

Kingdom of Bahrain
Culture and National Heritage

QAL'AT AL-BAHRAIN:
THE ANCIENT HARBOUR AND CAPITAL
OF DILMUN

MODIFICATION TO THE BOUNDARIES

REQUEST FOR MODIFICATION OF CORE AND BUFFER ZONE

January 2008

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1 Introduction

During its 29th Session in Durban, South Africa in 2005, the World Heritage Committee inscribed Qal'at al-Bahrain Archaeological Site unto the World Heritage List. The site was inscribed according to the cultural criteria (ii), (iii) and (iv) with the following justification:

“Criterion (ii): Being an important port city, where people and traditions from different parts of the then known world met, lived and practised their commercial activities, makes the place a real meeting point of cultures – all reflected in its architecture and development. Being in addition, invaded and occupied for long periods, by most of the great powers and empires, leaved their cultural traces in different strata of the tell.

Criterion (iii): The site was the capital of one of the most important ancient civilizations of the region – the Dilmun civilization. As such this site is the best representative of its culture.

Criterion (iv): The palaces of Dilmun are unique examples of public architecture of this culture, which had an impact on architecture in general in the region. The different fortifications are the best examples of defence works from the 3rd century BC to the 16th century AD, all on one site. The protected palm groves surrounding the site are an illustration of the typical landscape and agriculture of the region, since the 3rd century BC.” (WHC-29-COM 8B.26)

The inscription itself was preceded by a somewhat lengthy discussion on the quality of the management tools in place and potential threats to the setting of the site caused by long-term reclamation plans. The World Heritage Committee in recognition of the incompleteness of the management system especially with regard to the protection of setting and sea access added two requests to its decision for inscription. These are reflected in the same decision:

“The World Heritage Committee (...) requests the State Party of Bahrain to submit by 1st February 2006 complete management and conservation plans for the property;

Also requests the State Party to refrain from approving any land reclamation or construction in the sea anywhere in front of the site and that the new construction on existing reclaimed land should be checked as to protect the visual integrity of the site and to maintain the principal sight lines of the area nominated;” (WHC-29-COM 8B.26)

It turned out only few months later, that the concerns of the Committee were very relevant, as plans to reclaim an artificial island of 600 hectares at 500m distance of the shore of Qal'at al-Bahrain archaeological site were made known in the Kingdom of Bahrain. The project, “North Star”, accompanied by two further planned projects of a fishing harbour and a reclaimed highway led to intense discussions and considerations on improved tools for the protection of the sea in front of Qal'at al-Bahrain. An UNESCO World Heritage Centre mission (February 2006) and an UNESCO and ICOMOS mission (June 2006) took place and several national workshops, with participants from various governmental agencies, were dedicated to this particular challenge.

The outcome of these intense discussions – a visual corridor of 7 kilometre distance and 1.8 kilometre width in front of Qal'at al-Bahrain was presented to the World Heritage Committee at its 30th Session in Vilnius, Lithuania, as an extended protection zone. The Committee acknowledged the established new measures, with the following words:

“Welcomes the proposal to delineate a visual corridor, in which any land reclamation in the sea in front of the property would be prohibited in order to preserve its visual integrity, and which has been developed by the State Party in consultation with the World Heritage Centre and ICOMOS during the mission of June 2006, which identified eight defining geographic coordinates.

Supports the possible replacement of the foreseen causeway by a bridge and invites the State Party to consult the World Heritage Centre and ICOMOS on the design of this future project.” (WHC-30-COM 7B.49)

During the same session, the Kingdom of Bahrain requested a name change for the site in order to better illustrate its important relation to the sea and its particular values as a capital and port. The name was accordingly changed from “Qal'at al-Bahrain Archaeological Site” to “Qal'at al-Bahrain – the ancient harbour and capital of Dilmun”.

With the acceptance of the new name and the recognition of the proposed visual corridor, the World Heritage Committee requested that the sea elements of the site, that is an ancient light tower and a sea channel transgressing a coral reef shall, as a reflection of their crucial importance, be included in the core zone of the property. In addition the Committee requested to formalize the status of the visual corridor by designating it as an extended buffer zone of the World Heritage Site. The Committee invited the State Party in the 30th session in Vilnius, Lithuania:

“(…) to submit a proposal for a modification of the boundaries of the inscribed property according to the procedures indicated in paragraphs 163 to 165 of the Operational Guidelines, for revising the core zone to include the ancient channel and the sea tower, and for revising the buffer zone to include the visual corridor as identified in point 5 above.” (WHC-30-COM 7B.49)

The State Party was not able to submit the extension request within six months following the Committee session in order to meet the January 31st 2007 deadline, since further surveys were required to precisely identify the course of the ancient access channel. This led to another consideration of the extension during the 31st session of the World Heritage Committee, during which the Committee requested submission of the relevant documentation by latest January 31st 2008:

“Invites the State Party, as mentioned in document 30 COM 7B.49, to submit, before 1 February 2008, a proposal for a modification of the boundaries of the inscribed property according to the procedures indicated in paragraphs 163 to 165 of the Operational Guidelines, for revising the buffer zone to include the visual corridor, for examination by the Committee at its 33rd session in 2009.” (WHC-31-COM 7B.60)

The document at hand responds to this request although surveys of the property extensions have not been completed. Habitat surveys allowed to clearly delineate the outer course of the channel but traces are less evident in the harbour basin. Due to unavailability of underwater archaeological teams, the archaeological surveys were not yet completed. It might therefore be necessary to further enlarge the core zone once the precise extension of the later part of the channel and the harbour basin has been identified. As long as this identification cannot be founded on empirical data, the State Party prefers to propose two separate core zones and protect the presumed harbour area as part of the buffer zone.

2. Identification of the property

The following data corresponds to the details given in the initial nomination dossier submitted in January 2004 under the title "Qal'at al-Bahrain Archaeological Site". The name of the property was since changed in 2006 to "Qal'at al-Bahrain – the ancient harbour and capital of Dilmun".

2.1 State Party

Kingdom of Bahrain

2.2 State, Province or Region

Northern Municipal District

2.3 Name of property

Qal'at al-Bahrain – the ancient harbour and capital of Dilmun

2.4 Geographical coordinates to the nearest second

Furthest extension of core and buffer zones: (in geographic coordinates)

| | Core zone 1 (initial property) | Core zone 2 (extension) | Buffer zone (extended) |
|-------|--------------------------------|-------------------------|------------------------|
| North | 26°14'04 N | 26°14'55 N | 26°17'53 N |
| South | 26°13'53 N | 26°14'23 N | 26°13'34 N |
| West | 50°31'06 E | 50°30'54 E | 50°30'49 E |
| East | 50°31'28 E | 50°31'24 E | 50°31'55 E |

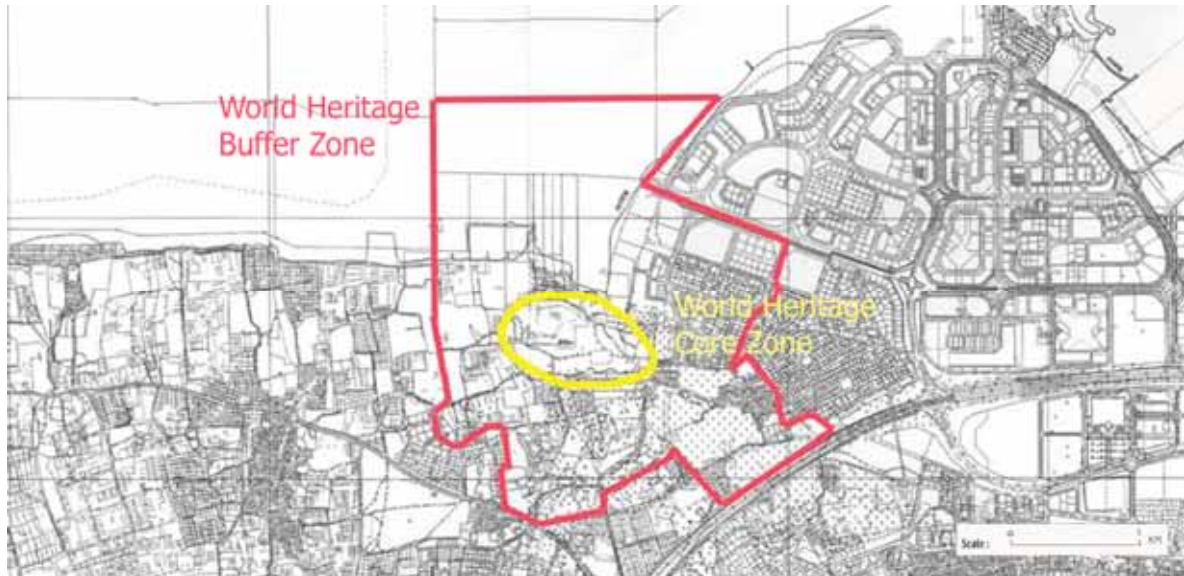
2.5 Maps and plans, showing the boundaries of the nominated property and the buffer zone

List of maps in annex:

