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CONSEIL INTERNATIONAL DES MONUMENTS ET DES SITES
CONSEJO INTERNACIONAL DE MONUMENTOS Y SITIOS
МЕЖДУНАРОДНЫЙ СОВЕТ ПО ВОПРОСАМ ПАМЯТНИКОВ И ДОСТОПРИМЕЧАТЕЛЬНЫХ МЕСТ

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Charenton-le-Pont, 29 September 2017

H.E. Dr. Samira Mohamed Moosa Al Moosa
Permanent Delegation of the Sultanate of
Oman to UNESCO
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World Heritage List 2018
Ancient City of Qalhat (Oman)

Dear Madam,

ICOMOS is currently assessing the nomination of "Ancient City of Qalhat" as a World Heritage site and an ICOMOS evaluation mission has visited the property to consider matters related to protection, management and conservation, as well as issues related to integrity and authenticity.

In order to help with our overall evaluation process, we would be grateful to receive further information to augment what has already been submitted in the nomination dossier.

Therefore, we would be pleased if the State Party could consider the following points and kindly provide additional information:

Layout of the city

The nomination dossier states that Qalhat is said to be 'an outstanding example of traditional town development and building techniques created to answer the constraints of the local environment.' It also says that 'The nominated property includes the whole of the Ancient City of Qalhat, a huge area of ruins of about 35 ha, limited by the inner and outer city walls as well as the zones outside the walls where the necropolises are situated. Qalhat is an extraordinary reflection of a traditional human settlement in a medieval Islamic port city, the town planning shows different quarters, sometimes fortified, defined by their use (religious, economic, etc.) and correspond to what was known of the City of Hormuz'.

The only plan of the overall city is that on p.21 of the nomination dossier and this appears to have been produced as a visitors' map rather than as documentation for the results of archaeological surveys. The only other spatial detail provided is an annotated photo of the funerary quarter on p. 22 of the nomination dossier.

ICOMOS would be pleased if the State Party could provide more details to substantiate the way the layout of the city can be seen as:

- an outstanding example of town planning;
- exhibiting different quarters, sometimes fortified, defined by their use (religious, economic, etc.);
- extraordinary reflection of a traditional human settlement in a medieval Islamic port city;
- precisely how the city correspond to what was known of the City of Hormuz.

Architectural innovation

The remains of the city are said to demonstrate the 'development of structural and decorative elements of the Islamic architecture'; the setting up of a dome on a square plan in the Mausoleum is seen as an introduction into the area perhaps influenced by buildings in Iran and Central Asia; and it said that Qalhat has 'preserved unique buildings that are fundamental for the study and reconstruction of the development of Islamic architecture. In fact, several other buildings, which were structurally and stylistically connected to those still standing at Qalhat, are now destroyed and cannot be longer studies or visited'.

ICOMOS would be pleased if further details could be provided as to what other aspects of the city can be said to reflect innovation in decorative architectural elements and wider Islamic architecture?

Commercial importance

The city is seen as an important port which with Hormuz 'dominated trade eastwards towards the coasts of Africa, India and the Indus and at times all the way to Southeast Asia and westwards to Al-Basra'. It is suggested that 'its commercial importance in the kingdom of Hormuz and of the lifestyle of its inhabitants, can be authenticated though detailed comparisons with the available archaeological data'.

ICOMOS would be pleased if further details could be provided as to how in particular archaeological data has contributed to the knowledge of commerce and the lives of its inhabitants, apart from the 'great amount of Chinese porcelain and stoneware from the 14th and 15th centuries' that were found at the site?

ICOMOS is grateful for the assistance that the State Party will provide along the evaluation process.

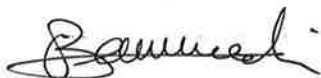
We look forward to your responses to these points, which will be of great help in our evaluation process.

We would be grateful if you could provide ICOMOS and the UNESCO World Heritage Centre with the above information **by Friday 3 November 2017 at the latest.**

Please note that the State Party shall submit two copies of the additional information to the UNESCO World Heritage Centre so that it can be formally registered as part of the nomination.

We thank you in advance for your kind cooperation.

Yours faithfully,



Gwenaëlle Bourdin
Director
ICOMOS Evaluation Unit

Copy to Ministry of Heritage and Culture
 UNESCO World Heritage Centre

Introduction/ Putting Qalhat into historical context – The available evidence

Qalhat, on the Arabian side of the Gulf, and its links with Kerman and with Hormuz on the Persian coast necessitate a synthesis of the historical record and archaeological materials across a number of traditional boundaries of research and scholarship crisscrossing Arabian, Persian, African, Indian, Asian and Indian Ocean studies. Qalhat, like geographical Oman, in the wider historical perspective, cannot be viewed in isolation from the Arabian Peninsula, the Gulf, Iran, Pakistan and India or the wider context of the Indian Ocean.

The nominated property for the World Heritage List represents a 35-hectare site of a complete medieval Arabian capital with fortifications, city centre, residential quarters, administrative and public buildings, workshops, suqs, mosques, graveyards, streets and alleyways, and even an elaborate bathing place (*hammam*), described by one Omani historian as “the Pompeii of Oman” (Bhacker, 2004; Rougeulle 2017, on press¹).

Qalhat’s geographical and specifically maritime position on the main sea route from India to Persia and the Gulf and the possibility of year-long sailing on the monsoon winds from Qalhat to and from India are the city’s defining characteristics. These, coupled with its sheltered anchorage, creek (*khawr*) and water supply, drew seafarers from earliest times. The city’s naturally fortified location on a platform above the sea at the foot of a mountain range giving access through a fertile hinterland to the interior for exchange of goods similarly attracted settlers.

Qalhat is famous in the Omani history as the refuge and capital of the Arab tribes of Azd after their migration from South Arabia at the beginning of the historical era. According to some local traditions, these tribes would have then exploited Qalhat’s strategic advantages to the full, settling on the coast before establishing their capital in the hinterland. It is said that from Qalhat, Azd clans sailed to Iran and set up mercantile kingdoms in Kerman on the Persian mainland, where they were recruited for their already acquired expertise as sailors and seafarers.

This early dating of Qalhat is probably legendary but in the 11th century, at least, the ‘Azd followed a similar pattern of settlement and colonisation of Qalhat and coastal Kerman where they founded the Hormuzi kingdom. Qalhat developed as the major coastal terminus in central and southeast Oman for the export of valuable Arabian thoroughbreds, which could be safely loaded aboard Indian Ocean trading vessels in Qalhat’s sheltered harbour. The horse trade underpinned the fabled wealth of the Hormuzi dynasty as well as much of the wealth of the Omani tribes and thrust Qalhat to the forefront of regional politics in a mercantile world, which spanned both sides of the Gulf.

¹ Bhacker, M. R. & Bhacker, B., 2004, “Qalhât in Arabian History: Context and Chronicles”, *Journal of Oman Studies* 13, p. 11–55. Rougeulle A. 2017. Medieval Qalhat, historical vs archaeological data. *Arabian Humanities*, on press (on line).

Qalhat has been tied by both kinship and commerce to the Persian mainland and, similarly, by kinship and tribal ties to its own hinterland and further into southeast Oman, facilitating the exchange of commodities in both directions. The horse trade in particular depended upon political and economic links between the Hormuzis and the Banu Nabhan of Quriyyat and interior Oman to secure the supply of horses and to repel incursions of foreign forces. Qalhat has therefore never been isolated as it is today but subject to myriad influences as part of a much wider world linked by land and sea caravan routes into the heart of both Arabia and Persia.

According to the Chronicles of Turanshah, the founder of the Hormuzi dynasty was Mohammed Dirhem-Ko, a descendant of an ancient line of south Arabian princes of Saba'. At an unspecified period of history, Dirhem-Ko marched northeast out of south Arabia with his followers to Qalhat on a journey of conquest. He identified Qalhat, then "a port of Arabia", as an ideal refuge and deposited one of his sons there with a trusted *wazir* before embarking with his followers on ships to the other side of the Gulf. He passed first through Jask and Kostek, before settling with his followers in Hormuz (Sinclair and Ferguson 1902: 153-155²). By the 10th century, Hormuz was already the seaport and chief market of Kerman (Yaqut in Encyclopaedia of Islam under Hormuz³). Today, the town of Minab stands on the site of Old Hormuz at the head of the creek, which is now largely silted up.

Qalhat, on the evidence of Yaqut, was firmly under the rule of the Hormuzis before 1228. Ibn Mujawir corroborates this, recording that Suhar was already destroyed around 1225 and that Qalhat and Hormuz had inherited its mantle as chief emporium for Indian Ocean trade on the Omani seaboard (cited in Bathurst 1967: 32⁴). In the early 11th century, the dynasty founded by Dirhem-Ko rose to establish a rich and powerful sea-going merchant empire that had become a byword in the mediaeval world for splendour and luxury by the end of the 15th century.

Under the Hormuzis, Qalhat was known as *Dar al Fath* (Place of victory). The safe house of early times for women and royal children became the chief *entrepot* on the Omani seaboard and the Arabian capital of the Hormuzi princes. Leading members of the Hormuzi ruling house and aristocracy were appointed governors in Qalhat. They maintained a political presence and oversaw the highly profitable trade in Arabian thoroughbreds, spices, dates and other commodities between Arabia, Persia and India. At times of often-murderous dynastic strife and rivalry with other powers, Qalhat became a sanctuary for the fleets and families of ousted Hormuzi kings and pretenders to the throne. Exiles and 'kings-in-waiting' passed long sojourns in Qalhat, establishing courts in exile, raising armies and building ships to fit out their fleets for an assault against Hormuz. Inevitably, they would have recreated at Qalhat the rich and luxurious surroundings for which Hormuz itself was famed and this is indeed reflected in the general aspect of the city.

² Sinclair W.F. and Ferguson D. 1902. *The travels of Pedro Teixeira; with his "Kings of Harmuz" and extracts from his "Kings of Persia"*. London, Hakluyt Society.

³ *Encyclopaedia of Islam*. 1999. 2nd Edition.

⁴ Bathurst R.D. 1967. *The Ya'rubī Dynasty in Oman*. Ph.D. Thesis (unpublished). University of Oxford.

Until its decline in the 15th century, Qalhat was a flourishing *entrepot* boasting fine houses, bazaars, and mosques, bustling with a cosmopolitan population of traders, travellers, artisans, seafarers, bureaucrats and nobles. Ships sheltered and loaded cargoes in the harbour and road at anchor the length of the shore in the lee of the city. Together with pearls and frankincense, Marco Polo (1272-1296) tells us “many good Arab horses are exported from Qalhat to India” (Yule and Cordier 1903 II: 450⁵). Ibn Battuta, who stayed in Qalhat for six days in 1329, records that he passed “people going to the town with various types of produce”. From Tiwi came “fruits of various kinds...banana called *marwari* which in Persian means pearly” consumed locally and exported to Hormuz. Dried dates were exported from the interior of Oman and rice imported from India (Gibb 1957 Vol II: 396-397⁶). In the other direction, Marco Polo noted that from Qalhat “spices and other merchandize are distributed among the cities and towns of the interior” and that “every merchant vessel that comes brings some [corn]” (Yule 1871 Vol II: 449-450⁷). A highly valued commodity traded in the interior probably for millennia, was salted fish, especially shark meat, regarded as a delicacy.

Politically, the Hormuzis acknowledged the dual sovereignty of both the ruling dynasties of Kerman and their successive il-Khanid, Timurid and Safavid overlords. However, because these Mongol and Turkish dynasties were not seafarers or merchants, the Hormuzi merchant fleets were able to dominate the sea-routes from India to Basra and south along the coast of Oman to Aden and East Africa. Provided they paid annual tribute to their nominal overlords, they enjoyed virtual independent sway over maritime trade passing through the Gulf and along the Arabian coast. They maintained their exclusive naval supremacy on the Persian coast by imposing a strict embargo on strategic materials, wood, iron, steel, sails that could be used to construct local shipping fleets. On the Arabian coast, they preserved their commercial supremacy by denying the merchants and rulers of Oman free access to the sea (Aubin 1972: 140-143⁸). This dual containment policy meant that once the Hormuzis had eliminated their arch-rivals, the al-Tibi merchant dynasty on the island of Qais around 1320, they were not seriously challenged until the Portuguese arrived off the Arabian Peninsula in 1507. The trail of death and destruction along the Omani coast blazed by the Portuguese heralded the beginning of the end of the Hormuzi maritime empire and the demise of Qalhat, their Arabian capital.

The above compendium of the historical studies on Qalhat brings out through sources and texts the extensive and cosmopolitan links across a variety of regions from Arabia to Persia, India and further East to Asia. We will now turn to the specific points raised by ICOMOS in its letter dated 29 September 2017.

⁵ Yule H. and Cordier H. eds. 1903. *The Book of Ser Marco Polo*. 2 vols. London. Reprinted New Delhi 1993.

⁶ Gibb H.A. 1957. *The Travel of Ibn Battuta*. 3 vols. London. Reprinted New Delhi 1993.

⁷ Yule H. 1871. *The Book of Sir Marco Polo the Venetian*. London

⁸ Aubin J 1972 (1973). Le royaume d’Ormuz au début du XVI^e siècle. *Mare Luso Indicum* 2: 77-179.

1/ Layout of the city

Qalhat and its hinterland represent a unique microcosm of human history on the Arabian Peninsula. Qalhat has lain virtually intact and undisturbed since late mediaeval times. It is a unique example in the region of a completely preserved medieval town (especially coastal) of the 13th-15th centuries that does not show traces of modern urbanism, and it is not affected by destruction, looting or encroachment as it happens instead in its Persian twin Hormuz, or in Siraf (Iran), Julfar (UAE) and Suhar (Sultanate of Oman).

Its constructions and buildings are well preserved beneath their ruins and all the various components of the city and its urban layout are clearly visible from the air: fortifications, *intra-muros* quarters, blocks, buildings, squares, street networks, and *extra-muros* associated features as graveyards, suburbs, cisterns, horse-trade facilities, lookout posts, and roads (Image 1).

Since 2008, field surveys implemented by the French CNRS archaeological team detailed the urban layout, and made discernible the buildings' plans. Conducted traditionally and with new technologies (differential GIS survey and aerial photogrammetry), the surveys allowed highlighting the various quarters of the ancient city (Images 2 to 4), and the archaeological excavations of selected buildings provided information about construction techniques, planning and functions.

This outstanding example of medieval town planning perfectly adapted to the geographical environment as the harbour city was located at the easternmost point of Arabia, the mouth of the Sea of Oman, an ideal location to control the navigation to and from the Arab Gulf (Image 5). It was founded on the lower part of a plateau, on the shore, the only place in the area where anchoring and landing was possible and in an area naturally protected, totally enclosed by the deep bed of Wadi Hilm to the north and by the mountains on the southwest side. These natural defenses were strengthened by fortification walls built (*ca.* 1220) accordingly to the topography. They entirely closed the area creating an *intra-muros* city to the north and an *extra-muros* empty space (for horses) to the south.

From the 13th century, the ancient city expanded from the shore into a densely built city center to the slope of the plateau. The French CNRS archaeological team identified the urban planning of this Central Quarter characterized by large architectural complexes as the Great Friday Mosque (excavated by the team between 2008 and 2015; Image 6), a main administrative/public building (a madrasa, a hospital, a *khan*?) and the suq. Rows of residential buildings were organized all around and on both sides of the main street leading from the West Gate of the city to the mosque. The quarter was served by north-south roughly parallel streets and east-west meandering lanes with steps climbing from the shore to the plateau.

The city was also built following the natural levels and taking in consideration the natural watercourses collecting the rainwaters from the mountains. In fact, the two small *intra-muros* wadis between the central and peripheral quarters drove (and still do) the waters in small basins

and dams strategically located in the city (Image 7). Several peripheral quarters founded from the end of the 13th century on the opposite banks of these small wadis had various function. The Northeast Quarter was characterized by palatial and/or rich merchants' residences with large storing facilities located along a street connecting the harbour to the North City Gate. The North Quarter had an enclosure, possibly used for flocks or poor suburbs in huts. The Northwest Quarter was occupied by a mixed of warehouses, shops and smaller private dwellings of people involved in activities as agriculture and fishing (Image 8). In the West Quarter there were workshops and pottery kilns. The function of the South Quarter is still unknown but it was possibly residential.

