reached in 1891 (£96,370).

"The greatest fishery in the modern history of Ceylon" occurred in 1905, according to Kunz and Stevenson, when 318 boats dived between February 20th until April 1st, with a record oyster yield (cf. nearly 4500 boats in the Gulf fleet for that year) (Kunz & Stevenson, 1908 p. 105). For this year, an estimate is available for the value of the catch from the Gulf of Manar, of Rs. 50,21,453 (£334,763). The next good season recorded in the Gulf of Manar, in 1907, yielded only around Rs. 20,80,000. These figures compare to Rs. 161,94,000 for the value of Bahrain's pearl exports (i.e. £1,079,600, more than three times the value of the Sri Lankan harvest). Interestingly, the figures from the Gulf of Manar are higher than the value of Bahrain's actual harvest, which was rather low in that year (Rs. 43,76,000, being the difference between the value of pearl imports and exports in Bahrain). Bahrain's harvest was Rs. 62,27,000 in 1904 and Rs. 83,72,000 in 1906, indicating that Bahrain alone usually produced a higher value of pearls than Sri Lanka's finest season.

There is some data on the size of the pearling fleet in the Gulf of Manar. 8000 boats were said to be active in the early 14th century (a vast and improbable number), according to Friar Jordanus, while Teixeira gives a more plausible count of 400-500 boats for the start of the 17th century (Kunz & Stevenson, 1908 pp. 100, 103; Sinclair, 1902 pp. 174-181). Note that this figure is larger than the count he gives for the Arabian Gulf fleet, which appears to have been undergoing a short-lived slump at the time. In response to the great fishery of 1905, when 318 boats fished for pearls in the Gulf of Manar, a record 473 boats with 8600 divers went out to the Sri Lankan beds in 1906, but the year was a bad one. Only 173 boats were used in 1907 (Kunz & Stevenson, 1908 p. 105). The statistics show that Bahrain consistently maintained a fleet larger than these, at least since the time of Teixeira.

The fishery of southern India, based at Tuticorin, appears to have been considerably lesser in value than the Sri Lankan counterpart, and equally unpredictable in yield; being exploited on average only once every fifteen or twenty years between the 17th and 20th centuries (Kunz & Stevenson, 1908 p. 130). Profit was only £13,000 in 1822 and £10,000 in 1830, following which the banks were unsatisfactory, until a season in 1860 (Streeter, 1886 p. 211). This was the best recorded year, yielding a profit of Rs. 2,50,276 (ca. £25,000) for the Madras governorate (Kunz & Stevenson, 1908 p. 130). The fishery declared for 1900 was expected to involve only 100 boats (Kunz & Stevenson, 1908 p. 130). Other Indian fisheries were found on the west coast of India at Nawanagar, to the south of the Gulf of Kutch (in Gujarat), but the value was minimal (Rs. 4,000) (Kunz & Stevenson, 1908 p. 132). Another fishery was found off Karachi, with similar returns and considered to yield inferior pearls of only one "coat" (Anonymous, 1986, vol. 1, 1877-8, p. 38; Kunz & Stevenson, 1908 p. 133).

Venezuela and other New World fisheries

The importance of the Venezuelan fisheries has been mentioned earlier. Although their heyday was in the first half of the sixteenth century, they were still recognised as important by the start of the 20th century (Kunz & Stevenson, 1908 p. 65). Few statistics from the years of its prime, the first half of the 16th century, can be used to compare its significance to the Gulf fishery, as its outturn tended to be reported in terms of weight of pearls. It was nonetheless stated by von Humboldt, who visited in 1799, by which time the Venezuelan fishery was moribund, that the quinto, the fifth due to the monarch, amounted to 15,000 ducats at its peak, indicating a total annual harvest of 75,000 ducats (Perri, 2009 p. 135). The nearest comparison with the Gulf is the considerably higher value of 600,000 ducats estimated by Teixeira for Bahrain's harvest in the late 16th century (assuming that Teixeira obtained his value from Portuguese estimates prior to their expulsion by the Safavids in 1602), which Ovington converts to between £100,000 and £125,000 (Ovington, 1929 p. 245, n. 4; Sinclair, 1902 p. 176). The same observer, von Humboldt, estimated that 800,000 piastres' worth was being sent to Europe annually from the Venezuelan fishery until around 1530. Crudely, this should equate to 800,000 European silver dollars, equal to ca. Rs. 16,00,000, or £160,000 (Perri, 2009 p. 135).

It is not clear why the totals derived from von Humboldt's quinto estimate and his annual shipment estimate should diverge so dramatically, and this creates problems when attempting to compare to the roughly contemporary Gulf fishery. If the piastre value

is used, and accepting a piastre equals a dollar, then the early 16th century Venezuelan fishery (£160,000, converted from piastres/dollars), is worth more than the late 16th century Bahrain fishery (£100-125,000, converted from ducats). If the ducat value is used, then the Bahrain fishery (600,000 ducats) is vastly more profitable than the Venezuelan one (75,000 ducats). This problem has not yet been resolved, satisfactorily, but various observers have noted that the quinto value was a considerable underestimate due to widespread tax evasion (Perri, 2009 p. 136)]

By the end of the 16th century the Venezuelan beds were exhausted, and their labour force largely exterminated. Output ceased entirely during the next century, but was briefly revived in the 1820s. A more significant revival occurred in the mid 19th century, but it "remained in poor condition" until around 1895, when global increases in pearl prices once again made it viable (Kunz & Stevenson, 1908 p. 234). It was estimated that 350 boats were active there in the years leading up to 1908, and the annual value of Venezuela's fishery was then put at \$350,000 per year (Kunz & Stevenson, 1908 p. 234; MacKenzie, Troccoli, & León, 2003 p. 12-13 and Table 2), equivalent to £71,900 sterling (at £1 = \$4.87). This compares to the much higher total of ca. Rs. 112,17,000 per year in the first decade of the century for Bahrain's pearl exports alone (i.e. £747,800 per annum). The value of Bahrain's fishery was to increase dramatically in the succeeding decade, though this increase was probably also reflected in the value of the Venezuelan fishery, as it was connected to global rises in pearl prices.

Following the collapse of Bahrain's pearling industry, Venezuela can be seen to benefit dramatically. By 1923, shortly before the worldwide and permanent depression in pearl prices caused by the advent of cultured pearls, the value of Venezuela's harvest had risen to \$500,000 (£109,170), and in 1947, when Bahrain's industry was all but dead, its annual value was \$1,250,000 (£310,173). This is a far cry from Bahrain's heyday, when the islands exported over £2,000,000 worth of pearls per year, but it is a remarkable testament to Venezuela's ability to make the best of a bad situation. Venezuela may have profited from its proximity to the markets of the US during the First and Second World Wars, at a time when global shipping was threatened, and the European markets were closed, but Venezuelan pearls also began to be exported to Bahrain's traditional markets, i.e. the Gulf and Bombay. Government records indignantly note the import of Venezuelan pearls into the Gulf in the 1940s (Anonymous, 1987, Vol. XI, 1948, p. 10; Burdett, 1995d p. 702), in response to which they were banned.

Colombia also enjoyed a profitable pearl industry as those of the Gulf declined in the 1940s, though the beds had to be closed in 1948 (MacKenzie, Troccoli, &

León, 2003 p. 13). Here, certain diving and mercantile techniques were remarkably similar to those in the Gulf (a shares system used to divide profit, use of graded copper sieves to sort the pearls) (MacKenzie, Troccoli, & León, 2003 p. 13-14). The outturn does not appear to have been particularly large compared to Venezuela's, which had grown impressively by the mid 20th century (just \$250,000 dollars' worth in 1947, or ca. £62,000, cf. over £310,000 for Venezuela) (MacKenzie, Troccoli, & León, 2003 p. 13). Most of the pearls from Colombia went to Europe, India and China.

Further pearl fisheries were found by the Spanish at Panama in the early 16th century (Kunz & Stevenson, 1908 p. 235-7). Although the pearls were of good quality, the beds were not productive, although a market for mother-of-pearl grew from the mid 19th century (Kunz & Stevenson, 1908 p. 239). A more profitable pearl fishery was found in Mexico, in the Gulf of California, with the quinto valued at 12,000 Spanish dollars in the mid 17th century, according to Venegas (Kunz & Stevenson, 1908 p. 242), implying an overall harvest of \$60,000, or approximately Rs. 1,20,000 (£12,000). This figure was disputed as too high by Baegert in the last quarter of the 18th century, who recorded that the quinto was no more than 150 or 200 pesos (dollars) per year, and subsequent records appear to show a comparably small yield (Kunz & Stevenson, 1908 p. 244). As with most other fisheries, a global price increase from the mid 19th century helped revive the industry, yielding \$62,000 in 1869. By 1908, the annual value of the Mexican fishery was estimated at \$250,000, or ca. £51,000 (Kunz & Stevenson, 1908 p. 250). Again, this is very small compared to the value of the fisheries of Bahrain and the Gulf.

Red Sea and African Fisheries

The Red Sea banks were known to the Greeks and Romans, though their use of the term initially included the whole of the coast of Arabia, including the Arabian Gulf. Banks which can be specifically identified with the modern Red Sea were mentioned by Istakhri (Colsum/Clysmā) in the 10th century and Biruni in the 11th (al-Biruni, 1989 p. 122; Istakhri, 1845 p. 16). By the time that statistics become available, they do not appear to be significant in terms of quality of pearls, or output.

Regarding the quality, most of the pearls of the Red Sea are said by ancient observers and modern pearl merchants to have a leaden or "oily" lustre (al-Biruni, 1989 p. 122, interview with Hussein al-Fardan, 20 June 2008). Around the end of the 15th century, the Genoese traveller di Santo Stephano visited the Red Sea and noted many pearling boats, but observed that the pearls "were not of so good quality as the

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oriental pearls", i.e. those from the Gulf and the Indian or Sri Lankan fisheries (di Santo Stefano, 1857 p. 4). In the understanding of the pearl merchants of the Gulf, the Red Sea pearls had only five "coats", compared to the superior seven coats of the Gulf pearls (with only 3 for those from Sri Lanka) (see Durand's report in Anonymous, 1986, vol. 1, 1877-8, p. 38). According to Wellsted (Wellsted, 1838b pp. 238-240), by 1835 the Red Sea fishery was already so insignificant that it was not monitored by the Egyptian authorities. Apart from a few boats sent occasionally by merchants from Jeddah, pearl fishing was left to two bedouin tribes, one of which had around 40 boats (Streeter, 1886 p. 220). This indicates the very small size of the Red Sea pearling fleets compared to the Arabian Gulf at that time. A certain quantity of pearls were, nonetheless, still coming from the Red Sea in the later 19th century, travelling to the Trucial Coast along the dhow trade route on the way to the international market in Bombay. In 1880, for example, most of the Rs. 1,90,000 (£19,000) of pearls imported into the ports of the Trucial Coast (UAE) were from the Red Sea and Aden, though this is dwarfed by the total of Rs. 31,69,200 then exported from the same area; a lesser amount, Rs. 60,000, came to the Trucial Coast from the Red Sea in 1882 (Anonymous, 1986, Vol. 2, 1880-81, 1882-3). Streeter, observing the Red Sea fishery of around this date, noted that the fishery was 'practically extinct', and carried out by bedouin tribes who compelled their slaves to do the diving (Streeter, 1886 p. 220-1).

By the early 20th century, the Red Sea fisheries were described as being "of slight importance compared with their extent in the time of the Ptolemies" (Kunz & Stevenson, 1908 p. 65). British administration reports suggest that the value of the Red Sea fishery fell from £50,000 in 1880 to £7,000 in 1902 (Burdett, 1995b p. 187). Nonetheless, an estimate was given of 2,000,000 lira for the value of the Red Sea fishery in 1898, equivalent to \$400,000, or £82,135 (Kunz & Stevenson, 1908 p. 143), implying that there was still a significant fishery, and some boats from the Arabian Gulf travelled to the Red Sea to supplement the local pearling fleet in the early 20th century (Hijji, forthcoming Ch. 3; Kunz & Stevenson, 1908 p. 141). Note that even the highest of these figures are dwarfed by those available for the Arabian Gulf.

Pearl banks have been known off the coast of Africa outside the Red Sea since at least the mid 11th c. AD, when Biruni mentioned new banks discovered off Sofala (Mozambique) (al-Biruni, 1989 p. 122). They were never of major significance, being described by Kunz and Stevenson as "of small extent" (Kunz & Stevenson, 1908 p. 65). Statistics are elusive, but in 1888 famine forced the locals to turn to pearl fishing off Portuguese East Africa (Mozambique), and \$83,500 dollars worth of pearls were taken (ca. £17,145) (Kunz & Stevenson, 1908 p. 156).

Pearls from the Sulu archipelago (Philippines) were considered by Streeter to be "the finest in the world", and also rated as unsurpassed by Chinese observers, but those of significant size ('six chuchuk or over') were claimed by the Sultan, so their contribution to the international market was relatively insignificant (Kunz & Stevenson, 1908 p. 216; Landman, Mikkelsen, Bieler, & Bronson, 2001 p. 117 and n. 65; Streeter, 1886 p. 135). In 1820, nonetheless, an estimate was made that the annual export of Sulu pearls to China amounted to 25,000 Spanish dollars, and it appears that some valuable examples leaked out into the wider world later in the century when the Sultan needed money (Kunz & Stevenson, 1908 p. 220).

Various other pearl banks were found scattered among the islands of the South Pacific (Kunz & Stevenson, 1908 p. 189). Statistics for the pearl harvests are not available, but Kunz & Stevenson made a rough estimate of a value of ca. \$125,000 per year at the start of the 20th century (ca. £26,000) (Kunz & Stevenson, 1908 p. 198).

Extensive pearl banks are found off the northern and western coasts of Australia (Kunz & Stevenson, 1908 pp. 65, 199), though their outturn was not large, and mother-of-pearl tended to yield a higher return than their pearls. Mother-of-pearl was the objective of this fishery, with pearls being only an 'incidental catch' (Kunz & Stevenson, 1908 p. 211). The highest annual value recorded by Streeter for the Western Australian fishery was £12,000 in 1874 and 1875 (compared to over £62,000 for oyster shells in each year) (Streeter, 1886 pp. 161-2). By 1905, 348 boats were employed in the Queensland fishery, and 2850 men, yielding a significant output of £135,000 of both shell and pearls. At the same time the Western Australian fishery employed 365 boats and yielded £196,000 of shell and pearls (of which only £50,000 was pearls), while the South Australian fishery (actually on the north coast), with 60 boats, produced £25,000 worth. The totals therefore amount to 773 vessels, 6075 men and £356,000 for 1905 (Kunz & Stevenson, 1908 p. 205,199).

Of this, the value of pearls, as opposed to shell, was only ca. £88,000 (Kunz & Stevenson, 1908 p. 211). This can be compared to over 917 boats and 17,633 men for Bahrain in 1905, with a local pearl harvest of Rs. 43,76,000 (ca. £291,700, it being a poor year), and total pearl exports of Rs. 161,94,000 (£1,079,600). Thus, it appears that by the middle of the pearling boom of the early 20th century, Australia's combined fisheries could exceed those of Bahrain in value if shell was counted in addition to pearls, but was around a third of the value of Bahrain's exports when only considering pearls.

Japan and China

Both fresh water and sea fisheries were found in Japan, and indeed Japanese pearl beds first appear to have been mentioned by Biruni as early as the 11th century (“the Sea of Sharghur, which is to the north of China”) (al-Biruni, 1989 pp. 122-4). Japan does not appear to have been a major exporter of pearls until the later 19th century. Kunz & Stevenson noted that no single bank was particularly important, but their distribution was so extensive that “the aggregate yield is considerable”, though no statistics are presented (Kunz & Stevenson, 1908 p. 148). It is said that the Japanese did not esteem pearls, but took an interest in the active markets of China, Vietnam and the Ryuku Islands (Landman, Mikkelsen, Bieler, & Bronson, 2001 p. 121). At the time that Kunz & Stevenson were writing, Mikimoto was farming 1000 acres of seabed and producing up to 50,000 pearls annually, but their quality was not reckoned to be high, and it was another 15 years before the cultured pearl threatened the Gulf fisheries (Kunz & Stevenson, 1908 p. 292).

China had extensive freshwater pearl resources, and access to marine pearls along some of its southern coasts, as well as a lively consumer market for pearls. It appears that most of its supply was provided from its own resources, but the pearls of the Arabian Gulf and the Gulf of Manar were known and esteemed from at least the 15th century (Ptak & Kauz, 2001), and that these were favoured for import rather than those of Southeast Asia and the Pacific (Landman, Mikkelsen, Bieler, & Bronson, 2001 p.118). The Bombay trade returns confirm that China was importing pearls from either of those two regions: in 1866-7, Rs. 23,604 of pearls were exported from Bombay to China; in 1873-4, the value of “precious stones and pearls” exported to China was Rs. 80,870; and in 1900-01, it was only Rs. 17,688 (Anonymous, , 1867, 1874 and 1901).

These figures appear rather small, given the quantity known to be going to Bombay from the Gulf, and moreover, in some years a higher value of pearls was actually imported into Bombay from China (e.g. Rs. 2,05,900 in 1866, Rs. 99,000 in 1873). China is nonetheless the biggest listed destination of pearls from Bombay in 1873-4, though this does not appear to be its normal status. It, therefore, appears that there was a degree of exchange going both ways between the China and Bombay pearl markets. The full value of China’s pearl fisheries, which is likely to be significant, is not known.

Freshwater Fisheries of Europe and the United States

Fresh water pearls, from the pearl mussel, were not as valued as those of the oceans, as they were usually not so lustrous (Kunz & Stevenson, 1908 p. 273). Significant fisheries, nonetheless, existed in the rivers of the USA, northern Europe (particularly Germany and Scotland, but also Norway, Sweden and Russia) and China. None approached the value of the sea-fisheries of the Arabian Gulf or Sri Lanka, but those of China are notable in that their custodians originated seeding techniques, which were developed by the Japanese in the late 19th and early 20th century to produce the cultured pearl (Kunz & Stevenson, 1908 pp. 285-298; Streeter, 1886 p. 253-8).

The values of these fisheries do not in most cases appear to be high. For example, the entire Scottish catch in 1864 was worth just £12,000 (Kunz & Stevenson, 1908 p. 164). In the USA, however, “pearl rushes” periodically developed during the 19th century when new resources of river pearls were found. The headwaters of the Mississippi were particularly rich. For example, a fishery was identified in 1895 in Arkansas, which yielded \$500,000 in three years (£102,669, or £34,223 per year), while another in southwest Wisconsin produced \$300,000 in 1904 (ca. £61,600) (Kunz & Stevenson, 1908 pp. 264, 272). These do not appear to have been sustainable catches, however, and the rivers in question were quickly fished out.

Chronological analysis: conclusions

The figures collated by Kunz & Stevenson and others can be used to calculate an estimate for the total annual value of the global pearl fishery and market for around the first decade of the 20th century. These estimates suggest that the Gulf provided a minimum of 65% of the world’s pearls in the years 1905-08, excepting those internally fished and consumed in China, for which no figures are available. More than half the Gulf pearls, and thus around 40% of the world’s pearls, were exported by Bahrain itself. This is certainly an underestimate, as it assumes both a rare bumper year for the world’s other major fishery, Sri Lanka (which usually produced nothing), and a pearl rush somewhere in the USA. It is expected that these assumptions would more than cancel out the missing value of China’s fishery.

In most years, the Sri Lankan fishery was not active and there was no pearl rush in the USA. In such years we can imagine around £400,000 being knocked off the value of the total for the global fisheries. This would bring the Gulf’s contribution to nearly 80%. Prior to the revival of the Venezuelan and Columbian fisheries in the late 19th century, and the development of the Australian fisheries at around the same time, it appears that the Gulf provided nearly all the world’s pearls from the

3.c.i Typological Comparative Analysis

medieval period onwards (again, apart from China's internal market). The exceptions are those rare years when the Sri Lankan fisheries were productive, and in the 16th century, when the New World beds were successively exploited and depleted.

The Arabian Gulf is the world's oldest known pearl fishery, and was notable not only because it was the supplier of the world's finest pearls, considered the second most valuable jewels in the world after diamonds, but also because of the size and regularity of its harvest. Throughout most of recorded history, the Arabian Gulf was the major supplier of pearls to the international markets of the western world, and was also recognised in the east as the source of the best pearls. Its nearest rival, the Gulf of Manar, was recognised by some observers (but by no means all) as producing pearls of equal quality, but it produced only a fraction of its output, except for a brief interlude at the end of the 18th century, and was usually barren. In the sixteenth century, pearls from the New World threatened the fisheries of the Gulf, but they were rapidly fished out. It was not until the late 19th and early 20th centuries that rival fisheries with predictable and sustainable output were established outside the Gulf. The contribution of these rival fisheries to the global market was small in comparison.

Within the Gulf, Bahrain was historically the centre of the industry, and enjoyed a virtual monopoly until the 1830s, when rival towns on the Gulf littoral began to take a larger share. Bahrain maintained its leading role, however, with the largest fleet and biggest output. By the early 20th century, Bahrain alone exported around 40% of the world's pearls, and this figure is likely to be an underestimate. Between the time of the Achaemenids and the start of the 16th century AD, and again from the start of the 17th to the early 19th centuries, Bahrain probably had a very much bigger share of the market.

The role of *Muharraq* was highly significant in its own right, as the largest pure pearl-fishing town in the Gulf, situated directly opposite Manama (the largest pearl market in the Gulf, a role sometimes shared with Bandar-e Lengeh). *Muharraq* Island provided most of the boats of Bahrain's pearling fleet, and most of its pearl fishers during the heyday of the industry. Together, this evidence places the heart of the historic pearl fishery of the Gulf and the centre of the global pearl supply firmly in Bahrain and *Muharraq*. The people and buildings of *Muharraq* Town, therefore, represent the heritage of not just one pearling settlement, but also the Gulf as a whole, and the wider world.

The typological comparative analysis compares properties of the same type as the serial properties proposed - other oyster beds, *tawwāsh* and *nūkhidhah* houses, for instance - with the properties selected to establish that the most outstanding, representative and authentic examples have been chosen for this nomination proposal. It draws on data collected during the anthropological and architectural surveys (2007-09) as well as on environmental surveys of the oyster beds (1993-2008). As a result of the typological comparative analysis, the following observations can be made:

- The oyster beds selected illustrate key environmental features with an exceptional state of conservation, and are also closely linked to the grand narrative of the pearling era, being the three most often cited in memories of the pearling seasons;
- The settlement of *Muharraq*, as well as representing the most focused single product economy of pearling in the Arabian Gulf (as established in the chronological comparative analysis), hosts a full range of architectural testimony representing all key profession holders in the pearling trade and its related supply industries, and the associated commercial, religious and public buildings;
- Each of the architectural properties selected represents the most outstanding example of its kind, and demonstrates a better state of conservation, degree of authenticity or quality of architectural construction than other examples that could potentially relate to the same theme of the grand narrative.

The oyster beds

Lorimer, in 1907, lists 25 oyster beds that were explicitly known as Bahraini, located in a north-eastern direction off *Muharraq* Island (Lorimer, 1995a, p. 71ff). Unfortunately, the names of these beds were sometimes changed, or else were referred to by a variety of names including at least one English and one Arabic name per oyster bed. The beds mentioned most often during interviews conducted in the preparation of this nomination dossier, apart from *Hayr Bū-l-Thāmah*, *Hayr Bū 'Amāmah* and *Hayr Shtayyah*, were *Hayr al-Mayyānah*, *Hayr 'Abū-l-Kharab*, *Hayr Abū-l-Jā'al* and *Hayr al-Rijlah*. Another oyster bed mentioned occasionally was *Hayr Bū Šuwar*. Unfortunately, however, different historic sources indicate very different coordinates for an oyster bed of this name, and its location cannot be stated with any certainty. The typological comparative analysis will be restricted therefore to comparing the three selected



Lane passing through passage of Al-Jalahma House

oyster beds with the four others mentioned as carrying narrative elements: *Hayr al-Mayyānah*, *Hayr 'Abū-l-Kharab*, *Hayr Abū-l-Ja'al* and *Hayr al-Rijlah*.

Hayr al-Mayyānah was researched extensively during the 2008 survey (al-Khuzai, 2008), as it was very present in the memory of pearl divers and ranked just after *Hayr Bū 'Amāmah* with regard to the number of oral history references (*Hayr Bū-l-Thāmah* and *Hayr Shtayyah* were both mentioned far more often and emerged without competition as memory-triggering sites). Unfortunately, the survey observed *Hayr al-Mayyānah's* state of conservation had been damaged by trawling techniques of the fishing industry. Trawling is prohibited in Bahrain's oyster beds (refer to Chapter 7b: Protective Designation Texts: Ministerial Order No. (10) of 1986 prohibiting trawl fishing in oyster beds areas). However, *Hayr al-Mayyānah* is located very close to the marine border with Saudi Arabia and appears to have been affected by Saudi fishing boats, which sometimes operate inside Bahraini territory, using trawling techniques. This theory is confirmed by the fact that the western part of the bed, located closest to the international border, was documented in the survey as the area which had suffered the most damage from trawling. The disturbance documented affected the density of oysters, creating some almost empty areas and resulted in very low visibility.

Similar observations have been made of *Hayr 'Abū-l-Kharab*, which expands across the Qatari-Bahraini marine border. Here, parts of the oyster bed are still in excellent condition while other parts have been affected by trawling. As a result, the average ratio of oysters per area varies considerably, and the authenticity and integrity of the oyster bed have been compromised. In addition, *Hayr 'Abū-l-Kharab* was named in interviews mostly in a rather unfortunate context: as the bed where a number of divers were severely injured by sawfish. Similar reports of sawfish and jellyfish encounters and injuries have also been recorded for *Hayr Bū 'Amāmah*, which documented a more satisfactory environmental condition. *Hayr 'Abū-l-Kharab* was therefore considered not to contribute additional attributes to the Outstanding Universal Value.

The bed *Hayr Abū-l-Ja'al*, like *Hayr Bū-l-Thāmah*, was mentioned by informants in relation to particularly large pearl finds. However, recent testing of pearl incidence could no longer confirm the data gathered up to 1993, and currently it cannot be confirmed that the oyster bed can still authentically reflect the pearl potential of the shared memory.

Hayr al-Rijlah is considerably smaller than the three oyster beds selected for this nomination proposal. Located at a depth of 13-15m, *Hayr al-Rijlah* was mentioned by the divers only with regard to its characteristic as a transitional bed which followed *Hayr Shtayyah* at the beginning of the

season as the dhows ventured gradually into deeper water. Since it has lower oyster density, pearl ratio and visibility than *Hayr Shtayyah*, it could not be considered as significantly contributing additional elements to the Outstanding Universal Value.

The seashore and urban testimony in Muharraq

Lorimer lists around 100 settlements in Bahrain principality, with town status accorded to Manama and Budaiyah on the main island, and *Muharraq* Town and Hidd on *Muharraq*. *Muharraq* and Hidd were dedicated pearling towns, with Manama being a more broadly-based commercial emporium and entrepôt as well as a major pearl market and diving centre. The town of Hidd was home to a few fishermen who continued their occupation during the *Ghūṣ al-Kabir*; it also provided the location for a summer camp for merchants who moved out of *Muharraq* Town during the pearling season. It can therefore not be considered a single product economy based on pearling in the strict sense. Such can only be established for *Muharraq* Town, located on the southernmost island of *Muharraq*, together with its two peninsulas - *Bū Halah* and *Bū Māhir* - which can with accuracy be described as a complete, single-product economy dedicated to the collection of and trade with pearls. As the chronological comparative analysis has already illustrated, *Muharraq's* unique trans-national role and status, the typological analysis refrains from comparing properties in other pearling settlements and centres its comparison of seashore and architectural properties exclusively on *Muharraq* Town.

Bū Māhir Seashore is *Muharraq* Island's last original seashore. A continuous process of land reclamation throughout the last century has meant few seashore locations are unaffected by development: *Bū Māhir* Seashore is the only location that retains characteristics of the pearling era. The fact that it was used extensively for the *rukbah* and *quffāl* ceremonies during the pearling era and was also of strategic importance, seems like a lucky coincidence in this context. It is the only location where the geomorphology and topography of the seashore have been preserved, and where the successive sea formation of *qirāḥ*, and *al-sif* remain harmoniously intact. All other *Muharraq* seashores where pearling-related festivals once took place have been reclaimed, with the result that their water edges are no longer sand-covered. This additionally makes *Bū Māhir* Seashore the only (public) beach along the *Muharraq* shore.

Qal'at Bū Māhir and *Qal'at 'Arād* are the only surviving physical testaments to *Muharraq's* pre-modern defences. *Qal'at 'Arād* is located in the village of Arad, to the east of

Arad Bay, rather than in *Muharraq* Town. However, the canon range of the Portuguese structure of *Qal'at 'Arād* was considerably greater than that of *Qal'at Bū Māhir*, enabling the fort to protect *Muharraq* Town's eastern coast. Unfortunately, shallow Arad Bay did not provide ideal access conditions for larger dhows, thus *Muharraq's* trade and pearling activities were centred on the western coast not covered by this protection. While the two defence structures that remain today (*Qal'at Bū Māhir* and *Qal'at 'Arād*) were thereby both important for the fortification of *Muharraq*, *Qal'at Bū Māhir*, focused as it was on access to both coasts, also played a role in the pearling economy on the southernmost tip of the island. This cannot be said of *Qal'at 'Arād*, which was too detached from the access routes the dhows would have taken to be a relevant location for the two pearling festivals.

Among the surviving coral stone structures and typical of the accommodation afforded to those involved in low-income pearling occupations during the pearling era, *Al-Ghūṣ* House remains distinguished by its key position on the passage to *Qal'at Bū Māhir* and its harbour. Although a few properties that were located on the former southern seashore (the pre-1930 island limits) of *Muharraq* Island remain, their state of conservation is inferior to that of the nominated house, since most have undergone several alterations and modern additions. *Al-Ghūṣ* House offers a rare example of a single-storey structure where all typological features remain intact: the courtyard, central tree, rooms with basic niches, and an open *liwān*. The modest architecture of the property stands as a foremost example of the *Muharraqi* architectural hybridity (*barāsti* to coral stone structures).

As medical care providers, the *Ghulum* family played an integral role in *Muharraq's* society. The American Mission Hospital maintained a presence in Manama from the early 20th century, but apart from a few families such as the *Ghulum* household who provided traditional folk remedies to local residents there was no organised social institution for medical care on *Muharraq* Island. This folk medicine tradition, once widely practised on *Muharraq* Island, maintains no physical testimony aside from the retained *Ghulum* structure. The room that once housed the medical activities of *Badr Ghulum* and his descendents remains an integral component of the nominated structure. As such it is the only remaining sample of a building complex associated entirely with the provision of medical services and healing.

The situation is similar for *Al-Jalahma* House, the features and attributes of which are so specific to the cultural tradition of the pearling era that no comparative example could be found. The complex architectural arrangements of the *Al-Jalahma* house, facilitating flexible male and female space usage, is a unique attribute in *Muharraq*. While other houses that fall into this category feature distinct reception and family areas, the plurality

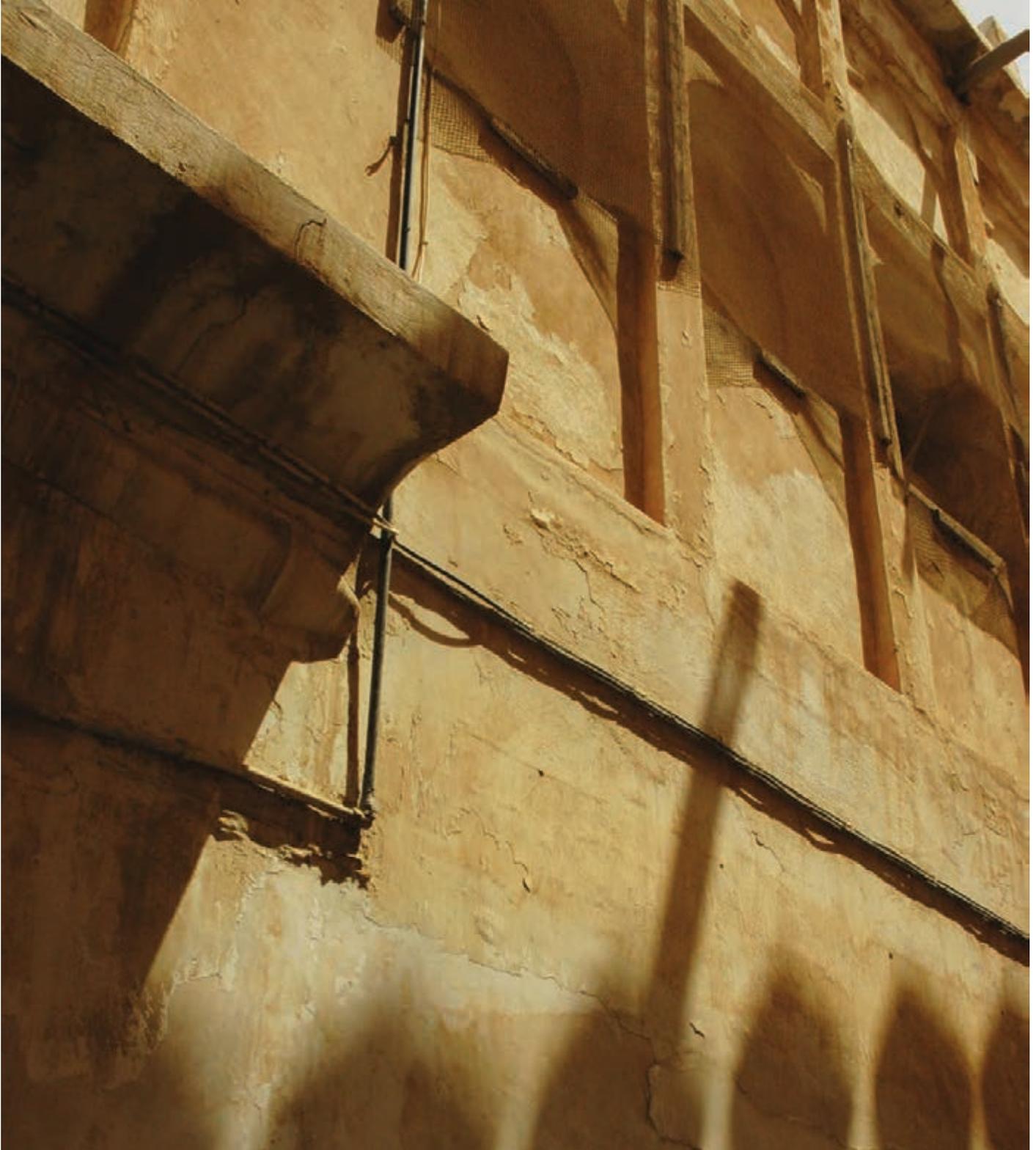
of space use in the *Al-Jalahma* house is unmatched. It is therefore the best example to illustrate the testimony of the special prominence of women during the pearling economy, so uniquely inscribed in its architecture. The house is also uniquely characterised by its location as a gateway to *al Ḥālah* Island, and the *ṣabāṭ* (bridging element across small alley); marking this gateway is certainly the last existing in *Muharraq*.