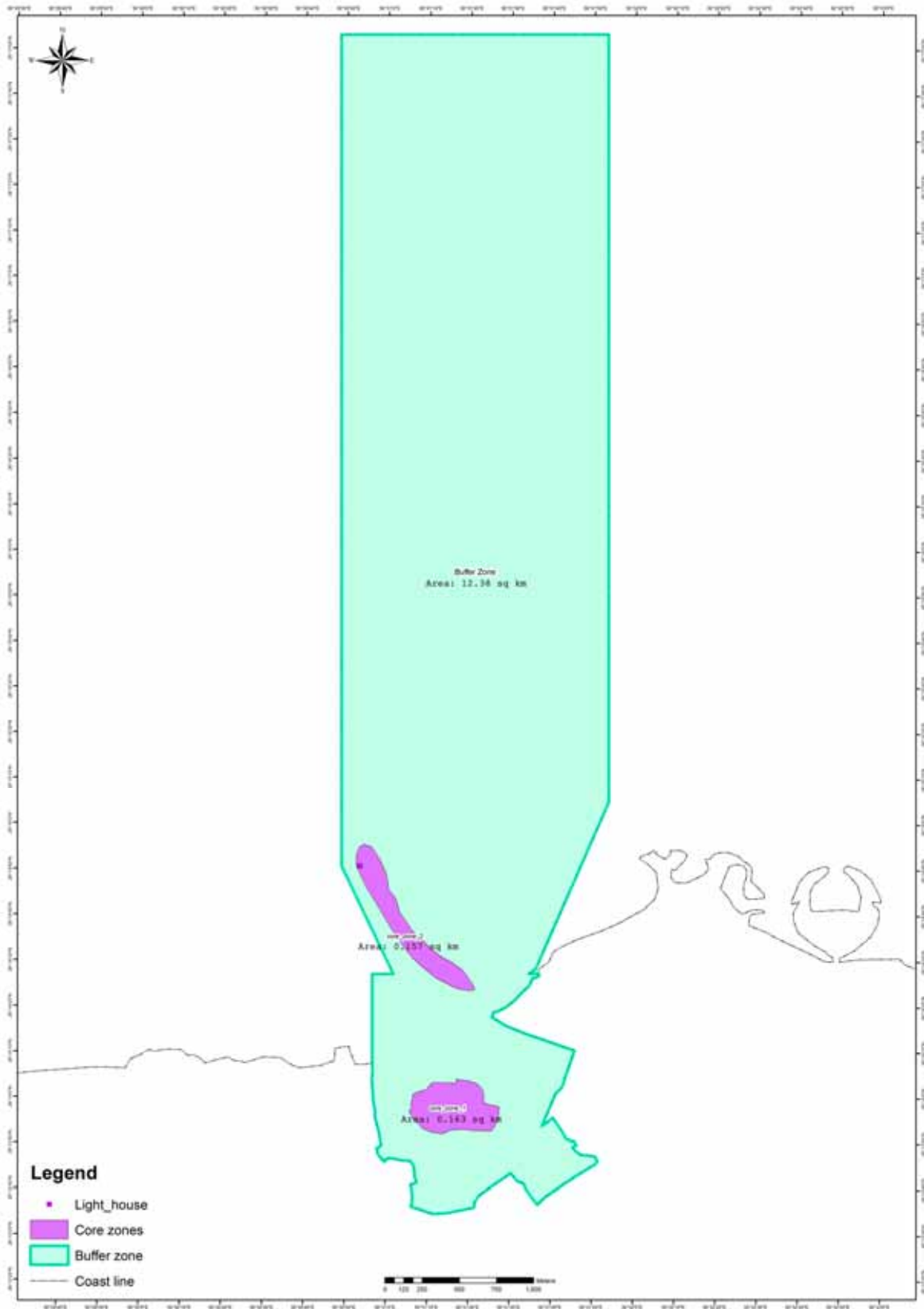
- 2.5.A Boundaries of core and buffer zones in property nomination dossier of 2004
- 2.5.B Extension of core and buffer zones according to geographical coordinates
- 2.5 C Area of the nominated property
- 2.5.D Aerial photograph with localisation of core and buffer zones
- 2.5.E Bathymetrical contours in extended buffer zone (superimposed on aerial photograph)
- 2.5.F Marine habitat survey in extended buffer zone

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

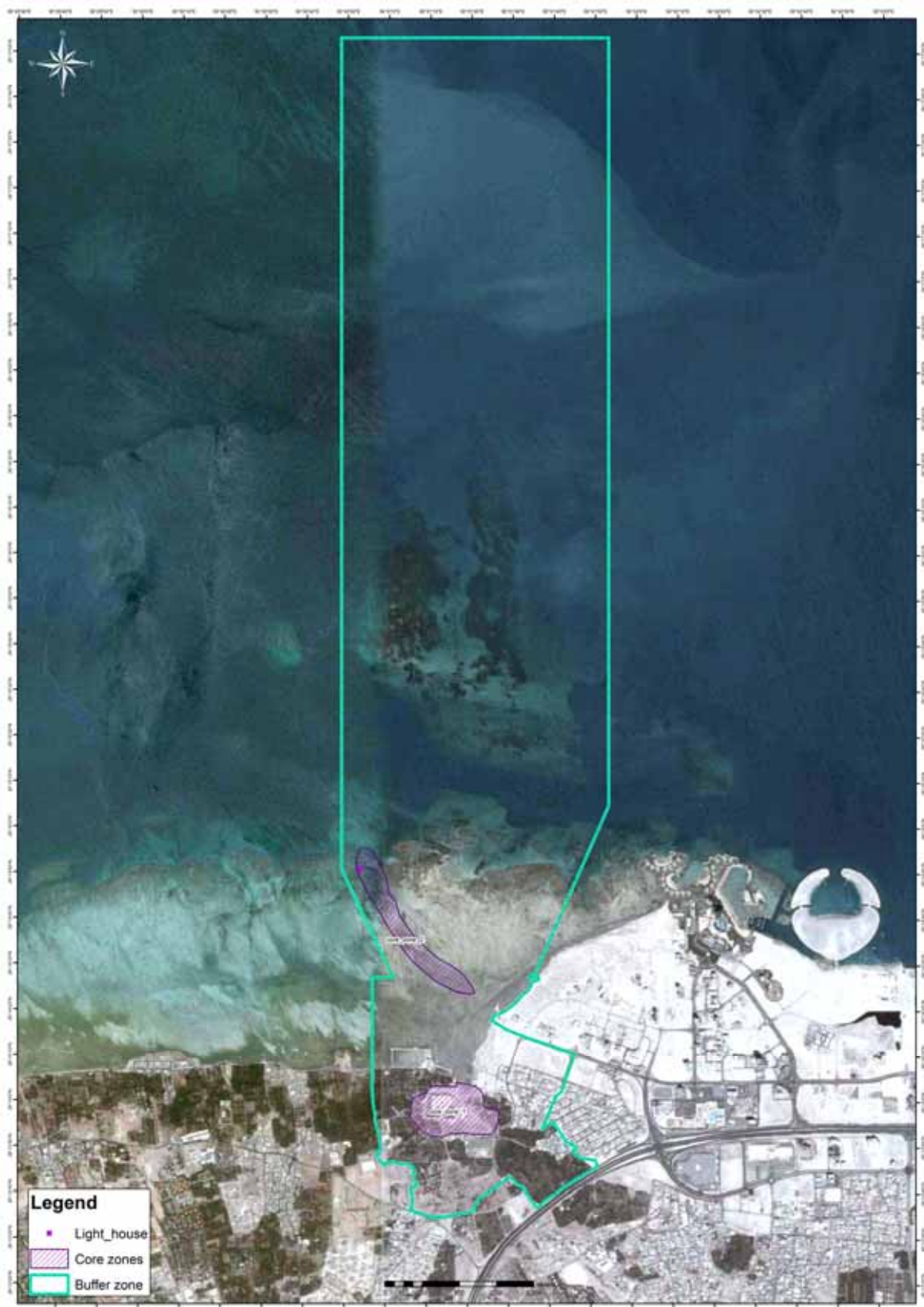
The core zone of the initial nomination comprises 0.163 square kilometres or 16.3 hectares. The proposed second buffer zone covers an area of 0.157 square kilometres or 15.7 hectares. The proposed extended buffer zone extends to an area of 12.38 square kilometres or 1238 hectares. When compared with the buffer zone presented in the initial nomination dossier in 2004 with an area of 185 hectares, the proposed buffer zone is now more than 6 times larger.