The graveyards (Image 9) were organized all around the western part of the city, in the *intra-muros* area between the peripheral quarters and the fortification walls, and the *extra-muros* areas between the fortifications and the mountains. The surveys permitted to identify several types of graves and a line of typical small platform mosques at the fringe between the peripheral quarters and the graveyards.

*** Extraordinary reflection of a traditional human settlement in a medieval Islamic port city**

The well-preserved conditions of the ancient city of Qalhat are fundamental to obtain information about its architectural traditions and deliver unique data about a little-known historical period of the region. The ruins of buildings show that they were constructed with materials collected locally, as coral aggregate (*hajar al bahr*), kept together by mortars made by earth and gypsum and natural hydrated lime, and finished with plaster and stucco. The conservation works also allowed identifying a variety of construction techniques.

This traditional architecture was enriched by a multitude of influences being Qalhat a cosmopolitan centre in contact with near and farer regions through political influence and commercial exchanges. Persian influences are visible in the design of the surviving ruined mausoleum attributed to Bibi Mariam, in a number of smaller ruined tombs in the city, in the vaulted cistern and in the unique decoration of the Great Friday Mosque. Fragments of luxury Chinese porcelain and stoneware, various other imported glazed and unglazed pottery vessels, glass containers and jewellery also testify to the wealth of the city and its contacts with the distant shores of Iran, the Gulf countries, Pakistan, India, the Far East and China (Image 10), as it is described more in detail in the "Commercial Importance" section.

*** Precisely how the city corresponds to what was known of the city of Hormuz**

Not much is known on the field about the two successive cities of Hormuz, first Old Hormuz (11th-13th c.), in the Minab delta on the mainland, then New Hormuz (14th-16th c.), after the city was transferred on Jerun Island in the Hormuz straights around 1300. Old Hormuz was never really identified, probably located near the shore and now silted, when New Hormuz was largely destroyed, except for large cisterns, by the Portuguese in the 15th century, by the Iranians in the 16th century, and now it is encroached by modern occupation. This makes the interest of Qalhât as a unique testimony of the Hormuz kingdom.

The following authors (Marco Polo in Yule and Cordier 1903 Vol. 1: 107; Ibn Battuta in Gibb 1957 Vol. 2: 400; Friar Oderic in Williamson 1973: 59⁹; Samarqandi in Fiorani 2000: 177¹ ; Barbosa in Dames 1921 Vol. 1: 91-96¹) give these eloquent attributes to the city. In 1294, mainland Hormuz was described as a “city of immense trade”; after its transfer to the island of Jerun (*ca.* 1300) as “a fine large city, with magnificent bazaars, as it is the port of India and Sind”; “very splendid”; “a port on the open sea which has no equal on the face of this earth”; “fair” and “exceedingly rich”.

Through few other sources about New Hormuz (Aubin 1973: 82-97), it is possible to create a comparison list of the many similarities between the city in the 14th-15th century and what is now known of the contemporary Qalhat’s urban layout thanks to the archaeological researches.

Hormuz	Qalhat
<i>Palace</i>	<i>B16 – B17 (known only by some soundings)</i>
Located at the border of the city, near the northern tip of the island	Similarly, in the Northeast Quarter
Beginning of 14 th century	Beginning of 14 th century
Massive building as a fortress with 9 towers and very thick walls up to 6.5m at their base	Towers not identified; walls 1m thick only
Length about 80-100m, seemingly narrower in the middle	B16: 31m but up to 70-80m if adding building B17. They are connected through a narrow construction along the street and a courtyard at the back
Several inside courtyards separating buildings	The two buildings are separated by a courtyard and there are several inside courtyards in each building
Inside secondary buildings as stables and armory	Courtyards surrounded by small buildings
Rooms with niches to present Chinese porcelain	B16: central wide <i>majlis</i> with decorated niches all around
Other palatial houses in the same area for the <i>wazir</i> and members of the royal family	Some large houses (B18) possibly for rich merchants
Complex of public buildings in the area of the palace: madrasa, mosques, <i>suq</i> , hospital, <i>khan</i>	<p>Central Quarter</p> <p>B14: on top of the ridge up the Great Friday Mosque; excavated by an Iranian team. It is a central building with surrounding walls and symmetrical small rooms with two large courtyards; possibly with a <i>khan</i> or a hospital</p> <p>B140-141: the <i>suq</i></p> <p>B13: a large public building between B14 and the Great Friday Mosque</p>

⁹ Williamson A. 1973. Hormuz in the Trade of the Gulf in the 14th and 15th centuries AD. *Proceeding of the Seminar for Arabian Studies*. 6: 52-68.

¹ Fiorani V.P. 2000. Hormuz and the ‘Umani and Arabian World (fifteenth century). *Proceeding of the Seminar for Arabian Studies*. 30: 170-188.

¹ Dames M.L. 1921. *The Book of Duarte Barbosa*. 2vols. London

<i>Friday Mosque</i>	<i>Great Friday Mosque</i>
Built at the beginning of the 14 th century in the middle of the city, <i>ca.</i> 250m far from the palace, with a minaret	Built at the beginning of the 14 th century in the middle of the city along the shore, with a minaret.
Custom warehouse near the palace on the beach, rather small building with surrounding opened galleries	Possibly B150, near the Great Friday Mosque, with large terraces overlooking the beach.
No surrounding fortification walls, as the city is on an island, only some towers with garrison around. Continuous line of houses along the shore with the streets reaching straight the beach. At the time of the Portuguese attacks, these accesses were closed by barricades (in Persian <i>kuchaband</i>)	Fortification on the mountainsides but exactly similar line of houses with high walls along the beach, with streets leading to the beach, possibly closed at some occasions.
Main east-west street leading to the Great Mosque, and one perpendicular street coming from the palace, with a crossroad not far from the mosque; some other large streets; narrow meandering streets	Main west-east street from the West Gate to the Great Friday Mosque, and north-south street from the North Gate and B16 to the mosque; other large north-south streets et narrower meandering east-west streets
Houses without backyard nor garden, only small patios	Similarly, all building have only rather small inside courtyards (see B94)
High houses with 2 to 4 storeys and wind-tower (<i>badger</i>)	Seemingly at least 2 storeys in most houses, and sometimes a marked elevation in one angle, possibly a wind-tower
Poor people living in reed and palm huts in the south part of the city	Possibly the same in Qalhat in the North Quarter, or/and outside the fortification in the south plain
Mausoleums of Hormuzi princes not far from the sea	Bibi Maryam and other smaller mausoleums in the graveyards around the city
Flat area near the graveyard where the kings of Hormuz used to play pall mall game	Possible same activity in the flat south plain near the graveyard?
Underground cisterns covered with domes for collecting raining water in the suburb and the plain at the foot of the hills	Seemingly, see cisterns B2 and B9
High place near the sea (<i>torumbaque</i>) with look-out post to check the arrival of boats	Seemingly, look-out posts on the first ridge of the mountains

2/Architectural innovation

Bibi Mariam Mausoleum is the unique testimony in the Arabian Peninsula of a majestic funerary building of Persian and Central Asia influences. Its design consists in a massive cubic construction capped by a dome on a square chamber. The squinches experimented for the first time in Kashan (Iran) in the Naisar Temple and later in Bukhara in the Sassanian period are now the main feature visible in the inside elevation.

The settings of the pointed dome was not properly defined before and gains the perfection in the 14th century, date of the erection of Bibi Mariam Mausoleum, in graphical proportion matching the mathematical ratio between the volumes of the dome and of the chamber.

The dimensions are scaled and acquired exactly in proportional repartitions of diameter, span of the chamber and elevation of the walls, making it a superlative example of architecture not by dimensions but mostly by the harmony and proportion of the forms. The Bibi Mariam Mausoleum represents a rare example of square proportioned mausoleum not altered in all its original forms. Later, the design of the plan in the mausoleums changed from square to octagonal and the dimension of the elevation prevailed on the dimension of the plan.

*** What other aspects of the city can be said to reflect innovation in decorative architectural elements and wider Islamic architecture**

Several buildings excavated in Qalhat are rather unique in a regional or wider Islamic perspective. The *hammam* is the only known building of this type in Oman, past and present. The plan is rather unusual compared with available documentation: small size, simply organized but efficient according to the function of the rooms, and stripped of all decoration. Most *hammam* documented today are prestigious antique or rather recent buildings, only few dating to the medieval period. Although clear parallels are therefore difficult to find, the Qalhat *hammam* seems more of Turkish than Iranian style, probably due to the Turkish origin of Ayaz and Bibi Maryam who most certainly ordered its construction.

The Platform Mosques in the funerary quarters do not have known parallels, except in the modern Bahraini countryside, and the Funerary Terraces belong to a specific funerary practice that does not have documented parallels either.

The Great Friday Mosque was built on a 4m high basement with cellars/substructures, to adapt to the topography of a terraced landscape and to enhance its visibility, as it was located in the lower part of the city. Very few parallels are known, as the Great Friday Mosque in Siraf (Iran,) built around 800 AD on an earth-filled platform 2m high but where no underfloor cellars are visible except under a later southern extension; or some Indian mosques as the Jumma Mosque in Bharuch. The plan of the prayer hall was peculiar, with two different spaces separated by a wall with wide doors; columns of different shapes (circular, polygonal, engaged), sizes, materials (cut stone, mortar) and decoration, according to their location; two gates with different architecture and function; complex accesses through stairs and terraces; two ablution areas, one public (outside), one private (inside). The decoration of the Great Friday Mosque was also unique, very varied and colorful with mixed different styles and materials according

to their location in the building, as it was proved by dispersion maps of the excavated fragments (Image 11):

- rare Kashan tiles of various shapes (rectangular, stars) and types (golden luster, turquoise, *lajvardina*). The luster type has unique *palmette* motives. Golden luster is visible on the *mihrab* and the northwestern gate while turquoise blue was on the northeast gate;
- typical starred and cross green and blue glazed tiles, used associated in mosaics (*qibla* wall) or inlaid alone in plaster with different motives (walls, intrados of arcs). Colors varied accordingly to the location in the mosque;
- unique decoration style of cut fragments of tiles inlaid under mortar strands, forming very complex multi-pointed stars motives (spandrels of arches under the cupola, front side of columns' bases);
- small elements in the shape of flowers in cut glazed tiles and mortar (inlaid in the columns under the cupola);
- square and rectangular mortar plaques with molded decoration of stars and crosses (*minbar*, half engaged columns in lateral walls);
- small molded elements to be inlaid as small arcades (top of *qibla* wall or *mihrab*), or triangle with *mhd* inscription (*mihrab*);
- cut stones, rectangular (second row of columns), polygonal (columns under the cupola), quatrefoil (border of arches);
- zigzag friezes, pseudo-*mihrab* shallow niches, and trims, carved in the plaster (wall with large doors between both spaces of the prayer hall);
- line of deep niches (*qibla* wall).

These archaeological discoveries prove what is reported in the written sources on the Great Friday Mosque. The best physical description we have of Qalhat appears, with supreme irony, in Bras' account of its sack in 1508 by his father, Afonso de Albuquerque and his fleet in his pursuit of political and commercial hegemony over the Indian Ocean and Hormuzi possessions in Arabia. In particular, we have an evocative description of a building that Bras calls the "Mosque". According to Bras, the Great Mosque "was a very large building with seven naves, all lined with tiles, and containing much porcelain fastened on the walls, and at the entrance to the gate a very large nave made with arcading, and above these was, as it were, a terrace looking towards the sea, all covered with tiles; the gates and roof of the mosque were all of elaborate masonry" (Bras 1874 Vol I: 221¹). Even allowing for the usual exaggeration by which the Portuguese commonly embellished their narratives of the scale of death and destruction wrought by them, the Great Friday Mosque of Qalhat was clearly a substantial and impressive building.

Contrary to the Portuguese description, only one piece of masonry with inlaid fragments of blue and white porcelain dishes was found in the excavations, more probably a late repair of a

¹ de Albuquerque B. 1874. *The commentaries of the Great Afonso Dalboquerque, second viceroy of India*. 4 vols. London.

degraded part of the mosque. Nevertheless, this use of embedded porcelain in the mosque of Qalhat predates other evidence in the 16th century of the fashion for porcelain, usually Chinese blue and white as wall decoration. This early date for the use of pottery as wall ornamentation corresponds with a peak in exports from southern Chinese ports (Kerr 2002: 129¹). This decorative trend observable in many mosques of interior Oman (Al Manah, Nizwa) and as Sharqiyya (al 'Awayna) may have filtered down over the mountain passes from Qalhat, (al 'Awayna mosque is particularly significant given its location in Wadi Bani Khalid connected to Qalhat through the neighbouring wadi system¹).

4

Elsewhere in Bras' account, we are told "they [Albuquerque's men] were to proceed at once to attack the city on the side near the mosque, which was close to the sea...while he would enter by the other end" (Bras 1874 Vol I: 217) and that the mosque had a tower in which the Portuguese posted a lookout. The Portuguese who bested the Qalhatis in the bloody encounter, set fire to the Great Mosque as they withdrew from Qalhat with their booty "and when it was set on fire it all fell to the ground without anything remaining in it which was not burned...which the Moors took very much to heart" (Bras 1874 Vol I: 221¹).

5

3/Commercial importance

* How archaeological data has contributed to the knowledge of commerce

The historical introduction to this document gives a wide description of the importance of Qalhat in the maritime routes toward Iran and the East and its connections to the Arabian inland. As for other aspects of Qalhat discussed above, the archaeological discoveries also corroborate Qalhat's international maritime trade networks and practices. The importance of the commerce with Pakistan and India since the 13th century at least is confirmed by up to 40% of Indian ceramics and objects especially jewellery (glass and stone beads, bracelets, ring, etc.) found in the excavations. Two Indian style graved slabs probably indicates the presence of an Indian community.

The study of the archaeobotanical samples proves the use of pepper (*piper nigrum*) and a lot of Asiatic rice (*oriza sativa*). Pepper is known by texts to be exported from Calicut (south India). The masonries of the Great Friday Mosque were strengthened by inlaid planks, all made by Indian tek (*tectona grandis*). Other exotic plants as Indian bamboo (*bambusoidae*), *cinnamomum* from Southeast Asia, and rosewood (*dalbergia sisoo*) from north India are also identified by the archaeobotanical researches.

The importance of the exchanges with the Far East, possibly *via* south Indian ports, is also well attested by the archaeology through the wide variety of porcelain and stoneware vessels

¹ Kerr R. 2002. Chinese Porcelain in the Gulf Region. *Journal of Oman Studies*. 12: 125-131.

¹ This fashion of ornamentation was popular in 16th century East Africa and later appeared in private homes in Oman such as the Bait al Kabir of the Masaakira (large tribe of as Sharqiyya and prominent merchants in East Africa) in 'Alayat Ibra where a curved wall of a first floor room is studded with blue and white porcelain bowls.

¹ In keeping with their usual practice, the Portuguese also set fire to the main houses of Qalhat, which contained the town's stores. These would have burned with great heat due to the large quantities of oil and molasses stored in them. For good measure, twenty-seven ships waiting to load cargoes in the harbour were also burned.

imported in the 14th-16th centuries, mainly from China but also from Vietnam, Thailand and Burma/Myanmar.

The connection with the West, except for Yemeni ceramics of the 13th-14th centuries is rarer. No trace of trade with East Africa was discovered, although many African ceramics were found at the earlier nearby site of HD4 (Ras al-Hadd), dated to the 9th-11th centuries.

The study of the Qalhat ceramics productions, especially imitations of Hormuzi vessels, is going to be well documented thanks to the excavation at the pottery kilns B41. This will allow a better definition of the networks, from Hormuz and/or Qalhat, through the analysis of exported pieces.

The wood planks from sewn boats in the masonries of the Great Friday Mosque, the anchors found in the bay in front of the mosque as in some houses, the Indian painted broken ceramics, probably wasters, bought in an Indian port to be used as ballast in boats and then sold in Qalhat as a backfill material (B67), are a rich group of elements providing information to navigation technics and uses.