Al-Alawi House is the last middle-class residence with distinguishing decorative and traditional elements. The wind tower, a distinctive feature of the property that characterised the fabric of *Muharraq* Island is the last remaining for this middle-sized typology. *Shaikh Isa bin Ali Al Khalifa* House is the sole other structure in *Muharraq* that maintains a similar, authentic, cooling wind tower; however, it falls into a distinct category of houses as it was the residence of the ruler. *Fakhro* House best illustrates the successive phases of expansion during the growth of a business and family, and is also one of the most prominent references in the narrative of timber traders. Although other important timber merchants had similar, large residences in *Muharraq*, for example that of the *Al-Doe* family, the remains of these properties are far from as significant as the remaining parts of *Fakhro* House. Additionally, the remains of the other properties do not testify to the successive land reclamations that took place throughout the pearling era. While both *Al-Doe* and *Fakhro* House have lost a significant part of their built-up areas, the remains of *Al-Doe* House have been not only reoccupied but rebuilt upon with modern structures, leaving no trace of the former traditional parts. On the contrary, the unoccupied archaeological land of *Fakhro* House has not yet succumbed to similar construction activities, and bears archaeological testimonies of the former house and house expansion.

Many buildings dating to the pearling era in *Muharraq* were found to have been formerly owned by *ṭawwāsh*. Among them, the *Murad* properties are unique in maintaining the authenticity of a wide range of attributes relating to the *ṭawwāsh* narrative (architectural design, continuity of function, memory and materiality) while at the same time preserving most of their original parts. Other *ṭawwāsh* houses do not compare in size and completeness of volumetric shapes to the *Murad* House, while the *Murad Majlis* is by far the best illustration of continuity in both materiality and use. The *Al-Binali* House is a rare example of a *ṭawwāsh* house which, through the design of its façade, has a similar impact on the streetscape. However, the integrity of the *Al-Binali* property has been compromised by the demolition of the private residential quarters on its southern side, after which only the northern guest courtyard and the *majlis* remain. *Al-Zayyani* House is the residence of a family with a well-established *ṭawwāsh* identity as a result of a book published by the former owner on



Detail of dihliz of Murad Majlis



Architectural detail of Siyadi House

his *ṭawwāsh* memories (al-Zayyani, 1998). Unfortunately, however, the house has been considerably modified with modernisation measures including the blending of the façade with modern tiles and the introduction of an elevator. It therefore cannot illustrate a degree of authenticity comparable to the ensemble of *Murad* House and *Majlis*.

The two market areas of *sūq al-Qayṣariyyah* and *sūq bin-Khatir* contain the best preserved elements of traditional markets in *Muharrāq* Town. The streetscape of *sūq al-Qayṣariyyah* is preserved in its layout and typology, which illustrates the harmonious way in which shops were arranged along streets running parallel to the seashore. The *Siyadi* Shops are the best preserved example of a shop complex within the area of these two markets. The property is a surviving testimony of the pearling economy in an environment now characterised by the modernisation of the *sūq* and the introduction of concrete structures. The traditional elements that once carpeted the *sūq* are, today, sparsely preserved throughout. The *Siyadi* Shops complex regroups a series of attributes which can no longer be seen in other examples. With the *'Amārat Ali Rashid Fakhro* (I) on the opposite side of Al-Tujjar Avenue is preserved a continuous ensemble of traditional structures in the historic market. Furthermore, the continuity of ownership and use, unique in the *sūq* area, is preserved through *Abdallah Siyadi*, who still continues the family tradition of attending to his business in the *Siyadi* Shop complex.

Within the *'amārah* typology, the complex of the three *'amārat* vividly illustrates the function, design, and historical evolution of this type of commercial pearling structure in *Muharrāq*. *'Amārat Yousif A. Fakhro* is by far the largest ruin site dating from the pearling era. Moreover, the property's previous seashore location and its gradual reclamation history can only be compared with *Fakhro* House. The vast area of the site covers an area of 2130 square metres, stretching from the old *sūq* on Al-Tujjar Avenue up to recently reclaimed areas dated to the late 20th century. Within this property, remains dating back as far as the 6th century AD have been traced. The *'Amārat Ali Rashid Fakhro* (I) is the best preserved *'amārah* with regard to architectural design and *'amārah* typology. The closest example of a preserved *'amārah* typology is *'Amārat Bū-Zabūn* further north in *sūq bin-Khatir*. This *'amārah* nonetheless underwent many renovations, and in the 1990s was internally re-designed in traditional fashion. The authenticity of the remaining architectural substance is therefore questionable, as traditional architectural elements have been replaced and artificial new elements, such as a minaret and wind tower, have been added in the interior open space.

Another well-preserved *'amārah* is the neighbouring *'Amārat Al-Doe*. Although it has preserved its oldest eastern part, the western part of the structure consists of a multi-pillared space built in concrete which does not represent a typical architectural layout as illustrated *'Amārat Ali Rashid Fakhro* (I). The *'Amārat Al-Doe* is attached to the *Fakhro 'Amārat* complex and is incorporated in the buffer zone as a primary protection element. It will in the future host the exhibition of the Pearling Visitor and Experience Centre (refer to *Management Plan, Chapter 2: Strategy 4: Interpretation and Presentation and Chapter 3: Site Analysis and Action Plans (2009-2013), Interventions on the properties and in the buffer zone*) and will thereby also be accessible to visitors. *'Amārat Ali Rashid Fakhro* (II) has also preserved its main architectural features and spatial qualities. The continuity of the *'amārah's* storage usage is of utmost rarity in *Muharrāq sūq* and contributes an additional attribute to the Outstanding Universal Value. It is the only *'amārah* which is still in use as a storage and merchandise facility.

Muharrāq's urban fabric today attests to the *nūkhidhah* activities. However, this is mostly represented by residential houses, which in themselves do not adequately represent the *nūkhidhah* narrative. The nominated property is a unique example of a *nūkhidhah majlis*, of which the exposure and impact on the streetscape remarkably references the business environment of the *nūkhidhah*.

The *Siyadi* complex is today the most remarkable architectural ensemble in *Muharrāq*. The property comprises a collection of the earliest buildings to be seen in the urban landscape and composes the only cluster in *Muharrāq*, combining three elements of an original urban nucleus. The three elements are the family house, the *majlis* and the mosque, which weave into the urban setting while preserving most of their authenticity. The closest comparative example of such an urban nucleus is the *Murad* complex, where the interrelation of the residence and the *majlis* has been reduced by the rebuilding works of the mosque complex. *Siyadi* mosque features the last traditional mosque typology in *Muharrāq*. All other religious structures dating from the pearling era have been replaced with modern structures or have undergone large-scale renovation and beautification activities which today make it hard to recognise the historic core of the buildings. Within the urban context of *Muharrāq* Town, no other mosque qualifies in a similar manner to testify to the relation between the pearling economy and Islamic religious values. *Siyadi Majlis* bears the most remarkable testimony to the activities of a *tājir al-lū'lū'* *majlis*. The architectural details of the property provide a window into the former richness and luxury of the upper-class merchants of *Muharrāq's* pearls. The only remotely comparable structure is the house of *Ebrahim bin Mattar*, also a *tājir al-lū'lū'* based in *Muharrāq*. The house belongs currently to the Sheikh Ebrahim Centre for

Culture and Research and is dedicated to the 'memory of the place'. It therefore contains an exhibition focused on the pearling economy and trading activities of *Ebrahim bin Mattar*. *Ebrahim bin Mattar* House was recently renovated and rehabilitated for its new public use. The adaptation has affected this building's architectural authenticity. Finally, the *Siyadi* House is unique in both, its architectural elements, size and illustration of the wealth and social status of a grand merchant. The courtyard's size, the monumentality of the façade and the quality of the design and decoration all contribute to its Outstanding Universal Value. The level of integrity of the building can only be compared to *Shaikh Isa bin Ali* House, the house of the ruler, and perhaps a few other residences of the ruling family not directly linked to the pearling economy.

3.c.iv Thematic Comparative Analysis

The thematic comparative analysis compares the proposed site, "Pearling, testimony of an island economy", to existing World Heritage sites on the basis of its key aspects and themes such as: sea-use, exploitation and trade of high-value natural resources, single product economies, and narratives of specialised economic activities. Both analogies and differences are pointed out. Among other things, the analysis allows the following observations to be made:

- there are no other World Heritage sites related to pearling;
- this is the first nomination to include an economic form of sea-use since the addition of sea-use to criterion (v) in 2005;
- it is similar to a number of other World Heritage sites in that it represents a single product economy; however, it differs from these sites in not being the result of planned industrial development but an underlying economic activity rooted in a millennia-old tradition;
- the site is similar to other World Heritage sites in that it represents the complete narrative of a single economic activity; however, it differs from these sites in that this economic activity is based on the harvesting of a renewable natural resource which has left no physical traces in the land- or seascape except for residential buildings and commercial structures related to the trade of the resource.

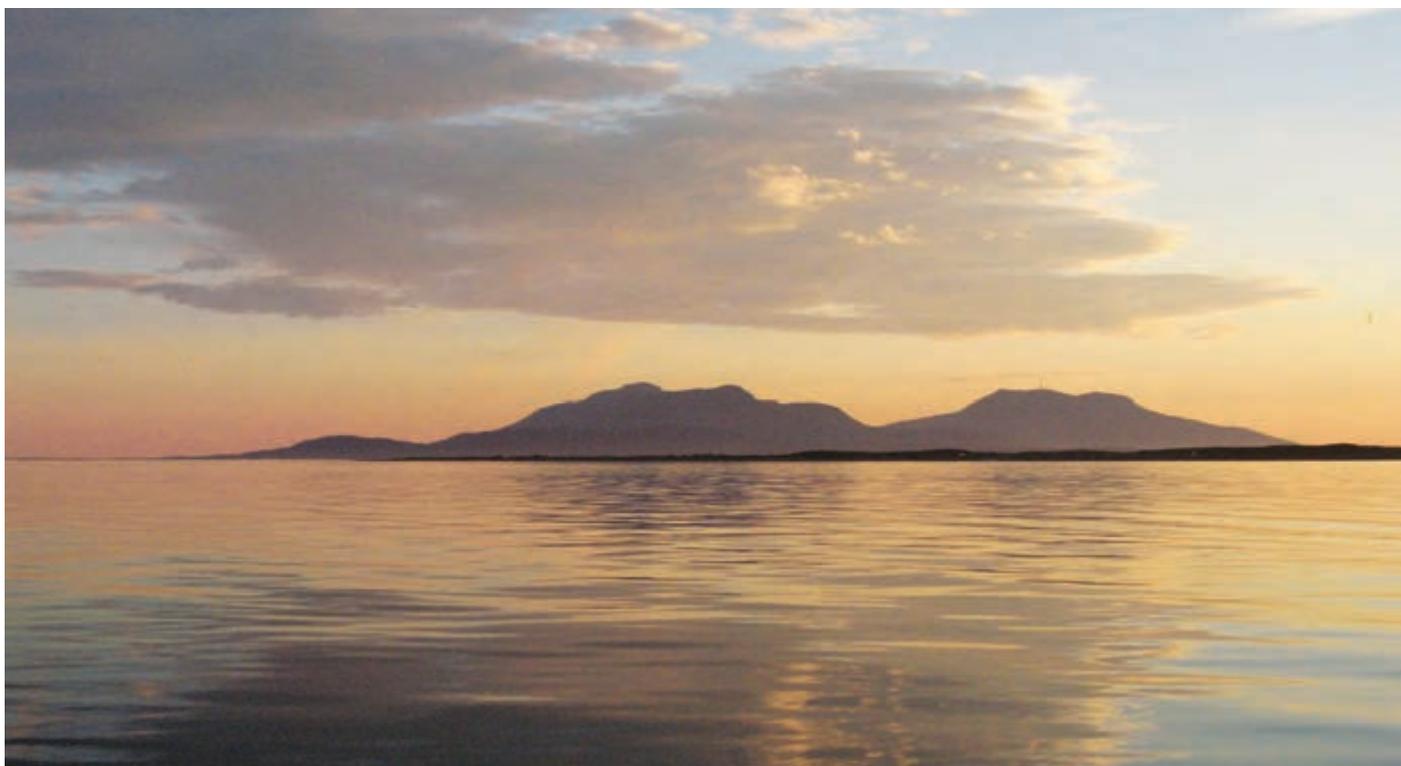
Vegaøyan – The Vega Archipelago (Norway)

The Vega Archipelago is perhaps the World Heritage site that is thematically most similar to the site on which this nomination is based. This is due to the fact that the Vega Archipelago is also an island site, and that it too provides an outstanding example of an age-old economy that is to a large degree based on traditional sea-use. However, the justification for the Vega Archipelago's inscription does not explicitly refer to sea-use, due to the absence of this aspect from the World Heritage criteria at the time of inscription in 2004. According to the World Heritage Centre's 'brief description' of the site:

"[The] cluster of dozens of islands centred on Vega... bear[s] testimony to a distinctive frugal way of life based on fishing and the harvesting of the down of eider ducks, in an inhospitable environment. There are fishing villages, quays, warehouses, eider houses (built for eider ducks to nest in), farming landscapes, lighthouses and beacons. There is evidence of human settlement from the Stone Age onwards. By the 9th century, the islands had become an important centre for the supply of down, which appears to have accounted for around a third of the islanders' income. The Vega Archipelago reflects the way fishermen/farmers have, over the past 1,500 years, maintained a sustainable living..." (UNESCO, 2009b).

As with the nomination proposed in this dossier, the Vega Archipelago World Heritage site reflects a range of cultural values related to sea-use, including associated oral and intangible traditions. However, unlike the proposed site, the Vega Archipelago is a 'living' heritage site in which the cultural traditions that gave rise to its Outstanding Universal Values – including the practice of eider down farming – have persisted until today despite pressures to the contrary (see ICOMOS, 2004a). According to the nomination file, "the universal value of the Vega Archipelago lies in the clear handing down of history and cultural traditions within an island realm integrating both land and sea, where new commercial enterprises have had little impact on this landscape" (Norwegian Ministry of the Environment, 2003, p. 5). Moreover, ICOMOS has stressed that "nowhere else does the 'domestication' of eider farming still exist with houses being provided for the birds and the down being cleaned by hand. This cultural system, with its associated sites and structures, is now therefore unique" (ICOMOS, 2004a).

In contrast, the practice of industrial pearling was widespread throughout the Arabian Gulf and ceased in the mid-20th century. Therefore, the testimony of the cultural tradition of pearling is mainly preserved in a grand narrative carried by physical testimony. Another difference between the Vega Archipelago and the proposed serial site 'Pearling, testimony of an island economy' lies in the fact that the pearling economy in *Muharraq* was a single product economy exclusively dependent on the trade of pearls, whereas the economy of the Vega Archipelago can be described



Vegaøyen – The Vega Archipelago (Norway), World Heritage Site



as a “subsistence economy based on a broad utilisation of the natural resources in the sea and on the islands” (Norwegian Ministry of the Environment, 2003, p. 36). In this subsistence economy, the mutual importance of the three combined occupations of the fisherman-farmer – fishing, farming, and gathering and processing eider down – has varied over the past 2000 years, “according to the availability of resources, the market and the development of new, more efficient vessels and fishing gear” (Ibid.).

Hallstatt-Dachstein/Salzammergut Cultural Landscape (Austria)

Another World Heritage site that in some important aspects thematically resembles the proposed site in Bahrain is the Hallstatt-Dachstein/Salzammergut Cultural Landscape in Austria. In particular, salt mining has played a similarly central role in the economy and history of the Hallstatt-Dachstein region as pearling has in the economy and history of Bahrain, and especially of *Muharraq*. The 1997 Advisory Body Evaluation of ICOMOS states that:

“The cultural landscape of the Hallstatt-Dachstein region boasts a continuing organic evolution covering 2500 years. From the very beginning of its history it has been linked primarily with the economic history of salt extraction. Salt mining has always determined every aspect of life, as well as the architectural and artistic material evidence. Salt production on a major scale can be traced in Hallstatt back to the Middle Bronze Age in the mid 2nd millennium BC” (ICOMOS, 1997).

According to the World Heritage Centre’s ‘brief description’ of the site, salt “formed the basis of the area’s prosperity up to the middle of the 20th century, a prosperity that is reflected in the fine architecture of the town of Hallstatt” (UNESCO, 2003, p. 6). Beginning in the 19th century, the salt mines gradually diminished in their importance for the economy concurrently with the growth of tourism, so that the “economic and socio-political factors of salt mining, which formerly initiated and coined the evolution of the Salzammergut cultural landscape, are no longer as prevalent as they used to be” (Republic of Austria, 1996, p. 49). Despite this change, salt production today remains as high as ever, albeit with comparatively few workers employed in the mining operation which has become highly mechanised and computerised (ICOMOS, 1997).

Therefore, although it has undergone significant changes and has lost much of its earlier significance, the practice of salt mining has not come to an end like the practice of industrial pearling in Bahrain and the Arabian Gulf. Another difference between

the two heritage sites is that the Hallstatt-Dachstein region never constituted a single product economy to the same extent as *Muharraq*. While salt mining has played a central role comparable to that of pearling in *Muharraq*, forestry has also always been an important source of income for the Salzammergut, and in fact “without [forestry] salt mining would not have been possible in this region. The use of the raw material wood accompanied the process of salt production in all its various phases...” (Republic of Austria, 1996, p. 51). Additionally, the alpine pastures of the Dachstein plateau have been used for the grazing of sheep and cattle since prehistoric times, although the once flourishing dairy business flagged in the 18th century due to climatic conditions (Ibid., p. 33).

Iwami Ginzan Silver Mine and its Cultural Landscape (Japan)

The “Iwami Ginzan Silver Mine” World Heritage site in Japan is similar to the proposed site of the pearling testimony in this nomination in that it too can be seen as an isolated, single product economy based on the exploitation and trade of a high-value, ‘precious’ natural resource. The site is located in a remote, mountainous area in the south-west of Honshu Island. It consists of “a cluster of mountains, rising to 600m and interspersed by deep river valleys featuring the archaeological remains of large-scale mines, smelting and refining sites and mining settlements worked between the 16th and 20th centuries. The site also features routes used to transport silver ore to the coast, and port towns from where it was shipped to Korea and China” (UNESCO, 2009b). Portuguese maps from the 16th century indicate the environs of Iwami Ginzan as the “Silver Mine Kingdom” (Government, 2009). In its heyday, over 150 villages and towns housed workers for the Iwami Ginzan mine; for most of these only archaeological evidence remains, as the mines closed in 1923 after the resource of silver ore had been exhausted. The mining area is now largely covered in forest (ICOMOS, 2007). According to the Statement of Outstanding Universal Value adopted by the World Heritage Committee, the “resulting relict landscape, which includes the surviving settlements of the people related to the silver production, bears dramatic witness to historic land-uses of outstanding universal value”; and the various elements of the property “exhibit the full expression of the mechanism of the original land-use system” and “show the whole process ranging from silver production to shipment” (UNESCO, 2007, p. 155). The nomination file describes the property as a “complete ensemble of 14 component features that are categorized into 3 groups: the ‘silver mine site and mining towns’, the ‘Kaidō (transportation routes)’, and the ‘ports and port towns’” (Government of Japan, 2005).

The site is therefore also similar to the proposed World Heritage site in Bahrain in that it consists of a range of buildings and other sites which together represent the complete narrative of a single economic activity that directly or indirectly provided the livelihood for every resident of the community. As in the case of pearling, this economic activity came to an end during the 20th century, although in the case of the Iwami Ginzan Silver Mine this was due to the exhaustion of the natural resource rather than adverse global economic and market conditions. In contrast to the island of *Muharraq*, however, the Iwami Ginzan Silver Mine and the associated mining settlements were largely abandoned when the predominant economic activity ceased. As a result, the historic site has “survived virtually intact” as a relict cultural landscape (as stated in the Statement of Outstanding Universal Value), a description which clearly cannot be applied to *Muharraq* Island and the proposed “Pearling, testimony of an island economy”. Consequently, this nomination is presented as a serial site consisting of 15 component properties.

City of Potosí (Bolivia)

Another silver mining site included on the World Heritage List is the City of Potosí in Bolivia. While Potosí had existed in the pre-Hispanic period as “a small hamlet perched at an altitude of 4000m in the icy solitude of the Andes”, as the Advisory Body Evaluation by ICOMOS notes, the city owes its prosperity to the discovery, in the 1540s, of the New World’s biggest silver lodes in the Cerro de Potosí, the mountain overlooking it in the south. Growth was extremely rapid, so that by the 17th century “there were 160,000 colonists and 13,500 Indians, who were forced to labor in the mines” (ICOMOS, 1987). The extraction of silver ore relied on a series of hydraulic mills, and the city and the region “conserve spectacular traces of this activity, which lasted up to the 18th century” (Ibid.). These traces include mines, hydraulic mills, water reservoirs and aqueducts in the heights of the silver mountain, as well as “the superb monuments of the colonial city where no expense was spared: 22 parish or monastic churches, ... the imposing ‘Compania’ and the Cathedral. The Casa de la Moneda (the Royal Mint) and a large number of patrician homes whose luxury contrasted with the bareness of the rancherías of the native quarter also remain” (ICOMOS, 1987). Among other reasons, the site was inscribed because:

“From the mine to the Royal Mint (reconstructed in 1759), the whole production chain is conserved, along with the dams, aqueducts, milling centres and kilns. The social context is equally well represented: the Spanish zone, with its monuments, and the very poor native zone are separated by an artificial river” (Ibid.)

In comparing the testimony of silver mining in Potosí to the testimony of pearling in *Muharraq*, a fundamental difference is evident: unlike silver mining, pearling was a sustainable industry based on the harvesting of a renewable natural resource, and the practice of pearl diving has left no direct physical traces in the land- or seascape. The physical testimony of the pearling economy, therefore, consists of commercial and residential architectural structures illustrating the various social and economic roles and institutions associated with the pearling society, and a number of oyster beds, in which the natural resource, the pearl oyster, remains as abundant as ever. Another ‘trace’ of the pearling era that is proposed for nomination is an important stretch of the *Muharraq* coastline, which serves to illustrate the various functions of the seashore in the pearling economy.

Other mining sites on the World Heritage List

In addition to Hallstatt-Dachstein, Iwami Ginzan and the City of Potosí there are many other mining sites on the World Heritage List which – naturally – share some of their characteristic features as mentioned above. These sites include, for example: Ouro Preto (Brazil, gold mining), Diamantina (Brazil, diamond mining), Guanajuato (Mexico, silver mining), Zacatecas (Mexico, silver mining), Sewell (Chile, copper mining), Humberstone and Santa Laura Works (Chile, saltpetre mining), Røros (Norway, copper mining), Falun (Sweden, copper mining), and Banská Štiavnica (Slovakia, silver and gold mining).

In one way or another, all of these sites can reasonably be compared to the World Heritage site proposed in this nomination, “Pearling, testimony of an island society”. For instance, several of these towns and settlements were originally established in remote or isolated places, and their economies were more or less exclusively focused on mining. These settlements therefore could be regarded as single product economies, comparable to the pearling economy of historic *Muharraq*. A good example is Sewell Mining Town in Chile, established by the Braden Copper Company in the early 20th century above 2000m in an isolated area of the Andes marked by extreme climate. The town housed workers at what was the world’s largest underground copper mine and at its peak numbered 15,000 inhabitants. It was largely abandoned in the 1970s (UNESCO, 2009b). Similarly, the now abandoned Humberstone and Santa Laura Saltpetre Works were established in the 1880s in the remote Pampas of Chile, one of the driest deserts on earth. In this hostile environment, thousands





of *pampinos* lived for more than 60 years in company towns to process the world's largest deposit of saltpetre, manufacturing fertiliser that was exported all over the world, producing great wealth for Chile (ICOMOS, 2005a).

The Humberstone and Santa Laura Works World Heritage site can also be thematically compared to the proposed World Heritage site in *Muharraq* in that it represents a distinctive culture and cultural identity that is closely related to an all-dominating economic activity. As stated in the World Heritage Committee's Justification for Inscription, "The saltpetre mines and their associated company towns developed into an extensive and very distinct urban community with its own language, organisation, customs, and creative expressions...The two nominated works represent this distinctive culture." The Advisory Body Evaluation also notes that this *pampinos* culture "is still shared by the descendents of the workers and gives the properties a strong cultural significance." It is further observed that the mining community "generated a way of life that was unique and which persisted for around 100 years" (ICOMOS, 2005a, p. 192). In comparison, pearling has had a profound impact on and shaped the cultural identity and way of life of the people of the Arabian Gulf, and in particular of Bahrain and *Muharraq*, not only for 100, but for several thousand years. It has produced traditions, ideas, place and family names, legal forms, poetry and songs that support the cultural significance of the proposed serial property and continue to be vital to contemporary Bahraini cultural identity.

La Chaux-de-Fonds/Le Locle, watchmaking town planning (Switzerland)

Another World Heritage property that in some ways thematically resembles the site proposed in this nomination is La Chaux-de-Fonds/Le Locle in Switzerland. The site consists of two towns situated close to one another on land ill-suited to farming in a remote environment in the Swiss Jura mountains. Both towns have been wholly dedicated to watchmaking from the 18th century to the present. "They are towns entirely intended for watchmaking, first as a craft and then as an industry, over a history of some three centuries..." (ICOMOS, 2009). According to the "Brief Synthesis" adopted by the World Heritage Committee:

"The watchmaking urban ensemble of La Chaux-de-Fonds and Le Locle demonstrates outstanding universal value as these twin manufacturing towns constitute an exceptional example of organic urban ensembles entirely dedicated to a single industry. They have been constructed by and for watchmaking. They are the product of an extremely close symbiosis between

socio-technical needs and responses provided by town planning choices. Watchmaking has given rise to a remarkable architectural typology in the built structure..." (UNESCO, 2009a, p. 202).

La Chaux-de-Fonds/Le Locle can reasonably be compared to the proposed World Heritage site in *Muharraq* because both sites provide examples of settlements that have been entirely dedicated to a single industry over long periods. However, there are a number of significant differences. In particular, La Chaux-de-Fonds and Le Locle are planned towns, "designed as a coherent and rational ensemble, in the perspective of promoting the long-term development of its mono-industry, in a way similar to the concept of the 'factory-town'" (ICOMOS, 2009, p. 207). In contrast, *Muharraq* grew organically over time in a decentralised and largely unplanned fashion, and consists of numerous separate neighbourhoods that evolved on the basis of tribal and family alliances. This said, the urban pattern of *Muharraq* during the pearling era reflected the underlying socio-cultural system and supported the viability of the single product economy of pearling in a number of important ways. Similarly, although pearling has not given rise to a specific architectural typology in *Muharraq*, the architecture from the pearling era responded to and reflects the social and cultural needs of the various actors in the single product economy and hence is highly important for understanding its functioning.

Tokaji Wine Region Historic Cultural Landscape (Hungary)

According to the World Heritage Centre (UNESCO, 2003, p. 27), the cultural landscape of Tokaji "graphically demonstrates the long tradition of wine production in this region of low hills and river valleys. The intricate pattern of vineyards, farms, villages, and small towns, with their historic networks of deep wine cellars, illustrates every facet of the production of the famous Tokaj wines, the quality and management of which have been strictly regulated for nearly three centuries." The site was inscribed by the World Heritage Committee on the basis of cultural criteria (iii) and (v):

"Criterion (iii): The Tokaji wine region represents a distinct viticultural tradition that has existed for at least a thousand years and which has survived intact up to the present.

Criterion (v): The entire landscape of the Tokaji wine region, including both vineyards and long established settlements, vividly illustrates the specialized form of traditional land-use that it represents." (UNESCO, 2002).

As with “Pearling, testimony of an island economy”, the Tokaji Wine Region is a serial nomination involving a number of geographically separate sites. Many of its characteristics are shared by other winemaking regions on the World Heritage List, such as the Alto Douro Wine Region (Portugal), the Landscape of the Pico Island Vineyard Culture (Portugal), and the Jurisdiction of Saint-Emilion (France).

In comparison, the serial site proposed in this nomination represents a cultural tradition that existed for several thousand years but became vulnerable and was gradually abandoned in the 1930s as a result of irreversible economic change. The site illustrates the complete narrative of the cultural tradition of pearling and the related human system established in a single-product island economy, including all major social and economic roles and institutions associated with the pearling society. Unlike winemaking, pearl diving has left no physical traces in the land- or seascape. Nevertheless, the underwater and seashore components of the nomination represent and illustrate this specialised form of sea-use, while the architectural testimony illustrates the different associated professional roles and hierarchies.

3.d Integrity and Authenticity

The following sub-chapters outline the aspects of integrity and authenticity essential for assessing the completeness and truthfulness of elements and attributes expressing the Outstanding Universal Value of “Pearling, testimony of an island economy”. Since the Outstanding Universal Value of the proposed nomination is expressed in the testimony to a cultural tradition as well as the memory and remains of a single product economy based on traditional sea-use, both aspects shall be explored in the interpretation of the qualifying conditions of integrity and authenticity. In addition, the integrity and authenticity of the grand narrative of pearling shall also be considered since it facilitates not only the understanding the Outstanding Universal Value, but also the continuity of the cultural identity of the post-pearling generations.

3d.i (Proposed) Statement of Integrity

As a serial nomination, the site conveys a complete understanding of the cultural tradition of pearling and the related human system established in a single product economy. The oyster beds and architectural

properties selected represent the testimony of this economic system and are of adequate size, containing all major features required to embody the grand narrative it produced. The site’s integrity suffered from adverse effects of insensitive housing development and neglect for decades. This is now counteracted by a special zoning arrangement which ensures the compatibility and control of new developments and urban upgrading schemes and helps in reducing the negative impact of the earlier additions.

3.d.ii Justification of Integrity

The serial property approach adopted for the preparation of this nomination proposal was predominantly aimed at ensuring that all attributes contributing to the Outstanding Universal Value of the testimony of the pearling economy are adequately represented. The 15 properties proposed provide the physical testimony that conveys the complete range of social and cultural aspects, of economic activities and of professional roles that characterised the pearling economy. These components include the oyster beds as the source of pearls and a cultural tradition of sea-use, the houses of key-profession holders in the pearling trade or its related supply industries and the associated commercial, religious and public buildings. All these places nowadays function as witnesses of a time that was centred on pearls, and also as memory markers of a shared historical experience and cultural identity, which is still prevalent and comprehensible through its association with these properties.

The full extent of the three oyster beds, which comprises of the denser central areas and the less densely developed edges, has been included for nomination. As the comparatively large size was considered essential to enhance the understanding of the immense richness that existed and can still be found in the northern waters of Bahrain, the serial site proposed is of adequate size. It was the considerable size of these oyster beds that engaged several thousand men for more than four months every summer and helped in the sustenance of the entire island community. In this context, it is not surprising that the three oyster bed properties cover an area which is more than half of the size of the land mass of Bahrain.

The seashore and urban properties on *Muharraq* Island are more focused on the most outstanding attributes represented by the architectural features of the pearling settlement. Each proposed property is the most representative, best preserved or most acknowledged one of its kind. By presenting only one example of each key building type, both the completeness of representation of all attributes and the strong link



Historic photograph illustrating traditional plaster production



Historic photograph of men sitting in front of 'Amārat Ali Rashid Fakhro (I)

between property and attributes remains ensured. Additional properties of the same architectural typology, e.g. other *tawwāsh* houses or mosques, would not have illustrated new attributes contributing to the Outstanding Universal Value and were therefore not selected. The property sizes are based on the attributes expressing the Outstanding Universal Value and are of adequate size. The setting of the urban properties is further protected by several primary and one secondary protection zones which together constitute the buffer zone. This buffer zone surrounds the properties with two gradual protection levels. The size of the primary protection zones is about three times the size of the urban properties while the secondary protection zone is more than double the size of the primary ones.