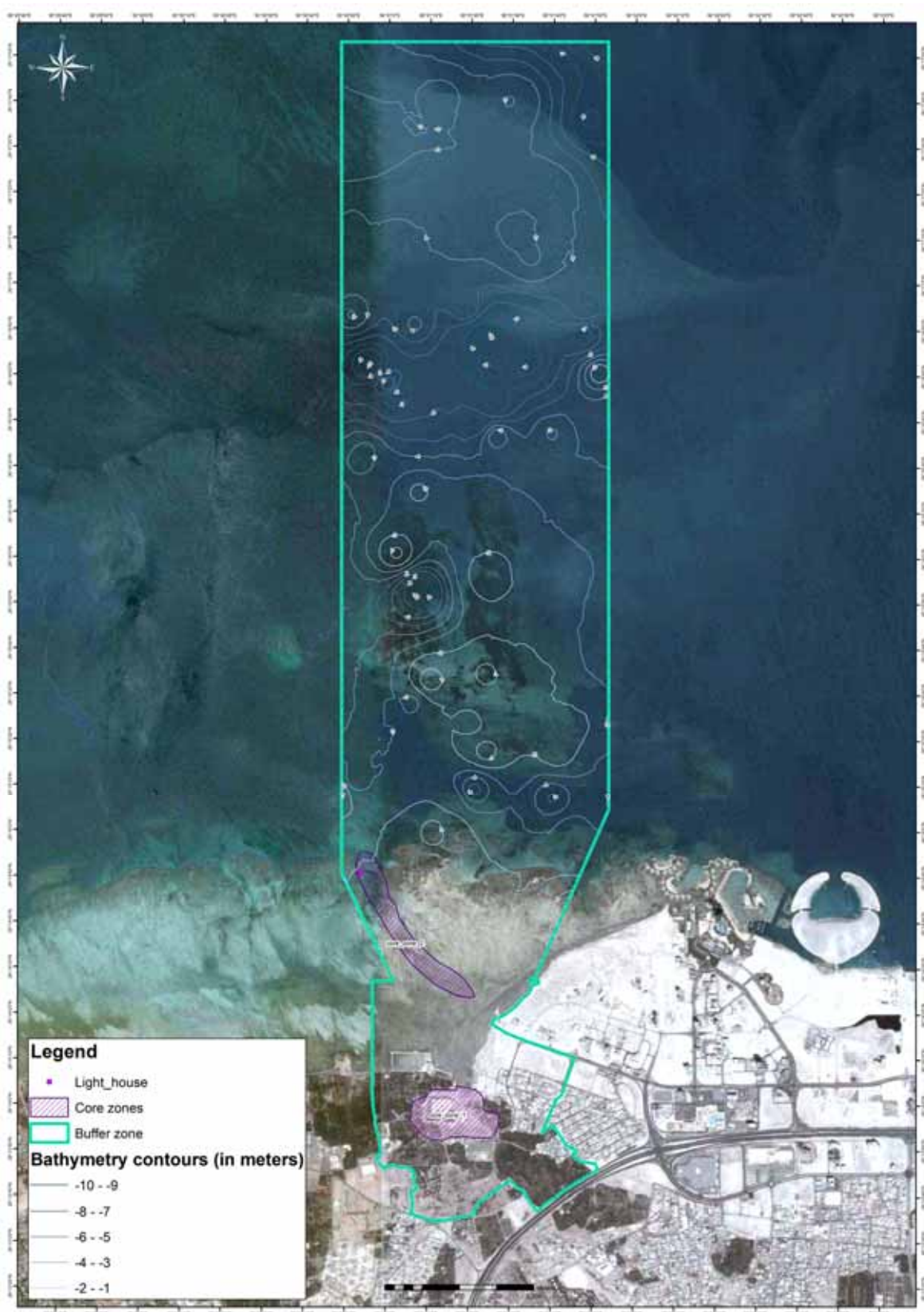
map 1: 2.5.A Boundaries of core and buffer zones in property nomination dossier of 2004



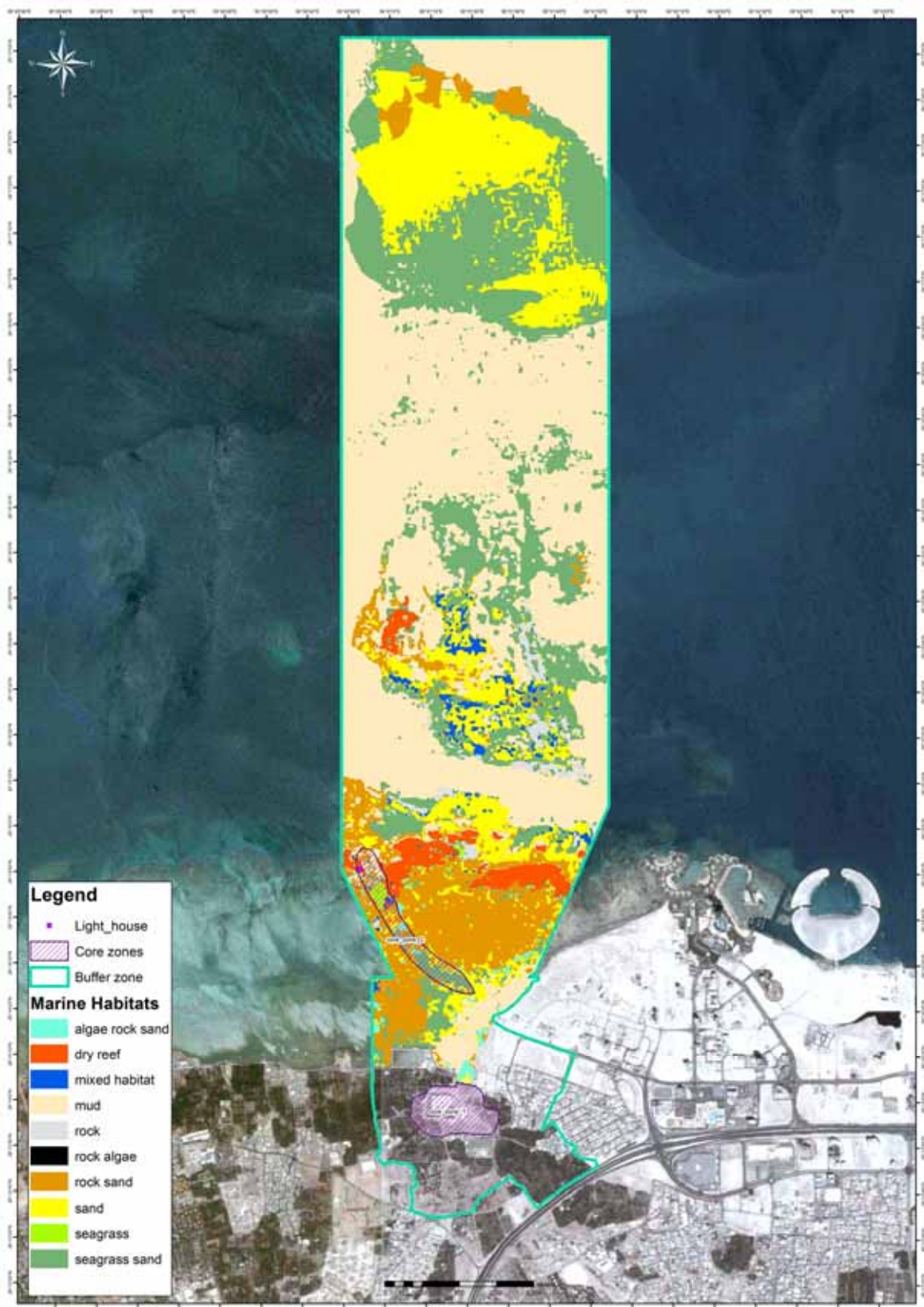
map 3: 2.5.C Area of the nominated property



map 4: 2.5.D Aerial photograph with localization of core and buffer zones



map 5: 2.5.E Bathymetrical contours in extended buffer zone (superimposed on aerial photograph)



map 6: Marine habitat survey in extended buffer zone

3. Description of property extension

During the initial nomination and inscription phase (2004 – 2005) the documents submitted focused on the universal qualities of the archaeological site that means seven subsequent settlements which are documented in an archaeological stratigraphy which includes more than 4000 years of building activity from 2300 BC up to the 16th century AD. The main focus of description was the archaeological tell and the fortress built on part of the settlements.

Only when discussing the threat of envisaged land reclamations in the sea in front of the property which became known in late 2005, it became obvious that the archaeological tell and its many subsequent settlements can only be fully comprehended by future generations if we also protect its relation to the sea and the main trade routes that brought ships to anchor at and trade with the ancient capital of Dilmun.

3.1 Description of property extension

The proposed extension of the site, indicated as a second core zone, brings forward two main elements. These are a sea channel which cuts through a fossilized coral reef and a tower structure built on the western edge of the coral reef structure adjacent to the channel. Both elements were already described in the initial nomination dossier but were not included in the core zone.

The access channel reaches from the subtidal zone at a distance of approximately 1.85 kilometres off the shore of the archaeological site through an intertidal platform located between roughly 1.75 and 1.55 km distance from the shore and continues passing through the intertidal plain behind the reef platform. (cf. fig. 1: Intertidal platform north of Qal'at al-Bahrain) The channel is difficult to identify as a result of years of sedimentation recently accelerated by the nearby land reclamation of Seef. Recent surveys, which measured the depth of the sediment that silted up in the area have led to a clear identification of the first 800 metres of the channel. Unfortunately we have not been able to trace the final 400 – 500 metres of the channel through which ships would have accessed the harbour. At the same time, since the harbour cannot be precisely located, jetty-like structures might have – at least at some points in time – reached up to a basin at the southern end of the channel. Since further under-water archaeological research is required to precisely identify the ancient harbour structures, this dossier proposes a second, separate core zone focused on the identified northern part of the channel.