Qalhât was described as a hub for horse trade confirmed by the presence of the wide enclosed south plain and associated structures (cistern B9, enclosure, small dam in the wadi in the middle of the plain, access to the beach and boats along the south city wall).

A better characterization of Qalhat's regional and local trade networks is studied thanks to the identification and dating of the earlier production and exportation of the Bahla ceramic kilns.

*** How archaeological data has contributed to the knowledge of the lives of its inhabitants**

Various information on the daily life of the medieval Qalhati population comes from the excavations data. The spatial organization of the city as a whole, with quarters with different function (city center/suburbs, official/palatial/residential/craft), gives a first clear idea of the social organization of the population of a medieval Arab port city. The varied funerary practices, with different types of graves and structures, may also give information on the social organization of the city. This study is in progress.

Craft activities and medieval technologies are documented through the study of the excavations data and objects from the *hammam* B4, the pottery kilns B41, the jeweller's workshop B39, the oyster's workshop associated with house B38. While the excavations in the *suq* (B140-141), in private warehouses (B21), or in small shops connected with a private house (B94) identified different kinds of business activities in various contexts.

The daily domestic life and production activities are documented through the excavations at house B94 of specialized rooms and items in the ground floor: the *madbasa* for the production of date honey, grinding stones for the production of flour, vestiges of culinary preparations (bread, rice with mung beans), fish processing structures (maybe for the production of *garum*), presence of poultry in a chicken coop. The living spaces were instead located at the first floor.

Archaeobotanical analysis also enrich the information on the local agriculture through the many species of grains (wheat, barley, and millet), legumes (beans, cowpeas) and fruits and vegetable (dates, jujube, pomegranate, grape, celery) identified. Data on fishing through the ichthyological studies could recognize two different techniques: offshore fishing (tuna, shark, swordfish, and sardines) and coastal fishing, probably with creels (many various small local species of fish were listed). Information on livestock through archaeozoological studies show the presence (for use and food) of mostly sheep and goats, but also hens, some ox and wild animals (gazelle, hare, dog, cats, rats ...).

The sources and texts of Marco Polo, Ibn Battuta and the Portuguese again provide a rich insight to the society and the culture of Qalhat that are associated to the material data from the excavations.

According to Marco Polo “The people of this country live on dates and salt fish which they have in great abundance; the nobles however, have better fare” (Yule 1871 Vol II: 450).

Ibn Battuta with obvious relish tells us “I ate in this city such fish as I have never eaten in any other region; I preferred it to all other kinds of flesh and used to eat nothing else. They broil it on the leaves of trees, place it on rice and eat it” (Gibb 1957 Vol II: 396). The richer people ate rice and imported grains, the others dates “which is their staple diet in the same way that ours is bread” but they also had milk and butter on account of the large number of livestock (Corsali in Aubin 1972: 116).

Ibn Battuta describes the merchant class thus: “They are traders, and make a livelihood by what come to them on the Indian Sea. When a vessel arrives at their town, they show the greatest joy. The majority of them are Kharijites, but they cannot make an open profession of their tenets, because they are subject to the sultan Qutb ad Din Tamahtan, king of Hormuz, who is a Sunni” (Gibb 1957: 396-7). The society was clearly cosmopolitan comprising wealthy Persianised-Arab Hormuzi nobles and a mixed Arab merchant class, supported by communities of anglers and cultivators. To this, we can add an artisanal class of potters, craftsmen, masons stucco carvers, tile makers and other artists, as proved by excavations. Ibn Battuta’s reference to Kharijites is taken by Gibb to indicate to Ibadhis but could equally apply to Shi’ite Arabs (in contrast, Ibn Battuta describes Nizwa Omanis on the following page as Ibadhis).



Image 1: Photogrammetry of the Ancient city of Qalhat (© Qalhat Development Project)

Qalhât Project
Mission 2013

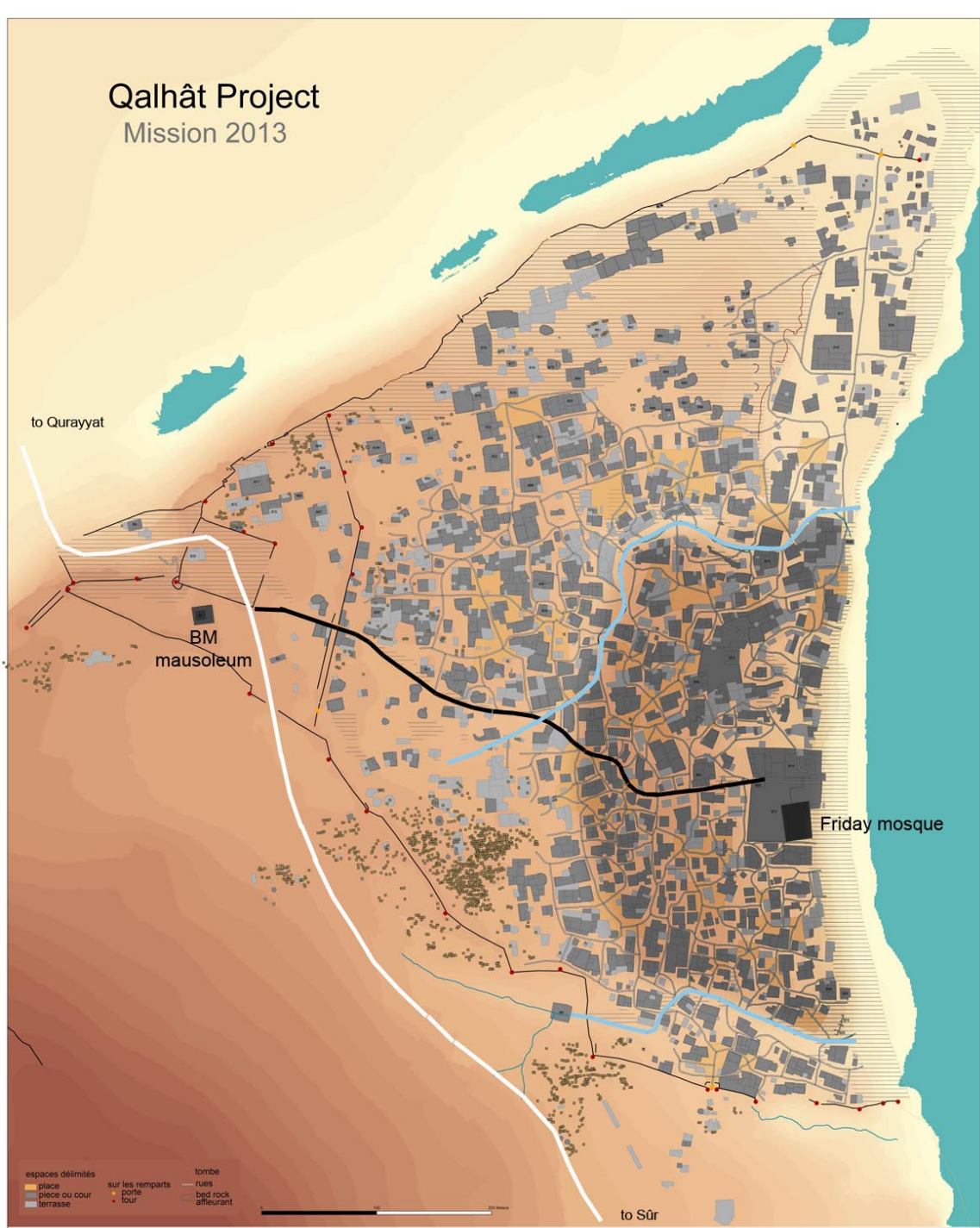


Image 2: A topographic map of the medieval city of Qalhat (© Qalhat Development Project)

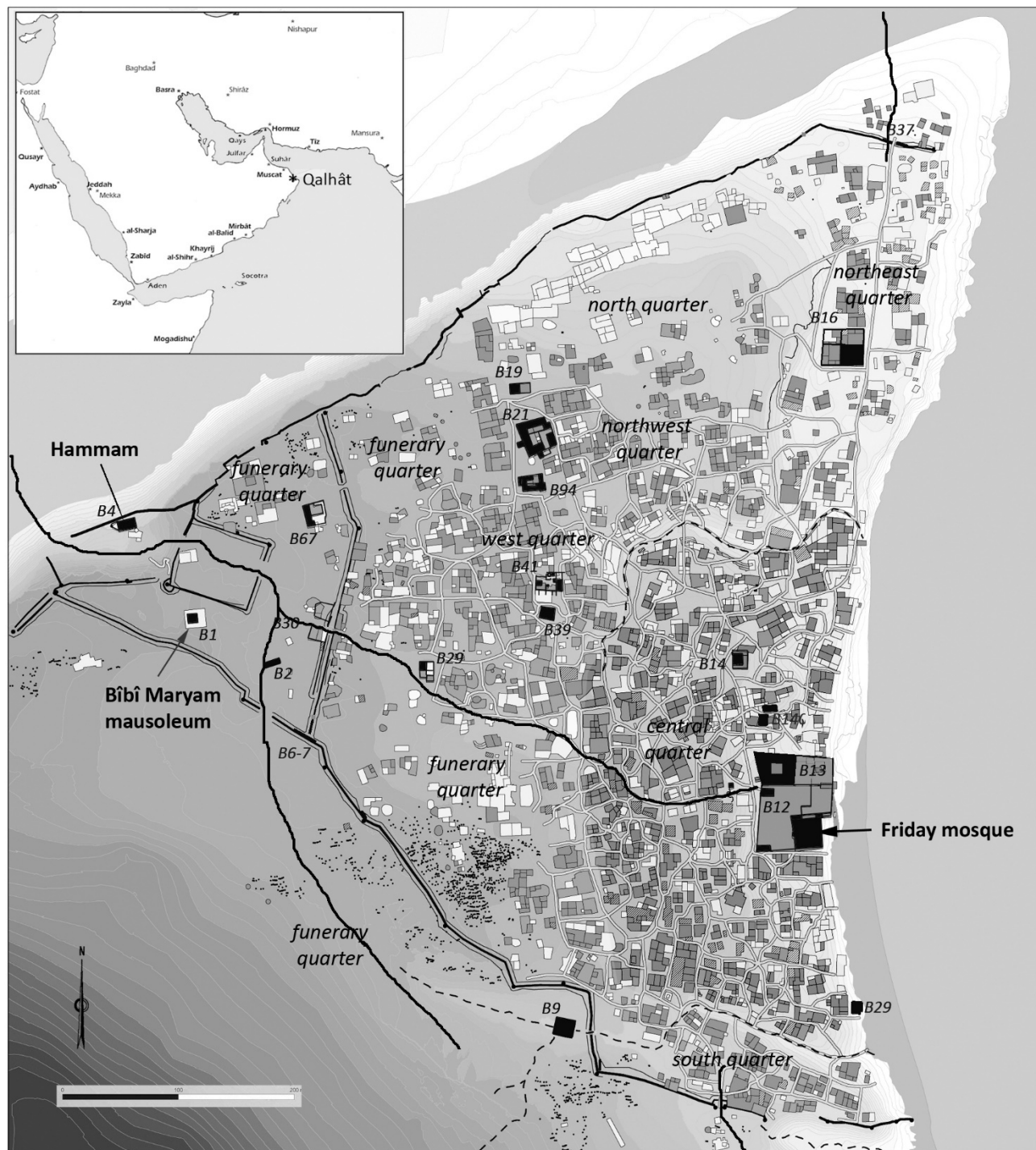


Image 3: A map of the medieval city of Qalhat showing also the excavated buildings
(© Qalhat Development Project)

- B1: Bibi Maryam Mausoleum
- B2: Cistern
- B4: Hammam
- B6-7: Defensive wall
- B9: Cistern
- B12: Great Friday Mosque
- B13: Public building near Great Friday Mosque
- B14: Large public complex with possible khan, hospital, etc.
- B16-17: Possible palace (only soundings)
- B19: Platform mosque
- B21: Warehouse
- B29: Platform mosque
- B30: West city gate
- B37: North city gate
- B39: Jewellery workshop
- B41: Pottery workshop
- B67: Funerary mosque
- B94: Twin house
- B140: Suq



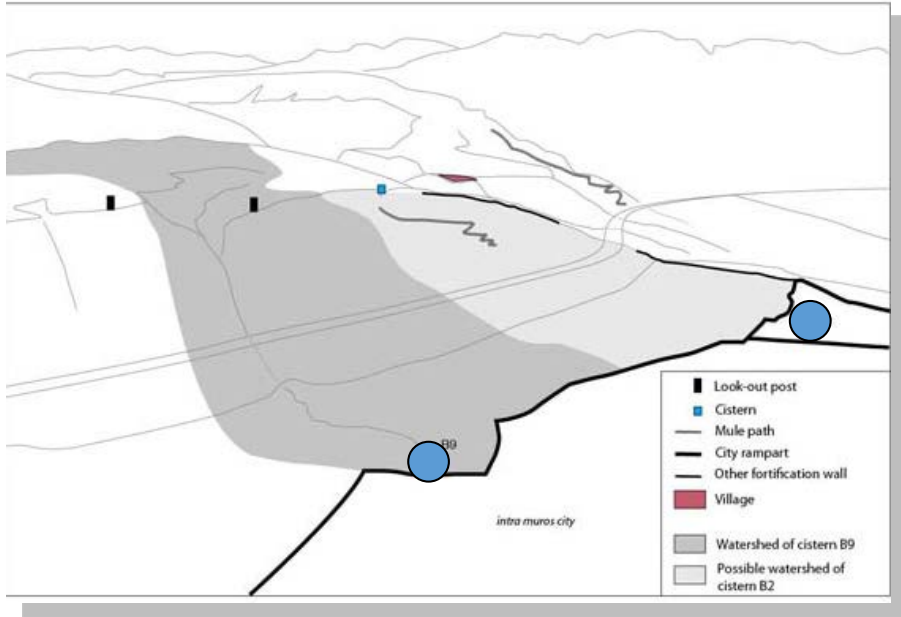
Image 4: An aerial view of Qalhat with some of the quarters. In the background, Wadi Hilm and the khwar (© Qalhat Development Project)



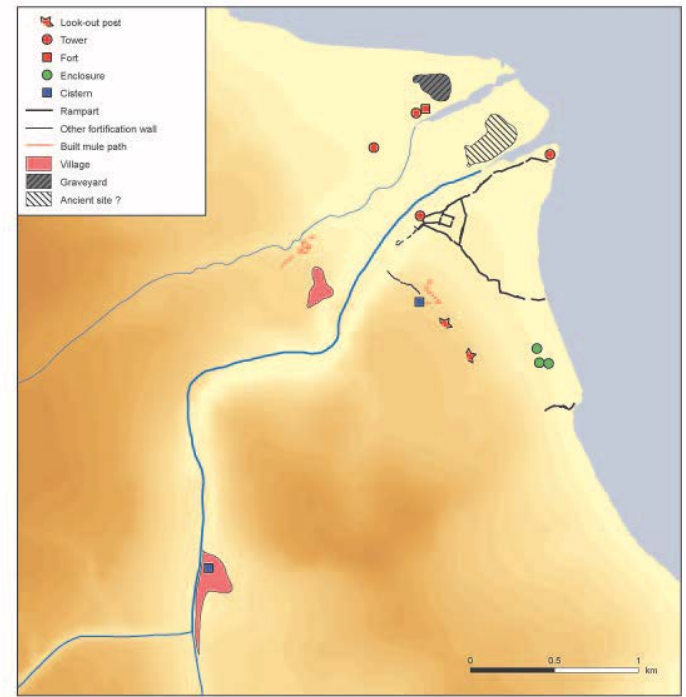
Image 5: The geographical and geological environment of Qalhat (from Rice Facey W. & M. 2005)



Image 6: Aerial view of the Great Friday Mosque during excavation (© Qalhat Development Project)



Watersheds of the intra and extra-muros cisterns (© Qalhat Cartographic project - CNRS)



Intra-muros cistern (B2)



Image 7: Water resources in Qalhat (© Qalhat Development Project)



Image 8: The Northwest Quarter under excavation (© Qalhat Development Project)

From North:

B19: Platform mosque

B21: Warehouse

B94: twin houses (details below)