The urban fabric surrounding the properties has admittedly suffered the adverse affects of insensitive housing development, mostly in the 1980s and 1990s. Although the enforced height restriction succeeded in limiting development to a maximum of three storeys (up to four storeys along commercial roads), in some cases, the implemented designs do not integrate harmoniously with the heritage properties. In these cases the integrity of the setting has been compromised and is now being counteracted by means of design guidelines. New development has to adhere strictly to these guidelines and they are also used for the evaluation of existing structures in the primary and secondary protection zones and impose design modifications, if required. Modification measures will be subsidised and implemented by the Ministry of Culture and Information in close consultation with the concerned property owners and residents. It is proposed that the most intrusive contemporary additions will be removed by the end of 2011.

In comparison to some of their settings, many properties illustrate exceptionally good or good states of preservation, while at the remaining ones, preservation, restoration and maintenance work is currently ongoing or scheduled. Therefore, for all 15 properties the deterioration process is controlled and the integrity of the historic and structural aspects of the properties secured. Especially the oyster beds illustrate an exceptionally good state of conservation and are far detached from the adverse affects of future marine developments. In their physical intactness they display the potential for future use which contributes significantly to the integrity of the marine sites and the grand narrative.

The socio-functional integrity of the site is associated with this grand narrative and the capacity of the proposed properties to trigger the memory and shared experience of the population. The dynamic relationship between the different properties, which gradually unfold the memory of the pearling economy,

augments a better understanding of pearling history and identity.

Here, the integrity of the pearling tradition in Bahraini society is also worth mentioning both in the context of history conception and self-definition. Bahrain is still well-known by its nickname, the pearl of the Gulf, and pearling was so central to the island community that schools still teach the history of the pearling era or epoch in a manner comparable to the 'age of enlightenment' in a European context. The all-encompassing nature of pearling cannot be separated from Bahraini self-definition and the islands remain the only place in the world where every pearl is guaranteed to be a natural pearl from the bottom of the sea. The strictly enforced import and trade prohibitions for cultured pearls also protect the integrity of this "single product", the centre of life and dreams for many centuries: the pearl.

3.d.iii (Proposed) Statement of Authenticity

The authenticity of the site is related to its ability to convey the shared memory and historical experience of all major social and economic roles and processes that constituted the human and economic system of pearling. While the oyster beds truthfully testify to the outstanding quality of pearls and have maintained the potential of economic pearl collection, the architectural properties are credible memory markers of the grand narrative. In maintaining reference to the traditional uses and functions and in illustrating traditional building techniques and designs, the architectural properties demonstrate an acceptable degree of authenticity. Over time elements of these structures were modified or changed, but later additions show architectural continuity with earlier buildings. Since the authenticity of the attributes acting as memory triggers is considered fragile, the management system gives special emphasis to their preservation and promotion.

3.d.iv Justification of Authenticity

In 1994 a group of experts gathered in Nara, Japan to reflect on the concept of authenticity in relation to the World Heritage Convention. Out of the meeting emerged the Nara Document (Nara Document on Authenticity, 1995) which has, in the meantime, been included as annex 4 to the latest version of the Operational Guidelines (UNESCO, 2008). Based on the approach of the Nara Document of considering the degree of authenticity of a heritage property within the cultural context to which it belongs and

related to a great variety of sources of information, the Operational Guidelines have incorporated revised recommendations for the justification of authenticity.

Paragraph 85 of the Operational Guidelines specifies that “When the conditions of authenticity are considered in preparing a nomination for a property, the State Party should first identify all of the applicable significant attributes of authenticity” (UNESCO, 2008, par. 85) The table below illustrates the different attributes that have been identified as contributing to and illustrating the Outstanding Universal Value of the properties. To facilitate a better understanding, these attributes have further been grouped into categories of similar context which have been indicated with different colours.

The following justification of authenticity analyses the degree of authenticity of these attributes with reference to the different properties. Each category is evaluated on the basis of the degree to which the attributes collected still have the ability to convey the collective memory and shared experience of the pearling era, the degree to which they truthfully represent the Outstanding Universal Value of the testimony of the pearling economy and (the extent of) their credibility as markers for the grand narrative of pearling based on a cultural tradition of sustainable sea-use. In cases where authenticity has been reduced or compromised to a certain degree, it is further outlined whether the situation can be improved or if the reduction of authenticity is of irreversible nature. Moreover, cases where the authenticity of an attribute is considered fragile have been highlighted and cross-references illustrate how the preservation of this attribute has been addressed as part of the management system.

The environmental and geophysical attributes identified for the oyster beds and the seashore strongly relate to the memory of diving practice and the experience of divers. Attributes like water depth, temperature and quality as well as the ratios of oyster density and pearl find favoured the selection of some oyster beds over others and provided the appropriate environment for the annual diving season. These attributes remain completely unchanged, perhaps with exception of a minor average temperature increase. This change is hardly significant in comparison to the historical experience the environmental and geophysical attributes provided, and can therefore be neglected. When diving today, the current conditions truthfully represent the environment associated with the pearling era, and diving excursions, despite the advanced modern equipment used, provide a very intense and accurate impression of the lives and daily tasks of the Muharraqi pearl divers. Additionally, the authentic condition of the oyster beds contributes to their potential of providing continued pearl finds

Property name	Attribute
Hayr Shtayyah	water depth (shallowness)
	water temperature (relative warmth)
	formation of oysters
	visibility
Hayr Bū ‘Amāmah	very high ratio of pearls per oysters
	variety of species
Hayr Bū-l-Thāmah	excellent environmental condition
	highest density of oysters per sqm
	high ratio of large pearl finds
	memory of large pearl finds
Bū Māhir Seashore	location
	topography
	geomorphology
	setting
Qal’at Bū Māhir	physical solidity
	Reminder of defence function
	location
	setting
Al-Ghūṣ House	tree
	design
	material
	atmosphere
Badr Ghulum House	shaded garden, palm trees
	recreation memory
	material, design
	function
	ownership
Al-Jalahma House	ground plan
	design
	memory marker
Al-Alawi House	architectural layout
	building materials
	workmanship
	experience of acclimatisation
Fakhro House	ground plan
	soil composition
	ownership

Property name	Attribute
Murad House	spaciousness
	luxury decoration
	materials
	ownership
Murad Majlis	function and use
	design
	memory marker
	ownership
Siyadi Shops	typology
	use and function
	ownership
	accessibility to public
'Amārat Yousif A. Fakhro	ruinous state
	remains of trade products
	material
'Amārat Ali Rashed Fakhro (I)	design
	use
	ownership
'Amārat Ali Rashed Fakhro (II)	atmosphere
	use and function
Nūkhidhah House	design
	ownership
Siyadi House	sihouette (of the complex)
	design
	ownership
Siyadi Majlis	design
	material
	visible building history
Siyadi Mosque	use and function
	design
	contrast
Colour code of attributes table:	
Environmental and geophysical attributes	
Location and setting related attributes	
Attributes of ownership, use and function	
Architectural and aesthetic attributes	
Archaeological attributes	
Narrative and Identity attributes	

and thereby of being used for controlled economic exploitation in the future.

A second aspect reflected in the environmental and geophysical attributes is the location of the Bū Mahir seashore property which retains its association with the sea and constitutes the last original seashore of *Muharraq* Island. Although neighbouring land reclamation has affected the historic setting towards the north, the crucial physical connection to the sea and the visual connection to Manama Island remain unchanged. The skyline on the other side of the bay is currently evolving, but this does not affect the access to and from the oyster beds at this location. While standing at the seashore one can still accurately visualise the arrival of the dhows at the horizon and vividly imagine women and children waiting anxiously on the shores for the dhows and the men of their respective families to return. The continuous bypassing of dhows towards *Muharraq* harbour contributes positively towards the revival of this memory.

The attributes of location and setting combine references to the interrelation of different properties, for example, the above-mentioned relation in view and potential transport between the seashore element and the oyster beds. Being a comparatively high structure, *Qal'at Bū Mahir*, though originally built for defence purposes, became an integral part of the seashore festival and the women and children climbed on its towers and roofs to await the return of the dhows at the end of the season. This strategic location at the southern tip of the island can still be used by contemporary visitors to watch out for the dhows approaching *Muharraq* harbour. Another example is that of *Siyadi* complex ensemble. A part of the value of this ensemble stems from its contribution to the urban silhouette, which serves as a reminder of the townscape during the pearling era. In the context of the ongoing, though controlled, urban development in the vicinity of these properties, the authenticity of the architectural silhouette is considered fragile. Therefore, the building permits in the areas surrounding the property will be subject to closer scrutiny and the maximum permissible building height defined in the *Muharraq* zoning scheme will be strictly enforced (refer to Management Plan, *Chapter 3: Site Analysis and Action Plans (2009-2013), Interventions in the urban buffer zone*).

One special attribute of most of the architectural properties is their continuous ownership and use, often by the same families since the time of the pearling economy. This uninterrupted family association strengthens the continuity of the memories linked to each property and promotes the concept of stewardship of the sites, thus making the task of managing the

properties easier. For many properties, such as *Badr Ghulum House*, *Fakhro House*, *Murad House* and *Majlis*, *Siyadi shops and House*, and several others, uninterrupted ownership by the same family contributes to a very high level of authenticity. This aspect of authenticity is highly valuable and many family representatives have become important partners in the protection and promotion of the testimony of the pearling economy. The continuity of ownership and use, especially for the publicly accessible buildings like the *Murad Majlis*, and the shops and *'amārāt* in the *suq*, contribute strongly to the credibility of the memory they convey and therefore to the demonstration of authenticity.

Although in the case of *Qal'at Bū Mahir* the former defence function is no longer relevant, this strategic location which provides a wide view is currently used by the contemporary Coast Guard Base situated next to the property. This ensures that the location is safeguarded and retains its potential for future use.

Architectural and aesthetic attributes are associated with most of the urban and architectural properties proposed. The main aspects relevant under this category are the building typologies, especially the ground plans and property subdivisions which reflect traditional use and function, and the combination of local and, in some cases, imported building materials

which illustrate the capacity of individual social or professional groups to make use of trading networks and local resources. The authenticity of the typology and ground plan attributes is satisfactory for all properties, except in the case of *Al-Ghūṣ House* and *Murad House*, where later architectural additions currently interfere with the readability of the original ground plan. It should be noted that in the case of *Murad House* the spaciousness of the courtyard, and not the ground plan, has been identified as attribute contributing to the Outstanding Universal Value. This, however, is currently compromised by the latter additions in the centre of the courtyard. However, in both cases the architectural additions were carried out long after the pearling era (between 1955 and 1985 AD) and do not interfere extensively with the physical remains of the original historic fabric. They are therefore planned to be removed as part of forthcoming restoration works scheduled for 2010/11, a process which will help improve the degree of typological authenticity expressed in the ground plan of *Al-Ghūṣ House* and spaciousness of *Murad House*.

In some properties where the building material has been identified as an attribute contributing to the Outstanding Universal Value, the authenticity of material has been compromised to some extent. Yet, in all such cases, the replacement of original material is



Muhammad Badr Ghulum during a site visit of the primary protection zone

localised to places where repair work was carried out over the years. Fortunately, this was not implemented on a large scale and therefore, the material composition of the buildings is still clearly distinguishable. Often the repairs implemented only affected the surfaces, for instance where painting or re-plastering works were carried out, while the underlying coral stone and timber construction remains unaffected. Of the eight structures for which material composition has been identified as contributing to the Outstanding Universal Value to some extent (*Al-Ghūṣ* House, *Badr Ghulum* House, *Al-Alawi* House, *Murad* House, *'Amārat Yousif A. Fakhro*, *'Amārat Ali Rashed Fakhro* (II), *Siyadi Majlis* and *Siyadi Mosque*), only one shows no material interventions, five structures illustrate surface interventions such as partial repainting and re-plastering and the remaining two structures have witnessed the introduction of modern building material such as concrete for repairs and new additions. As part of the conservation measures outlined in the Management Plan (refer to Management Plan, *Chapter 2: Management Strategies, Strategy 5: physical Conservation and Development/Architectural Conservation and Chapter 3: Site Analysis and Action Plans (2009-2013), Interventions on the properties and in the buffer zone*), reversal of some of the interventions which compromise the degree of authenticity of material is envisaged. Therefore, even though currently the authenticity can be evaluated as acceptable, but in need of intervention, after the

implementation of planned conservation measures, the authenticity of traditional building materials will return to a satisfactory stage.

Archaeological attributes reflecting the Outstanding Universal Value of the property are associated with two properties, *Fakhro* House and *'Amārat Yousif A. Fakhro*. Since in both cases the archaeological excavations took place recently, the findings are in a good condition and of high authenticity. To safeguard this authenticity, some of the excavated areas were buried again and will lie untouched until means of adequate and sensible conservation treatment can be made available and will allow the testimony of the pearling economy provided by these archaeological sites to be displayed to public once again. The soil composition, which contributes to the Outstanding Universal Value as the testimony of the subsequent phases of traditional land reclamation, is unchanged. It therefore is an authentic reflection of the materials and processes associated with land reclamation from the 1880s until the decline of the pearling era in the 20th century. The ruins of the *'Amārat Yousif A. Fakhro* are truthful products of natural degradation processes and constitute a unique site of high authenticity and an intriguing atmosphere.

Finally, the narrative and identity attributes reflecting the Outstanding Universal Value, which are present



Historic photograph of man finalizing dhow production

in almost each of the properties, are most explicitly expressed by *Hayr Bū-l-Thāmah*, *Al-Jalahma House* and *Murad Majlis* as memory markers for divers, women and *ṭawāwīsh*. The justifications of Outstanding Universal Value provided in the property descriptions (*compare Chapter 2: Description of the proposed properties and their narratives*) other than these refer to narrative elements and memory markers for almost every property proposed. These are particularly difficult to evaluate as is acknowledged in the Operational Guidelines:

“Attributes such as spirit and feeling do not lend themselves easily to practical applications of the conditions of authenticity, but nevertheless are important indicators of character and sense of place (...)” (UNESCO, 2008, p. 83)

When the properties to be proposed for this nomination were selected on the basis of a detailed historical and anthropological survey, followed by an architectural survey, between 2007 and 2009, members of the survey team spent months walking through historic *Muharrāq* with elderly informants, who, when passing certain properties began to share their memories. The sites finally selected for this nomination are, to a great extent, those properties which triggered most reactions and had compelling stories, narrated by several individuals and related to the pearling era, associated with them.

In a similar approach the three oyster beds, apart from their environmental characteristics, are the most crucial and present in the memories of Bahraini pearl divers who vividly share their memories of the ease of access related to *Hayr Shtayyah*, the dangers encountered in *Hayr Bū 'Amāmah* and the spectacular pearl finds in *Hayr Bū-l-Thāmah*.

The evaluation of the degree of authenticity of the shared memory and historical experience related to the properties was done on the basis of independent narratives provided by several individuals. Additionally, during the preparation of the nomination dossier, survey of the properties and preparation of conservation measures it became more and more evident that the younger generation, who did not experience the pearling era, also associates itself with these memories. This aspect of trans-generational continuity displayed by many families during their visits to the properties, the shining eyes of elderly Bahraini visitors, who could not stop themselves from narrating every memory they associate with these places and several related aspects on a daily basis, prove the authenticity of the shared memory reflected in the properties and the grand narrative of the pearling economy.



The Pearl Monument, a contemporary expression of pearling identity

4

State of conservation and factors affecting the property

This section of the nomination file provides a brief overview of the current state of conservation (section 4.a) along with factors identified as affecting or threatening the 15 serial properties (section 4.b), classified as maritime, seashore and architectural or urban properties respectively, proposed for nomination under the name "Pearling, testimony of an island economy".

The condition assessment of the maritime properties is based on comprehensive field surveys such as the survey of Bahrain's oyster beds by the Bahrain Centre for Studies and Research (BCSR) carried out from 1986 to 1989 and two surveys of the relevant oyster beds commissioned by the Ministry of Culture and Information and conducted with the help of the Directorate of Fisheries of the Public Commission for the Protection of Marine Resources, Environment and Wildlife (PCPMREW) as well as Bahrain Centre for Studies & Research (BCSR) in 2008 and 2009. Literature available on earlier research activities conducted in this field has also been used as reference for this purpose. For further information on the above-mentioned surveys and literature, please refer to the Management Plan (*Chapter 2: Management Strategies, Strategy 6: Research and Documentation*). A detailed description of each oyster bed, its state of conservation, factors affecting it, and scale and duration of future conservation measures to be undertaken for safeguarding their Outstanding Universal Value can also be found in the Management Plan (*Chapter 2: Management Strategies, Strategy 5: Physical Conservation and Development and Chapter 3: Site Analysis and Action Plans (2009-2013)*).

Documentation done during an architectural survey conducted in 2008 as part of the preparation of this nomination file along with review and analysis of previous conservation projects and research in Bahrain, such as the technical reports prepared in 1980 (*Conservation, Restoration, and Preservation of Archaeological Monuments and Sites of the Pre-Islamic and Islamic Periods*), 1981 (*Conservation Techniques for the Monuments of the State of Bahrain*), 1981/82 (*Conservation, Restoration, and Preservation of Monuments and Archaeological Sites of the Islamic Period*), 1983 (*Conservation of the Monuments of the State of Bahrain*) and February 2007 (*Field Visit to Archaeological and Heritage Sites in Bahrain*), formed the basis for the assessment of the current state of conservation of the urban properties. Like in the case of maritime properties, further information on the literature referred to and surveys conducted for a comprehensive condition assessment of the urban properties can be found in the Management Plan (*Chapter 2: Management Strategies, Strategy 6: Research and Documentation*). A detailed description of each urban property, its state of conservation, factors affecting it, and scale and duration of future conservation measures to be undertaken for safeguarding their Outstanding Universal Value has also been provided

in the Management Plan (*Chapter 2: Management Strategies, Strategy 5: Physical Conservation and Development and Chapter 3: Site Analysis and Action Plans (2009-2013)*).

4.a Present state of conservation

Maritime properties

Hayr Bū-l-Thāmah

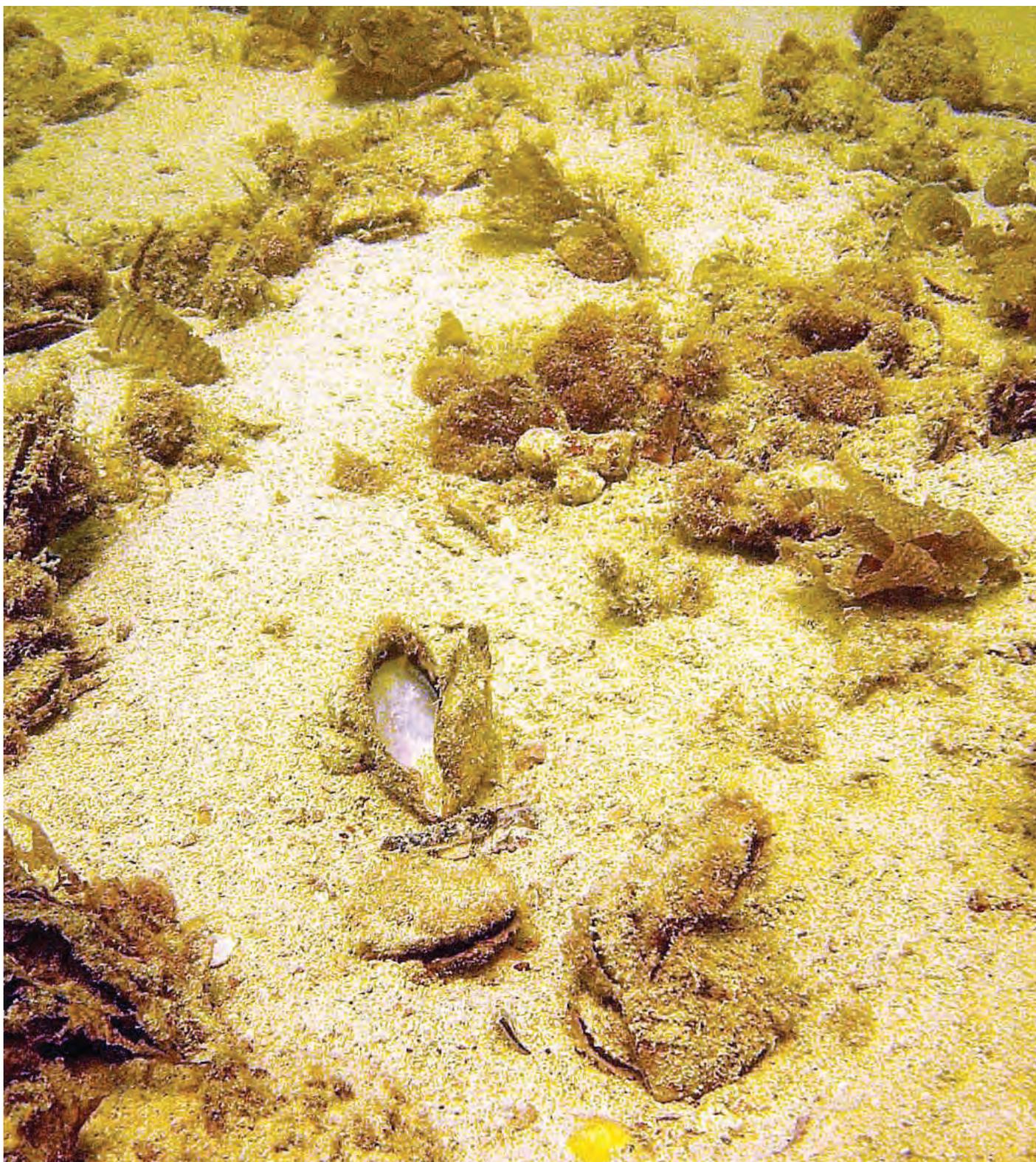
The survey conducted in 2008 found the oyster bed in excellent environmental condition. Oyster density figures of 4-20 per square metre, mentioned in earlier surveys, were confirmed along with the existence of a substantial amount of biodiversity within the property boundaries of *Hayr Bū-l-Thāmah*. Although the water quality is excellent, the visibility at *Hayr Bū-l-Thāmah* is only around 7 metres and therefore limited as compared to that at the other beds. This, however, is probably due to the additional depth of water and the accordingly stronger current as well as the continuous movement of the rich animal population, rather than a result of potential threats such as water pollution.

Hayr Bū 'Amāmah

The 2008 survey recorded an oyster density of 4-20 per square metre of the oyster bed – figures which collaborate with those of the last survey conducted in the 1980s. Moreover, the horizontal visibility in the plains of the bed ranges up to 10 metres and the survey also identified the presence of several species of sea anemones, various echinoderms such as sea urchins, sea stars and feather stars as well as a variety of fishes, molluscs, corals and sponges. All these parameters indicate that *Hayr Bū 'Amāmah* is currently in a good state of conservation.

Hayr Shtayyah

During the preparation of this nomination, the survey conducted in November 2008 showed that as with the other two oyster beds, *Hayr Shtayyah's* environmental condition is well preserved. Sample tests undertaken at three different locations confirmed that the density of pearl oysters in this bed varies from 4-30 oysters per square metre. Moreover, in terms of the existence of other species, apart from the pearl oyster *Radiata pinctada*, the hard substrate of the seabed is rich in: fish, echinoderms, molluscs, corals and sponges. The survey identified a good horizontal visibility ranging from 10 and 12 metres and a salinity rate of 43 ppt.



Pearl oysters at Hayr Shtayyah



Gathering at Qal'at Bū Mahir (1964) published in: "Muharraq the sea rose"
copyright © Abdallah el-Khan (2006)

Seashore properties

Bū Māhir Seashore

Public access currently restricted until 2010, minor conservation measures required.

Bū Māhir Seashore is the only stretch of authentic shoreline remaining in Muharraq. It features a well-preserved natural beach and adjacent seawaters, including a *ḥaḍrah* (the traditional fish trap), and the remains of *Qal'at Bū Māhir* as they existed during the late pearling era after the fort's destruction. The good state of preservation of the Seashore is attributed to the fact that it is located within the National Coast Guard Base.

The need for a boat access to the island has prevented a substantial part of the seashore from being reclaimed for development projects, thus preserving the natural beach and water basin as well as the *ḥaḍrah*, which remains functional. However, this also means that the site has been inaccessible to the public for security reasons. The seabed within the limits of the proposed area is preserved complete with its authentic topography and natural conditions, and boats can still land here. Most of the property, such as the *sif* part which also accommodates the remains of the fortress, *Qal'at Bū Māhir*, still maintains its visual connection to the sea.

To the north, however, the shallow sea has been reclaimed and *Bū Māhir* is no longer an island. Here, buildings housing Coast Guard facilities affect the quality of the scenery. Moreover, beyond the area designated as the Coast Guard's "public services area" is a highway which takes the former role of the sea in separating the seashore and *Qal'at Bū Māhir* from the urban properties located further north in *Muharraq*.

Qal'at Bū Māhir

Currently vacant, minor conservation measures required

The remains of *Qal'at Bū Māhir* had been in a state of dilapidation until the 1970s. The southern tower and the south-western wing were restored in the late 70s. During this time, an archaeological team excavated the northern tower and wall foundations and uncovered other important artefacts that shed further light on *Qal'at Bū Māhir*'s long history.

However, the execution of past restoration and partial reconstruction shows some deficiencies which impact the state of conservation today. The use of modern cement and lack of an appropriate damp proof layer caused plaster and paint on the walls surfaces to flake. It still needs to be confirmed whether the decorative gypsum elements and the wall opening of the reconstruction indeed reflect the



historical characteristics of the fortress. More recently the foundation wall of the northern tower has been incorporated into a temporary landscape design in a questionable attempt to beautify the property, which is scheduled to be reversed.

After restoration, the building was not in active use and therefore suffered from a lack of regular maintenance. Though the rooms are empty and unused, and therefore in a generally good state of conservation, the historic doors do not function properly due to the piling up of dust and sand and the exterior shows signs of decay. Many of the reconstructed merlons are dilapidating. Some of the exterior spaces and surrounding land have been temporarily used as waste deposits for disused equipment. Temporary structures, a small workshop and dry pit have been built, and rubble has accumulated on the western side. Some archaeological findings of the late 1970s excavation were left exposed and unprotected, and show traces of impact from natural elements and the movement of people.

Currently, the property is inaccessible to public without prior arrangements between the Ministry of Interior and the Ministry of Culture and Information.

Urban Properties

Al-Ghūṣ House

Currently in use, medium-major conservation measures required

The north-western room, the *bangalah*, has suffered some damage over the years. The original roof collapsed and has since been replaced with a corrugated sheet metal roofing system. The walls have suffered from wear and tear as well as exposure, and many niches now expose the internal horizontal structural timber members which show signs of fungus and termite infestation at some locations.

The eastern complex, with the aid of timber boarding and other temporary construction material, has been converted into a basic housing facility. The traditional walls, in an attempt to beautify the facility, have been plastered and painted, and traditional ceiling covered up with contemporary ceiling boards. A few windows have been replaced by air-conditioning units. The structural beams show signs of weakness. The courtyard has been covered with cement screed and is currently used as storage for furniture and construction material. A basic modern toilet and bathroom facility and a temporary room built of timber boarding material have been added to the western portion of the courtyard. The southern portion is roofed with a fibre cement

sheet on a large timber column and beam structure while the space beneath is used for storage and hosts a basic temporary kitchen facility.

The original setting of *al-Ghūṣ* House has changed considerably as a result of the continuous land reclamation in *Muharraq*. Modern urban buildings have been constructed on the reclaimed land adjacent to the southern seashore. To the north, however, the historic urban pattern is well-preserved and clearly distinguishable as the border of the historic settlement, although much of the traditional structures in the surroundings have been replaced by modern constructions.

Badr Ghulum House

Currently in use, medium conservation measures required

Badr Ghulum House shares its western outer wall with the neighbouring house of *Yousif-al-Turabi* and both are still owned by their original families. Today, the *Badr Ghulum* House is used by the family who still receives guests generously and, at request, offers simple medical treatments in remembrance of their family tradition. The *Turabi* House was recently given up as a family residence and currently stands vacant.

Due to land reclamation and urbanization to the south-west of the house in the mid-20th century, the main entrance was relocated to the north-east end of the property border. At the same time, a contemporary kitchen, bathroom, and separate room were constructed adjoining the southern interior boundary wall. The addition of two rooms to the double-storey western complex has further impacted the traditional character. The courtyard is clustered with temporary make-shift structures constructed of lightweight materials, and some landscape elements of the courtyard require attention. The windows, *bādgīr* and *farsh* on the first floor require attention and the aesthetic value of the house is reduced by the adjoining temporary storage facility made of corrugated sheet metal. In an attempt to protect the building against efflorescence, walls were plastered and painted with contemporary materials. This however may have speeded up the rate of decay of the traditional material, as is currently further investigated. Unfortunately the traditional entrance door has been replaced.

The portion of the *Turabi* House attached to the *Badr Ghulum* House has also experienced some modernisation attempts. Most walls have been rendered with contemporary plaster and oil based paint, while others have been covered with timber boarding to conceal efflorescence. A portion of the 1st floor terrace has been covered up with a modern structure that influences the aesthetic value of the traditional facade.

Al-Jalahma House

Currently vacant, major conservation measures required

The western part of the house seems to have been abandoned for a long time and has not been modernised. Its walls still show traditional plaster and authentic windows and only the external facade has been coated with cement-based plaster. However, the western part also shows an advanced stage of decay with damaged doors and windows and some signs of termite infection in wooden structures. On the southern edge of the upper floor, a *liwān* and an apartment have collapsed, and there is little evidence of their former shape. After the pearling period, only small-scale modifications were carried out in this part involving the use of modern materials such as concrete blocks.

The eastern part, in comparison, has seen more significant modernisation measures. Contemporary plaster and paint has been applied to the walls, lowered ceilings conceal the traditional ones, and "off-the-shelf" doors and windows have replaced their traditional counterparts. Both the staircases that led to the roof terrace of the *majlis* in the south-west corner and to the main first floor *ḥafiz* respectively have been removed. The roof structure of the *ḥafiz* shows sign of structural failure and is temporarily propped up with adjustable scaffolding.

While the urban setting is well preserved to the south, in the north the sea has been reclaimed and the coastal setting at the entrance of *al-Ḥālah* Island has been lost.

Al-Alawi House

Currently vacant, minor conservation measures required

All essential architectural elements are preserved within the building and the few additions noted can be removed without major impact on the historic fabric. The spatial qualities of the central courtyard have been reduced by the introduction of modern toilet facilities and a balcony on the first floor level. Some modern materials and elements introduced during this modification also contribute to the reduction of the traditional aesthetic qualities.

Other modifications relate to changes of use initiated by *Al-Alawi* family. The *majlis* was converted into a guest room; the *liwān* converted into a store; and the traditional sunken pantry with mezzanine level was converted into a living space. As in many traditional buildings, attempts were made to hide the signs of efflorescence behind temporary boarding and contemporary plaster and paint which unknowingly aggravated the deterioration

process. A few structural timber beams show signs of decay and/or termite infestation. However, considering the fact that the house, which is still partly furnished, has only been used occasionally in the past decade and has hardly been maintained, the building is in an overall good state of conservation.

The property's setting has changed due to the reclamation of the southern water bay and the surrounding attached historic buildings have been destroyed, thus isolating the historic house which used to be part of a cluster.

Fakhro House

Currently vacant, major conservation measures required

The eastern part of the building is well-maintained, but shows slight impacts of modernisation. In particular, the southern facade, which links the two building parts, has been compromised through inappropriate surface design, which is scheduled to be removed.

The western part of the building is in a critical state of disrepair but simultaneously retains its authentic architectural elements and decorations in Smooth and Perpendicular Style. Apartments A, B and C are all in an advanced state of disrepair with some roof structures in danger of collapse. Vertical cracks are visible between the windows and ceilings of each apartment and adjoining *liwān*. These cracks contribute to the destruction of the decorative incised gypsum panels. Non-load bearing elements such as door and window frames are also affected by occurring tensions. Apartment A's main entrance and *liwān* arches are under strain due to the partly collapsed floor which adds to the instability of the structure. In apartment B the western facade shows signs of instability created by the demolition of an attached room and possibly due to the movement of the foundations which are built on reclaimed, and therefore settling, land. The visual appeal of the internal facade is slightly reduced by the electrical conduits which run across the walls; in apartments A and C doors, openings and decorative incised gypsum panels have been plastered and covered with inappropriate paint; some of the remaining windows, doors, screens and stained glass are in a state of disrepair and decay. All rooms are vacant, and at some places pigeons have been nesting in the property. Maintenance work was not carried out for several decades.

The simpler rooms directly beneath the apartments retain most of their original character while the roofs of

other rooms in the ground floor have collapsed. Some rooms have been slightly modernised with the use of contemporary plaster and paint render or bordered with decorative timber panels to retain an aesthetically pleasing appearance. The rooms are now used as temporary storage. The archaeological remains within the empty land of the property are partly covered with vegetation.

Part of the historic fabric which formerly surrounded the property has been destroyed in order to make way for open spaces and modern residential buildings. Continuous land reclamation has left the property without access to the sea.

Murad House

Currently in preparation for re-use, medium conservation measures required

The last members of the Murad family who previously inhabited the building have recently moved out of the property to initiate its conversion into a traditional guesthouse. Most of the rooms are left empty or used as storage.

A portion of the house was modernised in the second half of the 20th century. In the 1950s, a portion of the house was modified to gain better access to a newly acquired *majlis*. The position of the second entrance was shifted and new rooms and a *livān* were added. The historic fabric of the northern wing was reduced at the time. In the 1980s, the 1st floor was modernised; the traditional kitchen on the ground floor was rebuilt and used as stores; a raised terrace was introduced in front of the *livān*; and an apartment was added within the courtyard at the entrance and in the far south-east corner of the property; the traditional water pool was filled in. All these modifications used non-traditional materials and proportions and are therefore planned to be removed. Furthermore, part of the southern wing was subdivided into smaller apartments, which currently still remain in use.