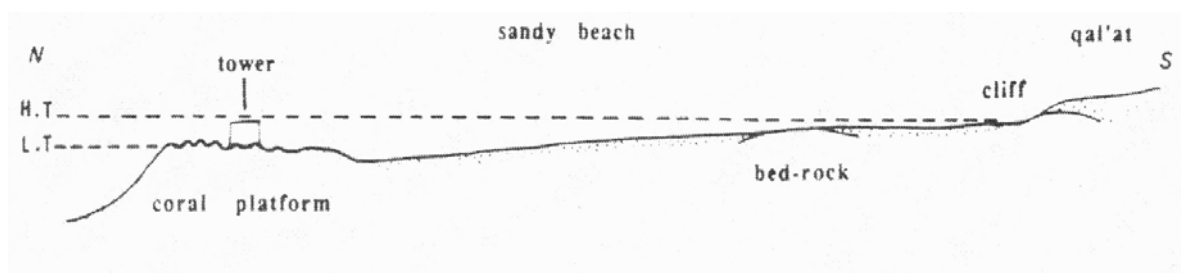


Figure 1: Intertidal platform north of Qal'at al-Bahrain (Paskoff & Sanlaville, 2005, p. 119)

The channel, which was first revealed by aerial photographs of the 1980ies, is between 15 and 90m wide and cuts through the rocky coral plate which parallels the Northern Coast up to 1.8 km off shore. The coral reef structure is very shallow and intertidal with a contemporary maximum depth of 1.6 m during highest spring tide while it is exposed along the entire 1.8 km during the low tides at spring tides. Nowadays the maximum tidal range is about 2.5 meters during this spring tides (cf. Paskoff & Sanlerville, 2005, p. 116).

The channel itself can be identified on the basis of sediment measures according to its depths or following the observation of marine habitats. While on the hard fossilized coral reef structure the merely 0.02 m to 0.3 m sedimentary surface is a natural habitat for algae, the considerable layers of sand which have silted in the depth of the channel have provided a ground for sea grass to grow. The attached marine habitat map illustrates this phenomenon and relates the sea channel to the relevant findings of sea grass habitat (cf. 2.5.F)

The depth of sediment in the sea channel varies between 0.4 m and maximum 1.1 m. With the addition of the inter-tidal differences in water level the channel would have reached a depth of 2.6 m, a relevant depth for access of even larger boats available during the ancient reigns.

The sea tower is built on the western edge of the coral reef, adjacent to the sea channel. Tower may be an euphemistic name for the merely 2 m high stone structure but it is assumed by most archaeologist that this structure had an indicative function for the sea channel that can be compared to the function of a light house. Already in the initial nomination dossier the tower was described as a "rectangular building constructed of two courses of large ashlar stones set directly on the uneven surface of the coral reef". It measures 9.10 m in latitude and 10.7 m in longitude and is preserved at only 2 m height.



Photo 1: transition between intertidal zone (coral reef) and subtidal zone (photographer Dr. Saeed Abdallah al-Khuzai)



Photo 2: Southern end of sea channel during low tide (photographer Dr. Saeed Abdallah al-Khuzai)

In the book “Qal’at al-Bahrain as a trading and military outpost”, published in 2005, Axelle Rougeulle described the technical features of the tower construction: “Marine concretion has thoroughly bonded the coral base and the lower portion of the building, as well as its individual blocks to one another, thus making an indestructible mass of the whole. (...) The lower course of stones is made of limestone blocks 0.65m high with width varying from 0.60 m to 1.12m. What remains of the second course of facing is made of smaller block that are 0.36 m to 0.40 m high and 0.43 m to 0.93 m wide. Above this and set back from the facing, the inside fill of the tower is still around 0.80m above water level. This fill is made of all sorts of stones embedded in a mortar to which highly concretised potsherds are attached.” (Rougeulle, 2005, p. 211)

The author further considers, that it is well possible that the tower would not have been higher than these two courses of stone since the likeability of pillaging at such distance from the coast is very limited and water erosion to an extent that reduced complete stone courses is considered rather improbable, especially if the stones are so firmly cemented as in the tower structure. It is even stated that “the effect of the sea in having so thoroughly cemented the blocks was so great that, had they existed, the upper courses of facing would have survived.” (Rougeulle, 2005, p. 211) However, other archaeologists who assume that the tower must have been a higher stone structure, debate this suggestion.

Since the two courses however are more or less covered during high tide and can hardly fulfil an indicative function, it can be speculated that the stone structure might have been the basis of an additional construction which would have contained the main function, perhaps an indication fire or a defence post. On the other hand we have to take the varying sea levels into account, which are in more detail discussed in the following section on history and development. Obviously the tower is less useful during times of extremely high sea levels than during times of extreme lows. Since the history of the site is affected by constant rises and declines of the average sea levels, the tower must have been the most severely affected element – most likely often subjected to resulting modification and construction works.



Photo 3: sea tower in 2004 (French Archaeological Mission in Bahrain)

3.2 History and development of property extension

The sea channel is a partly natural, partly most likely man-made feature of utmost importance to the location, settlement and trade of the ancient capital of Dilmun and the successive cities at its location. The northern coast of Bahrain is the strategic coast of the island, pointing into the Arabian Gulf and the coast that any boat passing from Mesopotamia towards the Street of Hormuz and into the Indian Ocean would pass by. It must have been a serious disadvantage for trade that especially this coast with its shallow offshore coral reefs was almost inaccessible to boats, with one exception, the bay in front of Qal'at al-Bahrain.

The sea channel which allowed boats to access the coast was the lifeline of the city as it brought in good for trades and merchants to buy their required loadings. And it is well understandable that the last settlement structure of Islamic time as well as the strategic defence fortress of the Portuguese both lost attraction and importance because the channel was silted to an extent that made it unusable. A frank report issued by the Portuguese authorities, dating from sixteen-ten reveals this: "The fort is totally useless because it is further than a gun-shot from the sea, and is surrounded by reefs which make it impossible to land there. It is only strong for its foundations and for its walls. If a landing were to be made in Bahrain, the fort should be overlooked."

It is very difficult to date both the channel and the tower, but since it is of essential importance to all trading activities we have to assume that at least the channel existed since the time of the earliest identified settlement, the ancient city built about 2300 BC. It may be that the access was first based on a natural channel which was later deepened to facilitate access of larger boats. However, such theory can only be confirmed or disproved once the silt and sediment has been removed from the channel and access to the vertical edges is possible. Available research on the interrelation of the site and the sea

suggest that the earliest settlement might not have required the same depth of channel that became necessary to later settlements. Paskoff & Sanlaville calculate in their studies that at the time of the earliest settlement the sea level was considerably higher and hence the need of a channel less pressing. "(...) we may estimate that towards the mid-third millennium, the sea level was noticeably higher than at the present time, even if one allows for the possible deposition of sands in the upper part of the beach" (Paskoff & Sanlaville, 2005, p. 126), as the authors conclude at least 0.8 m higher than at present (see fig. 2: hypothetical height of the sea level during the two last millennia BC).

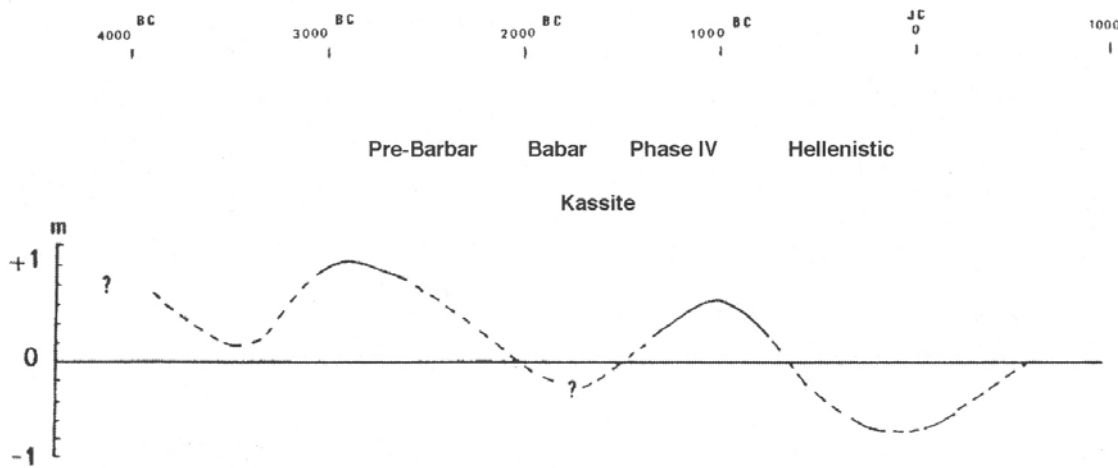


Figure 2: hypothetical height of the sea level during the two last millennia BC (Paskoff & Sanlaville, 2005, p. 126)

The tower provides additional guidance as some of the potsherds attached to it have been dated by the French Archaeological Mission. But they illustrate some unexpected variety in dating. Rougeulle reports that some of them date very late, i.e. thirteenth or fourteenth century while others turned out to be as early as from the second or third century BC. (cf. Rougeulle, 2005, p. 211) Because of its similarity to the construction of the Tylos fortress, the initial coastal fortress defence structure, the author is tempted to also date the sea tower into the Tylos period. But her conclusion remains open: "Nevertheless, we can exclude neither a construction in the third to first millennium BC, nor a later construction linked to the reoccupation of the fortress in the thirteenth century or even to the construction of the second fortress built by the Hormuzi re-using cut old stones." (Ibid.) Dr. Pierre Lombard, Head of the French Archaeological Mission in Bahrain, even suggests, that the sea tower basis might well be older than the Tylos period. It is difficult to favour one of the many options and attempts to define the exact age of both channel and sea tower and it may be necessary to seek clarification by means of additional testing of material samples.

Despite the uncertainty in age, the function or possible multi-functions of the sea tower seem obvious from its very location. It indicates the entrance of the access channel towards the city. Being located at the very tip of the channel where ships had to manoeuvre a curve to access from or into the open sea, the tower functions not solely as an indicator but as a guard tower that might have hosted a few guardians who could permit or prevent ship movement and access to the channel. As a result of the constant changes in sea levels, the use and function of the tower may well have been abandoned and re-established a number of times.