B94: below, fish processing area; right, madbasa for the production of date honey (© Qalhat Development Project)



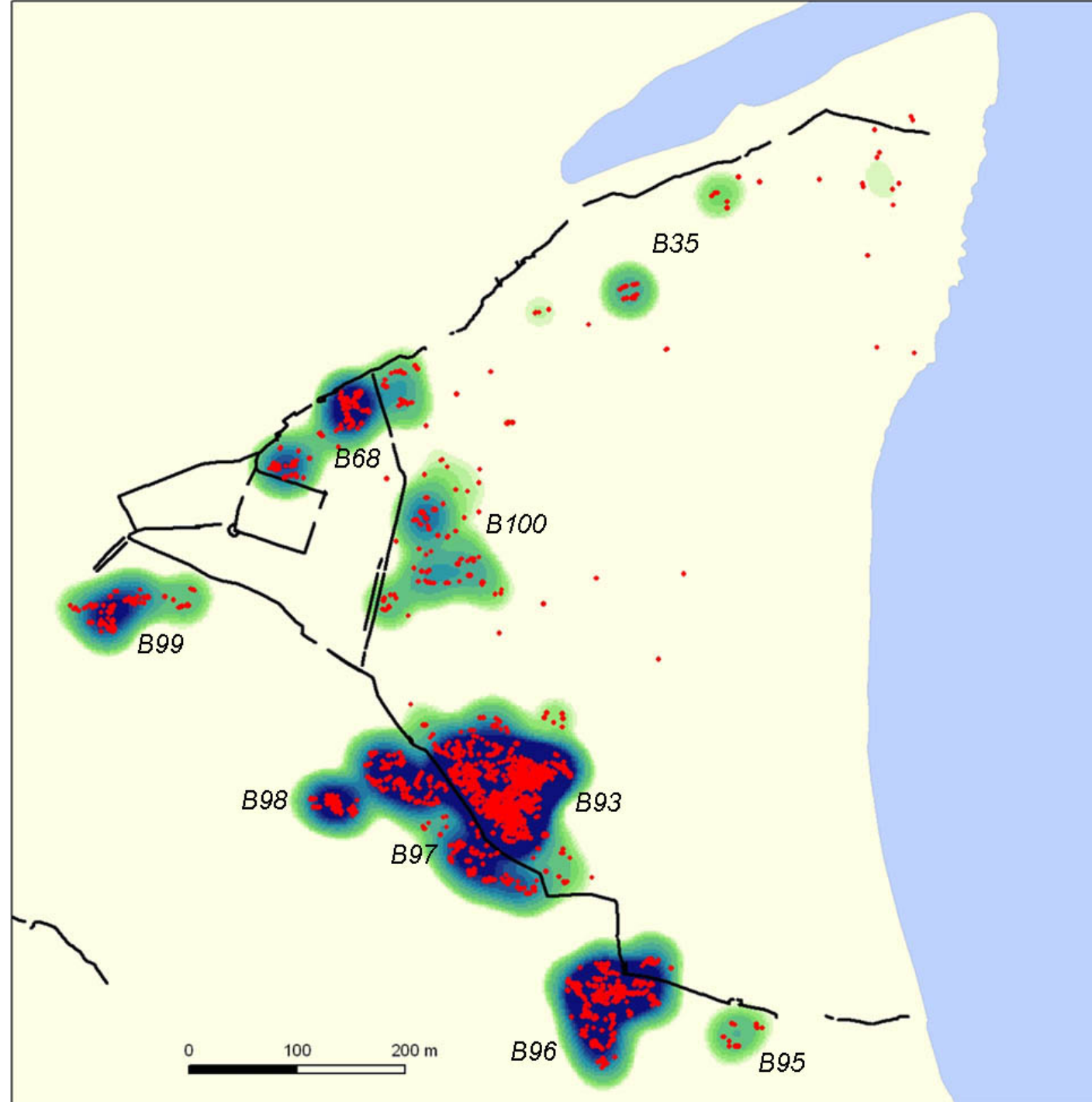


Image 9: Location of the funerary areas in Qalhat (© Qalhat Development Project)



Image 10: Local, Omani and imported ceramics (from Iran and China) of the second half of the 16th century from B94 (© Qalhat Development Project)

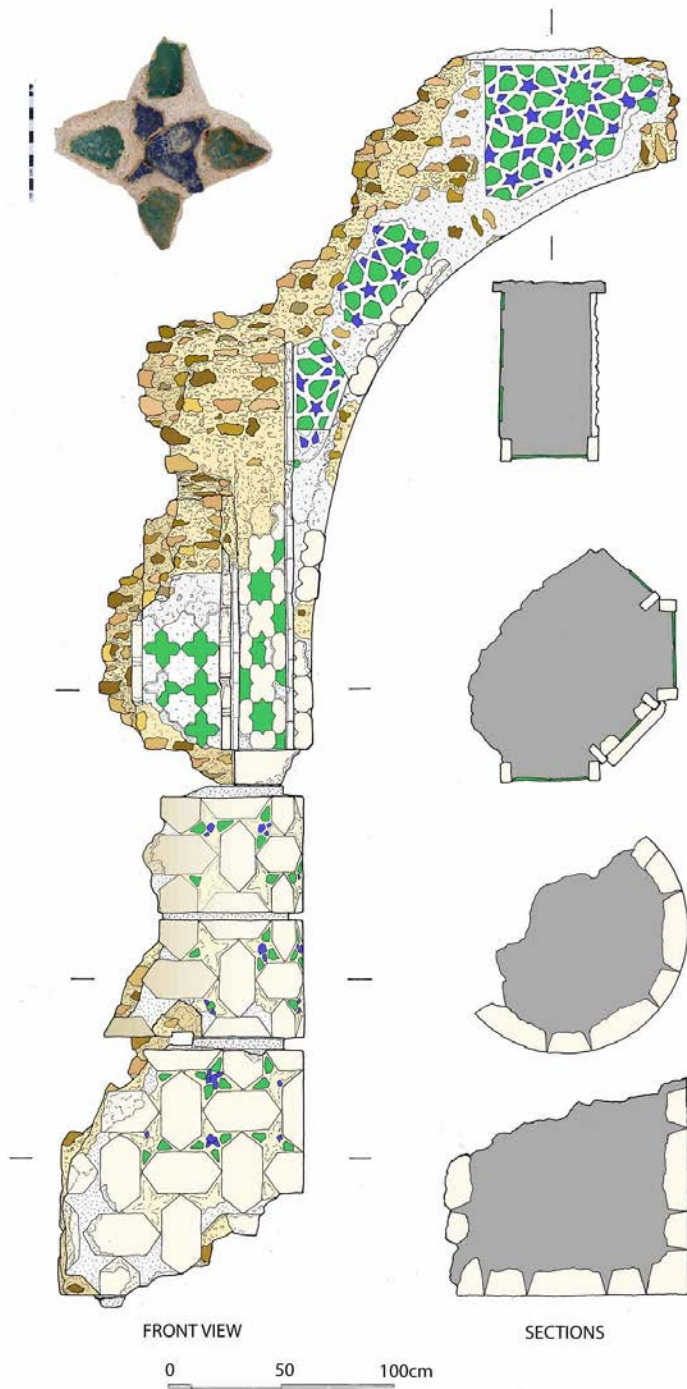


Image 11: Restitution of a column and arch under the cupola of the payer hall in the Great Friday Mosque from collapsed fragments (© Qalhat Development Project)



Image 12: An aerial photogrammetric view of the pottery workshop B41 (© Qalhat Development Project)

As requested by the ICOMOS panel, the State Party organized a series of additional information that will highlight the importance of the Ancient City of Qalhat.

Qalhat is an exceptional preserved archaeological site and the unique testimony of the greatness of the kingdom of Hormuz of which it was the second capital. Between the 13th and 15th centuries, the Hormuz Kingdom was the leader of the maritime trade in the Indian Ocean, and Qalhat along with the city of Hormuz itself, controlled the kingdom's political, commercial and administrative affairs. Qalhat is the only opportunity to bring alive this extraordinary heritage and legacy, as the ancient city of Hormuz has now totally vanished. It provides a unique, outstanding and yet exemplary insight on a medieval Omani harbour in the Indian Ocean that was the point of contact between the Arabian hinterland and the East as archaeological items from China, India, and Iran testify.

It was significant enough to be mentioned or visited and documented by many authors and in particular by two of the greatest explorers in history, Marco Polo and Ibn Battuta. Its importance and significance as a port city are also reflected by the scientific information and data, and by the artefacts collected from the extensive archaeological explorations.

Excavated and studied since more than 10 years, Qalhat already brought a mass of information about the urban planning, architecture, artisanship, material culture, society and daily life of medieval Oman. The majority of the following information is collected in scientific publications and in the reports and documentation provided by the archaeological teams at the end of each working season and that are available in the archives of the Ministry of Heritage and Culture in Muscat.



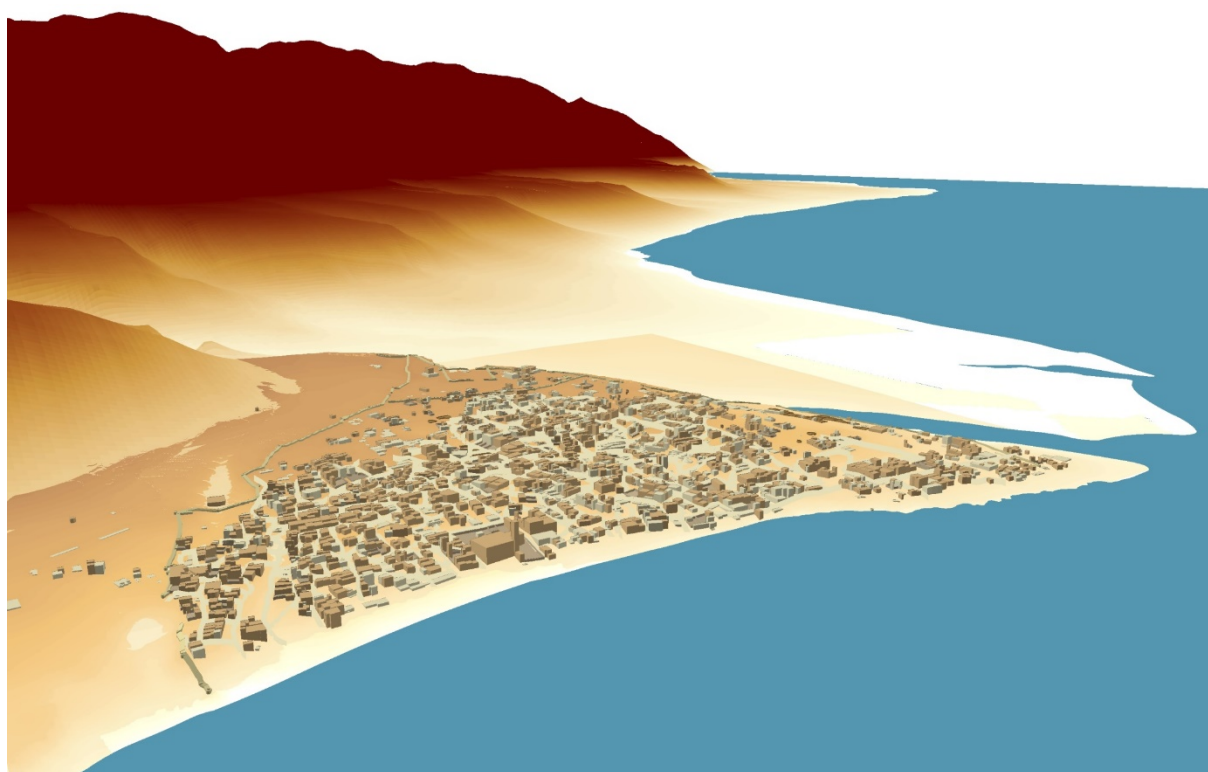
Aerial oblique image of Qalhat before excavations and the expressway from Rice Facey W. & M. 2005 (III ed.).
Oman. A Seafaring Nation. Ministry of Information and Culture, Sultanate of Oman, p. 44.

Justification of potential Outstanding Value

Surveys

Qalhat is one of the main archaeological sites of Oman. From a surface glimpse, the site is not more than a huge ocean of stones, 35ha wide, with nearly not a single standing building visible except for the mausoleum of Bibi Maryam. Nevertheless, aerial views clearly show the main features of this medieval port city, which is known from literary sources to have been a major hub of international trade in the Indian Ocean between the 13th and the 15th centuries. The city was totally deserted at the end of the 16th century and stayed untouched until present, never reoccupied or looted.

One of the main objectives of the archaeological work that started at Qalhat in 2008, besides excavations, was to produce a map, as accurate as possible, of the medieval town, based on non-invasive surveys. In 2008, the Cartographical Project led by cartographers from the CNRS lab Archéorient (**Images 1a-b**) produced a global Digital Terrain Model (DTM), following a 10m grid for the intra-muros area, and a 20m grid for the areas outside the walls, using a Differential Global Positioning System (DGPS) to build a database in ArcGIS. This allowed creating topographical representations of the surface, maps with contour lines (**Image 1c**) and rough 3D models of the ground.



3D model of Qalhat

In 2009-2010, the Cartographical Project used the same DGPS system, associated to kite photos, to plot and register in the GIS all heaps of stones testifying of the presence of walls underneath and determining buildings or groups of buildings, all open spaces or lines which could be interpreted as traces of the ancient streets network and all specific features, related to the funerary areas, the fortification and the water supply system, etc.

Altogether, about 2800 individual items were plotted, ranging from complete buildings (around 300, often seemingly including several units/dwellings), to single graves and isolated lines of wall. A preliminary map of the medieval city was drawn (**Image 2a**). To clarify the documentation methodology and the degree of legibility of the registered structures, two maps were produced (**Images 2b-c**) showing survey methods and reliability (the darker the most accurate, the lighter the less accurate).

Since the beginning of the Qalhat Development Project in 2013, a new aspect of the Cartographical Project was developed, thanks to the digital documentation work made by Iconem. A complete survey of the entire area of the archaeological site was implemented (**Image 3a**), thanks to high definition photos (8 to 3cm/pixel) captured by drones (**Image 3b**). Detailed photogrammetric documentation is also made of each excavated building (0,5cm by pixel) before and after conservation works (**Image 3c**). Tentative 3D reconstruction models of buildings, especially of the Great Friday Mosque or Bibi Maryam Mausoleum (**Image 3d** and <https://sketchfab.com/models/a0c8bae4d03548e695c4e71a5b96f2b5>), and of the city as a whole, are done or are currently in progress.

The medieval city – evolution, general layout and urban planning

Historical researches, the cartographical project with the associated detailed archaeological survey, soundings and extensive excavations held since 2008 allow a rather clear understanding of the general layout and urban planning of the medieval port city of Qalhat (**Image 4a**).

The adaptation to the topography of the terrain is, for example, very clear in the layout of the fortifications, which were built around 1219 according to Ibn al-Mujawir. They follow the steep edge of Wadi Hilm to the northwest and the Qalhat tectonic fault on the southwest side, enclosing a huge area with the core of the earlier city concentrated to the east along the beach and limited by the beds of two small *intra-muros* wadis. The beach is the only place where landing was possible and it is off this shore that in 2003 the T. Vosmer's team identified and plotted 15 to 17 anchors (**Image 4b**).

According to excavations' results, this earlier urban layout was mostly remodelled at the time of the main expansion of the town under the reign of Ayaz and Bibi Maryam (c.1280-1320). It is also the time when most of the peripheral quarters, North, Northwest, West and South, were eventually settled and which show rather different layouts and specific functions. As a matter of fact, the main features of the urban structure of the city as it appears nowadays on the surface and dating to the 14th-15th centuries, seems mostly due to the will power of Bibi Maryam.

The Central Quarter – mapping and urban structure

Located inside the two *intra-muros* wadis, the Central Quarter covers the slopes and the bottom of a depression sloping down toward the shore, the only place where the boats could land. It is the most ancient part of the city as archaeological levels excavated there dating back to around 1100 prove.