Murad Majlis

Currently in use, minor conservation measures required

As a result of its continued use, the property has been well maintained and is, therefore, in a good state of conservation. New additions and minor modernisations have not had a significant impact on the property. Additionally, the courtyard has been paved with stones. Incorporated in the courtyard are a modern kitchen, bathroom, spare room and shaded seating areas. The staircase to the roof remains unchanged since its construction. Contemporary plaster, paint and floor finishes are the only questionable changes





Streetscape view between Siyadi Majlis and Siyadi House

made to the traditional structure, which show some efflorescence. Photographs show that at some point the parapet's height was increased, a change that was reversed during a restoration project in 1994.

Siyadi Shops

Currently in use, minor conservation measures required

The Eastern complex (Bu Maher Avenue):

Archaeological excavations and historic maps illustrate that this complex consisted of eight shops of which six have retained their original dimensions. Excavations in one shop have uncovered the intact remains of a *mdbasah* (date juice press), which offers insight into the former use of the property. The shop on the south-western corner is in need of restoration. The rear wall has partly collapsed and, thus, does not shield parts of the structure from the impact of weather. Most of the shops have, since the collapse of the pearling economy, been modernised through the addition of canopies and signage that are in a bad condition due to a lack of general maintenance. These additions reduce the aesthetics of the historic fabric and are to be removed. Mezzanines have been upgraded over the years. The exterior walls retain their original character and expose the original surface materials. While some of the shops still retain their original use, others serve as storages or remain vacant.

The Western complex (Al-Tujjar Street):

Most of the shops of the western complex are still functional with only 2 shops in the south-east being vacant and in a state of disrepair. The property has been maintained regularly, a process that, unfortunately, included plastering and painting. Modernisation attempts further included the interior sealing of walls, niches and ceilings with temporary timber boarding and contemporary ceilings. Modern signage is scattered across the facade and the tenants of some shops have introduced steel roller shutter doors. The necessary introduction of a sewage system has further reduced the overall aesthetics.

The living units on the first floor are used for housing, which has increased the wear and tear and general strain on the property. Extra rooms have been added to the first floor using temporary building materials in a manner that interferes with the architectural proportions and overall aesthetic value of the property. These are to be removed in the medium-term. Air-conditioning units have been added to most rooms and reduce the aesthetics of the interior and exterior facades. Moreover, the traditional *buwwādgīr* have been blocked up.

Amārat Yousif Abdurrahman Fakhro

Currently ruined, medium conservation measures required

'*Amārat Yousif Abdurrahman Fakhro* today consists of ruins and archaeological remains. The parts of the former building which are still standing in a ruinous state are in danger of further disintegration and therefore preservation measures are currently being taken. The remains of the '*amārah's* foundations, floors, columns and walls as well as excavated artefacts provide testimony of the property's former shape and function.

The eastern portion of the property displays evidence of foundation walls, floors and the *mdbasah* (date press) system. The foundations of the stores show the exact footprint of the storage areas each with a centrally located door. The foundation walls also indicate the position of the central axis. As the archaeological remains were covered with up to half-a-meter of sand, the *mdbasah* system has been well preserved. However, the timber flooring system placed over these *mdbasah* has succumbed to decay and only some fragments of it are preserved.

Parts of the property's first extension, which now constitute the building's central part, are preserved as ruins. The columns that formed the central colonnaded passage have survived along with the *amārah's* boundary walls to the north and south. Similarly, the property's western portion displays remains of the boundary walls and a series of columns. The roof structure is partly preserved, but in an advanced stage of decay and most timber members seem termite infested. In the northern part, the former use as a barn for livestock is still evident. Here, separating walls made of concrete blocks have been introduced and a small storage room been built.

'Amārat Ali Rashed Fakhro (I)

Currently partly in use, major conservation measures required

The '*amārah* displays all the traditional architectural elements that define a prototypical '*amārah*, but is in an advance stage of neglect with the western roof in danger of collapsing. Most of the shops continue to be used for commercial purposes and the public facades give an impression that the building has been maintained and slightly modernised. Surfaces have been plastered and painted. Aluminium window frames have been replaced some of the property's traditional doors and windows and canopies have been added.

The administrative office in the south-eastern section of the Tujjar Street front has been converted into a fruit and vegetable shop. The shop on the north-eastern section of the same front has been joined with its neighbouring store to the west. The separating and

load bearing wall was removed and a steel beam was introduced. The main entrance door of the Tujjar Street front is still intact, but the timber shows signs of impact of weather.

Out of the eight shops aligned along the northern *sūq* facade, four remain operational. Modern elements and fittings such as steel roller shutters and illuminated signage decorate the facade. The *'amārah's* second entrance gate in the northern facade has been adapted to provide access to the *Bu Khalaf* Coffee Shop which today occupies a part of the former storage space with an open plan. Though the higher roof height at the former entrance area still indicates its original use, the traditional door and the arched fanlight have been replaced.

The internal spaces of the *'amārah*, made up of the central clerestory corridor, the small lockable storerooms, and the large open plan stores, are in need of restoration. The only space that still remains in use is the one that hosts the coffee shop. This has been given additional volume by means of a concrete block construction that extends into the central corridor. All other spaces remain vacant and have not been maintained for many years. Part of the roof structure that covered the clerestory corridor has collapsed, exposing the internal walls. This has caused a loss of protective render as well as instability of the walls, which in turn has affected the traditional timber doorframes. The remaining fragments of the *'amārah's* roof show signs of termite infection. Thus, they no longer fulfil their function of safeguarding the building from the impact of weather and additional protection against water ingress has only been provided in places that remain in use.

A part of the southern external wall has collapsed due to the decay of the *'amārah* which stood adjacent to it. The storerooms located in this part of the *'amārah* are therefore exposed. Two of these southern storerooms have been merged; the dividing wall has been knocked down and replaced with a steel I-beam. Moreover, the internal staircase that leads to the rooftop has partly collapsed.

Provisory structures shade Lane 1551. Random materials ranging from textile to timber boards have been fixed to traditional elements such as traditional window frames or the coral stone wall of the property's facade. These additions screen parts of the traditional facade and impact its aesthetics. Furthermore, some of them pose a safety hazard to the public. Removal of these additions has been identified as a priority and is being addressed currently.

'Amārat Ali Rashed Fakhro (II)

Currently used, minor conservation measures required

With its continuous use and only minor adaptations, *'Amārat Ali Rashed Fakhro (II)* is the most intact of the traditional storehouses. These adaptations include: the transformation of the southern entrance to host an additional shop; the closing of openings in the ceiling of the clerestory corridor, which traditionally provided ventilation to the space, and the introduction of roller shutters and showcase windows in place of traditional doors and windows in the shops. The application of modern plaster and paint, the installation of illuminated signage and the boarding up of the niches and walls are interventions that currently affect the appearance, but are reversible. The sealing of surfaces with timber boards has had an impact on the traditional coral stone walls and on timber elements.

Like in the case of *'Amarat Ali Rashid Fakhro (I)*, provisory systems for shading the adjacent *sūq* lanes have been anchored onto the building's public facades impacting its overall aesthetics.

Nūkhidhah House

Currently in use, medium conservation measures required

While the traditional character of the property's exterior is well preserved, the readability of the original structure in the interior is reduced through temporary additions. The property's exterior and interior walls have been re-plastered and painted. The interior niches have been boarded up and the traditional ceilings have been covered by lowered ceilings. Timber boards, metal windows and steel posts were introduced by the latest tenants and reduce the overall aesthetics of the place. The *buvwādgīr* were sealed, reducing ventilation and increasing the dampness caused by leaking water taps and pipes. The current condition of the electrical cables increases the potential fire threat. The property additionally shows signs of wear and tear due to the lack of maintenance and high strain caused by its latest tenants. Restoration works are scheduled and will be aimed at reversing most of the negative impacts listed.

Siyadi House

Currently in use, minor conservation measures required

Siyadi House has been maintained in its original form and character, although, the building evolved as the family grew within the last years of the pearling era and after the collapse thereof. The architectural fabric and the traditional character of the building are generally intact. Being inhabited, the house is well maintained but, unfortunately, some inappropriate materials



Sequence of niches and buwwādgīr on Murad House exterior facade

have been used in earlier maintenance processes. The traditional ceilings have sometimes been lowered, with electrical fittings set within and conduits running across the walls, which impact the overall aesthetic qualities of the house. The exterior walls were covered with cement-based plaster and contemporary paint. A room and a sanitary facility have been added on the north-eastern corner of the first floor. Another bathroom has been incorporated in the south-western corner, which blends into the character of the facade. The sewage and water pipes that branch down the outer wall, although preserving the traditional fabric, reduce the overall aesthetics. The walls on the ground floor have been punctuated for the installation of air-conditioning units. *Buwwādjir* have been closed up to retain the artificial climate. The main entrance door has been replaced with a contemporary door. Modern screening elements have been introduced to increase the privacy of the courtyard. Most of the courtyard's floor surface has been covered with tiles. Some windows have been replaced with new ones, which impact the character of the traditional facades. The introduction of electricity and public lighting has seen the incorporation of both these elements to the exterior facades. In recent decades, the number of inhabitants has decreased, leaving some rooms vacant. These empty rooms have since been used for temporary storage and sometimes lack regular ventilation.

The building's setting has preserved the most important assets, *Siyadi Mosque* and *Majlis*, which are separated from the residence by a narrow picturesque lane. However, empty plots to the south and north of the property remain in use as informal parking spaces.

Siyadi Majlis

Currently in preparation for re-use, minor conservation measures required

The *Siyadi Majlis* was vacant and, presumably, in a state of neglect when it was purchased, in 1974, by the Ministry of Municipalities and Agriculture. Subsequent questionable conservation efforts were later suspended and the ownership was transferred to the Ministry of Information (today named Ministry of Culture and Information). The initial conservation efforts, which unfortunately lacked documentation, led to the introduction of inauthentic elements and materials – and caused the reduction of parts of the authentic fabric. A reinforced concrete staircase attached to the historic facade was introduced in the courtyard. T-section steel angles, which have been inserted into the corners of humid and salt rich coral stone walls, show signs of rust and decay. An additional concrete stairway encroaches on the courtyard and

cuts through the traditional timber beam construction that supports the first floor *majlis*. This intrusive addition is now being reversed within the framework of a larger conservation project.

Some architectural details, such as the gypsum panels and the timber-panelled ceilings in the various rooms, have been restored in an insensitive manner. However, the intervention ensured the survival of the structure, which still stands empty, and most of its architectural details. Particularly the elements of the main *majlis*, *mukhtaṣar* and the viewing room, remain untouched and are well preserved.

Siyadi Mosque

Currently in use, minor conservation measures required

Over the years the *Siyadi Mosque* has been regularly maintained and is therefore in a good condition. Adaptation required for the continuous religious use, however, has led to modifications of the traditional fabric. The contemporary plaster and paint render applied to the external and internal facades, the electrical and audio appliances mounted onto walls and ceilings, and the electrical conduits running across the internal facade and its traditional decorative elements, illustrate the contemporary requirements of prayer performance. A central air-conditioning unit has been well integrated with the design of the interior. Functional elements such as lamps modify the traditional character. Plastic curtains have been fixed in a reversible manner to the timber frame openings of the *liwān* (under supervision of the Sector for Culture and National Heritage) in order to ensure effective air-conditioning for a larger space required to accommodate the growing number of worshippers. The ablution facilities, just north of the entrance gate, have been moved from their original position. The tiles that cover the surface of the courtyard seem in contrast to the traditional finishes and aesthetic qualities of the mosque. Parts of the boundary wall have been repaired with the help of concrete blocks and contemporary plaster and paint. The overall condition of the mosque however is satisfactory and it is a well frequented and valued place for the local community.

4.b Factors affecting the property

The various factors which are likely to affect or threaten the site "Pearling, testimony of an island economy" have been classified under four main headings. These are: (i) development pressures (e.g., encroachment, adaptation, agriculture, mining); (ii) environmental pressures (e.g., pollution, climate change, desertification); (iii) natural disasters and risk preparedness (earthquakes, floods, fires, etc.); and (iv) visitor/ tourism pressures. Under each heading, measures for counteracting the listed pressures have also been mentioned in brief. For further details of the threat prevention and counteraction, please refer to the management plan (*Chapter 2: Management Strategies, Strategy 5: Physical Conservation and Development, and Chapter 3: Site Analysis and Action Plans (2009-2013)*).

4.b.i Development Pressures

Development pressures on marine and seashore properties

Gas and oil exploration is envisaged within the marine buffer zone and exploitation is not unlikely to take place. Even though contemporary oil exploitation mechanisms ensure a high degree of environmental compatibility, any future exploitation will need to abide to a formal agreement (*for further information, refer to the environmental factors in this section*). The use of oyster beds needs to be carefully monitored in the future. Otherwise uncontrolled pearl collection may lead to over-exploitation of natural oyster resources, disturbance of marine habitat and environmental pollution.

Land reclamation resulting from development pressure has had a negative impact on the seashore property. This process has already erased the original boundaries of most of *Muharrag's* seashore and, if allowed to continue unchecked, it could pose a major threat to the attributes of *Bū Māhir* Seashore, which contribute to the property's Outstanding Universal Value, in the near future. In the unlikely event of the future expansion of the Coast Guard Base, development pressure could threaten the existence of *Qalat Bū Māhir*. However, this possibility has been prevented through its designation as a national monument. Moreover, it is probable that boat traffic within the buffer zone of the seashore property may increase in the future and may need to be monitored (*refer to the environmental factors in this section*).

Measures designed to counteract these pressures include negotiation and cooperation with the involved stakeholders by the Ministry of Culture and Information, developing regulations for pearl collection and regular patrolling in protected marine areas.

Development pressures on architectural properties

The architectural properties situated in *Muharrag* currently suffer from adverse effects of artificial tremors resulting from the use of heavy machinery in development projects. Increased vehicular traffic has also resulted in a higher level of noise and air pollution, and more accidents and damages to historic properties since the narrow lanes were originally intended only for pedestrian traffic.

The current zoning regulations allow a maximum building height of three storeys and a 300% floor area ratio, which puts the small single-storey structures like the *Nukhidhah* House, *Al-Ghūṣ* House, and the abandoned and ruined properties like *'Amārat Yousif Abdurrahman Fakhro* and *'Amārat Ali Rashid Fakhro (I)* under development pressure. This is being counteracted through special stipulations for the primary protection zones. For other buildings like *Murad* House, *Fakhro* House and *Siyadi* House, where the family still retains property ownership, problems may arise from implementation of insensitive renovations and adaptations to meet modern needs. Most of the ongoing maintenance activities, like the replacement of traditional materials with lasting contemporary ones, may result in progressive loss of the built historic fabric.

Road widening works, which are sometimes required for better fire brigade accessibility, could, in some cases also endanger the integrity of the properties. Moreover, some restoration and rehabilitation projects initiated in the past, and aimed at utilising the heritage value of the building, have led to unwanted changes in the building's architectural language and material composition.

Means for counteracting these threats include implementation of legal protection measures for the properties, and designation of *Bū Māhir* Seashore and all architectural properties as national heritage under the Antiquities Law (Law No (11) of 1995). It would ensure that no development project can affect the physical integrity of these properties. This measure is supported by article 3 of the urban planning law (Legislation Decree No (2) of 1994) which specifies that all urban development plans must respect the existing heritage sites and aim to protect them (*refer to Chapter 2: Management Strategies (especially Strategy 2: Statutory protection)* of the management plan for further details). In addition, following the heritage designation, all restoration projects are exclusively guided by the Site Administration Unit. The Antiquities Law, which protects the properties, allows the Ministry of Culture and Information to supervise all projects carried out for the conservation of the heritage buildings. Inappropriate and inadequate works can therefore be prevented and new uses compatible with the attributes, which contribute to the properties' Outstanding Universal Values, can be found. Organising awareness raising and

training workshops for locals in traditional construction techniques will also help in dealing with the above-mentioned development pressures and encourage proper maintenance of the properties in the future.

4.b.ii Environmental pressures

The environmental pressures listed below vary in scale and intensity of impact on the properties. They range from local and global climatic factors to environmental pollution or degradation caused by development. Some issues described below concern long-term trends in environmental processes, such as climate change, which will be dealt with through adaptation measures. In other cases, like marine pollution or land development, mitigation measures have been designed and incorporated in the management system. The environmental factors affecting the property have to be counteracted and thoroughly monitored to avoid serious damages to the properties. Some influences of climatic factor, such as sunlight or water penetration, will be considerably reduced after restoration and maintenance measures have been implemented for all architectural properties (please refer to the measures foreseen in the Management Plan, *Chapter 3: Site analysis and action plans (2009-2014)*). Moreover, monitoring of both marine and architectural properties will include a special focus on environmental pressures and contribute to an ongoing evaluation of the issues along with initiating preventive measures as required.

Gas and oil exploration

Gas and oil exploration is envisaged within the marine buffer zone and exploitation is not unlikely to take place. Even though contemporary oil exploitation mechanisms ensure a high degree of environmental compatibility, any future exploitation will need to abide to a formal agreement. This agreement, outlining the use of permissible techniques and the monitoring mechanisms to be applied, will be established between the concerned authorities (Public Commission for the Protection of Marine Resources, Environment and Wildlife (PCPMREW), National Oil and Gas Authority (NOGA), Bahrain Petroleum Company (BAPCO), *Occidental Petroleum Corporation and the Ministry of Culture and Information*). Following the agreement, monitoring and cooperation with involved stakeholders will ensure that these processes do not impact the environmental condition of the oyster beds.

Sea traffic

The amount of sea traffic from and to Bahrain is constantly increasing as the country progresses towards its goal of becoming an important centre of trade within the Gulf region. In addition, cruise liners have discovered Bahrain as an attractive location and dock more frequently at the new cruise terminal in Hidd Harbour. Discharges and emissions caused by the increased seafaring activities could affect the water quality and marine biodiversity. As a result, attributes reflecting the Outstanding Universal Value of the proposed marine properties, like the underwater visibility and high biodiversity of the oyster beds, may be compromised. However, following the increased patrolling and monitoring activities by the Public Commission for the Protection of Marine Resources, Environment and Wildlife (PCPMREW), pollution from emission discharge shall be reduced and littering or waste disposal shall be completely prevented.

Dredging and Land Reclamation activities

Dredging and land reclamation is a common practice in Bahrain. In the process of land expansion along the northern coasts, sand is transported from further offshore locations and deposited in shallow offshore areas. While the oyster beds are far too deep for land reclamation, they could qualify as potential dredging ground. Dredging in oyster beds has therefore been prohibited.

However, dredging causes silting and displacement of sediments, which affects the environmental surroundings within a range of up to three kilometres. These sediments not only reduce the water quality before resettling, they also pose a risk to the oyster beds. Once the hard substrates required by the oysters for attachment are covered with silt, they can no longer qualify as an oyster habitat. As a result of the introduction of the marine buffer zone, dredging works will not be permitted within 5 kilometres of the oyster beds and silt sedimentation is, therefore, unlikely to affect the marine properties.

Illegal littering and waste dumping

Severe threats to the oyster beds could be posed by illegal waste dumping activities practiced by ships at high sea. The potential impacts are highly dependant on the nature of toxic substance or waste disposed. Littering of metal or plastic waste items from boats can further reduce the aesthetic qualities of the oyster beds, but metal waste objects have also been used as substrates by oysters in the past and do not seem to impact the habitat. Finally, the drainage of sewage and industrial waste in the territorial waters of Bahrain contributes to reduced water quality in coastal areas. However, no negative impact of such activities on the proposed maritime properties has been established thus far.

Weather and climate

Bahrain has recently observed an increased frequency of very heavy rainfalls and occasional strong storms. Such weather conditions accelerate the erosion process observed at the seashore as well as the deterioration of the architectural fabric of the urban properties. The clay-based mortar finishes applied in many of the properties disintegrate easily when in contact with water. The architectural properties become particularly vulnerable if cracks and surface damage allow the water to penetrate into the inner structural elements. Regular monitoring procedures will assist to identify the degree of adverse affects caused by climatic changes. If the impacts exceed the defined limits of acceptable change, preventive measures will be implemented wherever possible. Damages caused by heavy sporadic rain showers have to be controlled with help of an effective rainwater drainage system in the vicinity of historic sites.

Storms can have a strong impact not only on the exposed, and therefore vulnerable, coastal structures, but also on the open ruins of *'Amārat Yousif A. Fakhro*. Heavy winds often carry accumulated sand and dust – with eastern winds frequently bringing sand storms – and cause further abrasion of the historic surfaces. Architectural structures in *Muharraq* may also be affected by the high level of UV radiation and heat exposure resulting from direct sunlight. Extremely high temperatures during the summer months contribute to the degradation of the coral stone which turns porous and more permeable. Under such circumstance, the extensive use of air-conditioning systems produces antipodal sub-climates which have a detrimental affect on the structural architectural elements. Excessive use of air-conditioning during the summer month can hardly be prevented, but awareness raising seminars will be organised to outline the threats posed by the local sub-climates. This will encourage the local inhabitants to create a better balance between the actual temperature and

the ambient room temperature within the buildings and ensure frequent ventilation.

Water table

With several sweet water wells underneath the island, Bahrain has a comparatively high ground water table which often reaches up to less than one metre below ground level. Due to the high percentage of asphalted and built-up surfaces, evaporation of ground water from natural surfaces is restricted and absorption of excess water by historic buildings is inevitable. Foundations of many architectural properties are located within the ground water and provide alternative channels for the water to move up the walls through capillary action. This results in salt crystallisation on the inner and outer walls, and a high level of humidity constantly being retained in the walls. In houses which have been repaired recently with non-permeable coating materials, this process is particularly problematic and leads to internal decomposition of the walls. In order to prevent or reduce damages caused by the high ground water table and water penetration into historical buildings, the ground surfaces adjacent to buildings shall be replaced by porous materials to reduce the concentration of evaporation processes through the historic walls.

With the globally rising sea levels, additional rises of the ground water table can be expected. At present, this phenomenon is carefully observed and monitored to project future trends and developments. In this context, special attention shall also be given to Qal'at Bū Mahir which is currently located approximately 50 cm above the current highest sea water level (during high spring tides).

4.b.iii Natural disasters and risk preparedness

Some of the risks that threaten the Outstanding Universal Value of the proposed site (the oyster beds, *Bū Mahir* Seashore and its buffer zone, the architectural properties as well as their urban buffer zone) are: oil spills; fire; floods; earthquakes; accidents such as plane crashes; as well as large scale vandalism and armed conflict.

Global warming and related natural disasters, such as the rising of sea level, whose extent and affects cannot be predicted with certainty, have been taken into consideration in this section. At the same time, keeping in mind the prevailing climatic conditions, risks such



Underwater scene at Hayr Bū 'Amāmah.

as blizzards, tsunamis or tropical cyclones are of little relevance or unlikely to occur within the Gulf region and are, therefore, not listed. Climate change and global warming, however, might trigger such events and therefore might need to be considered in the near future. Although all of the above-mentioned risks are of a specific nature, they can still be generalised under the categories of pollution, fire, tremors and water. Therefore, the disaster response plans within the Risk Preparedness section already include actions that indirectly help in counteracting all these risks, which can be amended as necessary (see *Management Plan, Chapter 3: Site Analysis and Action Plans (2009-13)*). The factors listed below cover natural disasters as well as hazards arising from human origins.

Oil spills

While various kinds of spills are possible, the oyster beds are especially threatened by the risk of oil pollution and oil spills due to the industrial nature of the Gulf Region. Various oil spills have been recorded within Bahrain's territorial waters. Nonetheless, no impact on the oyster beds from these spills has been confirmed. Yet, oil spills are a continuous risk to the environmental condition of the pearl banks. Attributes contributing to the Outstanding Universal Value, which would be especially threatened in the event of an oil spill, are the formation of oysters and the underwater visibility. Also in such a case, the resulting pollution of the excellent environmental condition of *Hayr Bū-I-Thāmah* and the adverse effects on its water quality would be detrimental, especially since the oyster bed is host to substantial marine biodiversity. Besides the oyster beds, the other natural component of the serial nomination, the *Bū Māhir* Seashore and the geomorphologic attributes associated with it, could also be negatively affected by oil spills.

In order to deal with an oil spill emergency, the Public Commission for the Protection of Marine Resources, Environment and Wildlife (PCPMREW) has been made the responsible agency in lead of formulating and administering the national policy to control pollution with oil or other hazardous and noxious substances on land or at sea.

In case of a spill, the National Oil and Hazardous Spill Contingency Plan (SEACOR, 2009) (contingency plan is included on CD of the nomination dossier) will be activated by the President of the Public Commission for the Protection of Marine Resources, Environment and Wildlife. Subsequently, the National Incident Command System will direct the allocation of resources, from the government controlled agency responsible on the

local level, to assist in the surveillance, protection, and the cleanup activities.

In the case of the three nominated oyster beds, the local actor is the Bahrain Petroleum Company (BAPCO) as well as any appointed oil and gas exploring company. The BAPCO Oil Spill Contingency Plan (The Bahrain Petroleum Company, 2007) (extract of the BAPCO Oil Spill Contingency Plan is contained in annexed CD) contains rapid response procedures. Furthermore, BAPCO works in close cooperation with the related private sector and national government agencies. These include the Bahrain Coast Guard (Ministry of Interior) and the Public Commission for the Protection of Marine Resources, Environment and Wildlife (PCPMREW). Furthermore, the Gulf Area Oil Companies Mutual Aid Organisation (GACMAO), a regional cooperation which responds to major oil spills throughout the Gulf region and Bahrain's Marine Emergency Mutual Aid Centre (MEMAC), which is a centre designed to provide governments of the Gulf region with assistance in coordinating and controlling oil spill responses. While oil spills are rather unlikely, the severity of the risks related varies according to the specificities of the case. The oil contingency plans are well prepared. Previous oil spills have not caused any serious harm to the oyster beds and their marine habitat. The seashore of *Bū Māhir* is, due to its strategic location near a waterway, also threatened by oil pollution from marine accidents (capsized or stranded ships) that result in oil leaks. However, as large oil freighters are not permitted to cross this waterway, this risk of oil pollution is minimised.

In the event of oil pollution on the seashore, the contingency plan also contains an action plan for combating oil spills on land, which will be helpful in preventing serious damages to attributes, such as geomorphology and material (natural sand formation). In the unlikely event of a chemical or other kind of spill, on land or on sea, the National Oil and Hazardous Spill Contingency Plan also provides response actions within this area.

Fire

There are several factors which do not directly affect the properties, but increase the fire hazard. These factors include: the presence of timber structural elements in the traditional houses; the use of old-fashioned cooking equipment with open flames; as well as outdated and often illegally-installed electrical systems, which are typical within the urban buffer zone. If a fire breaks out, it is likely to spread due to the close proximity of neighbouring buildings. As the traditional network

of narrow pedestrian lanes is usually congested with parked vehicles, these lanes are not easily accessible by large vehicles, such as fire brigades. Therefore, the damage caused by fire can be substantial.

All 15 architectural properties are important landmarks of the pearling era. Since the surviving urban fabric of all properties contributes to their Outstanding Universal Value, any outbreak of fire will have a detrimental affect. In spite of the planned provision for highly sensitive fire detection systems (improving access for fire brigades by restricting most, and especially, narrow lanes of the buffer zone to pedestrian traffic, and urban upgrading of unsafe electrical systems), fire cannot be prevented and remains a potential risk. The risk preparedness plan indicates measures that are in accordance with the response plan and, therefore, assists in preventing the more serious impacts in case of such an event. Moreover, as the numerous above mentioned factors increase the likelihood of the occurrence and spread of fire, any outbreak of such a disaster could end up being very severe. Therefore, apart from the risk preparedness plan, the management system also provides a response plan that indicates measures for dealing with the disaster.

Floods

Floods are considered a major risk to the properties as they, along with resulting increase in humidity and moisture, cause structural instability in the traditional fabric. Moisture within the historic walls accelerates efflorescence, which can destroy their protective finish. If not maintained properly, the clay-based mortar will disintegrate when in continuous contact with water, resulting in structural instability. Flooding of streets can occur due to heavy rain, particularly where the drainage system is outdated, not well-maintained or inefficient. The bursting of a water supply or waste disposal pipe can also cause temporary flooding and threaten the historic structures.

Though the above-mentioned floods might have a lesser impact, floods due to storms or global climate change, though unlikely to occur, may be of a much higher severity, especially along the *Bū Māhir* Seashore. As the *Bū Māhir* Seashore is one of the last remaining natural sand formations in *Muharraq* dating to the pearling era, the point of departure and arrival of the dhows, the occurrence of severe flooding and consequent erosion will affect the Outstanding Universal Value of this property. The management system addresses, wherever possible, factors that increase the likelihood of a flood. Actions are taken to prevent serious damages by upgrading the relevant urban infrastructure in the

buffer zone or through maintenance of the historic fabric, especially the building's outer walls. The Risk Preparedness Plan includes activities that should be conducted beforehand to reduce a disaster's impact as well as provides a disaster response plan.

Earthquakes

In the very unlikely event of an earthquake, the historic and partially fragile structure of the architectural properties would be greatly impacted as they have not been built to resist major tremors. Additionally, some of the historic buildings are not well maintained since they are not in regular use or rented out to tenants who do not have the knowledge or the financial resources to implement repair works. If fragile structures collapse, in the event of an earthquake, it can cause further negative impacts on the adjoining building structures. Lack of thorough maintenance may also trigger secondary damages during earthquakes. Among the secondary damages is the bursting of pipes which may lead to temporary flooding and the damaging of electrical systems (potentially causing fire). Fires and floods have already been mentioned earlier as other major risks which can impact the site negatively and cause damage to, or loss of, the attributes contributing to the properties' Outstanding Universal Value.

The current fragile condition of *'Amārat Yūsif Abdurrahman Fakhro* lends itself to even greater degree of damage during an earthquake. If such a disaster occurs, the *'amārah's* ruins, which illustrate the decline of the pearling economy, will be severely affected. In the case of *Qal'at Bū Māhir*, exposure to natural tremors will affect its physical solidity, which currently serves as a reminder of its historic defence function. The management system developed for the proposed site attempts to reduce the risk of the built historic fabric's collapse by using adequate techniques for stabilising the fragile structures. Regular maintenance will be carried out and the buildings' state of conservation will be monitored. A response plan towards earthquakes states the actions required to reduce negative in-situ impacts. The Risk Preparedness Plan also gives guidance on measures that can be taken prior to the event in order to reduce actual impacts.

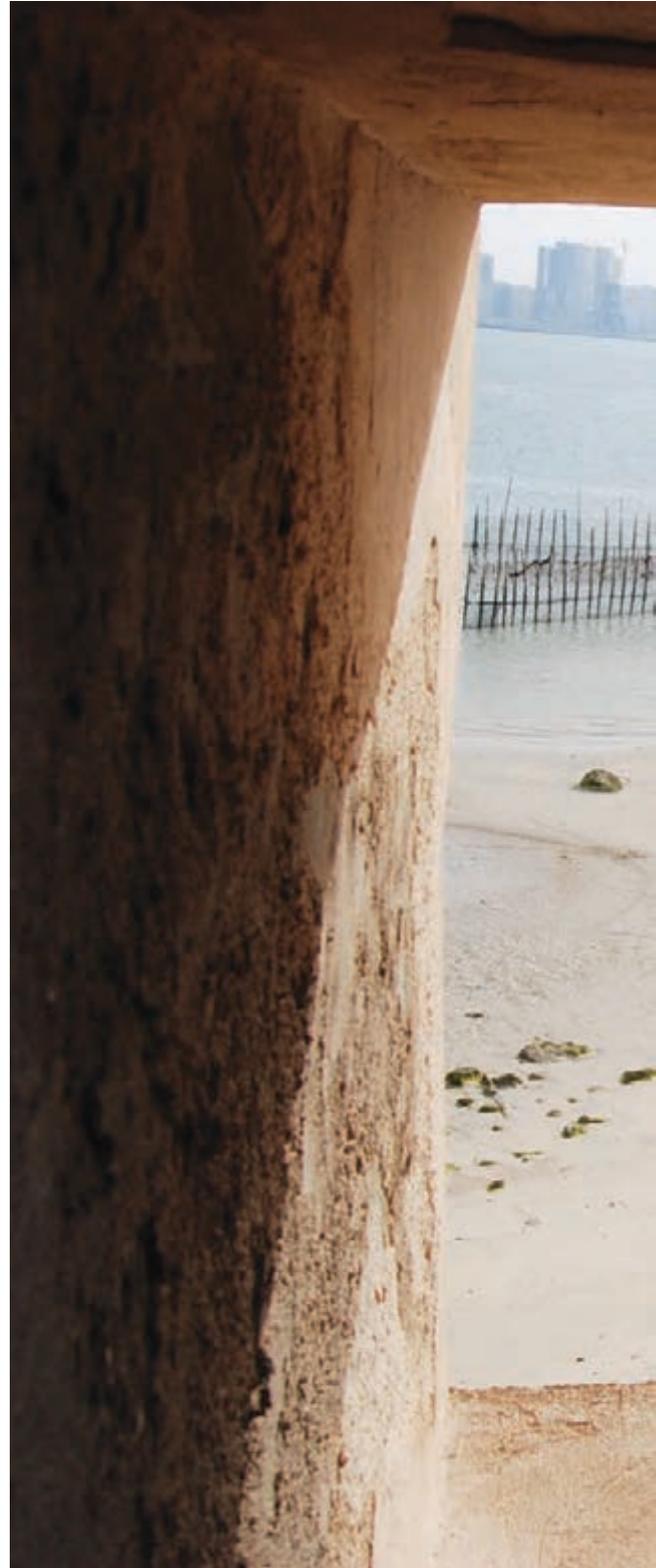
Rise of sea level and global climate change

The oyster beds, the major natural component of the site, face an increase of the water temperature due to global climate change. However, recent studies have shown that the oyster beds have so far been able to adjust to the temperature changes and to date no negative impacts have been reported. The variety of marine species, including those which illustrate the dangers to which the divers were exposed, also remains unchanged. As a result, a prominent attribute contributing to the Outstanding Universal Value of the oyster beds remains intact, but significant future temperature changes may potentially have adverse effects.