Photo 4: sea tower at high tide, January 2008 (photographer: Dr. Saeed Abdallah al-Khuzai)



Photo 5: sea tower at high tide (view towards North-East), January 2008 (photographer: Dr. Saeed Abdallah al-Khuzai)



Photo 6: sea tower at low tide (view towards West), January 2008 (photographer: Dr. Saeed Abdallah al-Khuzai)



Photo 7: sea tower at low tide (view towards South-West), January 2008 (photographer: Dr. Saeed Abdallah al-Khuzai)



Photo 8: intertidal area of coral reef along the Northern Coast, January 2008 (photographer: Dr. Saeed Abdallah al-Khuzai)



Photo 9: bird activity in the intertidal area, January 2008 (photographer: Dr. Saeed Abdallah al-Khuzai)

4. Justification for inscription of extension

With the proposal of a second core zone, Qal'at al-Bahrain archaeological site gets the character of a serial site with two core zone in one shared buffer zone. According to the specifications for serial sites in par. 137 of the Operational Guidelines it is provided necessary that “the series as a whole – and not necessarily the individual parts of it – (...) are of Outstanding Universal Value.” (UNESCO, 2005, par. 137). In this context, the extension of Qal'at al-Bahrain, the ancient harbour and capital of Dilmun, must be seen as an additional component which contributes to the outstanding universal value of the archaeological tell rather than a new core zone being of Outstanding Universal Value in itself.

4.1 Justification for inscription of extension

The sea channel and sea tower mark the access route from the sea towards the ancient harbour and capital of Dilmun. It is an essential element of understanding the location and the activities in the capital which was predominantly based on the economic gains from its sea-trading activities, solely guaranteed by a safe access and landing to the trade harbour.

Without the natural topography of a channel traversing the coral reef, the location of the city would have been inadequate and – about 2 km away from navigable waters – uninteresting for settlements of a trade-based civilization. Since however, the channel was there it determined not only the location of the first and largest city but also the arrangement of its port and city wall as well as later defence structures. The channel therefore is the reason for the existence of the archaeological site in its location and urban structure and it is difficult to explain these features of the already inscribed area in separation of the channel, and its indication, the sea tower.

4.2 Criteria under which the extension is included

The extension of the access channel and sea tower shall be included in the existing criteria. No additional criterion is proposed in this context. At the same time, the State Party wishes to seek the opportunity to slightly improve the wording (at least the English version) of the existing criteria:

“Criterion (ii): Qal'at al-Bahrain was an important port city and the ancient capital of Dilmun. It was a capital, where people and traditions from different parts of the then known world met, lived and practised their commercial activities, a real meeting point of cultures. This is reflected in its strategic geographical position, accessible from the Arabian Gulf through a sea channel, as well as its architecture and urban development. Several empires and great powers left their cultural traces in the unique stratigraphy of the archaeological tell when, during shifting fates of history, the city was invaded and occupied for long periods.

Criterion (iii): The site was the capital of one of the most important ancient civilizations of the region – the Dilmun civilization and it is the best known representation of Dilmun culture.

Criterion (iv): The palaces of Qal'at al-Bahrain are unique examples of Dilmun public architecture of the early 2nd millennium BC, which had a general impact on architecture in the region. The different fortifications are a collection of the best examples of defence works from the late 3rd millennium BC to the 16th century AD, all on one site. The protected palm groves surrounding the site as well as the intertidal coral reef are an illustration of the typical land- and seascape and its agricultural use in the region, since the 3rd century BC.”

4.3 Proposed amended statement of Outstanding Universal Value

The statement of Outstanding Universal Value is not affected by the proposed extension of the World Heritage Site Qal'at al-Bahrain – the ancient harbour and capital of Dilmun. The following paragraphs summarize the statement of OUV as presented in the initial nomination dossier submitted in 2004 as well as the detailed descriptions of OUV according to different value categories presented in the “Action plan towards a management system for Qal'at al-Bahrain”, submitted in 2006.

4.3.1 Summary statement of Outstanding Universal Value

Qal'at al-Bahrain – the ancient harbour and capital of Dilmun represents the most exceptional archaeological finding of the Dilmun civilization. Its continuous stratigraphy of more than 4000 years is unique and functions as a textbook of Eastern Arabian history. The immense treasures still assumed in the unexcavated 85 percent of the remaining cities promise an outstanding archaeological potential and many future discoveries on life, technology, arts and knowledge of the Dilmun civilization.

4.3.2 Historical Value

Qal'at al-Bahrain Archaeological site is the most unique testimony of a civilization which has disappeared – the Dilmun civilization. It is not only the most important evidence of this civilization but its capital, its main port and its physical centre. Therefore the site is crucial to understand the history of Dilmun civilization.

In addition Qal'at al-Bahrain provides clear evidence on other historic periods. Its unique, continuous stratigraphy from 2300 BC until the 16th century AD reads like a history book to the attentive observer. It therefore offers a deep insight into the alternating history of the Gulf region throughout more than 4000 years.

4.3.3 Cultural (Identity) Value

As the most important central port, the capital of Dilmun was also a cosmopolitan merchant centre, “where people and traditions from different parts of the then known world met, lived and practiced their commercial activities”. The city was a meeting point of cultures, a place of cultural, intellectual and artistic exchange and religious dialogue.

This definition of Bahrain as a centre of cosmopolitanism, cultural exchange and religious dialogue but at the same time as a flourishing merchants centre between East and West is still predominant nowadays. The capital of Dilmun can therefore be considered the initial source of the identity of the modern Kingdom of Bahrain and its people.

4.3.4 Archaeological Value

Being the most important evidence of the Dilmun civilization, the 17.5 hectares city at Qal'at al-Bahrain is the most precious excavation and research spot for archaeologist seeking information on the Dilmun civilization. Only about 15% of the capital has been excavated until today and although it is not in the intention of the Sector of Culture and National Heritage to carry out diggings indefinitely, it still offers a splendid potential for future excavations and thereby potential additional knowledge about the Dilmun civilization.

4.3.5 Landscape/Seascape Value

The harbour city and capital of Dilmun was the point of interaction between the sea and the island, nowadays called Bahrain. The setting of Qal'at al-Bahrain in the transition between the agricultural green belt of the Northern shoreline and the open sea in the North is to a large extent preserved and only disturbed by the development of the so-called Seef district at the North-Eastern edge of the site.

The setting reflects one of the rare remains of traditional shore settlements surrounded by palm groves and is open to the changing seascape which at the Northern coast is strongly characterized by the shallow waters and the enormous change of landscape characteristic between low and high tide. The interrelation between land and sea is further documented by the ancient sea tower, indicating the only access channel in the coral reef which enabled ships to reach the Northern Coast. The remains of this tower and the sea channel indicated by it, document the importance of the very strategic location chosen for the ancient capital.

4.3.6 Ecological Value

The sea access to Qal'at al-Bahrain and the surrounding palm groves are further of ecological value. Archaeological studies show that the palm groves have evolved only very little since the earliest settlements at Qal'at al-Bahrain Archaeological site. These palm-groves until nowadays present a traditional agro-system cultivated with limited amounts of water, at high production of particular fruits and vegetables, such as pomegranate, jujube, grapes, coriander, barley, wheat, sesame etc. Such species represent the typical multi-level-cultivation system of ancient palm groves which is retained until nowadays.

The marine surroundings of the artificial bay north of the site, decorated by traditional fishing traps still in function, attract flocks of seabirds on their way from or to their breeding places. Although the water level and the coastline were changed by the Seef land reclamations the bay and its off-shore coral reef constitute an ecological environment which contributes to Qal'at al-Bahrain Archaeological Site's overall value.

4.3.7 Architectural Value

The palaces of Qal'at al-Bahrain are unique examples of Dilmun public architecture of the early 2nd millennium BC, which had general impact on architecture in the region. Besides the design, ground plans and technology of the Dilmun buildings documented up to now, the site also encompasses a collection of the best examples of defence works from the late 3rd millennium BC to the 16th century AD.

4.3.8 Research/Scientific Value

The remaining archaeological potential of the ancient Tell, only excavated to a small part at the moment, constitutes an enormous research potential offering still hidden information on a civilization buried underneath which is poorly researched and studied at this time.

Although excavations are envisaged only at a very limited scope maybe future technologies will enable scientists and researchers to discover the hidden treasures without destructive archaeological interventions and benefit from the research value still offered by this site.

4.3.9 Educational Value

The unique stratigraphy of layers documenting a time-span of 4000 years is a perfect didactic tool to demonstrate the layering development of historic phases and settlements at this archaeological site. It will help the archaeological layman understand how people of the periods of Dilmun, Tylos, Byzantium and Islam established their housing on top of the former settlements and how such behavior nowadays enables archaeologists to describe and date the various historical stages.

Educational values are further to be attributed to the landscape/seascape quality of the site which enables future generations to experience a traditional Bahraini landscape that survived throughout the centuries. The experience is promoted by the sudden contrast between Seef development district and the quiet and natural environment of Qal'at al-Bahrain. The palm groves, a protected spot on the otherwise rapidly developing north coast might become one of the last traces of the traditional plantation and irrigation system of Bahraini agro-culture and thereby a key-place for environmental education.