The preliminary map produced in 2008-2010 was used as a base during a survey held in 2013-2016 that permitted to achieve a detailed plan of the entire quarter. About 140 structures, buildings or groups of buildings, were identified around the Great Friday Mosque complex on the shore. Lines of walls were searched and cleared to identify the limits of the buildings with their partition walls and courtyards, outside terraces and probable entrances; the number of storeys was tentatively

speculated according to the thickness of the collapse (**Image 5a**). In 2016, a new mission of the CNRS cartographic team allowed entering about half of these new data in the GIS database, and a further mission is planned to complete the entire detailed map of the quarter.

This updated detailed map (**Image 5b**) shows clearly that three areas with different spatial organization can be identified. To the north, there is an area with large buildings scattered amongst rather void spaces often covered with large low terraces. To the west and south of the Great Friday Mosque, there are medium buildings distributed in a slightly denser urban pattern. On the southwestern fringe of the quarter, there are much smaller and densely packed constructions.

The various features of the circulation networks were also mapped: one main west-east street leading from the west gate of the city to the Great Friday Mosque; four more or less parallel north-south streets including one along the mosque leading north to the probable residence of the governor in the North Quarter (B16); several secondary meandering east-west streets climbing from the beach to the plateau, with terraced, built and/or cut stairs that climb the sloping ground, as the one in front of the entrance of the Great Friday Mosque (**Image 5c**).

All these features fit well with the description of Qalhat ‘with narrow streets starting from the beach near the mosque’ made by the Portuguese (Albuquerque p. 217). There are also similarities with the accounts made by the same Portuguese about the circulation network in Hormuz ‘with a main east-west street reaching the great mosque, a perpendicular street leading to the palace, with a crossroad near the mosque, other large streets some of them ending on the shore, and a maze of meandering narrow lanes’ (Aubin 1973, p. 92).

The Great Friday Mosque

The Great Friday Mosque (**Image 6**) is located in the heart of the ancient quarter of the town, on the shore, at the end of the main street of the city coming from the west gate. It was discovered in 2008 and was extensively excavated since then. It is now under conservation work.

The Great Friday Mosque (**Image 7a**) was built on a high basement with underfloor cellars, in an ‘elevated position overlooking the harbour’ as described by Ibn Battuta. The accurate study of all the masonry fragments from the first floor collapsed inside the cellars allows a plausible tentative reconstruction of its plan (**Image 7b**) and of its general layout (**Image 7c**).

Above the basement, the prayer hall was accessible from the upper (high) courtyard to the west, or by staircases from a lower courtyard to the north. It was divided in two spaces by a wall with wide doors: to the east, the entrance hall with a porch access had high octagonal masonry columns; to the west there was the prayer hall, with a highly decorated gate, massive cylindrical stone columns topped by high arches, a decorated *mihrab* and a *minbar*, first probably in wood then in masonry. The roof was flat except for a cupola on drums at the meeting point of the entrance bay and the axial nave. Against the northeast corner, there was a square minaret, with a decreasing shaft marked by false merlons. Against the northwest corner, there was a small tower leading from the upper courtyard down to a private ablution area, and seemingly also up to the roof of the mosque.

The study of the collapsed layers also brought much information on the very rich, and unique in some points, ornamentation of the mosque, inspired both by local craftsmanship and by Persian traditions. For example, the decoration of the spandrels of the arches under the cupola, made of cut

fragments of green glazed tiles inlaid under coils of mortar in the shape of intricate stars has no parallel (**Image 8a**). Many various types of moulded mortar panels were found, as decoration of engaged columns (**Image 8b**), on the *minbar* and around the *mihrab* (**Image 8c**).

The main ornamental elements were glazed tiles in the shape of stars and crosses (**Image 8d**), either associated in mosaics or inlaid alone in white plaster (**Image 8a**), a typical Islamic motive. Many are green glazed, which were made in the local pottery kiln (B41) excavated in the West Quarter of the city in 2016. Others are turquoise or cobalt blue glazed and chemical analyses performed in the UPMC in Paris showed that they were probably made in the same pottery kiln, with local clay, but with materials imported from Iran for the glaze. The Persian influence in the Great Friday Mosque of Qalhat is also clearly shown by the discovery of many fragments of beautiful glazed tiles from Kashan (**Image 8e**), of lustre, turquoise and *lajvardina* types. A beautiful piece with the image of a phoenix is identical to those found in the palace of Takht-e Sulayman and now preserved at the Berlin Museum. These fragments allow a rather precise dating for the construction of the mosque, around 1300, under the reign of Ayaz and Bibi Maryam, as Ibn Battuta wrote.

The Central Quarter – other administrative buildings

This quarter was the heart of the city and it is clear that, besides the Great Friday Mosque, most of the official or administrative buildings may have been located there, especially along the seashore where many of the activities of the inhabitants were taking place as described in ancient texts.

North of the Great Friday Mosque, in the same architectural complex and dating to the same period, is a large building with a central courtyard and a tower in the southeast corner (B13). Although no extensive excavations were held there and its function remains for the moment unknown, it is believed to be most certainly an official edifice as two doors were connecting this building with the mosque's courtyard.

North of this complex, there is a rather flat area where excavations in 2013 cleared several small units served by back-lanes on both sides of a narrow street leading to the beach, certainly shops of a *suq* (**Image 9b**). North of it, on top of the plateau, there is another wide architectural complex (**Images 9a-b**). It includes eight buildings connected by fence walls and crowning the rocky ridge, which overlooks the *suq*/B13/mosque area to the south and the shore to the east. The buildings and walls enclose a wide space with three large courtyards around a central edifice. Each courtyard opens onto the outside through a gate (north, west and south side of the complex). The central building (B14) stands at the top of an indentation in the ridge leading down to the shore (**Images 9a-c**). It is marked by a huge piece of masonry collapsed on top of an arch (**Image 9d**), the only piece of construction which was still visible on the surface of the site beside Bibi Maryam Mausoleum. Excavations held there in 2008 by an Iranian team cleared several symmetrical small rooms, as cells, and delivered a rather rich material including fragments of an inscription (**Image 9e**). It is therefore clear that this complex had also an official function, possibly the same kind of complex of public buildings, which was located in the area of the palace at Hormuz, and which included a *madrassa*, mosques, a *suq*, a hospital, a *khan*, etc. (Aubin 1973, p. 88-89).

The Central Quarter – the houses

Amongst the other buildings registered in the Central Quarter, some had probably an official function. The custom, for example, might have been one of the buildings along the shore south of

the mosque, possibly B150, with large terraces overlooking the harbor as the one in Hormuz, which was described as made of rather small buildings surrounded by opened galleries (Aubin 1973, p.90).

Other buildings in the Central Quarter were certainly private dwellings. As shown by the most recent detailed survey map (**Image 5b**), they were of various sizes and shapes, but always with a courtyard, and probably at least two storeys high. They were built on the sloping bedrock of the plateau and were served by streets, lanes and squares. Because it is complicated to excavate in areas away from the modern tracks, as the evacuation of the rubbles is very difficult, information on these houses are scarcer. Nevertheless, a comprehensive knowledge of the ground leads us thinking that the Central Quarter of medieval Qalhat may have looked rather similar to some historic centres of present Oman, as al-Hamra (**Image 10**).

The Northeast Quarter – urban structure – the palace?

The Central Quarter is surrounded by peripheral quarters (**Image 11a**). Excavations held to the Northeast (B16), Northwest (B19, B20, B94), and West (B39, B41) Quarters showed that they were mostly void until the end of the 13th century.

The Northeast Quarter is located between a 12m high cliff overlooking the sea between the shore and a parallel rocky ridge. It has buildings on both sides of a straight street connecting the beach and the harbour to a city gate in the north fortification wall. From there, it was easy to cross the mouth of Wadi Hilm at low tide, and to reach the north coastal road to Qurayyat and Muscat without crossing the entire city.

In this quarter, on the west side of a large rectangular square, there is building B16 (**Image 11b**). It is the largest building identified at Qalhat with its more than 1110m² of extension. It could furthermore be associated with the next-by building B17, only slightly smaller, to which it is linked, reaching a size of more than 2000m². Soundings held in 2009 showed that there are two successive phases, the first one dated to the 14th c. the second to the 15th c. The two plans are rather similar. They were made of four quadrants, three with rooms around large courtyards, the last one a residence with a central beautiful *majlis* (12.5m long and 3.7m large) decorated all around by regular niches and entirely plastered by a strong white coating (**Image 11c**), and possibly covered by a cupola in the centre. Most probably, it was the residence of the governor of the city, with a residential estate around a reception hall and all the necessary commons all around, as was the case in the palace of the kings of Hormuz. This one was described as a huge fortified construction with several buildings separated by inner courtyards, with kitchens, stables, stores, workshops, and armoury. It was also located at the margin of the city with a direct access to the outside, and was decorated with niches to display Chinese porcelains (Aubin 1973, p. 86-87).

The Northwest Quarter – dwellings

Up to the plateau, the Northwest Quarter shows a rather sparse urbanism, with clusters of buildings of various kinds and functions organised around squares or wide void areas (**Image 12a**). Three such buildings at the northern border of the quarter (**Image 12b**) were extensively excavated and then preserved: a small mosque (B19), a wide construction that could be a store (B21), and a dwelling (B94). This dwelling (**Images 12c-d**, before and after excavations) includes two contiguous units, each one with rooms around a courtyard (**Images 12e-f**, before and after conservation; **Image 12g**,

tentative restitution). The ground floor was mainly devoted to domestic and craft activities, the living area was most probably located in the first floor.

These twin houses are the only dwellings excavated until now at the site. They delivered many data about the daily life of the Qalhatis, who were involved in fishing, agricultural and livestock activities as proved by the materials found during the extensive excavations. Archaeological, archaeobotanical, archaeozoological and ichthyological studies made on this material show the presence of a stone anchor (**Image 13a**), many fish remains (19310 samples studied, **Image 13b**), and several structures related to fish processing (production of *garum*?) (**Image 13c**); a *madbasa* for the production of date honey (**Image 13d**), many grinding stones (**Image 13e**) and varied grain remains, local and imported as Asiatic rice (**Image 13f**); a large amount of various animal bones, especially chicken and caprine (3853 samples studied, **Image 13g**). The very varied fish species collected indicate that the Qalhatis practiced both coastal and offshore fishing, and the large proportion of young mammal bones testifies of the wealth of the inhabitants. A small room and its backroom opened to the outside against the west wall was possibly a shop.

The Northwest Quarter – a trading warehouse?

Close to B94, there is a massive building 770m² wide (B21), which was solidly built on the bedrock with limestone blocks and a strong red mortar (**Images 14a-b**, before and after excavation). It dates to the early 14th c. and excavations proved that it underwent three main architectural phases. In its first phase (**Image 14c**), it had fifteen rooms, organised in ten independent units, which opened either onto the outside or onto a wide central courtyard. The building was soon re-organised and its plan partitioned into three almost equal spaces with independent rooms around smaller courtyards (**Images 14d-e**). In the third phase, nearly all rooms were backfilled with a layer that can be dated to the 15th c., and the building was eventually abandoned in the early 16th c., possibly after the Portuguese attack.

The organisation in independent units seems to indicate that B21 was used by different people, possibly as a warehouse for merchants to store their riches. The rather narrow access to the courtyard, with an entrance room maybe for guards, could support this hypothesis. Its later partition in three equal parts might indicate that it was originally the property of a single owner that was later divided.

The Western Quarter – workshops and techniques

Not far south of B94, two nearby buildings were excavated in the West Quarter of the city (**Image 15a**) and they appear to be both workshops. The northernmost is a pottery kiln (B41; **Image 15b**), which was built on the bedrock at the end of the 13th c., most probably in order to produce the glazed tiles used for the decoration of the Great Friday Mosque as several wasters of stars and crosses were found. It then produced, in the 14th c., a wide range of glazed and unglazed vessels of all kinds, including imitations of Hormuzi ceramics. Chemical analysis of these productions delivered interesting data on the techniques in use in medieval Qalhat, among them the exceptional use of fish as fuel. Current typological studies of the sherds will allow further understanding of the trade networks of the harbour (**Image 15c**). Several courtyards with three successive kilns, clay work areas, and waste areas were cleared. The pottery workshop was later abandoned and backfilled in the 15th c. by the rubbish of another near-by pottery kiln, probably located to the northwest.

South of B41, another excavated building appears to be an artisan's workshop (B39; **Image 15d**), given the material found inside (fragments of cornelian and other semi-precious stones, a pearl, balance's weights, cast moulds, etc.). It was built in the 15th c. on the top of an area with several basins that in the 14th c. were probably part of B41, and it was destroyed by fire, most probably by the Portuguese in 1508.

At least three workshops were therefore located in this area, and it is possible that this western suburb of the town, between the Funerary Quarter and the city centre, was mainly devoted to crafting activities.

Other technical building – the hammam

Further information on the techniques used in medieval Qalhat were provided by the excavations and study of the *hammam*, the only building of that kind ever found in Oman, and with no known parallel elsewhere in the Arabian Peninsula. It is located near the main access to the city and it was built together with a deep well and a high terracing wall, which protected this fortified entrance (**Image 16a**). This huge architectural project was most probably executed during the heydays of Qalhat, under the reign of Ayaz and Bibi Maryam. This hypothesis is sustained by the fact that they were both former Turkish slaves and that the *hammam*, with a circulation around a central space (**Images 16b-c**), seems of Byzantine rather than Persian inspiration.

As for the *praeefurnium* (furnace), the *hammam* seems to have been fuelled mostly with fish. It shows a complex system (**Image 16c**) composed by a fire chamber, an hypocaust (**Image 16d**) and pipes for the heating system; by a well, tanks, canalisations, tubs and basins for the supply in hot and cold water; by sloping floors, pipes, canals and raised threshold (**Image 16e**) for the evacuation of wastewaters.

Funerary practices – the secondary mosques

The Great Friday Mosque on the shore was the only congregational mosque of the town. Nevertheless, ten small secondary mosques were identified (**Image 17a**), which are nearly all located at the limit between the city and the funerary areas as the one excavated in the Northwest Quarter (B19; **Image 17b**) or near the west gate of the city (B29; **Image 17c**). They are all similar, built on a platform about 16x8m and 1,5m to 2m high, with a square courtyard accessible by a staircase and a square prayer hall. Some show secondary lateral terraces and/or additional enclosures. These are unique buildings, only paralleled by modern countryside mosques in Bahrain. They could be quarter mosques, but they also seem associated to funerary practices as graves are often found around or even on the terraces.

Funerary practices – the Funerary Quarters

The funerary area is located around the settlement itself, inside and outside the city walls. Nine graveyards were identified (**Images 18a-b**). More than 2000 various funerary structures were plotted by the Cartographical Project, including small mausoleums (**Image 18c**), cist graves with inscriptions (**Image 18d**), simple graves of various shapes (**Image 18e**), and funerary terraces (**Image 18f**). These ones are raised areas of various shapes and sizes, 30 to 150cm high, with surrounding walls, small white pebbles on the surface, and often pairs of small raised stones on top indicating underneath burials, which have no parallels outside Qalhat. The current detailed study of the spatial distribution

of these various kinds of burial practices might bring information on the social organisation of the city.

The defensive system – the fortifications

In his sketch plan of the fortifications of Qalhat (1230), Ibn al-Mujawir drew walls with a trapezoidal shape (**Image 19a**), which he dated to c. 1219. Excavations confirm the dating and the similarities of the actual walls with the ones of the sketch. They are in fact of a triangular shape, with an intermediary wall, which makes a trapezoidal inner city (**Image 19b**). The mausoleum of Bibi Maryam was not built at the time Ibn al-Mujawir visited the town, which certainly explains why he did not notice the westernmost part of the city.

Ibn al-Mujawir also indicated a sea wall with towers. This wall was actually made by the high walls of large houses on the shore, as was the case in Hormuz (Aubin 1973, p. 91), and several towers were identified on the beach (**Image 19c**).