Another potential – and apparently unpreventable – risk associated with climate change is the gradual rise of the sea level. This risk is particularly likely to have negative effects on *Bū Māhir* Seashore, the last remaining natural sand formation on *Muharraq* Island. A rise of the sea level may also have negative impacts on the architectural properties, especially those located close to the seashore. For instance, it may limit the accessibility of *Qal'at Bū Māhir* and constant contact with water may damage the physical stability of the fort structure. Although the management system does not include specific actions to mitigate this risk, it does provide for long-term adaptation measures. All architectural structures are located at least 50 cm above the current peak water levels (during the spring high tides) and the water table will be regularly monitored. In case of a measurable increase in water levels necessary adaptation measures will be introduced. The section of the risk preparedness plan dealing with floods could easily be adapted to outline measures to reduce the impact of rising sea levels. The risk preparedness plan for floods also provides an appropriate response plan.

Plane crashes

As the urban and seashore properties lie within the vicinity of Bahrain International Airport, plane crashes have a potential to cause damage to or loss of these properties. In such an event, the urban and marine parts of the site are prone to pollution, fire, tremors and flooding. Due to the unpredictability of such events, early warning is normally not possible and the impacts can be major. The same is valid for armed conflicts which are equally unpredictable but may be severe in their impact. The response plan within the risk preparedness plan addresses all these risks and issues.





View on the seashore and ḥaḍrah from Qal'at Bū Mahir



Traditional pearling songs performed during a festival

4.b.iv Visitor/tourism pressures

In line with the national tourism strategy, the management system of the nominated property aims to ensure and generate socially, ecologically and economically sustainable tourism that benefits both the conservation of the site and the local community. All tourism activities must be consistent with the strategic management objectives and must not impair the site's Outstanding Universal Values. Preservation and conservation of the site take precedence over its use for tourism. Negative impacts on the cultural and natural heritage assets of the site or on the local communities must be avoided or minimised.

The tourism management strategy outlined in the site management plan is based on the principle of Limits of Acceptable Change (LAC), under which limits are set not only to visitor numbers, but also to the impact visitors have on the various components of the site. A baseline survey will be carried out upon completion of the conservation work to document the condition of the site and to determine standards and indicators, as well as carrying capacities. Subsequently, surveys will be conducted regularly to ensure that the standards are maintained and that the established carrying capacities are appropriate (for details, see *Management Plan, Chapter 2: Management Strategies, Strategy 9: Tourism Development and Promotion Strategy and Strategy 5: Physical Conservation and Development, and Strategy 1: Administrative Structures and Procedures*). The potential negative factors posed by tourists and visitors to the site can be divided into three main categories:

Impacts to the urban/architectural properties

Potential tourism-related factors to the urban and architectural properties include: damage to fragile historic fabric through excessive visitor numbers (e.g. wear on ground surfaces, damages due to increased humidity, physical contact or vibrations); damage through increased traffic (due to emissions, accidents or vibrations); increased fire risk; theft and vandalism by visitors; littering; pollution from tourism facilities; and loss of sense of place. The management system seeks to prevent these impacts from occurring through measures such as: the establishment of appropriate carrying capacities for each of the historic properties; access restrictions; visitor distribution schemes; continuous monitoring; careful maintenance; visitor surveillance; posting of regulatory signage; information campaigns; and adequate fire protection measures.



Impacts to the oyster beds and the local environment

Tourism presents a potential environmental impact mainly in regard to the maritime and seashore properties. Potential tourism-related environmental pressures to the marine properties and oyster beds include: littering; pollution from boats and visitor facilities; damage to oyster beds and corals through uncontrolled diving and pearl collection activities; and pollution through sun block lotion. The main potential impacts of tourism to the environment of *Bū Māhir* Seashore are littering by visitors and discharges from the shuttle boats. Steps that will be taken to prevent these problems from occurring include continuous monitoring, regulation and control of diving, pearl collecting and other marine tourism activities in close cooperation with the Public Commission for the Protection of Marine Resources, Environment and Wildlife (PCPMREW); and regular trash collection by site personnel. The statutory protection of the nominated oyster beds will include provisions to ensure that tourism activities do not harm the ecosystem. In any case, the enhanced monitoring of the oyster beds and maritime properties as a result of their increased frequentation is seen as a positive factor.

Impacts to the local society

In addition to presenting a potential negative impact to cultural and natural heritage values, tourism may have negative effects on the local communities of *Muharrag*. The neighbourhood surrounding the nominated properties is rather conservative by Bahraini standards and has received few visitors in the past. An influx of up to 200,000 additional tourists per year therefore has the potential to impinge on the local population. For instance, local residents may perceive tourism as a disturbance if there is a lack of cultural sensitivity on the part of visitors. If managed improperly, tourism may also lead to overcrowding at individual points of the heritage site or an increase in traffic and traffic congestions. Other potential issues include: commercialisation of the urban environment; advertising directed to tourists; gentrification; and loss of sense of place.

The management system seeks to mitigate these concerns through a range of measures. These include: visitor flow management; ensuring an adequate involvement of the local community in management and decision-making processes; maximising the economic benefits to the local community; encouraging community-run tourism initiatives (e.g. guest house,

coffee shops, souvenir shops and related industries such as handicrafts and traditional foods); informing visitors of cultural protocols, such as dress codes; and rigorously enforcing these as well as appropriate behaviour in the month of Ramadan, during which the public consumption of food or drinks is prohibited.

4.c Number of inhabitants within the property and the buffer zone

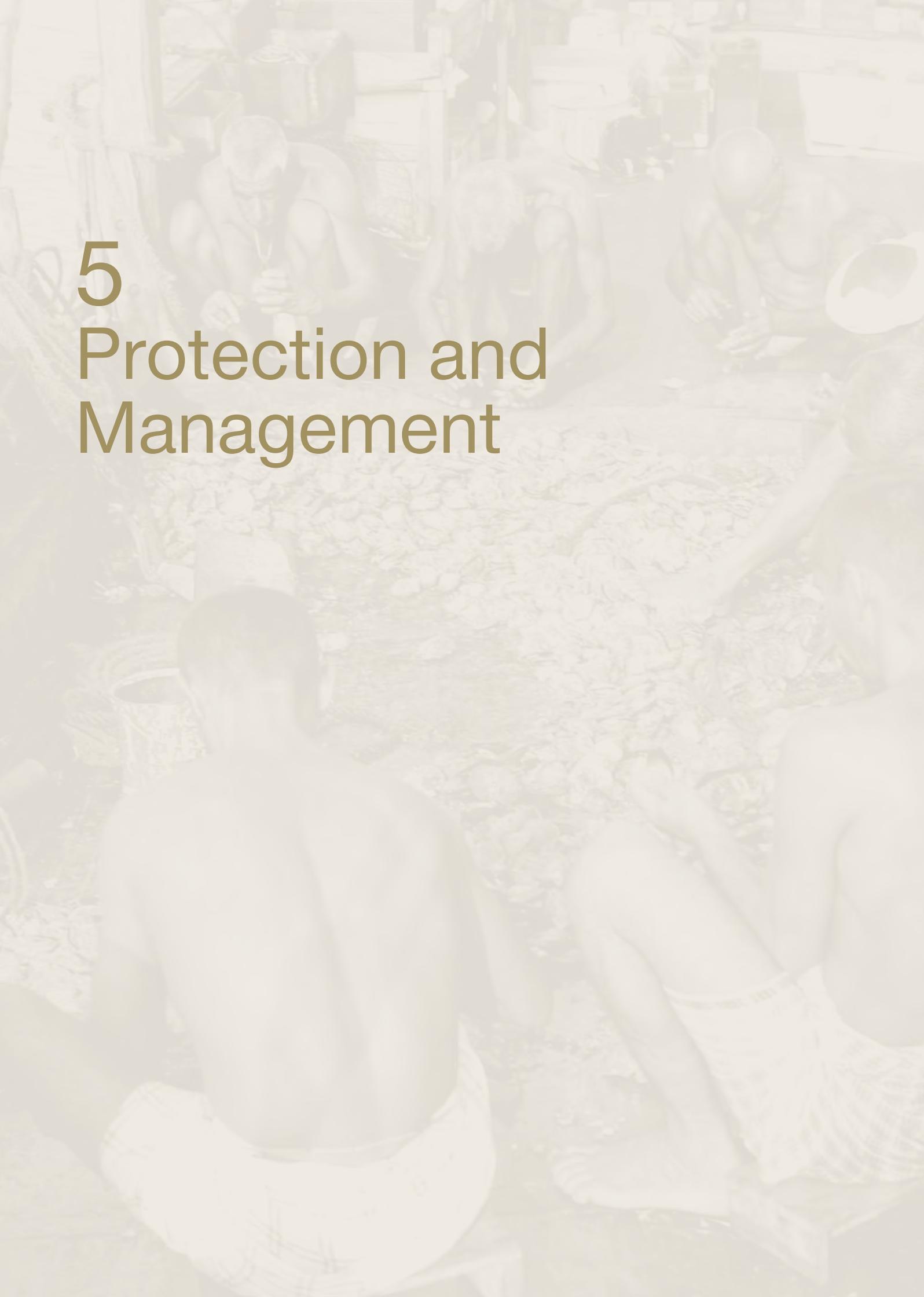
Estimated population located within:

Area of nominated property	–	9 inhabitants
Buffer Zones inhabitants*		ca. 7,025
Total inhabitants		ca. 7,034
Year		2009

* Due to the complex demographics of *Muharrag* resulting from a high percentage of informal renting of residential spaces, there is a lack of reliable data on inhabitant numbers. The number of inhabitants has therefore been estimated assuming an average of approximately five residents per plot.



Tin crafts shop

A group of men are gathered around a large pile of goods, possibly a market or workshop. The men are shirtless and wearing traditional loincloths. They are engaged in various activities, such as sorting or handling the goods. The background shows a simple structure with shelves and various items, suggesting a traditional setting. The overall scene is captured in a warm, sepia-toned light.

5 Protection and Management

5.a Ownership

The serial properties combine public and private ownership. The three oyster beds and common public marine territory are located beyond the limit for attributed ownership for sea property and are therefore public property. In case future legislative change enables property ownership beyond 40km offshore, the oyster beds will, as marine protected areas, become the property of the responsible government authority, i.e. the Public Commission for Protection of Marine Resources, Environment and Wildlife.

Bū Māhir Seashore is located on governmental property within a public services/utilities zone and is currently registered with the Ministry of Interior, National Coast Guard. Part of the water zone is free of ownership attribution and currently public marine territory. In the context of the management system, the buffer zone has been registered with the Ministry of Municipality and Agriculture, which in case of future property attribution would register the marine area with the Ministry of Culture and Information as a protected corridor of a cultural heritage site. The ownership of the *Qal'at Bū Māhir* property, following both its designation as a national monument and a special agreement negotiated with the Ministry of Interior, is currently in the process of being transferred to the Ministry of Culture and Information

The majority of the architectural properties in the heritage site are owned by private individuals or families. In most cases, these are the original families whose involvement in the pearling economy contributes to the property's Outstanding Universal Value as the testimony of the pearling economy. The majority of these buildings remain inhabited, or are used at least seasonally by members of these families. A detailed overview of ownership of the 16 architectural structures combined in the 11 architectural properties is provided below:

Two properties, *Fakhro* House and *Siyadi* Mosque are *awqāf*, an Islamic religious endowment in which the property (building or plot) is held in perpetuity and the income devoted to charitable purposes or a specific group of people. In case of *Fakhro* House, the property is held in a family *waqf* owned and administrated by the *Fakhro* Charity Foundation. The *Siyadi* Mosque is a public *waqf* owned by the Ministry of Justice and Islamic Affairs and administrated by the Sunni *Waqf* Directorate.

Siyadi Majlis has been in government ownership since 1974 and is currently registered with the Ministry of Culture and Information as the designated owner of national monuments no longer in family ownership. Two other properties, *Qal'at Bū Māhir* (as described above) and *Al-Ghūṣ* House are in the process of ownership transfer towards the Ministry of Culture and Information. The

current owner of *Al-Ghūṣ* House, a private individual based in Saudi Arabia, has agreed to a purchase offer from the Ministry of Municipalities and Agriculture. As a designated national monument, once the purchase and transfer are finalised the ownership will be passed on from the Ministry of Municipalities and Agriculture to the Ministry of Culture and Information. *Al-Jalahma* House, in family ownership until now, is in the process of being transferred into the ownership of the Sheikh Ebrahim Centre for Culture and Research. Based on an agreement with the *Al-Jalahma* family, the private foundation aims to conserve and open to the public the family heritage on behalf of and in cooperation with the *Al-Jalahma* family.

Of the remaining ten architectural components in private ownership, nine currently belong to the families who owned them during the pearling era. These are: *Badr Ghulum* House which belongs to Mr *Ghulum Badr Ghulum* (including the neighbouring *Turabi* House which belongs to Mr *Ahmad Yousif Turabi*); *Al-Alawi* House which belongs to Mr *Yousif Mahmoud Al-Alawi*; *Murad* House which belongs to Mr *Abdurrahman Abdallah Murad*, Mr *Khaled Abdallah Murad* and Ms *Lulwa Abdallah Murad*; *Murad Majlis* which belongs to Mr *Ali Mohamed Murad*; the *Siyadi* Shops and *Siyadi* House which both belong to Mr *Abdallah bin Isa Siyadi*; *'Amārat Ali Rashed Fakhro* (I) which belongs to Mr *Khaled Rashed Fakhro*, Mr *Ahmad Rashed Fakhro* and Mr *Hamad Ali Fakhro*; and the *Nukhidha* House which belongs to Mr *Yousif Ahmad Ajaj*. Although *'Amārat Ali Rashed Fakhro* (II) still belongs to *Fakhro* family, the inheritance from its latest owner has been tied up in legal procedures for the last two decades and the exact owner is at this moment undefined.

The authors of this nomination and the site administration unit of the testimony of the pearling economy cannot express adequately the gratitude due to all property owners, who have been exceptionally supportive from the earliest consultation phase up to the preparation of formal agreements. The management of the testimony of the pearling economy would not be possible without their continuous support and it is for this reason that they are involved in the future management processes through the property owner council and the Steering Committee.

Only one property, the *'Amārat Yousif A. Fakhro*, is no longer in traditional family ownership. Purchased by a member of the Royal Family, the late *H.H. Sh. Salman bin Muhammad Al Khalifa*, in the 1990s, the property is also currently in legal inheritance procedure. At the same time, the site administration is in close contact with *H.H. Sh. Khaled bin Salman Al Khalifa*, the son of the previous owner, who has been generous and supportive in providing his property for public use. The authors would like to thank him sincerely for this important contribution to the preservation of the testimony of the pearling economy.



Historic photograph of diver inspecting a pearl oyster,



Historic photograph of barasti structures in the 1960s



The ownership of the buildings and plots in the primary and secondary protection zones of the urban buffer zone is heterogeneous, including private owners, non-profit organisations, and different government ministries and agencies. According to the 2001 Census, an average of 41% of the housing units in *Muharraq* were rented out, while close to 55% were inhabited by the property owners. It is likely that this percentage has considerably decreased in the meantime.

5.b Protective Designation

The oysters beds are currently only partly protected as the decree for their protection as marine protected areas following Decree (2) 1995 with respect to the Protection of Wildlife in combination with Legislative Decree No. 21 of 1996 in Respect with the Environment (*Amiri Decree*) and Decree (20) 2002 with respect to the Regulation of Fishing and Exploitation of Marine Resources is still in process. As the boundaries have been finalised in the framework of the preparation of the nomination, and most relevant surveys have been conducted, the official proclamation is expected to take place during the course of 2010.

Although none of the three decrees above specifies the formal procedures for designation of marine protected areas, the combination of the three establishes a sufficient basis. Decree No (2) 1995 with respect to the Protection of Wildlife introduces the category of protected areas, and gives the Ministry of Housing, Municipalities and Environment (now followed by the Public Commission for the Protection of the Environment, Marine Resources and Wildlife) the authority to establish these. Decree No (20) 2002 with respect to the Regulation of Fishing and Exploitation of Marine Resource gives the Public Commission for the Protection of the Environment, Marine Resources and Wildlife the authority to ensure the protection of precious marine resources to prevent exploitation through unsustainable fishing techniques. Legislative Decree No 21 of 1996 in respect of the Environment (*Amiri Decree*) designates the Ministry of Housing, Municipalities and Environment (now followed by the Public Commission for the Protection of the Environment, Marine Resources and Wildlife) as the coordination body in any official process, study or project aimed at the protection of the environment. The combination of the three has been referenced for the protection of *Hayr Bū-l-Thāmah* in Decree No 8 of 2007. However, since this protection was aimed predominantly at the reef of the same name, and was not submitted with specific coordinates, it is unclear if the complete site of the proposed oyster bed *Hayr Bū-l-Thāmah* is covered by this decree. For this reason, it was decided to designate all three oyster beds in the new proclamation procedure and to include the existing reef of the same name into the buffer zone.

In the meantime, an interim protection status has been created with the signing of a Memorandum of Understanding between the Ministry of Culture and Information, the Public Commission for the Protection of the Environment, Marine Resources and Wildlife, National Oil and Gas Authority (NOGA) and the Bahrain Petroleum Company (BAPCO). A formal communication from the Secretary-General of the Public Commission for the Protection of the Environment, Marine Resources and Wildlife to the Ministry of Culture and Information approves and supports the property coordinates and identified buffer zone and confirms that the proclamation of the marine protected areas is in process. Since the oyster beds are currently not endangered, it is considered acceptable that the protective degree will be issued before the end of 2010. The Legislative Decree No 21 of 1996 in respect of the Environment (*Amiri Decree*) in English translation as well as the Arabic originals of the Decree No (2) 1995 with respect to the Protection of Wildlife and the Decree No (20) 2002 with respect to the Regulation of Fishing and Exploitation of Marine Resources are listed under *Chapter 7b Protective Designation Texts* and attached in the annex of the nomination dossier. In addition, the communication of the Secretary-General of the Public Commission for the Protection of the Environment, Marine Resources and Wildlife (in Arabic) and the reference Decree No 8 of 2007 designating *Hayr Bū-l-Thāmah* as a marine protected area are also included.

The seashore and land properties are designated national monuments on an individual basis according to Decree Law No (11) of 1995 Concerning the Protection of Antiquities. The promulgation took place on January 10 2010, and a decree (01/2010) was issued and is to be published in the official Governmental Gazette 2928 (in print at the time of submission of the nomination dossier). Following the promulgation, the following sites were designated as national monuments (antiquities): "*Qal'at Bū Mahir* with seashore", "*Al-Ghūṣ House*", "*Badr Ghulum House*", "*Al-Jalahma House*", "*Al-Alawi House*", "*Fakhro House*", "*Murad House* and *Majlis*", "*Siyadi shops*", "*The 'Amārāt Yousif A. Fakhro* and *Ali Rashid Fakhro*", "*The Nūkhidhah House*", "*Siyadi House, Majlis and Mosque*".

According to Article 1 of the Decree Law No (11) of 1995 Concerning the Protection of Antiquities, the management of the sites promulgated under this legal framework is the responsibility of the Ministry of Information (now followed by the Ministry of Culture and Information). Following Article 3, designated monuments (called antiquities in the current translation) have to be registered with the Directorate of Land Registration at the Ministry of Justice and Islamic Affairs (now succeeded by the Survey and Land Registration Directorate), and the decision published in the Official Gazette (Article 31). This procedure is in process as publication of the latest Official Gazette

is awaited at the time of submission. The complete translation of the Decree Law No (11) of 1995 Concerning the Protection of Antiquities is included in the annex of the nomination dossier.

5.c Means of implementing protective measures

The serial site 'Pearling, testimony of an island economy' is governed by a variety of different government and non-governmental bodies concerned with its management processes. They are organised together in a Steering Committee, established in May, 2009. The Steering Committee combines different government and non-governmental bodies representing the full range of partners and stakeholders, as well as representatives of the private owners of both the architectural properties and the businesses in the urban buffer zone. The voting members of the Steering Committee are one representative from each of the following government agencies: Ministry of Culture and Information, the Public Commission for the Protection of Marine Resources, Environment and Wildlife (PCPMREW), the Ministry of Municipalities and Agriculture Affairs, the Ministry of Interior, the Ministry of Justice and Islamic Affairs, the Ministry of Works, the National Oil and Gas Authority (NOGA), the Royal Court Property Directorate, the Electricity and Water Authority, the Bahrain Economic Development Board, the *Muharraq* Governorate, the National Oil and Gas Authority (NOGA) and the Bahrain Petroleum Company (BAPCO), as well as one representative of the property owners and one representative of the local businesses. The Steering Committee is chaired by the Minister of Culture and Information. It is responsible for taking overall decisions concerning the management policy of marine, seashore and urban properties and for approving all major activities related to the site. It is intended to provide a platform for conflict management and generation of ideas for the management of the heritage site through contributions from representatives of all stakeholders. The site administration unit for the pearling testimony reports biannually to the Steering Committee on progress regarding the implementation of its policies, and presents planned activities. The Steering Committee approves the Management Plan, its revisions, and the five-year action plans. Decisions of the Steering Committee are generally made on a consensus basis, or if necessary, by a simple majority vote. Only official members of the committee have voting rights. In addition to members with voting rights, invited advisors and guests can take part in the committee meetings. At least one observer attends to take the minutes. The composition, in terms of members, advisors and guests, changes according to necessity. However, changes to the composition of the

Steering Committee require a two-thirds majority of all Steering Committee members.

The first meeting of the Steering Committee took place in May, 2009. At this meeting, the Steering Committee was established officially. On this occasion, the committee also formally approved the administrative system, the boundaries of the site and its buffer zone, and the nomination to the UNESCO World Heritage List. A second Steering Committee meeting was envisaged for November, 2009, but due to several prior apologies has been rescheduled for January, 2010.

Designations as marine protected areas as aimed for in the case of the oyster beds put the site under the responsibility of the Public Commission for the Protection of Marine Resources, Environment and Wildlife (PCPMREW) which in general ensures that the marine protection standards stipulated by international conventions ratified by Bahrain are met. In addition to the oyster beds, the commission is responsible for five other designated protected areas, namely *Al-Areen* (a desert breeding center for threatened species), *Tubli Bay* (a productive shallow bay), *Hawar Islands* (an archipelago important for birdlife), *Mashtan* (an offshore island) and *Dhohat Arad* (a sheltered bay).

The protective designation would provide only one additional protection to the oyster beds: the protection from any form of development on the site. Other endangering activities such as dredging and trawling are already prevented by Ministerial Order No (10) of 1986 prohibiting trawl fishing in oyster bed areas, and Ministerial Order No (4) 2000 with respect to the Permission of Dredging of Marine Sand.

Following the decision of the First Steering Committee meeting in May, 2009, the governing and implementation measures for the protection of the oyster beds have been referred to the Subcommittee for Marine Heritage. The subcommittee was established as an entity responsible for the implementation strategies and supervision of measures concerning the protection and management of the oyster beds. This includes the development of future regulations for pearl collection activities. The subcommittee is also charged with coordinating enforcement of the legal provisions, and with planning and carrying out future monitoring of the oyster beds and their buffer zones, including scientific research. Finally, it assists and advises on the establishment of future visitor facilities and services in the marine parts of the pearling testimony.

In addition to the Public Commission for the Protection of Marine Resources, Environment and Wildlife, represented by the Directorate for the Protection of Marine Resources and the General Directorate

for the Protection of Environment and Wildlife, the subcommittee includes the Ministry of Culture and Information, the Ministry of Interior, particularly its Directorate of the Coast Guard, the National Oil and Gas Authority (NOGA), the Bahrain Petroleum Company (BAPCO) and the Bahrain Centre for Studies and Research (BCSR). The subcommittee establishes its own statutes and elects its chairperson, who will present all matters related to the responsibilities of the subcommittee to the Steering Committee, other governmental bodies or the general public. (For more detailed information on the subcommittee's role and responsibilities, refer to the Management Plan, *Chapter 2: Strategy 1: Administrative structure and procedures.*)

The Steering Committee has similarly referred the implementation of the protective measures for the seashore property to a subcommittee, the Subcommittee for *Bū Māhir* Seashore. This body deals exclusively with the protection and conservation of the seashore property. The subcommittee involves the Ministry of Interior's National Coast Guard, on whose territory the property is located and with whom the access conditions to *Bū Māhir* Seashore as well as the specifications of visitor facilities on the property have to be negotiated and coordinated. It further involves the Traffic Directorate of the Ministry of Works, the Public Commission for the Protection of Marine Resources, Environment and Wildlife (PCPMREW), the Ministry of Municipalities and Agriculture Affairs and *Muharraq* Municipality. As with the Subcommittee for Marine Heritage, the Subcommittee for *Bū Māhir* Seashore establishes its own statutes and elects its chairperson, who will present all matters related to the responsibilities of the subcommittee to the Steering Committee, other governmental bodies or the general public. (For more detailed information on the subcommittee's role and responsibilities, refer to the Management Plan, *Chapter 2: Strategy 1: Administrative structure and procedures.*)

The urban and architectural properties are administrated by the site administration unit of the Ministry of Culture and Information. Issues concerning the primary or secondary buffer zone which concern other governmental bodies have been referred to the Subcommittee for Urban Regulations and Project Design. This subcommittee has been given responsibility for planning and coordinating the implementation of all urban measures in the buffer zone within the settlement of *Muharraq*, and for protecting its traditional urban heritage assets. Its current members are: representatives of the Special Project Unit and Urban & Village Development Section of the Ministry of Municipalities and Agriculture Affairs, the Roads and Design Section of the Ministry of Works, the Electricity and Water Authority, the Building Permit Section of *Muharraq* Municipality, and representatives of the Ministry of Culture and Information, Site Administration Unit.

The subcommittee's tasks include supervising the development of urban design guidelines for new buildings and public space. This involves the enforcement of the stipulations by reviewing and approving or rejecting building or demolition permit applications by property owners within the protection zones. Its tasks further include coordination of the urban upgrading works, according to a master plan developed by an urban design consultant who is an advisor to the subcommittee on behalf of the Ministry of Culture and Information. As with the previous subcommittees, this body establishes its own statutes, and elects a chairperson who will present all matters related to the responsibilities of the subcommittee to the Steering Committee, other governmental bodies or the general public. (For more detailed information on the subcommittee's role and responsibilities, refer to the Management Plan, *Chapter 2: Strategy 1: Administrative structure and procedures.*)

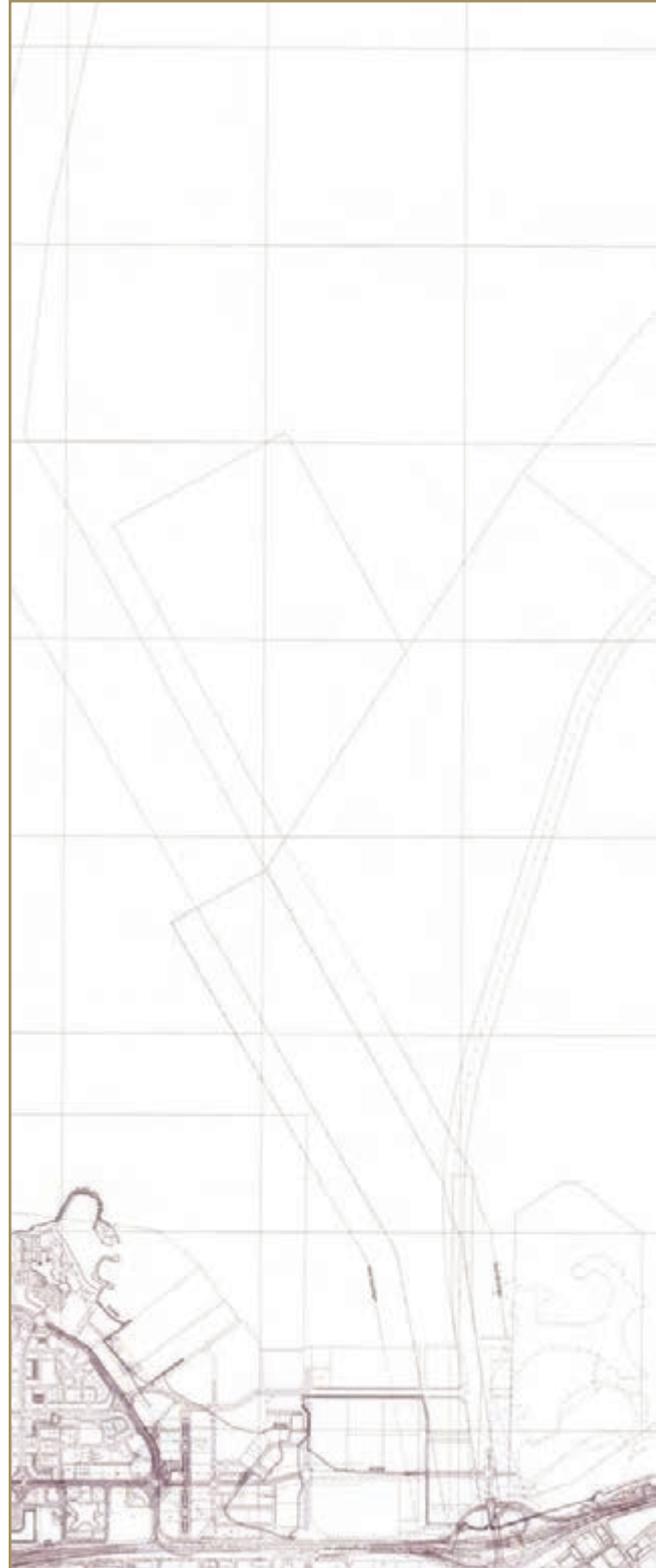
Further procedures regarding implementation of the protective measures are described in the Management Plan, an integral part of the submitted nomination dossier. Relevant information can be found in *Chapter 1: 5. Management Context; Chapter 2: 1. Administrative structure and procedures, and Chapter 3: 2 Project management flow chart and action plans.* An overview of all regulations concerning the implementation of protective measures is also provided in *Chapter 7b: Protective Designation Texts.*

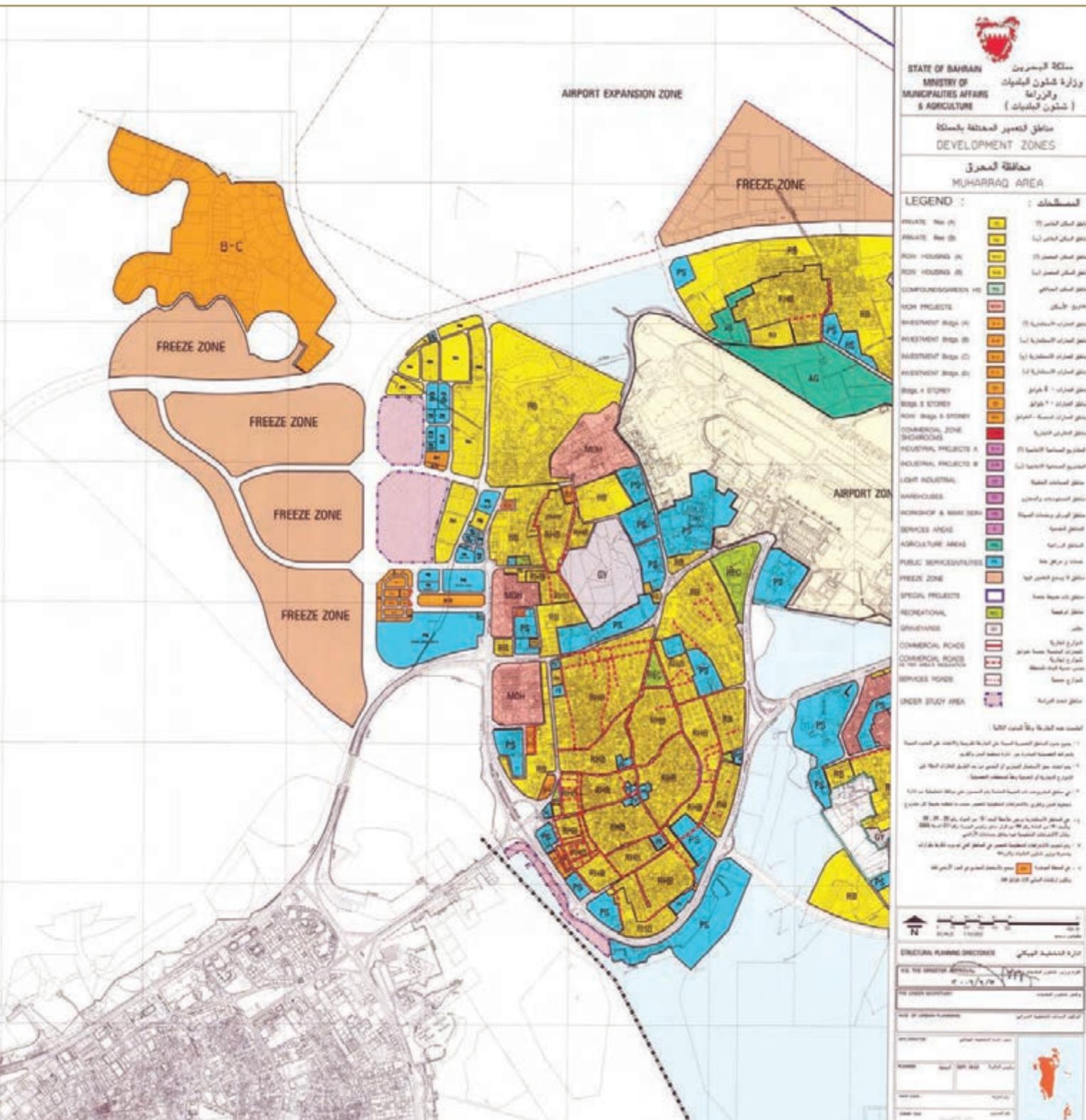
5.d Existing municipality plans

Physical planning legislation and municipality plans

The physical planning law (Legislative decree no.2 for the year 1994) defines the general concepts of urban planning and the responsible authority, the Ministry of Municipalities and Agriculture. The legislative decree is interpreted with the help of bylaws, such as Resolution No. 1 for the year 1994, which defines the procedures for producing urban planning policies and projects, for each stage of the process: the general plan, detailed planning and planning follow-up, definition in each case of the procedures and responsible authorities, as well as rights of all stakeholders. The zoning schemes anchored in this bylaw are revised on a regular basis and are sufficiently flexible to incorporate required adjustments.