4.4 Comparative analysis

Since the proposed additional core zone is not considered to be of outstanding universal value in itself but an integral part of the harbour and the consecutive cities of Qal'at al-Bahrain, the comparative analysis should focus on the features which predominantly constitute the outstanding universal value. These are the unique archaeological stratigraphy, the exceptional representation of the Dilmun civilization and the site's large future archaeological potential.

The comparative analysis for these features has been amply demonstrated in the nomination dossier submitted in 2004 and the State Party does not see any necessity to provide further comparative information.

4.5 Integrity and / or authenticity

4.5.1 Integrity

In 2004 when the initial nomination file was submitted to the World Heritage Centre of UNESCO, consideration of the conditions of integrity was not yet required for nominations proposed under cultural criteria. Perhaps, if it had been required at this time, the authors would have realized that the sea channel and the tower are essential parts of the site and that their inclusion contributes to a higher integrity of the nomination brought forward. With the late extension of the site to a second core zone

comprising the ancient access channel, all elements expressing the outstanding universal value of the site are finally brought together. In the current state of knowledge, the size and selection of the two core zones is adequate to represent the most important features of the archaeological tell including its geographic location and successive development. It may be possible that future surveys and underwater archaeological research and reinvestigation of some of the reclaimed areas may identify the ancient harbour basin or archaeological features located outside the city wall which may require further extension, but – for the moment – such discoveries remain hypothetical.

4.5.2 Authenticity

Since the condition of authenticity of the initial core zone of the World Heritage Property is documented in the nomination dossier submitted in 2004, considerations here shall be limited to the proposed extension that is the second core zone including the sea channel and the tower.

It is difficult to speak of an authentic property or a condition of high authenticity in this case, since several factors have altered the original characteristics as well as the meaning and value of the elements throughout the years. The most severe alteration has certainly been caused by the adjacent land reclamations of the 1980ies which created the district of Seef. It must be assumed that this reclamation changed the local currents, the sea level in Qal'at al-Bahrain bay (obviously the bay itself was only created by the reclamation) as well as the speed and range of silting and sedimentation. However, we do not have access to detailed long-term studies which could empirically underline these statements. The reclamation certainly changed the impression we have of the position of the cities, which were on a far more exposed tip of land than they appear nowadays. And further, the reclamation renders future research and in particular the identification of the exact location of the harbour more difficult. Paskoff & Sanlerville are convinced that their study of the sea and harbour locations in front of Qal'at al-Bahrain in 1982 was the last meaningful study in that sense: "Since our study took place, land reclamation which enlarged the shore around the Qal'at has distorted the environment and rendered impossible, today, all of the progress of understanding concerning the evolution of the site as a port" (Pakoff & Sanlerville, 2005, p. 115)

On the other hand, the reclamation did not physically affect the channel or tower and despite the changed surrounding conditions both elements remain unaltered in their physical and material state. The silting up of the channel in addition can easily be removed at any time and one should merely consider it a temporary diminution of authenticity. The attributes of form and design as well as materials and substance represent a high degree of authenticity.

The attributes of use and functions illustrate a rather limited degree of authenticity but it may be questioned in general if authenticity of use and function can be requested for elements of archaeological properties. It was considered that the channel would be more credible and may be better understood if the sediment which silted up inside was to be removed and small boats, most likely local fishermen could again make use of this ancient coast access. The required measures to clear and subsequently maintain the channel are therefore proposed in the later chapter on policies for the protection of the proposed extension.

5. State of Conservation and factors affecting the property

5.1 Present state of conservation of property extension

As was mentioned above the sea channel, despite being well-conserved in its location and formation, is hardly visible because of sediment silted up, in many places to the level of the coral reef.

The sea tower shows the effects of centuries of water and wind erosion. Thanks to the strong cementation of the materials, partly promoted by the constant influence of sea water, the material is very stable and the erosion hardly measurable. Solely the last oil pollution caused by the damages to oil extraction facilities during the Kuwait crisis in the early 1990ies has resulted in a colour change of the tower, which is according to archaeologists constantly diminishing but still visible. It is difficult to estimate if potentially stored oil particles could negatively influence the natural processes of decay.

5.2 Factors affecting the property extension

The property could be affected several potential threats and dangers which are considered below. The most challenging factor however is the future planning for adjacent land reclamation which will – in the long-term – be unavoidable. The visual corridor which is now brought forward as an extended buffer zone was defined as a reclamation-free zone but it will most certainly be bordered by new projects in the future. The main management focus is therefore dedicated to this very challenge.

5.2.1 Development pressures

Development pressures are the main challenge to the protection and conservation of the proposed extension to the World Heritage Site. After a series of intense negotiations with different governmental agencies of the Kingdom of Bahrain with participation of representatives of the World Heritage Centre and ICOMOS international, it is very evident that future reclamations will take place, most likely close to the edges of the negotiated enlarged buffer zone. Such future reclamations will in addition be connected via an outer ring road bridged or tunnelled through the visual corridor at minimum 3 km distance from the shore, i.e. 1 km distance from the Northern end of the sea channel and the sea tower. This compromise was accepted by the international representatives and welcomed in the Committee decision WHC-30-COM 7B.49, taken in Vilnius Lithuania:

“[The World Heritage Committee] Supports the possible replacement of the foreseen causeway by a bridge and invites the State Party to consult the World Heritage Centre and ICOMOS on the design of this future project;” (WHC-30-COM 7B.49)

Acknowledging the forthcoming land reclamation projects as inevitable, it may be more important to ask what elements of a future reclamation would be more threatening than others. In this sense multi-story buildings without greenery right up to the edge – perhaps even sea wall – of the newly gained islands, high risers or large new marinas in the immediate vicinity of the buffer zone or large coastal

highways seem not only visual or acoustical challenges. If guidelines for at least the shores and properties adjacent to the visual corridor could be developed with the mostly private investors conducting the projects, it may be possible to imagine reclamations with very reduced impact on the qualities of the site or in particular the ancient access channel and sea tower. The setting of the shore and the channel will necessarily change according the larger superimposed channel structure of the extended buffer zone, but only uncoordinated and uncontrolled land and seas development would be a threat.

5.2.2 Environmental pressures

Environmental pressures seem to relate predominantly to the water quality which determines the density and quality of marine habitat and decaying procedures of the underwater structures. Water quality could be severely compromised by higher sea traffic, especially the creation of new harbours and marinas along the northern coast but also by further sea pollution caused by dumping of unwanted material and fluids (both at the shore and at high sea) or by accidents in the oil extraction industry.

A constant rise of sea level – as predicted and analysed in many contemporary discussions on climate change, may have affects on the visibility of the tower which may completely disappear in water. This might not affect its physical structures nor does it need to be considered a unique and new phenomenon. The sea level rose and declined constantly and the tower had certainly disappeared in the water in earlier times before it had to be reused after sea level increases at a later stage.

5.2.3 Natural Disasters and Risk Preparedness

Bahrain has never been exposed to major natural disasters such as strong earthquakes or tsunamis but in theory such disasters could be possible. An intense earthquake may certainly affect both the tower and the sea channel but it seems impossible to think of preventive protection for such cases.

Tsunamis, which as a result of the relative small size of the Arabian Gulf and its isolation from the Indian Ocean by the narrow Street of Hormuz, will never be as catastrophic as we have experienced in other regions, are more likely to affect the archaeological cities than the access channel or the sea tower.

5.2.4 Visitors / tourism pressures

At present the tower and sea channel are hardly ever visited – although it is theoretically possible to walk there across the coral reef during low spring tides. In consideration of the hot and humid climate throughout the majority of the year and the distance of about 1.75 km off the shore, it seems very unlikely that many visitors will attempt to walk to the tower in the future.

Prevention should be taken against potential future shortcut walkways from adjacent land reclamations which might encourage new visitors and – once the channel has been excavated – the amount of visitors approaching Qal'at al-Bahrain from the sea through the channel by boat should be carefully observed.

5.2.5 Number of inhabitants within property extension

The extension proposed is located in the intertidal coastal area and is uninhabited.

6. Protection and management of the property

6.1 Ownership

The sea property covering an initial 600m off shore is under ownership of the Ministry of Information, as documented in the ownership certificate no. 78263 shown below. A large property located beyond this which reaches out to about 4km off shore was also under governmental ownership, but was attributed to the administration of the Royal Court of the Kingdom of Bahrain, and is currently in the process of being transferred to the status of public property under the authority of the Ministry of Information. Due to discussions and revisions of the national expropriation legislation all title deed transferrals of governmental properties are currently reviewed but the processes shall be completed soon. The sea outside the 4 km zone is not yet attributed to owners and has with the Royal decree on protection of the visual corridor in front of the site (see below) been blocked from future sale or distribution.

6.2 Protective designation

The proposed extended buffer zone – formerly referred to as visual corridor – is protected by the Royal Decree 26 of 2006 (see official letter and translation below). It instructs the Minister of Municipal Affairs and Agriculture to preserve the area surrounding Qal'at al Bahrain – the ancient harbour and capital of Dilmun, to refrain from any land reclamation in the area of the extended buffer zone and to restrict the building heights on adjacent lands, providing that they not exceed 3 storeys.

In addition, as is stipulated in the document, all future development measure which may have negative affects on the property are to be coordinated with the authorities for culture and national heritage in the Kingdom.