The wide plateau south of the city, enclosed between the cliff and the mountain (**Image 19d**), was further closed to the south by a huge fortification wall with two large round towers on both sides of a strongly fortified gate (**Image 19e**). This is certainly the gate where Ibn Battuta was stopped when arriving from Sur, 'with his feet bleeding'. This vast empty closed area, with an easy access to the beach through an indentation in the cliff (the Qalhat tectonic fault, **Image 19d**) along the south wall of the city, looks appropriate as the probable location for the horses ready to be embarked on the ships leading to India. The presence of an outside open-air cistern, of the ruins of water catchment structures in a small wadi in the middle of the plateau, and of an enclosure nearby could confirm this hypothesis. No remains of stables have been detected during the survey, as it is most probable that they were light traditional shelters made of perishable materials as palm wood and leaves (*arish* or *barasti*).

The defensive system – the look-out posts

In his sketch, Ibn al-Mujawir indicates towers on the mountain over the city. During the systematic survey, two lookout posts, north (**Image 20a**) and south (**Image 20b**), were in fact recorded there. The north one was connected to the west corner of the rampart of the city by a fortification wall following the ridge of the mountain. From these posts, the entire coastal area south and north of Qalhat was visible (**Images 20c-d**). They were sided by a cistern, a small mosque, a barrack and a platform (**Image 20e**, north post), and a wide enclosure (south post).

The water supply of the city

Qalhat was founded on a plateau mostly made of very hard puddingstone and no well was dug inside the city. Rainwater was collected from the roofs of buildings down to small in-door cisterns, as it is the case in the twin houses; or in small dams and basins, which are still visible inside the two *intra-muros* wadis.

The main water sources for the inhabitants of Qalhat were two large cisterns (**Images 21a-b**). One is an open-air cistern (B9) which was built in a fault in the bedrock, just outside the south wall (**Images 21 c-d**). It was most probably mainly used for watering cattle and horses stabled in the southern plateau. The second is a large vaulted cistern for human consumption (B2), which is located *intra-muros* near the west gate of the city (**Image 21e**). As its watershed is cut by the fortification wall,

water was most certainly brought up from wells in Wadi Hilm by a continuous flow of donkeys or other animals. The digging of this cistern (13,70 x 4,10m and at least 5,10m deep, a capacity of at least 300m³) required a huge workforce and can most probably be dated to the heydays of Qalhat, possibly under the reign of Ayaz and Bibi Maryam around 1300.

One and a half century earlier, in the mid-12th c., al-Idrisi noted that there was no water in town and that the inhabitants had to find their supply from one of the many wells, more than one hundred he said, which were located down in Wadi Hilm.

Influences

To summarize, many and major are the urban and architectural similarities between Qalhat and Hormuz. The below table synthetizes these architectural similarities between the two capital cities, and the historical evidence that follows extends the knowledge of Qalhat's role as a port of the kingdom of Hormuz, and its commercial activities and horse trade.

Hormuz	Qalhat
<u>Palace</u>	<u>B16 – B17 (known only by some soundings)</u>
Located at the border of the city, near the northern tip of the island	Similarly, in the Northeast Quarter
Beginning of 14 th century	Beginning of 14 th century
Massive building as a fortress with nine towers and very thick walls up to 6.5m at their base	Towers not identified; walls 1m thick only
Length about 80-100m, seemingly narrower in the middle	B16: 31m but up to 70-80m if adding building B17. They are connected through a narrow construction along the street and a courtyard at the back
Several inside courtyards separating buildings	The two buildings are separated by a courtyard and there are several inside courtyards
Inside secondary buildings as stables and armory	Courtyards surrounded by small buildings
Rooms with niches to present Chinese porcelain	B16: central wide <i>majlis</i> with decorated niches all around
Other palatial houses in the same area for the <i>wazir</i> and members of the royal family	Some large houses (B18) possibly for rich merchants
Complex of public buildings in the area of the palace: madrasa, mosques, <i>suq</i> , hospital, <i>khan</i>	B14: on top of the ridge up the Great Friday Mosque; excavated by an Iranian team. It is a central building with surrounding walls and symmetrical small rooms with two large courtyards; possibly with a <i>khan</i> or a hospital B140-141: the <i>suq</i> B13: a large public building between B14 and the Great Friday Mosque All these buildings are in the Central Quarter.
<u>Friday Mosque</u>	<u>Great Friday Mosque</u>
Built at the beginning of the 14 th century in the middle of the city, <i>ca.</i> 250m far from the palace, with a minaret	Built at the beginning of the 14 th century in the middle of the city along the shore, with a minaret.

Custom warehouse near the palace on the beach, rather small building with surrounding opened galleries	Possibly B150, near the Great Friday Mosque, with large terraces overlooking the beach.
<u>Others</u>	
No surrounding fortification walls, as the city is on an island, only some towers with garrison around. Continuous line of houses along the shore with the streets reaching straight the beach. At the time of the Portuguese attacks, these accesses were closed by barricades (in Persian <i>kucha-band</i>)	Fortification on the mountainsides but exactly similar line of houses with high walls along the beach, with streets leading to the beach, possibly closed at some occasions.
Main east-west street leading to the Great Mosque, and one perpendicular street coming from the palace, with a crossroad not far from the mosque; some other large streets; narrow meandering streets	Main west-east street from the West Gate to the Great Friday Mosque, and north-south street from the North Gate and B16 to the mosque; other large north-south streets et narrower meandering east-west streets
Houses without backyard nor garden, only small patios	Similarly, all building have only rather small inside courtyards (see B94)
High houses with two to four storeys and wind-tower (<i>badger</i>)	Seemingly at least two storeys in most houses, and sometimes a marked elevation in one angle, possibly a wind-tower
Poor people living in reed and palm huts in the south part of the city	Possibly the same in Qalhat in the North Quarter, or/and outside the fortification in the south plain
Mausoleums of Hormuzi princes not far from the sea	Bibi Maryam and other smaller mausoleums in the graveyards around the city
Flat area near the graveyard where the kings of Hormuz used to play pall mall game	Possible same activity in the flat south plain near the graveyard
Underground cisterns covered with domes for collecting raining water in the suburb and the plain at the foot of the hills	Seemingly, see cisterns B2 and B9
High place near the sea (<i>torumbaque</i>) with look-out post to check the arrival of boats	Seemingly, look-out posts on the first ridge of the mountains

Some other architectural features have foreign influences and are unique for the region as Bibi Maryam Mausoleum and the *hammam*, while others look to be exclusive to Qalhat as the platform mosques that have parallels only in modern Bahrain.

It is more aleatory to define if Qalhat influenced or was influenced by other cities, as a cultural, architectural and urban *koiné* expanded in the Gulf and in the Indian Ocean over the centuries

determined by the exchanges, the movement of people, the trading, the geological available materials, the climate, etc.

Further investigations and researches

Beside conservation activities, the team of the French National Centre for Scientific Research (CNRS-UMR 8167 Orient et Méditerranée) is continuing researches in Qalhat. Surface survey and archaeological soundings are conducted every year in selected areas to accomplish the works and to clarify scientific issues. The cartographers are expected to complete soon the survey and the GIS. Associated studies concerning ceramics, fauna, flora, coins and the historical sources are ongoing and are conducted in cooperation with various CNRS laboratories and with the University Pierre et Marie Curie in Paris. Additional information is in the management section below.

Comparative analysis

The previous pages provide a wide range of archaeological and architectural information about the Ancient City of Qalhat. The following lines analyse the historical sources that speak about the site and contribute to show how it had an important role in the maritime history of the Indian Ocean between the 13th and 15th century as the second capital city of one of the major kingdoms of the period. They also put Qalhat in perspective with Hormuz and other port cities of west and east Asia, and east Africa.

Qalhat's rise as an Hormuzi port in Arabia

Not much is known on the field about the two successive cities of Hormuz, Old Hormuz (11th-13th c.), in the Minab delta on the mainland, and New Hormuz (14th-16th c.), after the city was transferred on Jerun Island in the Hormuz straights around 1300. Old Hormuz was never really identified, probably located near the shore and now silted, when New Hormuz was largely destroyed, except for large cisterns, by the Portuguese in the 15th century, by the Iranians in the 16th century, and now it is encroached by modern occupation. This makes the interest of Qalhat as a unique testimony of the Hormuz kingdom.

As it comes out from the previous pages, through literary sources, it is possible to create a comparison of the many similarities between Hormuz in the 14th-15th centuries and what is now known of the contemporary Qalhat's urban layout thanks to the archaeological researches.

In the early 11th century, the Hormuzi dynasty founded by Mohammed Dirhem-Ko rose to establish a rich and powerful sea-going merchant empire that became a byword in the medieval world for splendour and luxury by the end of the 15th century. In 1294, mainland Hormuz was described as a 'city of immense trade' and after its transfer to the island of Jerun around 1300 as 'a fine large city, with magnificent bazaars, as it is the port of India and Sind', 'very splendid', 'a port on the open sea which has no equal on the face of this earth, 'fair' and 'exceedingly rich'.¹

In the early 16th century, Gaspar da Cruz records that 'the inhabitants of Ormuz say that the whole

¹ Marco Polo in Yule, H. and Cordier, H., 1903, eds., vol 1: 107; Ibn Battuta in Gibb, H.A. 1957. vol. 2: 400; Friar Oderic in Williamson, A. 1973: 59; Samarqandi in Fiorani, V. P. 2000: 177; Barbosa in Dames, M.L. 1921, vol. 1: 91-96

world is a ring and Ormuz is the stone thereof....it is commonly said that the custom house of Ormuz is a conduit of silver that is always running'.² In the eyes of the Portuguese, Hormuz was the most important emporium for the merchandise of India ahead of Malacca and Aden.³ This view was clearly shared by Ahmed bin Majid who a century earlier wrote 'Hormuz has the most prosperity and the greatest amount of business'.⁴ The Hormuzi merchant fleets were able to dominate the sea-routes from India to Basra and south along the coast of Oman to Aden and East Africa. They enjoyed virtual independent sway over maritime trade passing through the Gulf and along the Arabian coast, and maintained their exclusive naval supremacy on the Persian coast by imposing a strict embargo on strategic materials, wood, iron, steel, sails that could be used to construct local shipping fleets. On the Arabian coast, they preserved their commercial supremacy by denying the Omani sheikhs free access to the sea.⁵ This dual containment policy meant that once the Hormuzis had eliminated their archrivals, the Al-Tibi merchant dynasty on the island of Qais around 1320, they were not seriously challenged until the Portuguese arrived off the Arabian Peninsula in 1507. As a result of the expansion of trade activity and the appointment of governors in Qalhat as the Hormuzi port in Arabia, Qalhat developed as the major coastal *terminus* in central and south-east Oman for the export of a variety of trade items, including valuable Arabian thoroughbred horses which could be safely loaded aboard Indian Ocean trading vessels in Qalhat's sheltered harbour.⁶

Qalhat's harbour, commercial activity and the horse trade

Qalhat's sheltered harbour and ecological setting combined with other natural advantages, such as the availability of water and the favourable effect of the monsoon, ensured its importance as a port and as a transshipment hub. Primary among these factors was the natural sheltered harbour formed by the mouth of Wadi Qalhat. In 1292, Marco Polo commented that the harbour 'is very large and good and frequented by numerous ships with goods from India' from which 'many good Arab horses' can be exported to India.⁷ Two hundred years later in 1507, Bras de Albuquerque, (son and biographer of Afonso de Albuquerque, the Portuguese admiral and founder of the Portuguese empire in India) noted 'the harbour is very good, is situated at the foot of some lofty ranges'. His comment that 'this port is a great entrepot of shipping' was no doubt inspired in part by the fact that the Portuguese were able to seize a 'ship of Aden, of about two hundred tons, which was there [in Qalhat port] loading horses and dates'.⁸ The Portuguese description of the harbour extending to the foot of the mountains is consistent with Miles' observation, probably based upon information from by his local informants, that in earlier times vessels could ascend the harbour for 'half a mile and anchor abreast of the town'.⁹ The existence of the harbour is one of the keys to Qalhat's strategic advantage over neighbouring towns during the medieval period and even after the Portuguese occupation in the 16th century. Valuable Arabian horses bred elsewhere on the plains of Qurayyat and the Omani hinterland and destined for the royal stables and armies of Indian princes, were channelled down to Qalhat to be loaded on board trading vessels. Elsewhere along the coast, in particular at Qurayyat, the shore was too rocky, exposed or shallow to allow these valuable cargoes

² Sinclair, W. F. tr. and Ferguson D. 1902: 266

³ Bras in Williamson 1973: 62

⁴ Tibbets, G.R. 1971: 8

⁵ Aubin, J. 1972: 140-143

⁶ De Sousa, Joao : 80-82

⁷ Yule H and Cordier H, 1903: 450

⁸ Albuquerque, B, 1874: 66-67

⁹ Miles, S. B. 1919: 475

to board safely.¹⁰ Today, it is still possible from the vantage point of the hills overlooking Qalhat to conjure up in the mind's eye the prosperous, bustling harbour of medieval times extending from bank to bank of the present-day creek. Additionally, Qalhat's harbour provided a safe refuge for ships navigating the coast of Arabia. The entire stretch of coast from Ra's al Hadd to Ra's Musandam was prone to storms and sudden dangerous squalls just offshore.¹¹ The accounts of medieval travellers reveal that the shallower waters off Qalhat provided anchorage from these storms, which could not otherwise be found along the rest of the coast due to the depth of the water.¹² Two hundred years later in 1835, Wellsted was caught in a heavy squall off Wadi Dayqah en route for Sur and was forced to anchor abreast of Qalhat for a few hours.¹³ Miles too noted the neighbouring coast all along 'is steep, ten to fifteen fathoms being found within 100 yards' when he visited Qalhat in September 1874. He also spotted a large iron ring in the cliff over the sea south of the southern wall and observed that a low headland or reef south of the creek formed a good anchorage for *bughlas* (dhows).¹⁴ This suggests that the entire stretch of shore in front of the city, which until recent times was known by locals as *bandar* (port in Persian) was used as an anchorage by trading vessels. This is consistent with a concentration of several medieval stone anchors located underwater just off the beach in the front of the city.¹⁵

Development of Qalhat as a centre for the horse trade in Arabia

The political dramas of the Hormuzi princes in the Gulf and at Qalhat were played out essentially for control of the lucrative maritime trade in horses, luxury goods and spices.¹⁶ This commerce was shipped along the shores of Africa, Arabia and India from all corners of the known world, spilling into what was at that time known by Arab geographers as Bahr Al-Arab (Lake of the Arabs = currently Arabian/Persian Gulf). Travellers' accounts reveal that the sea-borne trade of horses from Arabian ports to India before the coming of the Portuguese was immensely profitable and underpinned the prosperity of both the ports and the Arabian hinterland.¹⁷ Chief among the Indian Ocean seaports was Qalhat. Arabian thoroughbreds were the most valuable export from Qalhat and, together with pearls (*lu'lu'*) from Bahrain and frankincense from Dhofar. The sea-borne trade in horses was of considerable antiquity¹⁸ and Arabian horses were the most prized of all. The trade from Qalhat itself is almost certainly of long pedigree. According to local tradition, horses were first brought to Qalhat from the valleys of the Kings of Hadramaut by Malik bin Fahm and have been bred in Wadi Hilm since the days of the Azd.¹⁹ This echoes one of a multitude of traditions whereby the first of the ancient families of Arabian horses is said to have sprung from among the Azd in Yemen and the Taghlib in Bahrain descended from a famous stallion given to an Azdi delegation when visiting King Solomon and his celebrated stud.²⁰ It is possible that the emergence of the Hormuzis as a maritime trading power at the end of the 12th century was related, in part, to the rise of the Delhi Sultans after the overthrow of the Rajputs in 1192. The Hormuzis from their base in Kerman were ideally positioned to

¹⁰ Khouri and Al-Tadmuri, 2010: 70

¹¹ Gibb H.A, 1957, Vol 2: 393; Barros and Castenheda in Beckingam, C.F, 1983: 13-21, 18

¹² Barzee in Billecocq, X.B, 1994: 62; Esprit Julien in Billecocq 1994: 86-7

¹³ Wellsted, J.R. 1838: 40-41

¹⁴ Miles, 1919: 527

¹⁵ Vosmer personal communication; see also Vosmer et al, 1998

¹⁶ Bhacker, Mohamed Redha and Bhacker, Bernadette, 2004: 11-55

¹⁷ Serjeant, R.B. 1963: 167, note B

¹⁸ Digby, S, 1971: 29

¹⁹ Sheikh Sultan bin Mohammed as Shu'aybi personal communication

²⁰ Encyclopedia of Islam, vol 2, El Faras, by Vire F

the insatiable demand of the Delhi Sultans and southern Indian princes for valuable Arabian thoroughbreds for their royal stables. The resulting shift in the axis of the Gulf horse trade east from Qais Island and Al-Hasa to Hormuz and Qalhat sparked more than 100 years of bitter rivalry between the two merchant dynasties of the Gulf.