The latest official version of legislation regulating the municipal zoning schemes was published in 2009 under the title Resolution No 28 of the year 2009 regarding the specification of the regulatory stipulations for





Zoning map of the eastern part of Muharrag Governorate, as defined by Resolution No 28 of the year 2009.



Detail of National Land Use Strategy 2030, showing Muharraq and Capital Governorates.

the development in different areas of the Kingdom. This defines the zoning schemes currently in place for *Muharraq*, which for the proposed properties as well as their primary and secondary protection area of linked residence -B- (also called Row Housing B) includes designated commercial roads. The stipulations of this zoning (Chapter 4: Area of linked residence -B- Articles 17-21) are favourable to the preservation of the historically grown urban layout. The construction height is restricted to a maximum of three storeys, with a maximum height of 13m (or 14.5m in cases incorporating construction of a basement). Construction on the plotline is allowed, with a maximum total built-up area of 300%. However, it allows setbacks and projections from the front line of plots.

Other relevant articles are the general regulations of Chapter 8, as well as Article 21 of Chapter 4, which allows for the use of special stipulations to ensure adherence to a specific area's heritage character as mentioned in clause 4. The primary and secondary buffer zones have been entered into the shared GIS reference system of the Ministry of Municipalities and Agriculture following this provision. These areas and their legal status are defined in Chapter 1, Article 1 under "Areas with special stipulations". Article 109 of Chapter 8 furthermore mandates the Minister of Municipalities and Agriculture Affairs to designate Areas of Projects with Special Nature and superimpose regulatory stipulations for that area upon examination by the Town and Village Planning Directorate. An exception to the allowed floor ratio of built up area of 100% applies to a special housing project titled "His Majesty King Hamad Scheme for Dilapidated Houses". Buildings constructed within this programme may not cover more than 70% of the plot area. *Bū Māhir* Seashore is the only property located outside the Residential Area -B- and is designated as a Public Services/ Utilities Area. Chapter 6, Articles 86-89 define the provisions for such areas, with a maximum height of three floors or 18m, and a maximum percentage of construction for all buildings of 180% of the land area.

The Town and Village Planning Directorate of the Ministry of Municipalities Affairs and Agriculture is currently preparing a new amendment to this zoning scheme with the aim of designating a 'historic district zone'. The new scheme will define a core area that incorporates the majority of the urban part of the heritage site. Stricter provisions than stipulated in the current zoning scheme will apply to this zone. They will be defined in collaboration with the Ministry of Culture and Information.

Bahrain's Economic Vision 2030 and Bahrain National Planning Strategy 2030

The Kingdom of Bahrain has approached the strategic planning for the forthcoming two decades with strategic visions for the development of the country. The Bahrain Economic Vision 2030 outlines the general vision under which economic, government and social strategies are to be developed. The National Planning Strategy 2030 provides a framework for urban and land development and envisages the expansion and use of the Bahraini territory. It is based on 10 strategies: (i) create one plan for the country; (ii) achieve a market economy specialised in global and regional markets; (iii) preserve and strengthen environmental resources; (iv) establish an interconnected and intermodal transportation strategy; (v) build distinct communities; (vi) define the public waterfront; (vii) protect the country's cultural and archaeological heritage; (viii) meet future military needs; (ix) green the country; and (x) promote a sustainable future.

The Government of the Kingdom of Bahrain has also initiated the development of a National Strategy 2009-2014 which aims to address the implementation of Bahrain's Economic Vision 2030. It consists of three sub-strategies, two of which are related directly to the conservation of the testimony of the pearling economy. The National Strategy follows the vision's guiding principle that government and society will embrace the tenets of sustainability, competitiveness and fairness. The strategy, like the vision, has been developed in an highly collaborative and consultative process that included the Economic Development Board (EDB), several ministries and other government institutions, the private sector, and international organisations and consultants. The strategy identifies the country's priorities for the next six years and includes three constituent parts: Government, Society and the Economy, each focusing on different initiatives.

The conservation and promotion of the testimony of the pearling economy contributes importantly to the Social Strategy by fostering and preserving national heritage and culture. The management system also adds to creating a sustainable, safe and attractive living environment in *Muharraq*. It is the Economic Development Board's (EDB) view, however, that the conservation of the testimony of the pearling economy as outlined in this plan contributes most significantly to the Economic Strategy. For this reason, it has selected the conservation of the testimony of the pearling economy as a lighthouse project within the National Tourism Strategy. The Economic Development Board (EDB) sees the tourism sector as a key driver in the refocused economy, together with financial services, remote business services, logistics and manufacturing.

The Tourism Strategy aims to strengthen the tourism industry by enhancing and promoting Bahrain's cultural tourism offerings. In line with this plan, the testimony of the pearling economy will contribute towards the development of a tourism product that is unique in the regional market.

Sustainable environmental development is an essential part of Bahrain's National Strategy. The government meets its obligation to protect the natural environment by protecting natural habitats and biodiversity on land and in the marine environment. Previous action was taken to conserve natural resources in the country through the National Environmental Strategy, which was approved by the Council of Ministers of the Kingdom of Bahrain on 8 October, 2006 (Edict No. 02-1902). One of the main elements of the National Environmental Strategy is its section on the Marine and Coastal Environment. This sets out the aims of the strategic vision of the Marine and Coastal Environment Sector: the sustainable exploitation of coastal and marine resources owing to their direct relationship with public health, food security, economic and social benefits and cultural values such as traditional ways of living.

5.e Property management system

The Management Plan of the nomination proposal 'Pearling, testimony of an island economy' documents a management system that was developed during the preparation of a nomination dossier for submission to UNESCO. The preparation of the nomination dossier was coordinated by the Ministry of Culture and Information, Sector for Culture and National Heritage. The Management Plan was developed in broad consultation with various governmental and non-governmental partners, especially those represented on the Steering Committee. It envisages 10 strategic objectives for the management of the site and details the first implementation phase of strategies derived from these strategic objectives between 2009 and mid 2013. This phase is focused on the formal establishment of administrative structures and legislation to protect the heritage site and its Outstanding Universal Value. It emphasises architectural conservation, urban upgrading, historical and anthropological research and the creation of visitor and interpretation facilities.

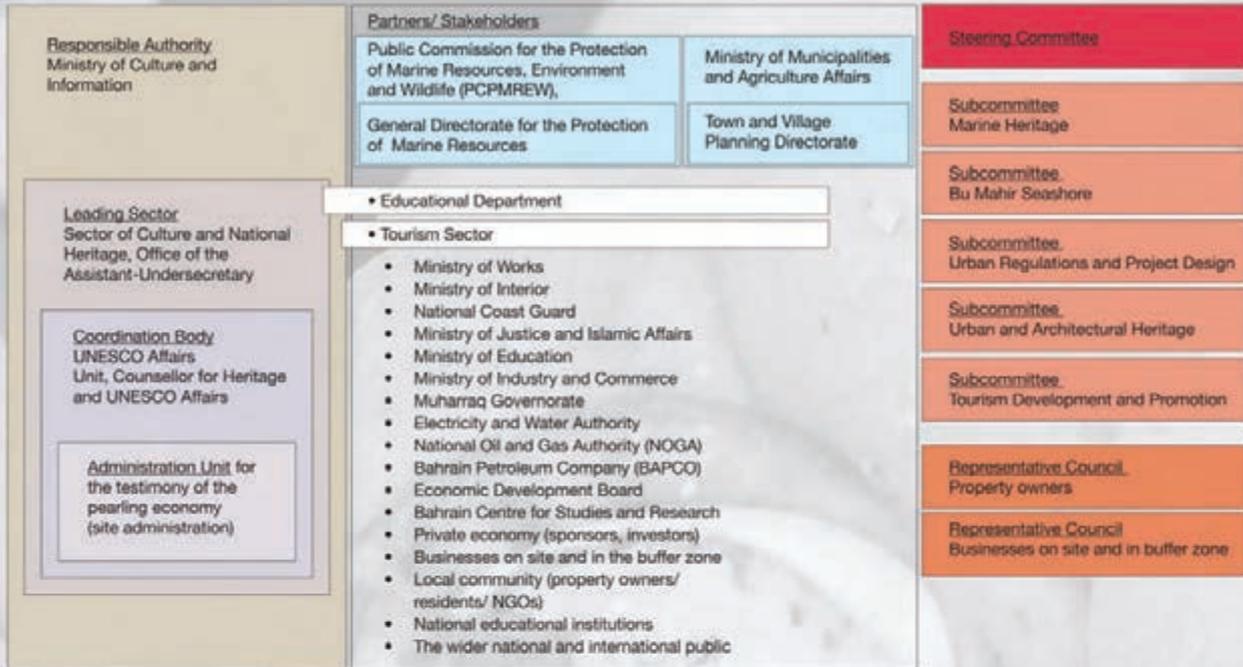
Looking beyond phase 1, the plan provides guidance for the long-term protection and operation of the heritage site in line with the stipulations of the World Heritage Convention. The Management Plan is an implementation tool providing a framework of

policies and actions to enable all concerned parties to understand and share the management objectives and their implementation, and to monitor the results achieved. It is oriented towards those responsible for the management of the site and other concerned government agencies, both municipal and national. It also addresses and serves the wider public: environmental and cultural associations, the scientific community, groups and individuals interested in the protection and utilisation of the site, and potential sponsors for conservation measures or interpretation facilities as an outline and verification document.

The Management Plan is divided into three main sections. The first chapter, *Site Description, Objectives and Assessment*, summarizes the central characteristics of the site, its cultural significance and Outstanding Universal Value. It defines the overarching aims of the management system and 10 strategic objectives, based on assessment of the context in which the planning and implementation takes place. The second chapter, *Management Strategies*, introduces 10 management strategies, each responding to one of the 10 strategic objectives. These strategies guide the first implementation phase from 2009 to 2013 and provide a long-term basis for future conservation and protection of the heritage site. The concluding third chapter turns towards the strategy implementation and action plans for a short-term period. Titled *Site Analysis and Action Plans (2009-2013)*, the chapter outlines the implementation of phase 1. It includes an assessment of each of the site's different characteristics and state of conservation, as well as of their individual or shared buffer zone. The action plans outline action to be taken during the implementation time frame 2009-13 and are arranged according to the strategies by serial property. They specify the actions envisaged and the bodies responsible for their implementation. In addition, indicators and means of verification are introduced to assist future evaluation cycles of the Management Plan. Implementation partners, budget source and timeframe are also provided, with the latter graphically illustrated in a project Gantt chart.

The Management Plan is attached as a separate volume to the nomination file. In combination with the shared annex, containing graphic records and legal texts, the three documents constitute the nomination dossier. The Management Plan is yet to be approved formally by the Steering Committee during its first session in 2010.

Governance Structure



10 Strategic Objectives of the Management System

1. ADMINISTRATIVE SETUP AND PROCEDURES
2. STATUTORY HERITAGE PROTECTION
3. STAKEHOLDER INVOLVEMENT
4. INTERPRETATION AND PRESENTATION
5. PHYSICAL CONSERVATION AND DEVELOPMENT
6. RESEARCH AND DOCUMENTATION
7. EDUCATION AND AWARENESS RAISING
8. SUPPORT FOR CULTURAL TRADITIONS
9. TOURISM DEVELOPMENT AND PROMOTION
10. RESOURCE MANAGEMENT

5.f Sources and levels of finance

The sources and levels of finance are detailed in *Chapter 2, Strategy 10: Resource Management* of the Management Plan. The text below contains merely a summary of the different funding sources utilised for the protection and preservation of the testimony of the pearling economy, and summarises the additional data to be found in the Management Plan.

The sources of funding are government funds, public-private partnerships and revenue generated by the site itself. In addition, sponsorships – if received – will be incorporated as special project funds. The governmental contribution is provided in a regular standard allocation for the site in the government's biennial budget, as well as in an upfront special project budget for the testimony of the pearling economy intended to fund the initial conservation measures, set up of site presentation and interpretation facilities, and the presentation of this nomination dossier to UNESCO.

From 2011-12, the site administration of the pearling testimony will receive a standard biennial allocation of an estimated 300,000 Bahraini Dinar to cover the ongoing cost of maintaining and administering the heritage site. Future standard allocations may be reduced if revenues generated by the site increase. The standard allocation for 2011-12 will however be set at half of this figure, as it is anticipated that many costs will still be covered by the initial special project budget of 12.6 million Bahraini Dinar (provided for 2009-2012), and that heritage maintenance needs immediately following the major conservation projects will be low. This one-time allocation to the site administration unit for the major initial conservation works up to 2011 is scheduled as follows: 0.85 million BD in 2009; 7.16 million BD in 2010; and 4.59 million BD in 2011.

Significant contributions of resources, although no direct funds, come from other ministries and government agencies. The Public Commission for the Protection of Marine Resources, Environment and Wildlife (PCPMREW) contributes resources for the protection and research of the maritime properties. The Ministry of Municipalities and Agriculture Affairs and the Ministry of Works join forces in providing labour and services for the urban works related to the pearling testimony in *Muharraq*. Furthermore, buildings and plots have been bought by the Ministry of Municipality Affairs and Agriculture to be developed according to the management system's urban master plan and/or ownership has been transferred to the Ministry of Culture and Information. The Ministry of Works implements most of the urban upgrading works and contributes funds within the limits of the standard budget allocated for this purpose.

The Resource Management Strategy of the Management Plan provides further information on public-private partnerships and fund-raising strategies. It presents an estimate of potential revenues to be generated through the use of the visitor facilities to benefit the maintenance and protection of the site. The projected operating net income is calculated against the operating costs, and future increases of the biennial budget allocations are anticipated. These are outlined within the timeframe of the initial 5-year action plan (2009-2013), and will be evaluated and adjusted for the following implementation cycle. (For further information, please refer to the *Management Plan, Chapter 2, Strategy 10: Resource Management*.)

5.g Sources of expertise and training

The sources of expertise and training are introduced under the heading 'Human Resources' in *Chapter 2, Strategy 10: Resource Management* of the Management Plan, provided in a separate volume. It provides an overview of the personnel requirements of the management system as well as the training measures and capacity building activities needed. Given the diversity of the site and the scope of activities envisaged for its conservation and promotion, professionals from a range of very different fields and all levels of expertise are required. Among the disciplines currently involved one can list: history, anthropology, architectural conservation, civil engineering, urban planning and design, archaeology, environmental protection, heritage management, surveying, exhibition design and museum pedagogy, tourism development, public relations, project management, emergency and rescue-management, promotion and marketing, scuba diving and various traditional crafts and construction techniques.

These human resources, whether employees, interns, consultants or volunteers, are recruited from the private national and international markets, through cooperative partnerships with other ministries, agencies or companies, and most importantly from the local community. The site administration relies partly on resources from within the Ministry of Culture and Information for translation, public relations, marketing, educational activities, accounting, human resources management and legal advice, as well as for core activities such as architectural conservation and archaeology. The Site Administration Unit within the Sector of Culture and National Heritage of the Ministry of Culture and Information under the coordination of the Counsellor for Heritage Management and UNESCO Affairs during the preparation of the nomination dossier consisted of an interdisciplinary team of

national and international professionals, and extended as the implementation of site conservation activities started. The professional/training background of the Site Administration Unit's 12 current employees is as follows: (1) Head of the Site Administration Unit: Counsellor for Heritage Management and UNESCO Affairs, PhD in heritage studies/management; (2) Architectural Conservation Specialist: BA Architecture with specialization in heritage conservation; (3) Urban Rehabilitation Specialist: BA Architecture with specialization in heritage of oriental cities; (4) Heritage Management Specialist: diploma in architecture with specialization in heritage management; (5) Project Management Assistant: BA Social Sciences; (6) Heritage researcher: BA Anthropology / Cultural Geography; (7) Environmental Specialist: PhD Ecology; (8) Site Manager: 10 years experience in site management; (9) Accountant: BA Accountancy and Finance; (10) Archivist / GIS expert: MA in Archaeology; (11) Building Permission Administrator: BA Engineering; and (12) Translator: BA English.

Additional specialist resources are incorporated as consultants and through temporary contracts. (Please refer to the Management Plan *Management Flow Chart* in *Chapter 3 Site Analysis and Action Plans (2009-2013)* for the scheduling of personnel appointed throughout the first implementation phase.)

It is important to achieve and maintain high quality performance by every individual entrusted with a responsibility within the management system. To this end, regular training courses and workshops will be offered to employees of the site administration and all other personnel, including volunteers. This applies equally to so-called "multipliers", i.e. people who disseminate information about the testimony of the pearling economy to others. For this purpose, training courses and workshops led by specialists will be organised for teachers, tour guides and members of the tourism industry. The Tourism Sector of the Ministry of Culture and Information has initiated discussion with Tamkeen (a semi-autonomous, independent authority formulating strategic and operational plans which aim to enhance the overall prosperity of Bahrain through investments in Bahraini employability, job creation and social support) about providing training in the fields of tour guiding and jewellery design. Some regional and international organisations have been earmarked to provide training. The mandate of the planned Arab Regional Centre for World Heritage (ARC-WH) in Bahrain will also include training services. During the preparation of the nomination dossier, members of the site administration unit attended training courses and workshops in the history of pearling in Bahrain and the Gulf region, architectural conservation techniques, architectural terminology, architectural and urban surveying, documentation of oral history, Geographic

Information Systems (GIS), specialised computer software, and, for foreign employees, Arabic language.

As traditional construction techniques have gradually fallen into disuse, the available craftsmen and construction workers familiar with those techniques do not meet the demand generated by the restoration of the architectural properties. The management system will therefore facilitate onsite training in these fields throughout the conservation projects. Additional training required to generate a service team for the properties includes tour guides, diving supervisors and jewellery designers.

The purpose of offering regular training courses and workshops to tour guides is to maintain a high-quality performance by keeping them up-to-date about new research results and to ensure that they have a comprehensive understanding of the pearling testimony and its values. In addition to latest research findings on the pearling economy the pearling testimony, the courses and workshops will also offer training in rhetorical, pedagogical and interpersonal skills. All guides will additionally be trained to attend to physically-challenged visitors and to provide first-aid. A specialist tour guide, to accompany boat excursions to the heritage site's maritime properties, will be trained within a training scheme for pearl diving tours. Young Bahrainis will learn skin- and scuba-diving techniques. They will receive an international PADI diving certificate upon completion of the training, which will also include relevant knowledge on the ecological processes of the oyster beds, their values in context of World Heritage, and their monitoring procedures. An initiative that aims to see the onsite production and sale of Bahraini pearl jewellery will provide training in design and manufacturing in that field. (For further information on sources and expertise of training, please refer to the Management Plan, *Chapter 2, Strategy 10: Resource Management* and *Chapter 3: Site Analysis and Action Plans (2009-2013)*, especially the employment schedules.)

5.h Visitor facilities and statistics

Bahrain currently attracts 2-3 million tourists annually. On completion of the conservation measures and establishment of the visitor facilities, the nominated property is expected to attract around 200,000 international visitors and some 150,000 Bahrain residents a year. These numbers are projected to rise in following years as additional events and attractions are offered, so that by 2015 the site may attract up to 450,000 annual visitors (for more details, see *Management Plan, Chapter 2, Strategy 9: Tourism Development and Promotion*).



Bahrain visitor opening pearl oysters



Pearling songs and dance (Fjiri) displayed during a cultural event in Muharraq.

There are already sufficient hotels in Bahrain to accommodate the projected number of visitors, most of which are conveniently located in Manama. A boutique hotel is currently being established in *Muharraq* in vicinity of the site, and a guest house will be operated within one of the nominated properties (*Murad House*) to allow visitors to experience the historic architecture more intimately. Numerous gastronomic facilities exist in the neighbourhoods of the heritage site, most of which are rather simple in character. However, various additional food outlets will be operated onsite to broaden the range of food on offer and to ensure that bottled drinks and water are readily available. All of the publicly accessible heritage properties, as well as the new visitor centre, will be equipped with at least one sanitary facility. In addition, public lavatories will be installed in the vicinity of the heritage site, as required. It will also be ensured that first aid and emergency help is readily available at all properties.

Due to the limited availability of public transport in Bahrain, most visitors will arrive at the site in private cars, taxis, coaches or shuttle boats. The management system will provide for the necessary infrastructure in terms of parking and drop-off spaces. A boat shuttle to and from the site will be established between *Bū Māhir* Seashore and both Manama (National Museum) and Arad (*Qal'at Arād*). Parking is available for cars and buses at both locations. Within the heritage site, shuttle vehicles will establish regular links between the key access points and the heritage properties. Once the visitor facilities at *Hayr Shtayyah* are opened, boat shuttles will also be provided to the oyster beds. In the meantime, organised excursions will be offered.

A Visitor and Experience Centre will soon be established at a central and easily accessible location within the site, on the plot of the *'Amārat Yūsif Abdurrahman Fakhro*. It will offer a wide range of services and will be designed to accommodate large groups of visitors (see *Management Plan, Chapter 2, Strategy 4: Interpretation and Presentation*, and *Chapter 3: Site Analysis and Action Plans (2009-2013)* for details). Among other things, the Visitor Centre will include a public library and archive on the history of the pearling economy, a multimedia centre, and a shop where visitors can obtain publications, postcards and souvenir items related to pearling and the heritage site. Jewellery items and pearls are also available at the many jewellery shops that already exist and others that will be established in the vicinity of the site.

Many of the nominated properties will host permanent exhibitions on specific themes related to pearling and the pearling economy. These include *Hayr Shtayyah*, *Qal'at Bū Māhir*, the *Al-Ghūṣ House*, the *Badr Ghulum House*, the *Al-Jalahma House*, the *Al-Alawī House*, the *Fakhro House*, the *Murad Majlis*, the *'Amārat Yūsif Abdurrahman Fakhro / Visitor Centre*, the *Nukhidhah House*, and the *Siyadi Majlis* (for details, see *Management Plan, Chapter 2, Strategy 4: Interpretation and Presentation*).

The individual architectural properties of the serial site are linked within their buffer zone by an urban pathway (the "Pearling Pathway") which guides visitors through the site. This approach enables a coordinated presentation and interpretation of the various properties. Along the pathway, interpretation panels (in both Arabic and English) will be installed both at the nominated properties and in locations with an historic connection to the pearling economy. As well as providing information, the interpretation panels will serve to enhance public awareness of the heritage values. Audio-guides and guided walking tours will be offered at the Visitor Centre and other locations, and printed informational materials such as leaflets and maps will be available throughout the site. Additionally, special events related to pearling will be organised on a regular basis at the Visitor Centre and other venues in the vicinity of the site.

5.i Presentation and promotion

With the exception of the oyster beds and the *Bū Māhir* seashore property, all nominated properties consist of architectural structures located in the urban setting of *Muharraq* Town. Due to wear and tear and previous neglect, most of these properties require conservation measures, some of them major ones (for details, see Chapter 4 above and *Management Plan, Chapter 3: Site Analysis and Action Plans (2009-2013)*). Accordingly, various conservation and restoration works will be carried out in the near future and are already underway in several cases. The purpose of these efforts is to ensure the adequate protection, conservation, presentation and transmission to future generations of these properties, in accordance with the World Heritage Convention. For the same reason, all of the architectural properties, as well as the seashore property, were on 10 January 2010 registered as monuments under the Decree Law No. (11) of 1995, Concerning the Protection of Antiquities. In addition the Ministry of Culture and Information and the mostly private owners of the buildings have signed legal agreements regarding long-term use and conservation requirements. The marine properties, which are in a good state of conservation, are in the process of being designated as marine protected areas under Decree (2) of 1995 with respect to the Protection of Wildlife (for details, see Chapter 4 above and *Management Plan, Chapter 2: Management Strategies, Strategy 5: Physical Conservation and Development* and *Chapter 3: Site Analysis and Action Plans (2009-2013)*).

The urban setting of the architectural properties is protected through the specific stipulations of a "Special Protection Zone" established in 2009 in line with Resolution No 28 of 2009 regarding the specification of the regulatory stipulations for the development in

different areas in the Kingdom (for details see Chapter 7.b below). The Special Protection Zone corresponds to the World Heritage buffer zone proposed in this nomination. Within the Special Protection Zone, a “Pearling Pathway” will be established which will link the individual architectural properties of the serial site as well as the associated visitor facilities. This will facilitate a coordinated presentation and promotion of the various properties, and contribute to raising awareness of the site’s heritage values among both visitors and residents of *Muharraq*.

A coordinated, visually consistent presentation throughout the heritage site requires the adoption of basic design principles for all physical planning, design and construction works on the site and in the surrounding buffer zone. For instance, it is important that any additions and new developments in the immediate setting of historic buildings do not compete for attention with the authentic historic fabric and be clearly identifiable as new. The site’s management system therefore includes design guidelines and principles which are aimed at an appealing, functional and high-quality design, while ensuring that new constructions and interventions do not impair the authenticity and integrity of the heritage site (see *Chapter 2: Management Strategies, Strategy 4: Interpretation and Presentation, and Strategy 5: Physical Conservation and Development*).

The main value of the architectural properties is their contribution to the grand narrative of pearling. On-site interpretation and presentation facilities and efforts such as exhibitions, interpretive panels or informational materials will be aimed at conveying the nominated properties’ values and narrative elements, and will support the continuation of the shared memory associated with each property. They will correlate with and promote their Outstanding Universal Value, and support their integrity and authenticity. The two interpretative visitor centres envisaged at the *Bū Māhir* Seashore and the *‘Amārat Yūsif A. Fakhro* will equally support these efforts (for further information refer to the Management Plan, *Chapter 2, Strategy 4 Interpretation and Presentation, Facilities and Services*)

The Government of Bahrain, and especially the Ministry of Culture and Information, will facilitate and promote publications and scientific studies and research on the values and histories of the nominated properties and their role in the pearling economy of *Muharraq* and Bahrain. Previous books and booklets related to individual properties or more generally the pearling heritage, which were published by the Government of Bahrain, include, among many others “The production of Traditional Crafts in Bahrain” in Arabic (Bahrain National Museum, 1994), “Bahrain Civilization through Historical Ages” (Bumatai & Khalil, 2006), “Architectural Features of Traditional Cities in Bahrain” (Ministry of Housing, 1999), “The harbour of heritage” in Arabic (Ministry of Information, 2003). The Ministry of Culture and Information has also organized

and facilitated numerous exhibitions and cultural events related to Bahrain’s pearling heritage, not only in Bahrain, but also internationally. Recently, an exhibition entitled “Légendaires Perles de Bahreïn” was put on at the Institut du Monde Arabe in Paris (13 October – 29 November 2009). A similar show, entitled “Perles de Bahreïn”, was organised at the same location in 1999.

During the preparation of the nomination and the initial phases of implementing the management system, the site was promoted at the government level through information spreading and broad stakeholder involvement. A promotional brochure and poster highlighting the value of the heritage site and the benefits of its future protection and promotion was developed (Kingdom of Bahrain, 2008).

A number of activities were carried out during the preparation of the World Heritage nomination that aimed at raising the awareness of the local communities about the pearling heritage and informing them of the conservation measures. These included community workshops, consultations with property owners, lectures, a Bahrain-wide media campaign, a public photo competition “Pearling in Muharraq”, and a research competition on “Pearl Diving Heritage” at local schools (see *Management Plan, Chapter 2: Management Strategies, Strategy 3: Stakeholder Involvement and Strategy 7: Education and Awareness Raising*). A special website for the project is currently being developed and will go online in the near future. The website will greatly enhance the ability of the Government and site management to inform the public at large about the outstanding universal values of the various properties, ongoing research projects, and special events such as exhibitions or performances. The planned Arab Regional Centre for World Heritage (ARC-WH) in Bahrain will play a major role in raising awareness of UNESCO World Heritage-related issues by hosting national and international seminars, workshops, conferences and training courses.

Last but not least, the Management Plan for the property seeks to support and foster the continuation of a wide range of surviving cultural practices which are rooted in the pearling era and are directly associated with its economy. These include: pearl-diving, pearling music, dances, festivals and ceremonies, poetry and literature, jewellery-making, architectural construction techniques and boat-building, among other practices. These ongoing cultural practices are fundamental to a lively and illustrative interpretation and presentation of the nominated property and contribute to their appreciation. They are therefore a strong tool for communicating and promoting its Outstanding Universal Value (see *Management Plan, Chapter 2: Management Strategies, Strategy 8: Support for Cultural Traditions*).

BAHRAIN'S PEARL HOUSES

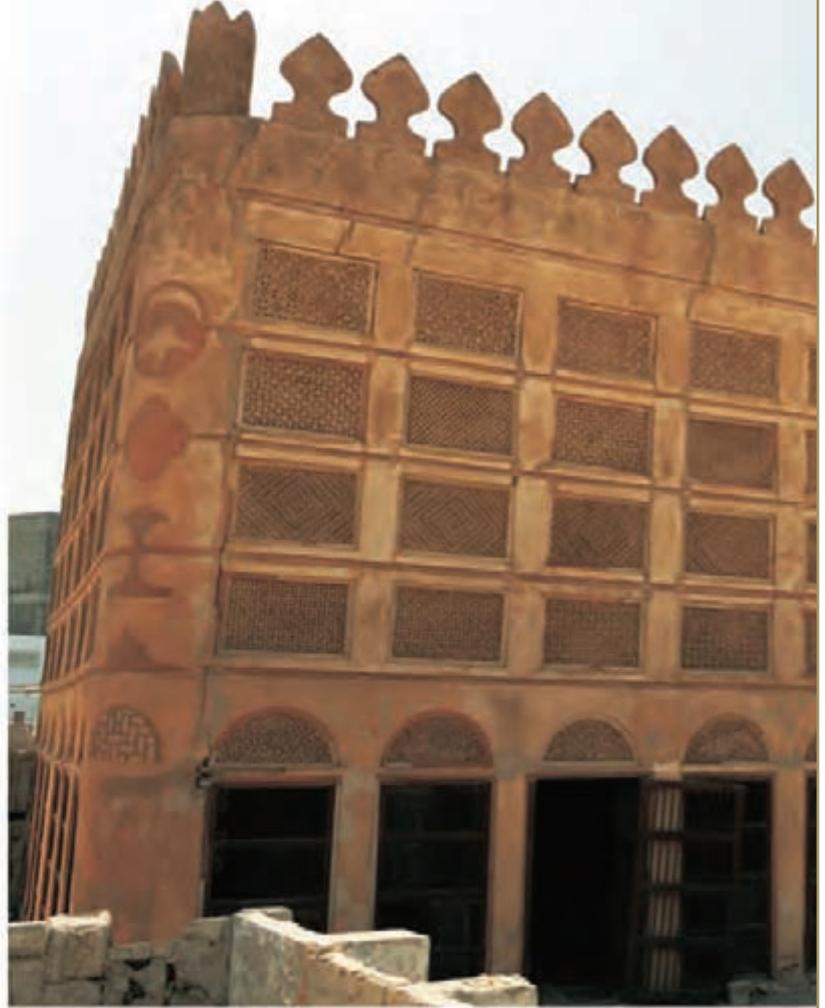
THE HOUSES THAT PEARLS BUILT

Bahrain is saving its pearling heritage, and restoring the houses of its pearl workers

A BHD12.5m (US\$33m) project by Bahrain's Ministry of Culture and Information is working to restore 18 historic houses on the island of Muharraq. A stretch of coastline in the area where the dhows left and returned is also being preserved, along with three oyster beds. It's all part of a project called "Pearling Testimony Of An Island Economy", which is on UNESCO's World Heritage tentative list and could be classed as a World Heritage site by 2011.

"There is no better place in the world to describe the history of pearl diving and pearl trading than Bahrain," says Dr Britta Rudolff, Bahrain's counsellor for heritage management and UNESCO affairs. "Pearling determined the identity of the island on an economic basis, on a cultural basis and on a societal basis because for centuries it was the main economic activity, especially on the island of Muharraq. If you look at the main businesses in Bahrain – the family names that you always come across – they are the people who made their fortune during the pearling era."

The 18 houses, which will be linked by a 3km walkway, will include the homes of a captain, a dhow maker, a diver and a trader who brought provisions to the crews. One house will be used to explore the role of women when their husbands were away, and another will be used for an exhibition about medical services available to divers. This latter house was owned by Bader Ghulum



ترميمه حاليا على الطرف الجنوبي من المحرق، وبعد الشاطئ الطبيعي الوحيد الذي لا يزال باقيا على حاله في الجزيرة، وقد استغرق العثور عليه وقتا ليس بالقليل. وتقول د. رودولف «يعتبر هذا الشاطئ جزءا أساسيا في المشروع لأنه المكان الذي كانت قوارب الضوء تغادر منه لتنطلق في رحلات صيد اللؤلؤ، وكانت مهرجانات الوداع والترحيب تتم فيه. لقد تم استصلاح الكثير من المناطق في المحرق، وكنا بحاجة إلى أماكن تتمتع بأصالة تاريخية حقيقية حتى نتقدم لإضافتها إلى قائمة اليونسكو للتراث العالمي. وأخيرا عثرنا على هذا الشاطئ الطبيعي المذهل بجماله في المحرق، قرب قلعة بو ماهر التي يستخدمها الآن حرس السواحل». ومن المقرر أن يتم بناء مركز سياحي في هذا الموقع، إلى جانب خطة لتسيير خدمة رحلات بحرية تنطلق من هذا الشاطئ.