In the name of God, the Most Merciful, the Most Beneficiary

The Kingdom of Bahrain

Ownership Document

| | |
|--|--|
| Ministry of Justice and Islamic Affairs Directorate of Real Estate Registration | Fee: no fee Number of Muqademah: 6061/1984 Number of Document: 78263 |
| Minister of Justice and Islamic Affairs | Assistant to Real Estate Registration & Documentation |
| His Royal Highness Skheikh Isa Bin Salman bin Hamad Al Khalifa | |

Main topic of this document: is that the Ministry of Housing and Municipal Affairs and after the approval of HH the Minister has requested the registration of the Land number 5116 (land plot located in Site of Qal'at al Bahrain in Manama) so it can be an area of general public good. These documents have registered this Land in the name of the State for the purpose mentioned, and this document was issued to grant ownership as stated. Boarders from the north include government land, and from the east a land owned by HH Sheikh Khalifa bin Salman Al Khalifa, and the land of Sheikh Khalifa bin Ali Al Khalifa, and the land of Youseff Khalil al Muayyad, and a private land, and a land owned by Skheikh Khalifah Bin Ali Al Khalifah, and the land Mohammad Rashid Fethi and his partners, and other private land. And from the South, there is the Road, and from the West, there are the ownerships of Al-Sheikha Sheikha Bint Sheikh Ibrahim Al Khalifa. The area and boundaries of the land is as indicated in the enclosed map number 5 of this document which was issued on the 11th of Rabi'e Awal coinciding with the 28th of August, 1993.

Figure 3: translation of ownership certificate (shown in figure 4)

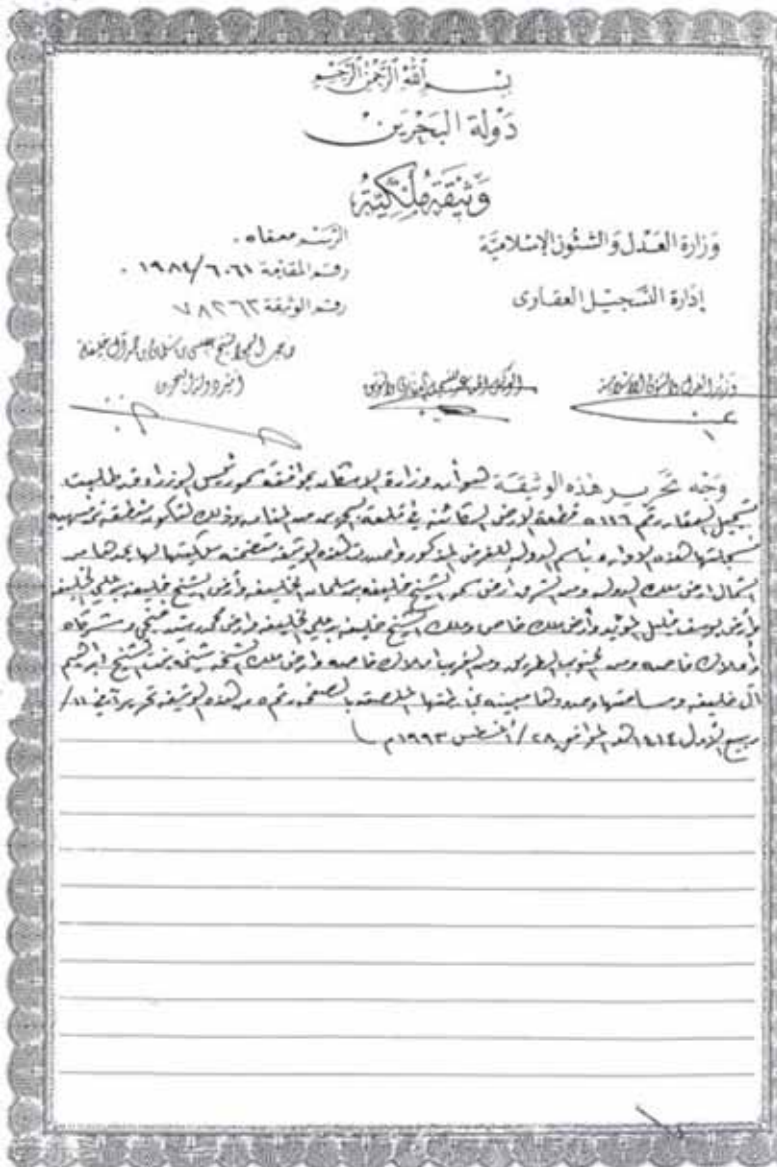


Figure 4: Ownership certificate for public property at sea shore of Qal'at al-Bahrain

Kingdom of Bahrain
Royal Court



مملكة البحرين
الديوان الملكي

٢ محرم ١٤٢٧
١ فبراير ٢٠٠٦
الرقم: ٢٦/ ٢٠٠٦

سعادة الأخ الكريم علي بن صالح الصالح المحترم
وزير شؤون البلديات والزراعة

السلام عليكم ورحمة الله وبركاته ،

بناءً على الأمر الملكي لحضرة سيدي صاحب الجلالة الملك حمد بن عيسى آل خليفة حفظه الله ورعااه .

وحيث أن لجنة التراث العالمي المنبثقة عن منظمة الأمم المتحدة للتربية والعلوم والثقافة (UNESCO) قد وافقت بقرارها رقم 29 COM 8B.26 على تسجيل موقع قلعة البحرين ضمن قائمة التراث العالمي باعتبارها موقع يمتاز بقيمة تاريخية مميزة ، وحيث أن البند الرابع من القرار المذكور أعلاه يشير إلى ضرورة الالتزام بعدم إجراء أي عمليات دفان أو إقامة منشآت في المنطقة المقابلة للقلعة وذلك حفاظاً على الممر البصري أمام القلعة ، كذلك عدم إقامة أي منشآت على الأراضي المدفونة حالياً والتي تحيط بموقع القلعة دون الرجوع إلى الجهات المعنية للتأكيد من عدم تأثير هذه الإنشاءات على التكامل البصري للقلعة مع المنطقة المحيطة بها .

نبحث لكم هذا الكتاب لإجراءاتكم حول إصدار الأنظمة والتشريعات اللازمة للحفاظ على المنطقة المحيطة بقلعة البحرين حسب إشتراطات منظمة اليونسكو لتسجيل الموقع ضمن قائمة التراث العالمي ، وتحديد ارتفاعات المباني المسموح بها في المنطقة المذكورة على أن لا تزيد عن ثلاثة طوابق ومن ثم بصوراً تصاعدياً في المناطق المجاورة ، والتنسيق في ذلك مع قطاع الثقافة والتراث الوطني .

هذا مالزوم ودمتم سالمين موفقين.

خالد بن أحمد آل خليفة
وزير الديوان الملكي

نسخة إلى : سعادة وزير الإعلام

ص.ب. ١٧٧٨٨ / ٥٥٥ - هاتف : ١٧١١١١١١ / ١٧١١١٣٣٣ - فاكس : ١٧١١٤٥٨٧ P.O. Box : 28788/555, Tel. : 17888886 / 17888333, Fax : 17884587

Figure 5: letter on the Royal Decree 26 of 2006 regarding the World Heritage Site Qal'at al-Bahrain

Translation of the letter presented in figure 5:

Author: Kingdom of Bahrain , Royal Court (signed by H.E. Shaikh Khaled bin Ahmad Al Khalifa, Minister of the Royal Court; addressed to: H.E. Ali bin Saleh al-Saleh, Minister of Agriculture and Municipalities Affairs; dated 2 Muharram 1427, i.e. February 1st 2006, decree no. 26/2006.

Excellency,

With reference to the Royal Decree issued by H.M. King Hamad bin Isa Al Khalifa. King of Bahrain, Recalling UNESCO's World Heritage Committee's Decision 29 COM 8B.26 concerning the inscription of Qal'at al-Bahrain Archaeological Site (Bahrain) on the World Heritage List on the basis of cultural criteria,

Taking note of Paragraph.4 of the above-mentioned adopted decision requesting that the State Party should "refrain from approving any land reclamation or construction in the sea anywhere in front of the site and that the new construction on existing reclaimed land should be checked up as to protect the visual integrity of the site and to maintain the principal sight lines of the area nominated ", and to refrain from any construction projects on existing reclaimed land surrounding Qal'at al-Bahrain archaeological site without prior approval of the authorities concerned, in order to make sure these construction plans do not affect sight lines of the site and the surrounding area.

We are pleased to send you this letter to take the necessary measures related to the new laws and regulations to be issued in order to preserve the area surrounding Qal'at al-Bahrain site as requested by UNESCO according to inscription of the site on World Heritage List. In addition, We be grateful if Your Honourable Ministry could determine the building heights in the above-mentioned area, providing that they do not exceed Three (3) Storey-building plan, and ultimately apply this to all the surrounding area buildings. Coordination with Culture and National Heritage Sector is necessary to carry out these schemes.

Please accept, Excellency, the assurances of my highest consideration.

6.3 Means of implementing protective measures

The protective buffer zone has been included into the National Planning legislation and the Municipal Zoning Plans of both, the Northern and Seef municipal districts. The area is highlighted as related to a UNESCO World Heritage Site and all building or development requests for the particular area received by the Ministry of Municipalities and Agriculture and forwarded to the Sector for Culture and National Heritage. 14 such requests were received in the course of 2004 for the previous buffer zone and a large majority of them related to the request for permission of residential construction in the village of Karranah adjacent to the site.