Marco Polo (1272-1296) tells us a “many good Arab horses” are exported from Qalhat to India.²¹ He expresses astonishment at the sheer numbers of fine Arab chargers shipped annually from Qalhat, Dhofar, Shihr, Sohar and Aden and other cities of the Arabian littoral to Hormuz and India destined for the Hindu rulers of the remote southern Indian kingdoms and the royal stables and armies of the Delhi Sultans. According to Marco Polo, the King of Ma’abar and his four brothers each imported 2000 horses per year at a cost of 100 marks of silver or 500 saggi of gold each. Vassaf writing around 1312 records that Malik Al-Islam Al-Tibi of Qais was contractually bound to supply to Ma’abar 10,000 horses annually, as many as he could procure from Qalhat, Al Hasa, Bahrain, Qateef and Hormuz as well as 1,400 from his own stables. Remarkably, the price of 220 dinars of red gold (equivalent to Marco Polo’s 100 marks) was payable by the purchaser even if the horses died during the voyage. The custom was for the merchant simply to produce the dead horse’s tail as evidence of shipment.²² Barani, writing around 1300, records similar prices (one tanka of silver being equivalent to one mark of silver). His comparative scale for horses and workers also serves to illuminate starkly certain contemporary values.²³

Horses

- First class from 100 to 120 tankas
- Second class from 80 to 90 tankas
- Third class from 65 to 70 tankas
- Tatus unfit for the master 10-25 tankas
- Pack mule (best class) 4-5 tankas
- Mule (other class) 3 tankas

Workers:

- A servant girl 5 to 12 tankas
- A concubine 30 to 40 tankas
- A pretty boy 30 to 50 tankas
- An experienced man 10 to 15 tankas
- An inexperienced boy 7 to 8 tankas

Marco Polo describes the precarious manner in which these valuable cargoes were shipped, the horses standing on top of other cargoes covered with hides.²⁴ Samarqandi, ever the fastidious traveller, embarking for Calicut from Hormuz provides more detail, ‘They divided the people and horses into two groups....and put them on the ships....And when the smell of the boat reached the nostrils of your humble servant he became in some manner unconscious’.²⁵

²¹ Yule 1871, Vol 2: 450

²² Balbi in Aubin 1972,169; Yule, 1871, Vol 2: 348-349 n7

²³ Barani cited in Digby 1971: 37-38

²⁴ Yule 187, Vol 1: 108

²⁵ Samarqandi in Digby, 1971: 30

Throughout the following two centuries, increasing numbers of horses were shipped from Oman to supply the Muslim armies of the Bahmanids and the Hindu Rajahs of Vijayanagar into whose courts Hormuzi merchants flooded. In 1507, Bras de Albuquerque described Qalhat as a great entrepot for shipping which comes to take horses and dates to India and that many horses were bred 'in all the land' (around Qurayyat) or brought from much further afield. Horses were shipped from Qalhat in preference to Qurayyat where 'the harbour is rather rocky, and the sea runs with a strong current'.²⁶ Barros provides interesting insight into trade routes and relations across the Arabian Peninsula with his note that horses (as well as all sorts of other merchandise) poured into Oman from Al-Hasa. He adds that most of the commercial items found their way to Qalhat from where they were shipped to India.²⁷ Bras de Albuquerque has left a description of how horses were stabled at Khor Fakkan, another large port under Hormuzi control 'in the town there were also large stables for horses and many straw lofts for their straw, for this port exports many horses to India'.²⁸ It is reasonable to assume that there would have been similar stables in Qalhat close to a water supply, possibly drawn from the wells in the bed of Wadi Qalhat. The open space outside the city walls to the south of the main site where there is little evidence of building may have been the site of stables. This would tally with the recent discovery of a large water cistern south of the inner city wall with a probable capacity of 700 cubic metres. The cistern is sited to catch run-off from the mountains but the water collected would not have been fit for human consumption.²⁹

Commercial activity, the horse trade and Qalhat's hinterland

The historical accounts do not indicate how far the Hormuzi writ ran inland of Qalhat. The defensive walls and towers around the city, indicate the heavily fortified character of the settlement. However, the Hormuzi-dominated population at Qalhat would clearly have been in a relationship of mutual dependence with the tribes of its immediate hinterland as well as neighbouring village communities. While Qalhat as a maritime-oriented trading port was primarily outward looking, it also had to secure water, produce and trade routes for the safe passage of goods for import and export as well as local consumption from its hinterland and adjacent coastal settlements. From the direction of Sur, Ibn Battuta passed 'people going to the town with various types of produce'. From Tiwi came 'fruits of various kinds....banana called *marwari* which in Persian means pearly' consumed locally and exported to Hormuz. Dried dates were exported from the interior of Oman and rice imported from India.³⁰ In the other direction, Marco Polo noted that from Qalhat 'spices and other merchandize are distributed among the cities and towns of the interior' and that 'every merchant vessel that comes brings some [corn]'.³¹ A highly valued commodity traded in the interior probably for millennia, has been salted fish, especially shark meat, regarded as a delicacy. Two hundred years after Marco Polo and Ibn Battuta, Bras records that Qalhat obtained all its supplies of corn, barley, maize, millet and dates from the interior 'for there is plenty of these products there', and the inhabitants presented the Portuguese with a gift of oranges, lemons, pomegranates, fowl and sheep on their first visit.³² This evidence contradicts Aubin's description of Qalhat's hinterland as disadvantaged. Although grains, fruit and vegetables were not cultivated at Qalhat, they appear to have been in plentiful

²⁶ Albuquerque, Bras, 1874, Vol 1: 71

²⁷ Barros in Aubin, 1972: 120

²⁸ Albuquerque, Bras, 1874 Vol 1, 100

²⁹ Vosmer, personal communication; Vosmer et al, 1988

³⁰ Gibb, 1957, Vol 2: 396-397]

³¹ Yule 1871, Vol 2: 449-450

³² Albuquerque, Bras: 1874, 65-6

supply. It is clear from the sources that Qalhat enjoyed good relations with its hinterland and surrounding coastal areas upon which it relied both for supplies and for safe passage of goods. The port would have, of necessity, sought alliances with far-flung tribes through whose territories these land routes passed from remote interior locations as far as the borders of Bahrain.

The symbiotic relationship between the cosmopolitan Hormuzi-controlled seaport and the Ibadhi Omani tribes of the interior is perhaps best exemplified in the conduct of the horse trade. Qurayyat, despite its geographical proximity to Qalhat, appears to have remained largely outside the Hormuzi political/cultural sphere and was under the control of Nabhani rulers until the rise of the Omani Ya'rubi Dynasty in 1627. However, it is clear from the sources that the Nabhanis in Qurayyat supplied horses to the merchants of Qalhat in return for shipping and market access. Beyond that, the economic prosperity of the entire interior of Oman depended upon its access to the Indian Ocean. This economic relationship between the Omani tribes and the Hormuzis inevitably also had a political dimension. The Omani dissatisfaction with the commercial dominance of the Turco-Iranian elements in Qalhat and in socio-political class at Hormuz triggered the civil war at Hormuz in the 15th century, which resulted in the ascendancy of the Omanis.³³ By the time the Portuguese arrived in Oman in 1507, the powerful Bahraini Jubur tribe were a dominant part of the equation. They had invaded many parts of Oman and held much of eastern Arabia from Bahrain (which they had wrested from the Hormuzis around 1418) to Hadramaut. The Hormuzis appeared to have reached a tacit settlement with the Jubur over the division of sea and land power.³⁴ At stake were their respective interests in the thriving horse trade, a significant part of which, as Barros relates, originated in al-Hasa. Elusive references linking Qalhat and Al-Hasa hint at a caravan route connecting them, perhaps opened up by the Azd, (one stream of which migrated to Al-Hasa and possibly as part of a longer route from Iraq to Yemen. Ibn Mujawir refers to a caravan route from Iraq to Dhofar used specifically by Bedouin horse-traders.³⁵ In his time, Ibn Battuta also talks of a land route between al-Bahrain (which in old Arabic usage was used to denote the geographical region which included Al-Hasa and the island of Bahrain) and Oman, which in his time 'had been overwhelmed by the sands and become impassable, so that the city cannot be reached from 'Oman except by the sea'.³⁶ Interestingly, the principal overland route linking north-eastern and south-western Arabia in antiquity from Gherra to Marib is now believed to have detoured through Buraimi rather than crossing immense stretches of desert.³⁷ These literary fragments are entirely consistent with the existence of a caravan route from Al-Hasa to Qalhat, contrary to Aubin's view that there is no evidence to support Barros's reference.

In conclusion, we have ample historical evidence, as described above, that it was the horse trade that underpinned the fabled wealth of the Hormuzi dynasty as well as much of the wealth of the Omani tribes. It was also mainly the horse trade, as the above cited evidence shows, that thrust Qalhat to the forefront of regional politics in a mercantile world, which spanned both sides of the Gulf.

³³ Bhacker M.R and B, 2004: 38; Fiorani V. P, 2000: 181-185

³⁴ Wilkinson, J.C. 1987, The Imamate tradition of Oman: 81

³⁵ Aubin, 1972: 120, n261

³⁶ Gibb 1957: 409

³⁷ Potts D.T, 1990, Vol 2: 323

Other sites

As per the WH list, there are several port cities nominated in the Arabian Peninsula, in the eastern African coast, and in southeast Asia, which together show the range of historical periods, cultures and traditions represented on the WH list for this geographical area. Most are continuously inhabited historical towns/cities, while some are archaeological sites. The following table gives a synthetic summary of their characteristics, including also the sites that were considered for the comparative analysis in order to have a comprehensive vision of the situation and a clear understanding of how Qalhat could fit in the WH list and how it could fill chronological and thematic gaps.

From this brief analysis, we see that there is a series of still inhabited WH sites that were nominated as important historic port cities. Although Lamu Old Town presents an older foundation, the majority of them were founded (or developed) during the Portuguese domination.

Because of the nature of Qalhat, only archaeological sites were considered for the comparative analysis. As required in the Operational Guidelines, they were selected from the WH list and from other sites. Again, we can see a vast range of chronological periods with sites that are older or more recent than Qalhat, as Khor Rori, Siraf and Zubarah, or whose peak of prosperity does not exactly coexisted with Qalhat (13th-15th c.).

Except for Julfar, none of them was an actual port of the Hormuz kingdom, and Julfar was far from having the same importance as Qalhat, who was the second capital of the kingdom. Moreover, archaeological data about Julfar does not provide much information on the commercial activities of the port, and the present configuration of the site will never allow a comprehensive study of the layout and urban planning of the city.

About the specialism of the ports, this is not always clarified by the historical sources or by the archaeological remains. If horses could have also been exported from Julfar, it is in Qalhat that this export obtained the most attention of the ancient chroniclers.

We can then say that this additional exercise of the comparative analysis confirms again that Qalhat has the legitimacy to be included in the WH list. Besides its importance for our knowledge of Middle Islamic Indian Ocean harbours, it is a unique representative of the important maritime trade network of the kingdom of Hormuz that had a significant role of connecting the Orient and the Occident in the Middle Islamic period and that is not properly and comprehensively represented on the WH list.

Property	Country	WHS	Type	Period	Connection to Hormuz	Specificities
WH historic cities						
Lamu old town	Kenya	Yes	Historic inhabited port town	700 years of continuous occupation; post-Qalhat	no	Urban layout with small alleys of Arab influence
Hoi An ancient town	Viet Nam	Yes	Historic inhabited port town	Trading between the 15 th -19 th c.; post-Qalhat	no	Well preserved example of South-East Asia port
Galle	Sri Lanka	Yes	Historic inhabited port town	Peak in the 16 th -18 th c.	no	Built by the Portuguese
Island of Mozambico	Mozambico	Yes	Historic inhabited port town	Developed by the Portuguese in the 16 th c.: post-Qalhat	no	An Arab harbour since the 10 th c.; it has its heydays from the 16 th c. when it became the Portuguese East Africa capital. Trade of gold, spices and slaves.
Historic Centre Macau	China	Yes	Historic inhabited port town	Development with the arrival of the Portuguese in the 16 th c.; post-Qalhat	no	Meeting of East and West influences
WH archaeological sites in the comparative analysis						
Khor Rori	Oman	Yes	archaeological	300 BC-5 th c. AD: pre-Qalhat	no	Control of the frankincense trade
Qala'at al Bahrain	Bahrain	Yes	archaeological	2300 BC-16 th c. AD: pre- and contemporary of Qalhat	only the fortress is WHS	Port-city in activity during the Hormuzi period; paying tribute to Hormuz; located at the same place of present Manama city, not at the WHS which is only the fortress
Al Baleed	Oman	Yes	archaeological	Probably long occupation but important in the Middle Islamic period. Three attacks in the 13 th c., one made by the Hormuzi: mainly pre-Qalhat	no	Port on the frankincense trade route; mainly an official and administrative centre while people lived in the surrounding oasis; because of the attacks, the city lost its importance after the 13 th c.
Kilwa Kisiwani	Tanzania	Yes	archaeological	13 th -14 th c. peak of prosperity: contemporary of Qalhat	no	Swahili costal town; trade of gold and ivory

Al Zubarah	Qatar	Yes	archaeological	Foundation in the middle of the 18 th c.; post-Qalhat	no	Important as a pearl trade centre
Non-WH sites in the comparative analysis						
Sohar	Oman	No	archaeological	1 st -13 th c. ; peak in the 10 th c.; pre- and post-Qalhat	no	Small local harbour between the 12 th and the 16 th c., only paying tribute to Hormuz
Banbhore	Pakistan	No; tentative list	archaeological	1 st -13 th c.; pre-Qalhat	no	Indus deltaic port strategically located on a N-S land-route and E-W sea-route; its importance declined in the 11 th c.
Siraf	Iran	No; tentative list	archaeological	Sasanian origins; greatest prosperity in 9 th -10 th c.; decline from 11 th c.: pre-Qalhat	no	Important port among the Gulf, East Asia and East Africa; affected by modern development and natural erosion
Julfar	UAE	No	archaeological	14 th -16 th c. (peak in the 15 th and 16 th c): contemporary of Qalhat	yes	Port that developed because of the Hormuzi boom; it provided pearls, soldiers, horses but the main trade were most probably agricultural products from the inland.

Boundaries

As indicated in the nomination file, in October 18, 2016, the Ministry of Housing confirmed the limits of the Ministry of Heritage and Culture property 6-39-015-01-308. In the Site Management Plan, boundaries and buffer zones are identified, described and regulated as follow.

The core zone includes the entire archaeological site of Qalhat that is all property of the MHC. The northern limit of the core zone is the southern bank of Wadi Hilm. To the north-eastern side, the property and the core zone follow almost entirely the line of the ancient city walls. To the east and west, the property limits and the core zone boundaries are parallel to the shore (on the east) and follow the line of the expressway (on the west). The south-advance fortification wall indicates the southern limit of the core zone. The shore is outside of the MHC property because the Supreme Committee for Town Planning Decision 20/90 Regarding the Rules Regulating and Specifying Coastal Setbacks 'enables the public to use and benefit of the coasts' (Article 1).

Buffer zone A is within the MHC property limits. To the north, it includes the lower part of Wadi Hilm with traditional farms located under the edge of the plateau where Qalhat is situated. To the south, it is a deserted area without archaeological remains and with a difficult access, outside of the south-advance fortification.

Buffer zone B extends outside of the property of the MHC. To the east, buffer zone B enters into the sea between 120 to 300m following the depth of the sea at 10m with the purpose of protecting shore and underwater archaeological remains. During underwater surveys conducted in 1998 and 2003, T. Vosmer identified these remains (mainly anchors) to a maximum distance from the shore of 150m for one item. To the west, buffer zone B includes the expressway and the slope of the mountain in an area of difficult access. It follows the topography going up behind the first ridge of the mountains.