وهناك أيضا خطط تقضي بطرح مجموعة من المنتجات التي تستخدم لألى البحرين في صنعها على أن يتم عرضها للبيع في بعض المنازل المرممة. وتوضح د. رودولف قائلة «نحاول الآن تشكيل صورة جديدة للبحرين، ونجري اتصالات في الوقت الحالي مع مصممين عالميين في مجالي المجوهرات والأزياء لمحاولة

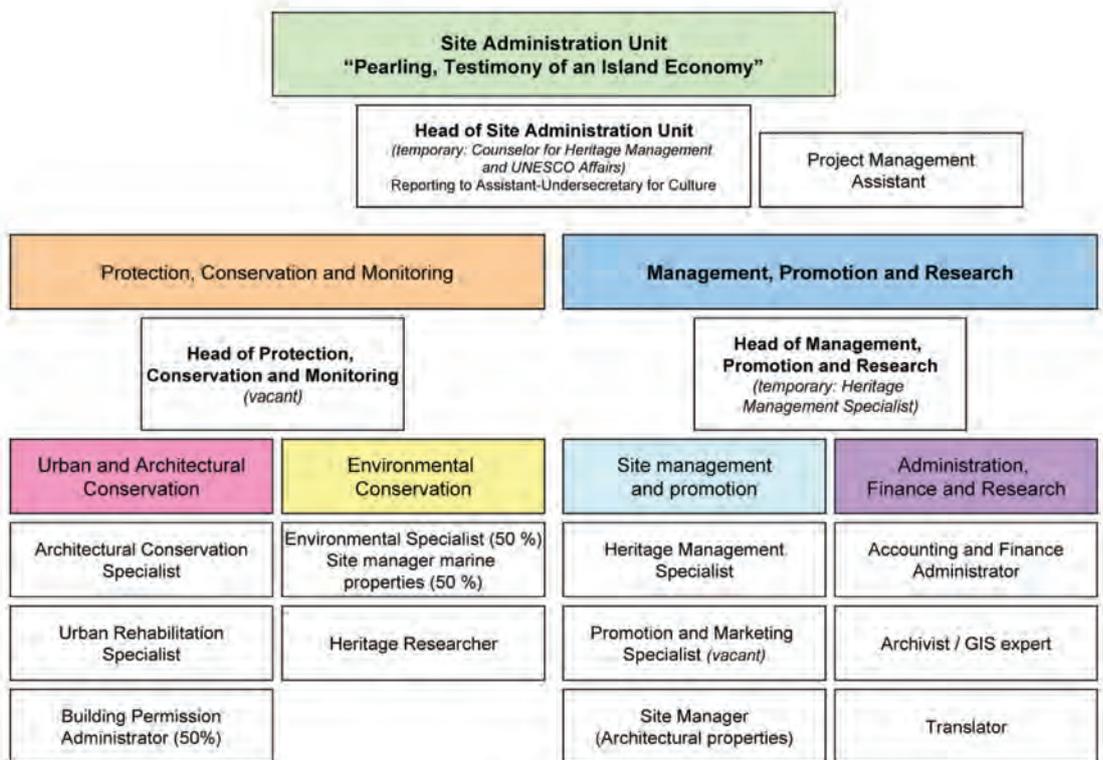
5.j Staffing levels

The staffing levels at the site ‘Pearling, testimony of an island economy’ can be divided into two different categories: (a) the Site Administration Unit, which mostly consists of personnel dedicated full time to the management and protection of the site; and (b) staff of other bodies and partner institutions who provide external services to the site. The latter mostly belong to the Public Commission for the Protection of Marine Resources, Environment and Wildlife (PCPMREW), the Ministry of Municipalities and Agriculture Affairs, and the Ministry of Works.

The Site Administration Unit is part of the Ministry of Culture and Information and currently consists of 15 positions, four of which are vacant or temporarily filled by other staff members. The four vacant positions (Head of Site Administration Unit; Head of Protection, Conservation and Monitoring; Head of Management, Promotion and Research; and Promotion and Marketing Specialist) will be filled by December 2010 at the latest. While the necessary funds are available, it has been difficult to identify Bahrainis who are qualified for the leading positions.

The Site Administration Unit is divided into two sub-units, based on a distinction between implementation-oriented (conservation, rehabilitation and monitoring) and process-oriented (management, research, and promotion) tasks. The organizational setup of the Site Administration Unit is illustrated in the flowchart below:

The professional/training background of the Site Administration Unit’s 12 current employees is as follows: (1) Head of the Site Administration Unit: Counsellor for Heritage Management and UNESCO



Structure of Site Administration Unit

Affairs, PhD in heritage studies/management; (2) Architectural Conservation Specialist: BA Architecture with specialization in heritage conservation; (3) Urban Rehabilitation Specialist: BA Architecture with specialization in heritage of oriental cities; (4) Heritage Management Specialist: diploma in architecture with specialization in heritage management; (5) Project Management Assistant: BA Social Sciences; (6) Heritage researcher: BA Anthropology / Cultural Geography; (7) Environmental Specialist: PhD Ecology; (8) Site Manager: 10 years experience in site management; (9) Accountant: BA Accountancy and Finance; (10) Archivist / GIS expert: MA in Archaeology; (11) Building Permission Administrator: BA Engineering; and (12) Translator: BA English.

The administration of the oyster beds is the joint responsibility of two directorates in the Public Commission for the Protection of Marine Resources, Environment and Wildlife (PCPMREW): (1) the Directorate for Protected Areas, and (2) the Directorate for Marine Resources. The Directorate for Protected Areas is responsible for monitoring the properties, and defines the prohibitions and technical specifications applied to the marine protected area. The Directorate for Marine Resources operates the patrol boats which frequently survey the oyster beds in order to prevent violations of the trawling, dredging and waste management regulations. The Directorate for Protected Areas currently consists of four employees with MA degrees in Marine Biology, as well as administrative personnel. The Directorate for Marine Resources operates three patrol boats with a crew of 10 each. The crew is specialized in patrolling operations and recognises any violations occurring in protected areas. The main contact person between the two PCPMREW directorates and the Site Administration Unit is the Environmental Specialist and Site Manager for the marine properties, who is based in the Ministry of Culture and Information.

The Ministry of Municipalities and Agriculture supports the protection and management of the site through its Directorate for Urban and Village Planning and the Building Permission Section of Muharraq Municipality. The liaison person is the Building Permission Administrator, a staff member of the Site Administration Unit whose office is located on the premises of the Muharraq Municipality. The Ministry of Works contributes expertise in road and traffic planning.

The overall staffing situation can be considered as adequate, as ample resources allow the hiring of external consultants for short-term projects and tasks. However, an important objective is to train Bahraini citizens in heritage conservation and management, so that there can be a higher ratio of Bahraini employees in the Site Administration Unit. More detailed information on staffing is provided in the Management Plan, *Chapter 2, Strategy 10: Resource Management* and *Chapter 3: Site Analysis and Action Plans (2009-2013)*. Additional information can be found under item 5.g *Expertise and Training*.

6

Monitoring



The Kingdom of Bahrain considers preventive monitoring and periodic reporting of the serial properties proposed for nomination as World Heritage Site in this dossier as an absolute essential for safeguarding the future of the properties. Therefore, this section of the nomination file lists key indicators which should and will be used for reviewing the state of conservation of the property at specified regular intervals. The key indicators highlighted in a tabular form are associated directly with the attributes that contribute to the Outstanding Universal Value of the individual maritime, seashore and architectural properties, as well as the entire ensemble, and will help in identifying conservation and development trends over time. These trends, in turn, will guide future conservation works along with review and implementation of the 10 strategic objectives outlined in the management plan on a regular basis (*Chapter 2: Management Strategies, Chapter 3: Site Analysis and Action Plans (2009-2013), Objective 5: Physical Conservation and Development*).

Furthermore, this section lists, in brief, the name and contact information of the agencies responsible for the monitoring process along with a summary of the relevant previous exercises. For detailed information on the same, please refer to *Chapter 1: Administrative Structure and Procedures, Chapter 2: Management Strategies and Strategy 6: Research and Documentation* of the attached management plan.





Historic photograph of preparations for the start of the pearling season

6.a Key indicators

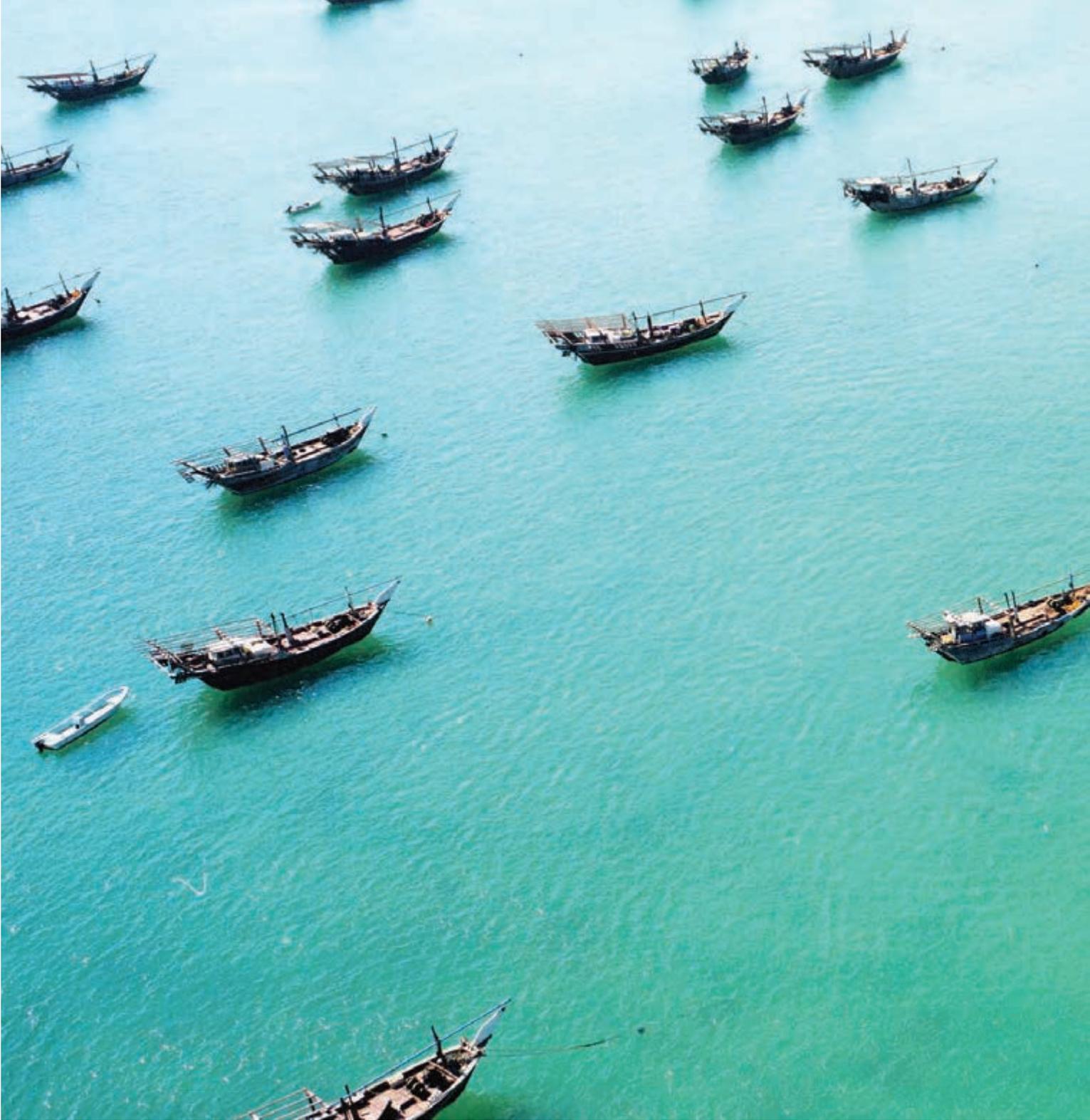
Groups of attributes	Attribute(s) contributing to Outstanding Universal Value	Property	Indicator	Periodicity	Location of Records
Environmental and geophysical attributes	Topography	Bū Māhir Seashore	Erosion activity measured in cm at 2 markers along seashore (not more than +/- 5 cm by 2014)	2 years	BMIC copy at SAU
	Geomorphology	Bū Māhir Seashore	Chemical soil and sand composition analysis	2 years	BMIC copy at SAU
		Fakhro House	Chemical soil and sand composition analysis	2 years	SAU
	Water temperature	Hayr Shtayyah	Water temperature measures (annual average) (not more than +/- 0.2 °C by 2020)	5 years	PCE
	Water depth	Hayr Shtayyah	Change in water depth (no more than +/- 10 cm by 2015)	5 years	PCE
	Visibility	Hayr Shtayyah	Visibility measures, (no reduction should occur – base value 10-12m)	5 years	PCE
	Formation of oysters	Hayr Shtayyah	Number of clusters per sq.m. at 5 sample stations (max. 10% reduction by 2015)	5 years	PCE
	Oyster density	Hayr Bū-l-Thāmah	Density of oysters at 3 sample stations (max. 10 % reduction over a span of 20 years)	5 years	PCE
	Ratio of pearls per oyster	Hayr Bū 'Amāmah	Counting of pearl finds per 1000 oysters (max 10 % reduction over a span of 20 years)	5 years	PCE
	High ratio of large pearl finds	Hayr Bū-l-Thāmah	Ratio of pearl finds of diametre greater than 3mm (max 15% reduction over a span of 20 years)	5 years	PCE
	Existing bio-diversity in marine ecosystem	Hayr Bū 'Amāmah	Presence of key species (no reduction should occur)	5 years	PCE
		Hayr Bū-l-Thāmah	Presence of key species (no reduction should occur)	5 years	PCE
	Vegetation	Al-Ghūṣ House	Presence and condition of tree (photographic comparison)	1 year	SAU
Badr Ghulum House		Presence and condition of trees (photographic comparison)	1 year	SAU	
Location and setting related attributes	Setting	'Amārat Ali Rashed Fakhro (I)	Increased commercial viability of the local market (min. increase of rented spaces by 5% in 2014)	1 year	SAU
	Historically important location	Al-Ghūṣ House	Presence and condition of illustrative panel explaining historic location from 2010 onwards	6 months	SAU
		Al-Jalahma House	Presence and condition of illustrative panel explaining historic location from 2010 onwards	6 months	SAU
		Siyadi Shops	Increased commercial viability of the local market (min. increase of rented spaces by 5% in 2014)	1 year	SAU
		Qal'at Bū Māhir	Sea view analysis by photographic comparison	2 years	SAU
	View of and from individual properties	Bū Māhir Seashore	Sea view analysis by photographic comparison	2 years	SAU
		Qal'at Bū Māhir	Sea view and setting analysis by photographic comparison	2 years	SAU

Groups of attributes	Attribute(s) contributing to Outstanding Universal Value	Property	Indicator	Periodicity	Location of Records
Attributes of ownership, use and function	Public accessibility	Qal'at Bū Māhir	Public access during opening hours from 2010 onwards(visitor numbers)	1 month	BMIC
		Siyadi Shops	Public access during opening hours	6 months	SAU
	Ownership	Badr Ghulum House	Ownership registration at Survey and Land Registration Bureau	5 years	SLRB copy at SAU
		Murad House	Ownership registration at Survey and Land Registration Bureau	5 years	SLRB copy at SAU
		Murad Majlis	Ownership registration at Survey and Land Registration Bureau	5 years	SLRB copy at SAU
		Siyadi Shops	Ownership registration at Survey and Land Registration Bureau	5 years	SLRB copy at SAU
		'Amārat Ali Rashed Fakhro (I)	Ownership registration at Survey and Land Registration Bureau	5 years	SLRB copy at SAU
		Nūkhidhah House	Ownership registration at Survey and Land Registration Bureau	5 years	SLRB copy at SAU
		Siyadi House	Ownership registration at Survey and Land Registration Bureau	5 years	SLRB copy at SAU
		Fakhro House	Ownership registration at Survey and Land Registration Bureau	5 years	SLRB copy at SAU
	Traditional climate control	Al-Alawi House	Functioning of traditional climate control systems (exposure test)	1 year	SAU
	Continuity of use and function	Badr Ghulum House	Provision of medical services (appointments provided)	1 year	SAU
		Siyadi Shops	Public access and range of merchandise offered(visits to property)	1 year	SAU
		'Amārat Ali Rashed Fakhro (II)	Public access and range of merchandise offered (visits to property)	1 year	SAU
		Siyadi Mosque	Public access and Imam designated to mosque (contract by Awqaf authority)	2 year	AWQ
		Murad Majlis	Public access during majlis hours (visits)	1 year	SAU



Aerial view of the Siyadi complex.

Groups of attributes	Attribute(s) contributing to Outstanding Universal Value	Property	Indicator	Periodicity	Location of Records
Architectural and aesthetic attributes	Typology / ground plan	Siyadi Shops	Typology / ground plan preserved (inspection of property)	1 year	SAU
		Al-Alawi House	Typology / ground plan preserved (inspection of property)	1 year	SAU
		Al-Ghūṣ House	Ground plan preserved (inspection of property and comparison of aerial photograph)	1 year	SAU
		Al-Jalahma House	Ground plan preserved (inspection of property and comparison of aerial photograph)	1 year	SAU
		Fakhro House	Ground plan preserved (inspection of property and comparison of aerial photograph)	1 year	SAU
	Building materials	Al-Ghūṣ House	Building material unchanged (inspection of property)	1 year	SAU
		Murad House	Building material unchanged (inspection of property)	1 year	SAU
		'Amārat Yousif A. Fakhro	Building material unchanged (inspection of property)	1 year	SAU
		Siyadi Majlis	Building material unchanged (inspection of property)	1 year	SAU
		Al-Alawi House	Building material unchanged (inspection of property)	1 year	SAU
	Design	Qal'at Bū Māhir	Design unmodified (inspection of property and photographic comparison)	1 year	SAU
		Fakhro House	Design unmodified (inspection of property and photographic comparison)	1 year	SAU
		'Amārat Ali Rashed Fakhro (I)	Design unmodified (inspection of property and photographic comparison)	1 year	SAU
		Murad Majlis	Design unmodified (inspection of property and photographic comparison)	1 year	SAU
		Siyadi Majlis	Design unmodified (inspection of property and photographic comparison)	1 year	SAU
		Siyadi Mosque	Design unmodified (inspection of property and photographic comparison)	1 year	SAU
		Siyadi House	Design unmodified (inspection of property and photographic comparison)	1 year	SAU
		Nūkhidhah House	Design unmodified (inspection of property and photographic comparison)	1 year	SAU
		Al-Ghūṣ House	Design unmodified (inspection of property and photographic comparison)	1 year	SAU
	Workmanship	Siyadi Majlis	Visibility of workmanship (inspection of property)	1 year	SAU
	Solidity	Qal'at Bū Māhir	Solidity unmodified (measuring of wall thickness, max reduction of 1cm until 2020)	2 years	SAU



Anchored pearling dhows



Groups of attributes	Attribute(s) contributing to Outstanding Universal Value	Property	Indicator	Periodicity	Location of Records
Archaeological attributes	Documentary evidence	'Amārat Yousif A. Fakhro	Unchanged appearance of archaeological ruins (inspection and comparison of aerial photos)	2 years	SAU
		Siyadi Majlis	Readability of building history (existence and condition of interpretative panels)	6 months	SAU
		Fakhro House	Unchanged appearance of archaeological elements (inspection and comparison of aerial photos)	2 years	SAU
	Ruinous state	'Amārat Yousif A. Fakhro	Unchanged condition of archaeological ruins (inspection and structural stability test sampling)	2 years	SAU
Narrative and identity marking attributes	Memory	Hayr Bū-l-Thāmah	References related to large pearl finds in interviews and publications (at least 5 references identified by 2015)	5 years	SAU
		Murad Majlis	Reference of Murad Majlis related to <i>tawwāsh</i> activities in interviews and publications (at least 5 references identified by 2015)	5 years	SAU
		Al-Jalahma House	Presence and condition of exhibition on the life of women in Muharraq during the pearling era (from 2011 onwards)	1 year	SAU
	Impression of luxury	Murad House	Excellent condition of ornamental designs and luxurious elements (comparison of photographs)	2 years	SAU
		Siyadi Majlis	Excellent condition of ornamental designs and luxurious elements (comparison of photographs)	2 years	SAU
	Atmosphere	Badr Ghulum House	Length of average stay per visitor observed on 2 day sample (min expectation 10 min.)	2 years	SAU
		Murad House	Percentage of negative written comments received on evaluation forms for guests (from 2011 onwards)	6 months	Guest House administration (to be established) copy at SAU
		'Amārat Ali Rashed Fakhro (II)	Unchanged atmosphere of storehouse space (photographic comparison and inspection)	6 months	SAU
		Al-Ghūṣ House	Length of average stay per visitor observed on 2 day sample (min expectation 10 min.)	2 years	SAU

Abbreviations used for indicating location of records:

BMIC	Office of the site manager at Bū Māhir Interpretation Centre, c/o Coast Guard Base Muharraq, Sh. Khalifa al-Kabeer Highway, Muharraq, Kingdom of Bahrain
SAU	Site Administration Unit, Pearling, testimony of an island economy, Sector for Culture and National Heritage, Bahrain National Museum, Al-Fateh Avenue, Manama, Kingdom of Bahrain
PCE	Public Commission for Protection of Marine Resources, Environment and Wildlife, General Directorate of Environment and Wildlife, PO Box 20071, Manama
MUN	Muharraq Municipality, Ministry of Municipalities and Agriculture, PO Box 53, Muharraq, Kingdom of Bahrain
SLRB	Survey and Land Registration Bureau, P.O. Box 5802, Manama, Kingdom of Bahrain
AWQ	Sunni Awqaf Directorate, Ministry of Justice and Islamic Affairs, P.O. Box 450, Manama, Kingdom of Bahrain

6.b Administrative Arrangements

The monitoring procedures introduced in the preceding table are being carried out by two responsible agencies. The oyster bed surveys which will take place every five years are initiated and carried out by the Public Commission for the Protection of Marine Resources, Environment and Wildlife, General Directorate of Environment and Wildlife. A survey necessary for the definition of detailed baseline values and marking of exact sample location, and a first evaluation of state of conservation changes since 2008 will be undertaken in mid 2010 and the first complete monitoring will be undertaken in 2015. The Public Commission for the Protection of Marine Resources, Environment and Wildlife will initiate these two exercises in May and October of the respective years and each following monitoring cycle.

The monitoring data of these marine surveys will be physically stored in the archives of the Public Commission for the Protection of Marine Resources, Environment and Wildlife, General Directorate of Environment and Wildlife and will be available to all project partners and

the wider public, including UNESCO specialists, on the GIS based webpage interface of the site monitoring procedures.

The monitoring cycles of the seashore and architectural properties differ and are divided into 6 months, 1 year, 2 years and 5 years cycles. These are initiated by the Site Administration Unit based in the Ministry of Culture and Information. Information on the forthcoming monitoring exercises will be provided in the first Steering Committee meeting of every year (approximately end of January) to allow full participation of all partners and stakeholders.

All monitoring procedures are initiated on March 1st of the respective years and the 6 months cycles are repeated on October 1st. The initial dates of each monitoring cycle are 1st October 2010 (6 months cycle), 1st March 2011 (1 year cycle), 1st March 2012 (2 years cycle) and 1 March 2015 (5 years cycle). The 6 months cycle refers mainly to interpretative facilities that ensure availability of information and atmospheric impressions. It required inspective site visits and should be completed in 2 days per cycle. The annual cycle requires a designated period (1st March to 15th March) during which the Site Administration Unit will conduct detailed surveys and inspections as well as photographic comparisons. Monitoring procedures which require external information from other governmental bodies, such as most recent aerial or satellite photographs, commercial statistic data or human resource information on employment in other ministries have been restricted to a biennial cycle. In these years, starting from 1st of March 2012, the information required from external bodies shall be requested in writing on January 15th of each year to ensure timely availability for the monitoring cycle. Since the monitoring procedures of the biennial cycle also require special laboratory analysis and measuring devices, 1 month should be dedicated in the Site Administration Unit to the survey implementation. Every 5 years, the Site Administration Unit will initiate a confirmation of unchanged land ownership by requesting current ownership certificates from the Survey and Land Registration Bureau.

All monitoring results and updated monitoring forms and procedures will be available to the project partners as well as the wider public on the GIS based web interface of the testimony of the pearling economy. Through this page, starting 2011, all monitoring information can be accessed and evaluated by UNESCO officials. However, an exception will be made for the aspects of the monitoring exercise which involve personal data, such as ownership records as well as working and rental contracts. These aspects of the monitoring documentation will be reflected in general terms in the online database and will be archived in the Site Administration Unit.

6.c Results of previous exercises

Monitoring of individual properties proposed for the serial nomination was carried out by different authorities in the past. However, the first coordinated monitoring exercise of all properties considering their interrelation as the testimony of the pearling economy and with a focus on the attributes reflecting the Outstanding Universal Value was only initiated during the preparation of this nomination dossier.

The most important aspect of this first monitoring was the recording of baseline values as part of a sufficiently detailed condition assessment for all proposed properties. The condition assessment of the maritime properties, as described earlier (refer to *Chapter 5: State of Conservation*), was based on historic data of comprehensive field surveys by the Bahrain Centre for Studies and Research (BCSR) carried out from 1986 to 1989 and complimented by two new surveys of the relevant oyster beds commissioned by the Ministry of Culture and Information and conducted with the help of the Directorate of Fisheries of the Public Commission for the Protection of Marine Resources, Environment and Wildlife (PCPMREW) as well as Bahrain Centre for Studies & Research (BCSR) in 2008 and 2009. Literature available on earlier research activities conducted in this field has also been used as reference for this purpose. For further information on the above-mentioned surveys and literature, please refer to the Management Plan (*Chapter 2: Management Strategies, Strategy 6: Research and Documentation*). Most baseline values are identified in the respective descriptions and tables of the properties in the conservation plan incorporated in *Chapter 3: Site Analysis and Action Plans (2009-2013)* of the management plan.

Reference material for the urban and architectural properties was defined during an architectural survey conducted in 2008 and 2009 as part of the preparation of this nomination file. Review and analysis of previous conservation projects and research in Bahrain, such as the technical reports prepared in 1980 (*Conservation, Restoration, and Preservation of Archaeological Monuments and Sites of the Pre-Islamic and Islamic Periods*), 1981 (*Conservation Techniques for the Monuments of the State of Bahrain*), 1981/82 (*Conservation, Restoration, and Preservation of Monuments and Archaeological Sites of the Islamic Period*), 1983 (*Conservation for the Monuments of the State of Bahrain*) and February 2007 (*Field Visit to Archaeological and Heritage Sites in Bahrain*), also formed the basis for the assessment of the current state of conservation of the urban properties.

The attributes which were identified to illustrate the Outstanding Universal Value were given special attention in the baseline definition. Reference photographs for future monitoring cycles have been archived in the site administration unit, and forms for future monitoring documentation and digitising of survey data are being prepared as part of the overall GIS based site documentation system. In the case of maritime properties, further information on the literature referred to and surveys conducted for a comprehensive condition assessment of the urban properties can be found in the Management Plan (*Chapter 2: Management Strategies, Strategy 6: Research and Documentation*).



Historic photograph illustrating pearl drilling techniques

7.a Image inventory

Id. No	Format	Caption	Date	Photographer	Copyright owner
1	jpg	Pearl divers during annual festival	07/2009	Ivan Rosales	photographer
2	jpg	Searching for pearls during annual festival	07/2009	Eva Battis	MiCI
3	jpg	Oysters in Hayr Bū-l-Thāmah	11/2008	Hani Badr	MiCI
4	jpg	Oysters in Hayr Bū 'Amāmah	11/2008	Hani Badr	MiCI
5	jpg	Oyster bed view in Hayr Shtayyah	11/2008	Hani Badr	MiCI
6	jpg	Oysters in Hayr Shtayyah	11/2008	Hani Badr	MiCI
7	jpg	Boat access to Bū Māhir Seashore	07/2009	Stefan Disko	MiCI
8	jpg	View of Bū Māhir Seashore	02/2008	Herb Stovel	photographer
9	jpg	Qal'at Bū Māhir - seen from eastern side	12/2009	Ghassan Chemali	MiCI
10	jpg	View from tower Qal'at Bū Māhir	02/2008	Herb Stovel	photographer
11	jpg	Badr Ghulum courtyard – view to the north	12/2009	Ghassan Chemali	MiCI
12	jpg	Badr Ghulum House treatment room	12/2009	Ghassan Chemali	MiCI
13	jpg	Ali Badr Ghulum with the photo of Ghulum	12/2009	Anwar Ali Hubail	MiCI
14	jpg	Passage underneath Al-Jalahma House <i>sabat</i>	10/2008	Yumna Tabet	MiCI
15	jpg	Detail of Al-Jalahma House window elements	10/2008	Yumna Tabet	MiCI
16	jpg	Handcarved door latch of Al-Jalahma House	10/2008	Yumna Tabet	MiCI
17	jpg	Majlis of Al-Jalahma House	10/2008	Yumna Tabet	MiCI
18	jpg	Street façade of al-Alawi House	11/2008	Anwar Ali Hubail	MiCI
19	jpg	Inside view of Al-Alawi House windtower	11/2008	Eva Battis	MiCI
20	jpg	Windtower of Al-Alawi House	12/2009	Ghassan Chemali	MiCI
21	jpg	Southern Façade of Fakhro House	01/2009	Ghassan Chemali	MiCI
22	jpg	Façade detail of Fakhro House	11/2009	Manfred Erber	MiCI
23	jpg	Murad House	11/2009	Manfred Erber	MiCI
24	jpg	Murad House door	11/2009	Anwar Ali Hubail	MiCI
25	jpg	Mr Khaled Murad in his courtyard	12/2009	Ghassan Chemali	MiCI
26	jpg	Street façade of Murad Majlis	11/2009	Manfred Erber	MiCI
27	jpg	Interior of Murad Majlis	11/2009	Manfred Erber	MiCI
28	jpg	Siyadi Shops façade at Al-Tujjar Avenue	10/2008	Yumna Tabet	MiCI
29	jpg	Siyadi Shops seen from Bu Maher Avenue	11/2009	Manfred Erber	MiCI
30	jpg	Coffeeshop scene at 'Amārat Ali Rashed Fakhro	11/2009	Manfred Erber	MiCI
31	jpg	Architectural detail of 'Amārat Ali Rashed Fakhro	11/2009	Manfred Erber	MiCI
32	jpg	Interior of 'Amārat Ali Rashed Fakhro (I)	12/2009	Anwar Ali Hubail	MiCI
33	jpg	Interior of 'Amārat Yousif A. Fakhro	11/2009	Manfred Erber	MiCI
34	jpg	'Amārat Yousif A. Fakhro ruins	12/2008	Ghassan Chemali	MiCI
35	jpg	Aerial view of Siyadi complex	07/2008	Anwar Ali Hubail	MiCI
36	jpg	View of Siyadi complex from mosque courtyard	11/2008	Anwar Ali Hubail	MiCI
37	jpg	Northern façade of Siyadi complex	04/2009	Ghassan Chemali	MiCI
38	jpg	Southern Façade of Siyadi Majlis	11/2008	Anwar Ali Hubail	MiCI
39	jpg	Interior of Siyadi Majlis	11/2009	Manfred Erber	MiCI
40	jpg	Interior of Siyadi Mosque	10/2008	Yumna Tabet	MiCI

The images of the inventory are included in the CD of the nomination dossier. With the signature under item 9 (*Signature on behalf of the State Party*), the State Party confirms the non-exclusive session of rights for all photographs provided in digital form and included in the table above. All copyright owners who are not employees of the Government of Bahrain have been consulted and have provided their consent to the cession of rights in writing.

7.b Protective designation texts

Ministerial Order No (10) of 1986 Prohibiting Trawl Fishing in Oyster Bed Areas (Summary)

The Ministerial Order No (10) of 1986 "Prohibiting Trawl Fishing in Oyster Bed Areas" prohibits trawl fishing, with boats, in oyster bed areas of depths less than 20 metres. The Order establishes the fines applicable in case of violations. The Ministerial Order No (10) of 1986 is included in the annex of the nomination dossier in Arabic language.

The Legislative Decree No (10) of 1990 with Respect to Control over Pearls and Stones of Value

The legislative decree no (10) of 1990 with Respect to Control over Pearl and Stones prohibits in article 9 any sale, offer for sale or possession of cultured pearls, defined as pearls formed in oysters through man's interference. Fines, including prison terms for up to 6 months are stipulated for violations. The legislative decree is included in the annex of the nomination dossier in official English translation.