For the proposed buffer zone extension, which has already been declared a "no construction above water level zone" and the second core zone which is declared a no construction zone we do not expect any such requests or permissions.

6.4 Existing plans related to municipality and region in which property extension is located

The last version of the municipal zoning plans that is publicly available dates from 2002. Currently the Seef zoning is under revision, but regular coordination meetings with the authorities for Urban Planning in the Ministry of Municipalities ensure the appropriate integration of development regulations which benefit the future promotion of the World Heritage Property.

6.5 Property management plan or management system

According to the decision reached by the 31st Session of the World Heritage Committee in Christchurch New Zealand, the management and conservation plan for the complete World Heritage property of Qal'at al-Bahrain – the ancient harbour and capital of Dilmun is to be submitted to the Committee latest in February 2009 and to be examined with this extension request at the 33rd Session of the World Heritage Committee in 2009.

It did not appear advisable to the national authorities to present a separate management system which merely places emphasis on the sea tower and access channel structure at this point of time.

6.6 Source and levels of finance

The protection of the ancient sea channel and the sea tower will be addressed by the regular budgetary fund of the Ministry of Information, sector of Culture and National Heritage. For the financial biennium 2009/2010, and estimate of 300.000 USD are foreseen to facilitate the excavation of the entrance channel, the study and in situ conservation of the tower as well as the preparation of guidelines for future land reclamations adjacent to the extended buffer zone.

The current biennial budget for 2007/2008 includes a provision of roughly 30.000 USD for the invitation of an international team of underwater-archaeologist to survey the channel, bay and subtidal area north of the coral reef.

6.7 Source of expertise and training in conservation and management techniques

The professional expertise in under-water archaeology in Bahrain is extremely limited, especially when considering that the island is surrounded by archaeological underwater potential. Photographic surveys and measurements have so far been carried out with specialists for marine resources and underwater geology. However, an underwater-archaeology team shall soon be included to assist in the definition of management and preservation objectives.

The national authorities have contacted the ICOMOS International Scientific Committee on Underwater Cultural Heritage (ICUCH) to assist in the identification of an international team to carry out further underwater-archaeological surveys. As soon as a team has been identified further studies of the proposed extension will be conducted. At the same time the presence of the team shall be used to facilitate training courses and allow for participation of local archaeologists to increase the level of local expertise in this field.

6.8 Visitor facilities and statistics

The proposed property extension is not regularly visited. Consequently the number of visits has never been studied or formally summarized in statistics. As soon as the channel is made accessible, the number of boats accessing the site from the open sea will be counted as part of the larger visitor survey of the site.

6.9 Policies related to the preservation and promotion of the property extension

The foreseen excavation of the sea channel will be a main contribution to a future promotion of the property extension, in particular since awareness of the existence of the channel will rise with the opportunity to use it with smaller boats. As soon as boats will again be enabled to access the coast via this channel, they will pass by the ancient sea tower and relate to the historic tradition of access to the Northern Coast and the many successive cities at Qal'at al-Bahrain.

More detailed policies for the promotion and protection of all elements of the World Heritage Site Qal'at al-Bahrain – the ancient harbour and capital of Dilmun will be included in the documentation of the site management system, to be submitted to the World Heritage Committee in February 2009.

6.10 Staffing levels

Permanent staff will not be required to manage and preserve the proposed extensions. The maintenance of the sea channel (continuous removal of silt and sediment) will be provided by an environmental consultant on behalf of the Culture and National Heritage authorities.



Photo 10: Sea tower and its relation to the shore during high tide (photographer Karim Hendili)

7. Monitoring

7.1 Key indicators for measuring state of conservation

Monitoring of the sea tower and the ancient access channel emphasizes two main aspects, on the one hand the environmental quality of the setting, on the other hand the physical decay of the historic tower structure.

Environmental monitoring of the proposed second core zone will employ three sets of indicators, water quality, sediment quality and – dependant on the two first – bird breeding and visitation activity. Water quality measures and sediment analyses can be combined with hydrodynamic measures (evaluating potential speed increases) and shall be carried out at least semi-annually and in the event of special external influences (such as oil pollution, reclamation activity etc). These measures depend on standard data for the evaluation of water quality, i.e. temperature, salinity, dissolved oxygen, water depth, visibility and sediment accumulation and mixture, i.e. sediment type and sediment depth.

Bird watching activities are conducted by many environmental experts and bird specialists in Bahrain and it will merely be necessary to include the bay of Qal'at al-Bahrain into the regularly reviewed and monitored bird spots. Indicator species shall be the Common Cormorant (which visits places with considerable density of small fishes and good water quality and which is nowadays still a very frequent visitor to Qal'at al-Bahrain), Black headed Gulls and Slender-billed Gulls, two migratory species which visit the North Coast of Bahrain with high regularity and in large numbers. In addition to seabirds few waders species should be monitored, such as the Kentish plover and the Western Reef Heron, two residents present in adequate numbers for continuous study.

The sea tower, which will be documented in all detail during the forthcoming low spring tides, shall be measures on an annual basis to establish reliable data on the amount of annual erosion. Only if the statistics seems worrying after a five year monitoring period, additional protective measures to slow-down the erosion processes should be considered.

7.2 Administrative arrangements for monitoring property

The environmental monitoring will be ensured through a long-term consultancy contract with specialists for marine surveys. The marine habitat surveys done so far were prepared by Al-Reem Environmental Consultation and we will probably continue our excellent cooperation. The consultant will further supervise the excavation of sediment in the sea channel and use the sediment samples of different layers to analyse the changes in sediment compositions through the time of silt collection.

Archaeological documentation (including photographic documentation) and detailed measurement of the sea tower shall be conducted by the archaeologists of the Sector of Culture and National Heritage. Since the low spring tides create the best conditions for such survey as the largest possible

amount of stone substance remains outside the water, the documentation shall be annually repeated and photo documents shall be produced at the annual low tide minimum.

7.3 Results of previous reporting exercises

Despite a series of marine surveys of the coast to the North of Qal'at al-Bahrain and archaeological inspections of the tower, comparative data of successive exercises has not yet been gained or evaluated.

Since Qal'at al-Bahrain – the ancient harbour and capital of Dilmun was only inscribed on the World Heritage List in 2005 the site did not participate in the last Periodic Reporting Exercise of the Arab States and has no reference material from such standard monitoring activities.



Photo 11: Impressions from the monitoring exercise (photographer: Dr. Saeed Abdallah al-Khuzai)

8. Documentation

8.1 Photographic documentation of property extension

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| Photo 1: transition between intertidal zone (coral reef) and subtidal zone (photographer Dr. Saeed Abdallah al-Khuzai) | 14 |
| Photo 2: Southern end of sea channel during low tide (photographer Dr. Saeed Abdallah al-Khuzai) . | 15 |
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| Photo 11: Impressions from the monitoring exercise (photographer: Dr. Saeed Abdallah al-Khuzai) .. | 35 |
| (provided in digital form in the annex of the file) | |

8.2 Texts relating to protective designation of the property extension

The initial core zone of the World Heritage Site Qal'at al-Bahrain is owned by the Ministry of Information and designated a national heritage site according to the "Law concerning the Protection of Antiquities" no. 11 of the year 1995. According to § 1 of this law it is under the sole authority of the Ministry of Information to decide what places constitute archaeological or historical value and to determine what their specific importance is. The sea tower has now also been designated an archaeological property and falls under the same specifications of this legal instrument. The above mentioned law gives some reference to the setting of archaeological sites:

"§ 7 When considering town or village planning projects, expanding or beautifying or distributing land plots for building purposes, archaeological places and features should be maintained in accordance with the decision taken by the authority concerned in this regard. (...)"

“§ 8 Building and restoration permits in places close to archaeological sites and historic buildings should not be issued before obtaining the approval of the authority concerned with archaeology to ensure the construction of modern buildings with the appropriate style to match the same archaeological character.” (Decree law no. 11 of 1995 concerning the protection of antiquities)

As yet heritage sites and archaeological findings remain absent in the law dealing with physical planning and the updating of zoning plans, which is of relevance to the buffer zone elements which were not declared archaeological sites. According to this law: “§ 28 The Directorate of Physical Planning shall undertake the periodical revision of its physical development plans(...) with the co-ordination of the authorities of jurisdiction taking into account the observance of economic, social, development situations and their future requirements.” (Resolution no 1 for 1994 of Implementation Regulation of the Decree Law No 2 for 1994 concerning the Physical Planning) The involvement of the heritage authorities has only been added in 2006 for the special case of the World Heritage Site Qal'at al-Bahrain by the issuing of the Royal decree no 26 quoted earlier in this document.

8.4 Address where inventory, records and archives are held

General archives:

Library and Archives, Sector of Culture and National Heritage, Ministry of Information, PO. Box 2199, Manama (Kingdom of Bahrain).

Archaeological Collections:

Directorate of Archaeology, The Bahrain National Museum, PO. Box 2199, Manama (Kingdom of Bahrain).

Gulf-Danish Archaeological Expedition, Prehistorical Museum, Moesgård, DK-8270 Højbjerg (Denmark).

French Archaeological Mission in Bahrain, CNRS - Maison de l'Orient et de la Méditerranée-Jean Pouilloux, 7 rue Raulin, F-69007 Lyon (France).

Legal archives:

Ministry of Information, Department of Legal Affairs, Official Gazette Archives, PO Box 253, Isa Town (Kingdom of Bahrain)

8.5 Bibliography

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