Physical Planning Law (Legislative Decree No (2) for the year 1994) (Summary)

The Physical Planning Law authorises the Ministry of Housing (now followed by the Ministry of Municipalities and Agriculture as the responsible authority) to draw the general urban planning schemes and administrate their implementation through a Planning Directorate (now Directorate for Urban and Village Planning). Based on social, environmental, architectural and economical assessments, this directorate shall, in collaboration of consultants, prepare urban development plans for all towns and villages in Bahrain. These plans shall specify

future land use in accordance with the settlement's requirements and the community's needs. Public services areas and heritage areas to be protected will be indicated in the general plans. Any permit requested within a planned area can only be granted if it is in line with the urban development plan and approved by the urban planning authority. The Physical Planning Law is included in the annex of the nomination dossier in Arabic Language.

Resolution No (1) of 1994 Concerning Urban Planning Policies and Projects (Summary)

The Resolution No (1) of 1994 constitutes a bylaw of the Physical Planning Law. Section 1 defines the responsible bodies and administrative procedures for urban planning regulations and indicates the concerned government sectors to be involved: infrastructure (roads, electricity, and water) and public services sector (education, health, religious affairs, industry, agriculture, economy, legal affairs, and municipalities' affairs). In the subsequent portion, the resolution indicates general guidelines for development, definition of land use in designated study areas (areas in process of zoning definition) and specific strategies for development decision-making. The final section of part 2, section 3 stipulates that urban development regulations shall also consist of building regulations where land use, heights, setbacks and floor area ratios are indicated. Resolution No (1) of 1994 is included in the annex of the nomination dossier in Arabic language.

Decree Law No (11) of 1995 Concerning the Protection of Antiquities (Summary)

The legal provisions for the protection of cultural heritage, such as historic buildings and archaeological sites, are stipulated in Decree Law No. (11) under the authority of the Ministry of Information (now Ministry of Culture and Information). Antiquities are defined in Article 2 as any remains of artistic or historical significance from a former civilisation or past generations, of at least 50 years of age. As per Article 3, any remains connected to the ground, such as buildings, are defined as immovable heritage. Antiquities have to be registered with the Directorate of Land Registration at the Ministry of Justice and Islamic Affairs (now Survey and Land Registration Bureau), and the designation decree shall be published in the Official Gazette (Article 31). Article 7 stipulates the consultation of the Ministry of Culture and Information during the development of plans for areas of heritage value in towns and villages. In order to ensure that the neighbouring buildings match in architectural style,

Article 8 puts the Ministry of Culture and Information in charge of approving building and modification permits for plots near monuments. Decree Law No (11) of 1995 is included in the annex of the nomination dossier as an unofficial English translation.

Decree Law No (2) of 1995 with regard to the Protection of Wildlife (Summary)

The Decree Law No (2) of 1995 with regard to the Protection of Wildlife provides a basis for the establishment of protected areas. According to Article 5, the governmental agency responsible (now the Public Commission for the Protection of Marine Resources, Environment and Wildlife (PCPMREW)) is authorised to designate protected areas on land and in the sea with the aim of protecting the special resources of wildlife. Article 10 of the decree grants the above listed governmental authority the responsibility to designate these protected areas, regulate visitor access to these areas, prohibit hunting in protected areas, regulate trading of wildlife from these areas, and employ specialists for their management and monitoring. Decree Law No (2) of 1995 is included in the annex of the nomination dossier in Arabic language.

The Legislative Decree No (21) of 1996 in Respect with the Environment (Summary)

This legislative decree is considered the backbone of the environmental policy and mandates the environmental bodies to control all developments with potential impacts on the environment. The legislative decree provides authority to initiate projects and studies wherever negative impacts towards the environment are suspected. The decree additionally grants authority the right to regulate on all matters related to the environment, not covered under any other legal regulation. The Decree No (21) of 1996 is included in the annex of the nomination dossier as an unofficial translation in English language.

Ministerial Order No (4) of 2000 with respect to the Permission of Reclaiming Submerged Marine Lands (Summary)

The Ministerial Order No (4) of 2000 with respect to the Permission of Reclaiming Submerged Marine Lands establishes, in Article 1, that no reclamation or dredging of submerged marine lands can be undertaken without an explicit permission granted by Ministry of Municipalities and Agriculture. The decree is included in the annex of the nomination dossier in Arabic language.





Packages of nails excavated in 'Amārat Yousif A. Fakhro



Informant pointing out historic locations on Muharraq map

Decree Law No (20) of 2002 with respect to the Regulation of Fishing and Exploitation of Marine Resources (Summary)

Decree Law No (20) of 2002 with respect to the Regulation of Fishing and Exploitation of Marine Resources is considered the principle national legislation that regulates the exploitation of fisheries and other marine resources. It regulates the permission for commercial fishing activities and the tools and gears allowed or prohibited to be used for fishing operations. Further articles specify the fish sizes that may be caught and net sizes that may be used. The fishing of sea turtles, sea cows and other endangered species is strictly forbidden according to Article 19. Final regulations prohibit the release and dumping of material waste, and dangerous and toxic substances into the sea. Decree Law No (20) of 2002 is included in the annex of the nomination dossier in Arabic language.

National Environmental Strategy, approved by the Council of Ministers of the Kingdom of Bahrain on 8 October, 2006 (Edict No. 02-1902) (Summary)

The National Environmental Strategy approved by the Council of Ministers of the Kingdom of Bahrain on 8 October, 2006 (Edict No. 02-1902) addresses environmental protection at the level of enforcement for existing legislative decrees. Such measures include: updating legislation; strengthening the number and level of training of enforcement staff; improving public awareness and diligence; raising awareness among journalists and within the legal community; and fostering a business forum on sustainable development and green technology. The National Environmental Strategy is included in the annex of the nomination dossier in English language.

Decree No (8) of 2007 designating *Hayr Bū-l-Thāmah* as a marine protected area (Summary)

The Decree No (8) of 2007 designates *Hayr Bū-l-Thāmah* as a marine protected area. It further stipulates that, in consequence, drift-net fishing and trawling is no longer allowed, even in areas previously excluded by the Ministerial Order No (10) of 1986 "Prohibiting Trawl Fishing in Oyster Bed Areas" (see above); as result of their water depths of more than 20 metres. Decree No (8) of 2007 is included in the annex of the nomination file in Arabic language.

Resolution No (28) of 2009 Regarding the Specification of the Regulatory Stipulations for the Development in Different Areas of the Kingdom (Summary)

This resolution defines the zoning schemes for the proposed architectural properties as well as their primary and secondary protection areas. The relevant articles can be found in Chapter 4: Area of Linked Residence -B- Articles 17-21, which describe the height restrictions and layout regulations. Also relevant is Chapter 8 as well as Article 21 of Chapter 4, which allow for the use of special stipulations to ensure adherence to a specific area's heritage character as mentioned in Clause 4. The primary and secondary buffer zones have been entered into the shared GIS reference system of the Ministry of Municipalities and Agriculture as "special protection zone" following this provision. Chapter 6, Articles 86-89 further define the provisions for public services areas, which is the current zoning of the land component of the seashore buffer zone. Resolution No (28) of 2009 is included in the annex of the nomination dossier in Arabic language.

Bahrain's Economic Vision 2030 (Summary)

Bahrain's Economic Vision 2030 presents the comprehensive economic vision of Bahrain until the year 2030. The document outlines the future development paths for Bahrain's economy. At the heart of the Economic Vision lie the aspirations for the Bahrain economy, government and society in accordance with the guiding principles of sustainability, competitiveness and fairness. In collaboration with the legislative body, civil society and the private sector, the Bahraini government will develop detailed strategic and operational plans for making these aspirations a reality. In particular, the Economic Vision will be translated into a tangible and coordinated National Strategy across government institutions. This National Strategy is currently under preparation for its first phase (2009-2014). The Economic Vision 2030 is included in the annex of the nomination dossier in English language.

Bahrain National Planning Strategy 2030 (Summary)

The National Planning Strategy 2030 provides a framework for urban and land development and envisages the expansion and use of the Bahraini territory. It is based on 10 strategies: (i) To create one overall development plan for the country; (ii) Achieve a market economy specialized in global and regional markets; (iii) Preserve and strengthen environmental resources; (iv) Establish an interconnected and

intermodal transportation strategy; (v) Build distinct communities; (vi) Define the public waterfront; (vii) Protect the country's cultural and archaeological heritage; (viii) Meet the future military needs; (ix) Green the country; and (x) Promote a sustainable future. The original Arabic version of the document is included in the annex to this nomination dossier.

Communication regarding agreement on oyster bed coordinates (2010) (Summary)

The letter by the Secretary General of the Public Commission for the Protection of Marine Resources, Environment and Wildlife (PCPMREW) to the Undersecretary of the Ministry of Culture and Information addresses the boundaries and coordinates selected for the presentation of the nomination proposal of the testimony of the pearling economy. The Secretary General states that it is in the authority of his government body to declare marine protected areas. He further states that he is in full agreement with the coordinates and boundaries indicated in the nomination dossier and has initiated the process towards the protection of the oyster beds *Hayr Bū-I-Thāmah*, *Hayr Bū 'Amāmah* and *Hayr Shtayyah*. The letter is included in the annex of the nomination in Arabic language.

7.c Inventory of property

The Ministry of Culture and Information currently houses the general inventory of materials, which document the testimony of *Muharraq's* pearling economy. The ongoing research that is being undertaken by an interdisciplinary team of anthropologists, archeologists, historians, architects, economists, as well as specialists from other fields is increasingly expanding the Ministry's holdings. As such, the inventory of materials remains a working archive. Aside from maintaining a physical holding of data, additional steps have been taken to incorporate the bulk of these sources (property documentation, image inventories, monitoring forms and reports, anthropological reports, interview transcripts, all legal regulations and official correspondence with relation to the site project) in a Geographic Information System (GIS) database. Of central importance to these holding is the indispensable environmental and architectural survey data gathered between 1993 and 2009.

In a 2008 joint project with the Directorate of Fisheries, under the Public Commission for the Protection of Marine Resources, Environment and Wildlife Environment (PCPMREW), and the Bahrain Centre for Science and Research, the Ministry of Culture and Information conducted a thorough environmental

study of Bahrain's oyster beds. The findings of this study provided a plethora of information, which was used to update the existing environmental record as well as document the maritime boundaries of Bahrain's thriving oyster beds. The maritime (oyster beds) inventory component of our resource holdings house, in addition to our existing data, the extensive surveys that were seen from this joint project.

The maritime inventory is further complimented by an equally important architectural component. The extensive architectural surveys and reports of greater *Muharraq* form the pith of these holdings and facilitated the comprehensive evaluation effort that was undertaken, by the Ministry of Culture and Information, in 2008. Of importance to these documentation undertakings was the incorporation of each property to a Computer-Aided Design (CAD) with particular reference to ground plans, elevations and sections (compare the annex to the nomination dossier).

In light of these comprehensive efforts, the combined data set holdings reflect, for each property, architectural survey drawings and plans, the corresponding protective heritage designation decrees, and extensive image holdings (including a special section of reference photographs for monitoring procedures). Anthropological and/or historical information, in addition to publications related to the various properties, enriches these holdings. The archaeological finds (pottery, jewellery and other priceless artifacts dating back to the height of the pearling era) are cataloged and stored, and subsequently preserved in the Ministry of Culture and Information's archive for archaeological finds.

Expansive efforts are being made by the Ministry of Culture and Information to convert and incorporate all data formats to a developing electronic database, which will be accessible to the public, online, via a GIS system by the end of 2010.

7.d Address of inventory records

The inventory records of the proposed site 'Pearling, testimony of an inland economy' are currently held at the:

Ministry of Culture and Information,
Sector for Culture and National Heritage,
Site Administration Unit,
Al-Fateh Avenue (Bahrain National Museum),
Manama, Kingdom of Bahrain

Once the Visitor and Experience Centre is established in central Muharraq, it will incorporate a public archive and library dedicated to pearling resources. The Site Administration Unit inventory will then be moved to this archive while a copy of the records shall remain at the Sector for Culture and National Heritage.

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Architectural detail of 'Amārat Ali Rashed Fakhro (I)

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7.f Transliteration of Arabic terms

The Arabic words used throughout this text have been transliterated into English using the system set forth by the *International Journal for Middle East Studies*. The use of this system has, however, been adapted to account for Bahraini colloquial usage. A complete phonetic interpretation of current Bahraini usage has not been attempted, although some description has been made of Bahraini colloquial particularities (writing and pronunciation).

ء ' َ	ط t
ب b	ظ z
ت t	ع ' َ
ث th	غ gh
ج j	ف f
ح ḥ	ق q
خ kh	ك k
د d	ل l
ذ dh	م m
ر r	ن n
ز z	ه h
س s	و w, ū when used as a long vowel
ش sh	ي y, ī when used as a long vowel
ص ṣ	ى ā
ض ḍ	ة ah

Notes

1. (ك) may be pronounced as *ch* and (ق) as *j*
 2. (ق) is also often pronounced as *g* or *gh*
 3. (ة) is written throughout the text as *-ah* and (ية)-*iyyah*
 4. The definite article (ال) is always *al-*, even with sun letters
 5. Al without a hyphen has been used to denote "family of", eg. Al Khalifa
 6. The names of families have been left to respect their own spelling
 7. Terms and locations that have familiar English equivalents have not been transliterated and are used as such
- All local names of areas that are not widely known have been fully transliterated

7.g Glossary of Arabic Terms

'Amārah, pl. 'Amārāt - A venue of various economic activities such as shipbuilding/trading, also a store for fishing or specialised food materials

'Amil - Work

'Arīsh, pl. 'Irsh - A structure built from date palm branches

Bāb, pl. 'Abwāb - Door(s)

Bāb Bū Farkhah - The term used by the *Murad* family to describe the door at their main house entrance (door with a smaller door framed within it)

Bādḡir, pl. Buwwādḡir - Wind tower also an opening in a wall to channel air

Baḡhlah - A large deep-sea cargo-carrying dhow

Bakhhār - A smaller storeroom inside the *'amārah*

Banḡlah, pl. Banāḡil - Room(s) decorated with either elaborate panels or arched niches and slightly elevated from other rooms on the property

Banūsh - A small sized boat used by many *ṭawāwish*

Baqqārah, pl. Baqqāqīr - Double-ended dhow with a vertical stern-post and a raking bow

Barāstī, pl. Barstīyah - Traditional Bahraini house(s) constructed from palm-frond

Barwah - A letter stating that the diver was free to work for another captain

Battīl, pl. Batātīl - Double ended dhow with a raking bow that has a vertical stern post and a fiddle head shape.

Bayt, pl. Buyūt - House(s)

Al-Bid'ah - The historic name of Doha, Qatar

Bīṣ - Keel (a central fore-and-aft structure located at the bottom of a hull, extending from the stem to the sternpost)

Buḷḷ - Quay (a traditional jetty)

Būm, pl. 'Abwām - Large deep-sea cargo-carrying vessel (double-ended, long raking prow and yoke steering)

Chaū, pl. al-'Achwā - The unit(s) used by the pearl merchants to calculate a pearls worth



Historic photograph of pearling songs performed on the seashore during a festival

- Dahliz* - L shaped entrance to a house that is used for enhanced privacy
- Dakkah, pl. Dakkāt* - Built in sitting benches to an outer wall
- Dallah, pl. Dlāl* - Copper coffee pot(s)
- Dānah, pl. Dānāt* - Particularly large and beautiful pearl(s)
- Dār, pl. Dūr* - A place where men gather to spend their time dancing and singing
- Daraj, pl. 'Adrāj* - Staircase(s)
- Darbil* - Telescope
- Dā'ūs* - Narrow dead-end lane
- Diyīn, pl. Diyā'in* - Basket used during the dives where the oysters were placed
- Fajlūl* - Jellyfish also referred to as *mandil al-baḥr*
- Fanāyil* - A water jug with metal cups
- Farij, pl. Fūrjān* - Residential cluster or neighbourhood
- Farij al-Bannā'in* - The Neighbourhood of builders
- Fārs* - One of the present day provinces of Iran located in the south with its center being Shiraz
- Farsh, pl. Furūsh*—Coral stone slab(s)
- Faṭām, pl. 'Aṭamah* - A pincher used by divers to compress the nostrils
- Fils* - Mast-step of a dhow
- Fiqh* - An Islamic scholar
- Funṭās* - Wooden water tank carried on board a pearling dhow
- Ghīṣ, pl. Ghāṣah* - Pearl diver(s)
- Ghurfaḥ, pl. Ghuraf* - An elaborately decorated room built on a roof area that is typified by a *liwān* and roof terrace
- Al-Ghūṣ* - The Diving
- Ghūṣ al-Barīd* - The Cold Dive
- Ghūṣ al-Kabīr* - The Great Dive
- Ghūrī* - Kettles
- Gidū* - Traditional clay water pipes with a bamboo inhaler
- Ḥabl, pl. Ḥibāl* - Rope(s)
- Ḥabl al-Zayban (Ḥibāl al-Zayban)* - One of the ropes used by pearl divers to descend and ascend from the seafloor
- Ḥaḍrah pl. Ḥuḍḍūr* - Fish trap(s) built in the shallow intertidal areas of the coast
- Ḥaḍramawt* - A historical area in the southern Arabian Peninsula along the Gulf of Aden in the Arabian Sea
- Ḥafiz* - A reception room
- Ḥajar* - Weight that was attached to the diver's rope used to descend to the oyster beds
- Halwah* - Traditional sweets usually eaten with tea
- Ḥammām, pl. Ḥamāmāt* - Bathroom(s)
- Haram* - Prayer room
- Al-Ḥasā* - Oasis region in present day eastern Saudi Arabia
- Ḥaṣāh* - A weight attached to a divers rope that assist in the descent to the oyster beds
- Ḥaṣīr* - Palm fiber carpet
- Ḥayr, pl. Ḥayrāt* - Oyster bank(s)
- Hibb* - Traditional clay water container
- Ḥujrah; pl. Ḥujar* - Plain masonry room
- Ḥūsh; pl. 'Aḥwāsh* - Courtyard
- Ḥūṭah* - Animal barn
- Al-Hūwalah* - A groups of Arabs who migrated from the Arabian Peninsula to the Persian side of the Gulf
- 'Idā, pl. 'Iyadī* - A rope that was tied around the waist of a diver and also connected to his oyster basket
- 'Istikānah* - Traditional tea glass
- Jālbūt* - A pearling dhow of small to medium size (transom stern and vertical prow)

- Jaww* - A village on the south eastern coast of Bahrain
- Jirbah* - Bag-pipe musical instrument
- Khabaṭah*, pl. *Khabūṭ* - Leather guards used by divers (on their fingers and toes) to protect from the sharp coral edges when detaching oysters
- Khammās* - Refers to an instance when no advances were made to the pearling crew and the practice was based on shared ownership of a boat (consortium of divers and haulers), one of whom would act as the *nūkhidhah* and kept the accounts
- Khanfarūsh* - A traditional sweet (small crunchy like pancakes)
- Khanjiyyah* - A mezzanine room for storage
- Kharjiyyah* - A mid-season loan taken, if necessary, to supplement the *salaf*
- Khirs* - A seawater pool in the shape of a canal
- Khākah* - Tobacco leaves broken into small pieces
- Khānjiyyah* - A synonymous reference to *Ghūṣ al-Barīd*
- Kishtīl* - Windtower
- Kubār*, pl. *'lkbarah* - A structure with solid walls and a roof made of palm branches
- Kūrārah* - Traditional gold-weaving embroidery
- Liwān*, pl. *Lawāwīn* - Colonnade
- Lū'lū'*, pl. *La'ālī* - Pearl(s)
- Maḍyīf*, pl. *Maḍāyīf* - A guesthouse or quarter in a prominent household
- Madyan* (or *mudayyanah*) - Implies that pearls from the season's catch could be sold to anyone
- Maḥḥārah*, pl. *Maḥḥār* - Pearl oyster (*Pinctada margaritifera*)
- Mahram* - A close male relative of a women that acts as her escort (Islamic Jurisprudence)
- Majlis*; pl. *Majālis* - A reception space for guests and businessmen
- Majāz*, pl. *Majāzāt* - Foyer connecting public and private parts of the house while maintaining the privacy of the living spaces
- Makhzan*, pl. *Makhāzin* - Storage room in a house for food and personal belongings
- Malqif al-Hawā'* - A wind tower and also an opening in wall to channel air
- Manqalah* - Movable coffee container with charcoal
- Maq'ad*, pl. *Maqā'id* - Sitting place(s) inside the *ḥarim* used for women social gatherings
- Mrād* - A genre of songs performed by women both when a pearling dhow was pushed out to sea and upon its return, and also at a ceremony for a newly constructed dhow
- Masbaḥ*, pl. *Masābih* - A shower section of a house
- Mashrabiyyah* - Decorated window screen used for privacy
- Maṭbakh*, pl. *Maṭābikh* - Kitchen(s)
- Māyat Hilāl* - The spring tides of the full or new moon
- Mbasah* - Date Syrup floors
- Miqbas*, pl. *Maqābis* - Incense burner(s)
- Mirḥāḍ*, pl. *Marāḥiḍ* - A water closet detached from the house structure
- Mithqāl* - Unit measurement used to weigh the pearls
- Mjaddimī*, pl. *Mjādmah* - Denotes the second in command after the *nūkhidhah*.
- Mrash* - Rose water container
- Msaqqum* - Someone who advances loans to the *nūwākhdhah* that were used to maintain the dhows and to subsequently advance loans to the crew
- Mufliqah*, pl. *Mafāliq* - Special curved knife used to open the pearl oysters
- Mujannah* - A winter pearling season in shallow waters along the coast (the season was untaxed)
- Mukhtaṣar* - An office room/private *majlis* extension
- Muqahwi* - A person who serves coffee
- Nahhām* - A individual onboard the pearling dhow that would encourage the crew by singing

Najwah, pl. Najwāt - Oyster beds formed on top of submarine mounds in deep water

Nakhilū - A town in Iran that is located in the state/region of Hormozgan

Nūkhidhah, pl. Nūwākhdhah - Dhow captain(s)

Qafshah - Caddy scoop

Qahwah, pl. Qahāwī - Coffee house(s)

Qāfūd - (pronounced *ghāfūd*) describes the high ceilings of a house

Qallāf, pl. Qalālīf - (pronounced *Gallāf, pl. Galālīf*) A person who carried out ship building and repair work in the dhow building industry

Qal'at, pl. Qilā' - Fortress

Qal'at Arād - Arad Fort

Qal'at al-Bahrain - Bahrain Fort

Qal'at Bū Māhir - Bu Maher Fort

Al-Qalfāt - (pronounced *al-Galfāt*) the celebrations that were held on the seashore in honour of a newly built dhow

Al-Qirāḥ - The costal seabed that is visible during low tide

Al-Quffāl - (pronounced *guffāl*) the closing of the pearling season marked by the return of the pearling dhows.

Qumāshah, pl. Qumāsh - Literally means canvas but refers to the red piece of cloth used to carry and preserve the pearls

Al-Raddah - A pearling season that commences shortly after the conclusion of *Ghūṣ al-Kabīr*.

Rahash - A traditional sweet made from a sesame seed paste and is usually sweetened with *dibs* (date syrup)

Rajyān - The act of heaving a boat to a floating position in the water

Rakbah - Refers to the beginning of the pearling season

Rās al-Khaymah - Historically known as *Julfār*, now one of the emirates of the United Arab Emirates (UAE), in the southwest of the Arab Gulf

Riẓīf - Puller-assistant who helped the *siyūb* in their work

Rūshinah, pl. Rawāshin - Recessed panel used as a cupboard and to showcase household items

Ṣabāṭ - Bridging element often over a road that connects two properties

Salaf - The second loan taken at the start of the dive and used to maintain the families of the worker on board the pearling crews during their absence

Sālafīyyah - Loaning system that financed the pearling crews

Sambūk, pl. Sanabik - Pearling dhow(s) with a decorated transom stern and curving bow, and a short keel to lend it extra maneuverability

Ṣangalī - A song of joy and happiness

Ṣaṭaḥ, pl. Ṣuṭūḥ - A fenced roof space or private terrace

Shamshūl, pl. Shamāshīl - Small loincloth used by the divers to clothes themselves during the dives

Shamāl - Strong seasonal northerly wind

Shurfah, pl. Shurfāt - Balcony

Shūwī'ī, pl. Shawā'ī - Small to medium-sized transom-sterned dhow(s)

Sīb, pl. Siyūb - Those in charge of pulling/hauling pearl divers from the depths of the sea

Sīf - Coast (less frequently also called *al-yāl*)

Ṣull - Shark or sardine oil used to protect the hull of a dhow

Sīrāf - Located on the north shore of Persia in what is now the province of Bushehr

Sūq, pl. 'Aswāq - Market(s)

Tabbāb - A multipurpose helper, usually a young apprentice, on board the dhows

Ṭabl - A large cylindrical double-headed drum with carrying sling

Tabrah, pl. Tabārī - Several oysters clinging together rather than being attached to coral or other hard substrates

Ṭār - Frame drum

Ṭāsah, pl. Ṭūs - Perforated sieve(s) used to sort pearls by size

Ṭawwāsh, pl. Ṭawwāsh - Pearl merchant(s)

Ṭawwāsh al-Bahr - Pearl merchant of the sea

Tjūrr - A safe

Tājir al-Lū'lū', pl. Tijār al-Lū'lū' - Pearl trader(s)

Tisqām - Elaborate loaning system used to finance the crews during the pearling seasons

'Urf - Customary law

'Ushār - A celebration in honour of launching of a new boat into the water

'Ustādh - A senior carpenter in the shipbuilding industry

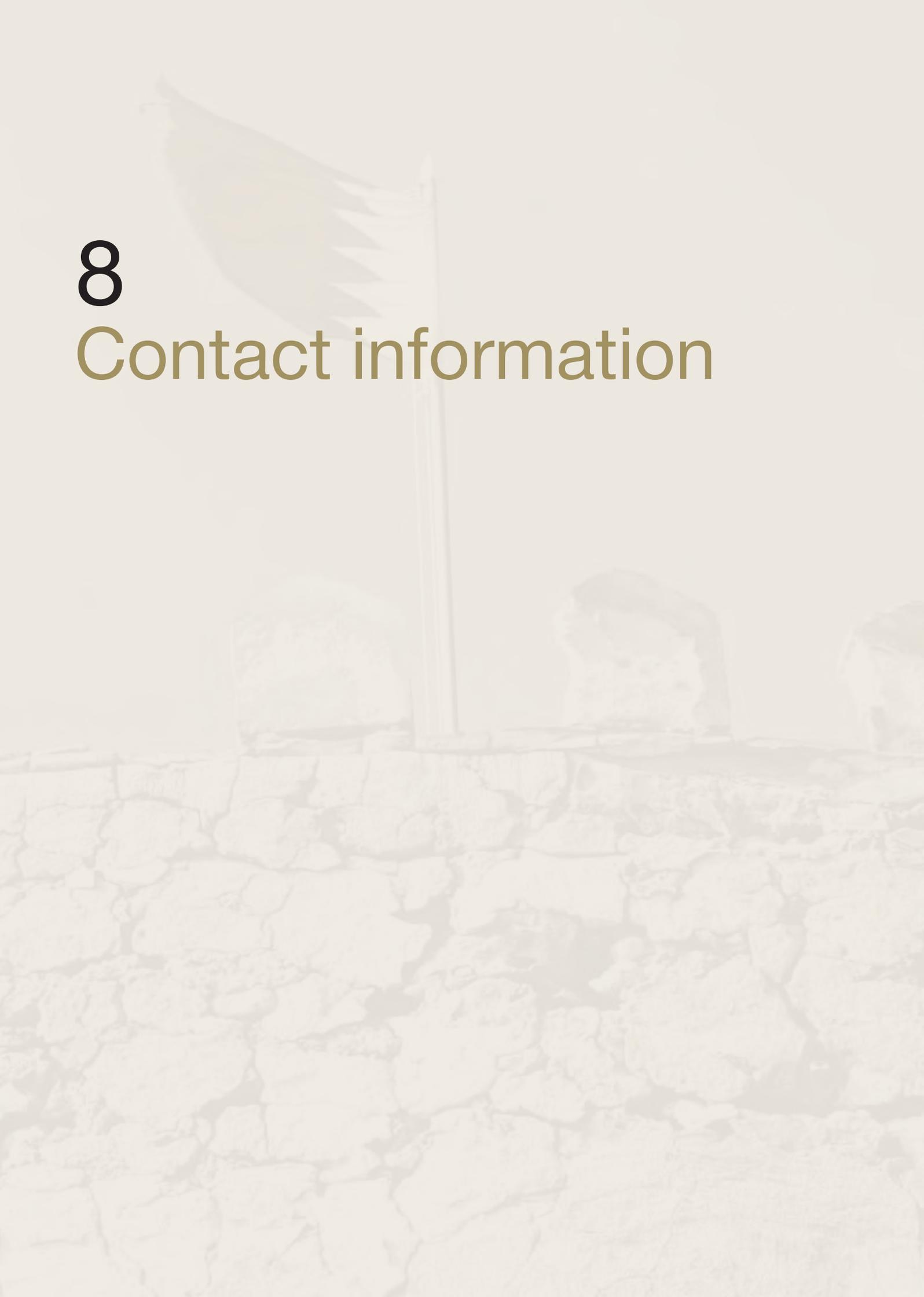
Wārish, pl. Wirsh - Parapet(s)

Waqf, pl. 'Awqāf - An Islamic religious endowment often referring to a building or plot of land that is used for religious or charitable purposes

Zarnūk - Narrow, winding pedestrian lanes

8

Contact information



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Wooden balustrade detail from Siyadi House



Fanlight detail in Fakhro House.

8.b Official local institution

The coordinating institution for the preparation of this nomination dossier is the Ministry of Culture and Information, Sector for Culture and National Heritage, Site Administration Unit 'Pearling, testimony of an island economy'. This institution shall be the contact for UNESCO on all matters related to the proposed properties and will coordinate with and relay information to other concerned bodies as well as the Steering Committee of the testimony of the pearling economy, as required. The official address of the institution is:

Ministry of Culture and Information
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Pearling, testimony of an island economy
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8.c Other local institutions

Several other local institutions are responsible for administrating parts of the proposed properties or participate as partners in the implementation of the management system. The institutions and the areas of their involvement are listed below:

Public Commission for the Protection of Marine Resources, Environment and Wildlife (PCPMREW),
General Directorate for Environment and Wildlife,
P.O. Box 20071,
Manama, Kingdom of Bahrain
(responsible for the marine protected areas and administrative authority for the oyster beds)

Ministry of Municipalities and Agriculture Affairs,
Muharraq Municipality,
P.O. Box 53,
Manama, Kingdom of Bahrain
(responsible of granting demolition and building permits in the primary and secondary protection zones)

Ministry of Municipalities and Agriculture Affairs,
Directorate for Urban and Village Planning,
P.O. Box 53,
Manama, Kingdom of Bahrain
(responsible zoning development and preparation of historic urban district zoning scheme (under development))

Ministry of Works,
Directorate for Roads Planning and Design,
P.O. Box 5,
Manama, Kingdom of Bahrain
(responsible for all public space works and traffic regulations)

Ministry of Interior,
National Coast Guard,
Sh. Khalifa al-Kabeer Highway
P.O. Box 13
Manama, Kingdom of Bahrain
(responsible for administrating the Coast Guard Base near *Bū Māhir* Interpretation Centre, for patrolling the seashore property and the marine properties)

Ministry of Justice and Islamic Affairs
Sunni Awqaf Directorate,
P.O. Box 450,
Manama, Kingdom of Bahrain
(responsible for the administration of *Siyadi* Mosque as well as other mosques in the primary and secondary protection zones)

Ministry of Education,
P.O. Box 43,
Manama, Kingdom of Bahrain
(responsible for the implementation of the education programme and for the administration of schools buildings in the secondary protection zone)

Ministry of Industry and Commerce
Directorate of Craft and Small Industries Development
P.O. Box 5479,
Diplomatic Area,
Manama, Kingdom of Bahrain
(responsible for trade regulations and commercial permissions, partners in promoting pearl collection and trade)

Electricity and Water Authority
P.O. Box 2,
Diplomatic Area,
Manama, Kingdom of Bahrain
(responsible for upgrading of water and electricity infrastructure of properties as well as primary and secondary protection zones)

National Oil and Gas Authority (NOGA),
P.O. Box 5831,
Diplomatic Area,
Manama, Kingdom of Bahrain
(responsible for oil exploration in the marine properties and potential extraction in the marine buffer zone)





Upper floor room in Siyadi Majlis, with 'Transitional Period' decoration



Historic photograph of model boat builder in the 1960s



Bahrain Petroleum Company (BAPCO)
P.O. Box 25555,
Awali, Kingdom of Bahrain
(partner in the administration of oil exploration in
the marine properties and potential extraction in the
marine buffer zone)

Economic Development Board
P.O. Box 11299,
Seef Area,
Manama, Kingdom of Bahrain
(partner in implementation and evaluation of
management aspects related to tourism and national
economic growth)

Bahrain Centre for Studies and Research
P.O. Box 496,
Manama, Kingdom of Bahrain
(Partner in further research and documentation as well
as implementation of the monitoring system)

The distribution of the World Heritage Newsletter to these institutions is a kind offer. Since the email, fax and phone contacts of the individual contact persons change, the Site Administration Unit will gladly distribute the newsletter among all members of the Steering Committee, additional partners as well as property owners. The email address of the Site Administration Unit is: pearling@info.gov.bh.

8.d Official web address

The official web address of the Ministry of Culture and Information is: www.info.gov.bh.

The official web address of 'Pearling, testimony of an island economy' is: www.pearling.com (available from 06/2010). This webpage is administered by the Site Administration Unit web manager (pearling@info.gov.bh (from 06/2010 admin@pearling.com))

9 Signature



**9.a Signature on behalf of
the State Party**

Signature of
H. E. the Minister of Culture and Information,
(Mai bint Mohamed Al Khalifa)





Historic streetscape in Muharraq