Regulation for the boundaries and the buffer zones are indicated in Chapter 7.2.1. Legal and institutional framework of the Site Management Plan.

The northern part of Wadi Hilm is outside of the buffer zone but after the 2007 Cyclone Gonu that affected the wadi, no new constructions are allowed in this area giving further protection to Qalhat and its view sheds.

Buffer zone limit into the sea

The limit of 120 to 300m following the depth of the sea at 10m was decided based on the underwater remains found by T. Vosmer who after 300m did not identify any archaeological item. It was also considered that only one anchor was found at around 150m from the shore while the other are at a much nearer distance. In front of Qalhat there are no intensive marine activities: the fishermen pass at a certain distance from the coast and they practise only light fishing. The passage of ships/boats toward the terminal of OLNG happens at even a farer distance from the shore and they are not numerous to generate disturbances to the archaeological site.

All underwater archaeological remains are protected by the Heritage law 6/80 and a specific department of underwater archaeology was established inside the Directorate General of Archaeology at the Ministry of Heritage and Culture.

The scientific publications about ancient Qalhat often mention a port but it should be considered that it was a natural harbour with no-built infrastructures as we are used to see in Mediterranean archaeological sites. Images of old Muscat could help to visualize this traditional landing (**Image 22a and b**) that was most probably also used in Qalhat.

Conservation

Qalhat Development Project conservation component

Comprehensive and systematic conservation works started with the Qalhat Development Project (QDP) in 2013. Between 2013 and 2016, three seasons were conducted for around five months per year and six excavated buildings were preserved. Conservation works at the Great Friday Mosque started in November 2017 and will last for at least 2 years. The following information is a selection of data from the conservation reports and the site management plan.

The strategy defined for the QDP is to preserve the remains in the state in which they were found, respecting the original masonry composition. Before starting the preservation works, the available documentation (photogrammetry, photographs, bibliography) is reviewed; on-site visits and further discussions among the Omani and international team members are conducted together with condition assessment of the structures. Archaeologists are consulted before and during the conservation works. No reconstitution or over-interpretation is made. A complete photogrammetric documentation is done before and after all conservation interventions. The original materials are respected. The purpose is to preserve the historicity, ensure the durability and give the remains a didactic dimension.

Because of the growing field experience, methodologies are continuously improved and better adapted. New elements are also introduced as the detailed study of the masonry techniques to accurately reproduce the same construction procedures; the organization of the excavation waste; the collection of the old mortars that are reactivated with hydraulic lime to create a composition more compatible with the original.

In order to be respectful of the conservation charters and then to act more effectively and economically in the field, a following conservation methodology was defined. The first difficulty was to identify the right materials to prepare the mortars. First, the ancient mortars were analysed in an Italian lab suggested by the Istituto Superiore per la Conservazione e il Restauro (IsCR). New mortars are produced using adapted percentages of a red silty soil from the wadi near Farahat village (3km from Qalhat), *saru*³⁸ and washed sand. Hydrated lime, as a compatible material, is used as binder instead of the missing traditional gypsum. To respect the principle of using as much as possible

³⁸ A kind of soil resulting from the transformation of very pure clay. The clear brownish clay is prepared by stagnating in basins, mold in disc shape, sun-dried and then fired on palm trees trunks in open-air areas and reduced in powder.

traditional materials, old mortars recovered from the joints curettage of each building are incorporated into the mixtures. The composition of the mortars and plasters varies depending on the building construction specificities.

Curettage of masonry joints is probably one of the most delicate steps: it consists in digging the joints of the masonry in depth to replace the old dry, weak and friable mortars to introduce the new mixture, which will reinforce the structure. During this operation, there is a great danger of destabilizing the construction. It is cautious to keep, or place if necessary, shims and wedges that are integral parts of the masonry. This operation also allows the recovery of the traditional mortars for their reuse. Joints to be filled need to be thoroughly soaked before applying the replacement mortar, in order to limit the effects of shrinking. After a light resting time, the mortar must be compacted at a steady pressure to avoid cracking. If possible, the mason should provide shade during the drying period, so that this will be slow and steady as possible. When the mortar is dry enough but still brittle, the mason must check the joints and brush the stones to remove the surplus and unify the exterior masonry.

For the conservation work, only limestones and coral stones belonging to the building under treatment are used. They are collected during the preparatory procedures of cleaning of the surroundings or from the collapses.

The presence of plaster still in situ on the walls varies. In some buildings, it is limited. In others, as the *hammam* and the Great Friday Mosque, it is extended. It is in fact in these last two buildings that the plasters are more resistant and compact but, especially in the mosque, affected by numerous cracks. The interventions of a specialized restorer from Italy have been programmed to consolidate them. The use of chemical products will be reduced to the minimum as closing the cracks and filling the gaps with the appropriate mixture of gypsum and earth has been considered the most applicable technique for the situation in Qalhat.

Where the floors are irregular due to excavations or soundings, a layer of gravel is prepared to level the area and to facilitate the drainage. Earth is deposited and compacted manually with a weight. Sometime, a small quantity of hydrated lime could be added to avoid a friable surface. If the original plaster floors are still in situ, geotextile is laid down and then it is covered with earth that is very carefully compacted. A thin layer of gravel is used where the excavations confirmed that it was present in the antiquity.

Conservation, monitoring and maintenance guidelines are under preparation by the Ministry of Heritage and Culture and the World Monuments Fund. The Ministry of Heritage and Culture has the program to continue the conservation of the excavated buildings during the next years. The calendar will be based on resource availability.

Previous conservation work

Few conservation works were conducted before the launch of the QDP. These interested the Mausoleum of Bibi Maryam and cistern B2 and two small mausoleums in the Funerary Quarters.

Between 2005 and 2006, the MHC, under the direction of Arch. Enrico D'Errico, conducted conservation works at cistern B2 and Bibi Maryam mausoleum to stabilize the masonries and to reinforce the dome of the mausoleum with pins to recreate the cohesion of the entire structure. No hypothetical reconstructions or alterations were executed in respect of its authenticity and aesthetic value. The original plaster's layers were left intact and only consolidated where needed.

An Iranian team that worked in Qalhat only one season in 2008, implemented conservation work at two small mausoleums (B109 and B111). The methodology applied by the team was different. It is in the plan to find old photographs of the monument to analyze the condition of the two mausoleums before their restoration for documentation policy and conservation procedures.

Management Plan

The site management plan (SMP) was completed at the end of 2017 by a World Monuments Fund and Ministry of Heritage and Culture team. It was also approved.

The management plan was built upon the experiences of the many researchers and conservators that have dedicated their expertise to the study and conservation of the site. Key stakeholders from the government, civil society, and private sector provided information and input throughout its preparation.

An analysis of the site's context, of its history, of its archaeological remains, of its conditions, and of the threats it faces, precede a statement of the values that make Qalhat unique. This is followed by specific and detailed aims for each of the categories under which a site management plan can be conceived. These include, among others, the establishment of a dedicated management structure operating between Muscat and the site itself, of conservation and monitoring priorities, of the preparation of the site for visitation, including site interpretation and the development of any future tourism infrastructures, of education initiatives involving schools and universities, and of opportunities for the local communities.

Through this management plan, the setting of the site will be protected by coordinating with relevant authorities and stakeholders for any future activity in the area and by limiting the expansion of nearby infrastructures. Research will be encouraged and economic opportunities linked to increased visitation will be created for the local community.

The Qalhat Development Project

The Qalhat Development Project (QDP) started in 2013. The excavation component have been suspended after two and a half phases to permit to the conservation team to proceed in the conservation works and to limit possible damages to the excavated buildings if exposed for too long before preservation. The forth phase of the conservation works is now ongoing. The QDP is supposed to last for five years. At the end of the fifth season, the Ministry of Heritage and Culture (MHC) will evaluate how to proceed. A third component of the QDP is interpretation and visitation. This component did not start yet because the MHC was waiting to complete the site management plan and to have a solid number of preserved structures representative of the urban ensemble of Qalhat that could comprehensively inform the visitors about all aspects of the life in a medieval city of the Arabian Peninsula.

After the conclusion of the Qalhat Development Project, a new research strategy should be developed by the MHC in consultation, if needed, with national and international research centers and other stakeholders. The strategy will be incorporated in the revisions of the SMP and its annual implementation will be presented in the Site Annual Plan with related budget estimates.

Natural threats

In case of storm surge, the site could be hit by heavy rains. The rainwaters flow rapidly from the mountain toward the site following the natural slope and wadis. These phenomena are very rare and happen only few days during winter. The site was originally built to address as best as possible the rain that flows out of the mountains (**Image 21**). The slope permits to the waters to pass rapidly through the site and to reach easily the sea without stagnating at the site. The two *intra-muros* wadis and the outer cistern B9 still collect the waters that are coming from the mountains. The expressway does not seem to increase the effects of heavy rains as the channels for the flowing of the waters were arranged following the natural landscape situation and orography.

Tourism management

This site management plan highlights various options and frames the rules that should be considered in the design and implementation of the Interpretation and Visitation component of the Qalhat Development Project. There is not an established visitor center (VC) and parking at the site, and the actors did not yet agree on a specific location. To respect both the integrity and authenticity of the site, the VC will not be built in the core zone and its plan and design will take in consideration the surrounding landscape minimizing any visual impact to the site.

In general, the VC will host a permanent exhibition about Qalhat. The media to be used to support the narrative will be decided in the Interpretation plan. Decorative objects and pottery fragments found during the excavations works could be displayed in the VC being part of the comprehensive narrative that will explain to the visitor the importance of Qalhat, of its traditions, art and culture, and of its maritime trades.

In the SMP, two entry options have been considered and evaluated. In both cases, service vehicles could transport the visitors and stop at the same spot, which could be at the north entrance of the site or behind the Bibi Maryam Mausoleum where there are areas without archaeological remains.

A preliminary study map (**Image 23**) shows the excavated structures that will constitute the frame of the visitation itinerary. Component three of the QDP will analyze in details and define the itineraries that will be developed. They represent a significant and wide sample of types of structures and urban features present in the ancient city of Qalhat during its lifespan, such as the Great Friday Mosque but also small neighborhood and funerary mosques; houses, a store and a possible *khan*; the funerary and the artisan quarters; the water supply structures (cisterns, catchment structures in the wadis), the exceptional Bibi Maryam Mausoleum; streets, lanes and city squares; the city walls; and a *hammam* unique for the region. Tourists will travel through time and will exit the site with a comprehensive vision of a south Arabian medieval harbor.

The presence of the visitor center and an open archaeological park will generate employment opportunities for the local population of the modern Qalhat village as drivers for the service vehicles and VC staff; guides; artisans and producers of local products and food. The feasibility of these and

other activities will be analyzed, supported and suggested during local stakeholder meetings with the local communities where representatives of the *wali* and of the local Chamber of Commerce can provide useful information about employment or feasible small business opportunities.

Both the administrative office and the store are temporally at the site. They will be removed at the location of the VC and their design will be assessed and planned together with the VC during the preparation of the Interpretation and Visitation plan.

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³⁹ For a more extensive bibliography, please see in the nomination file and the site management plan

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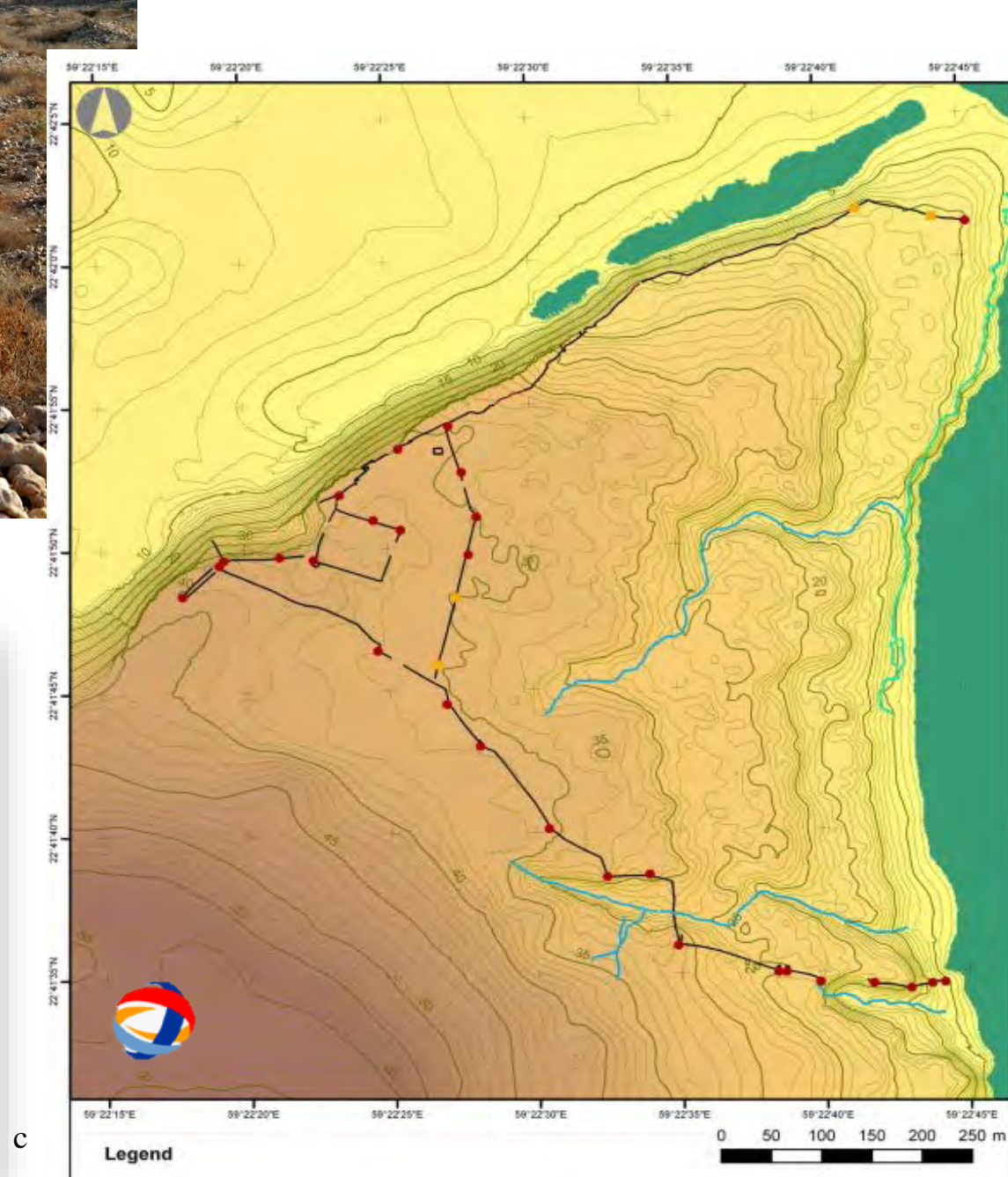
IMAGES



a



b

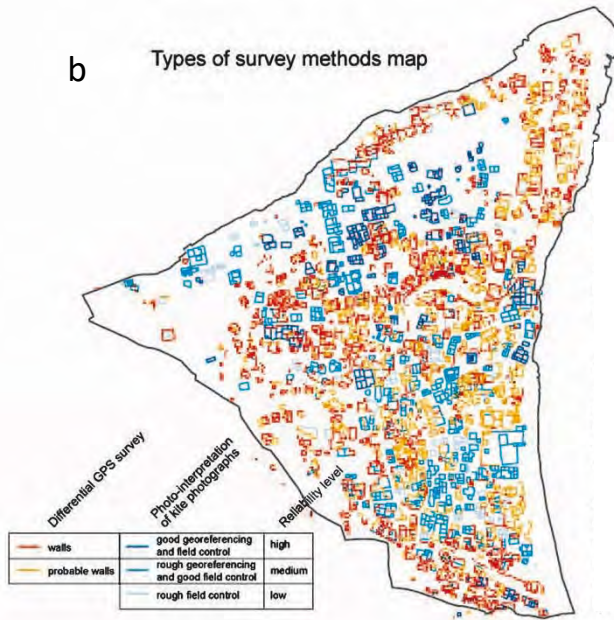


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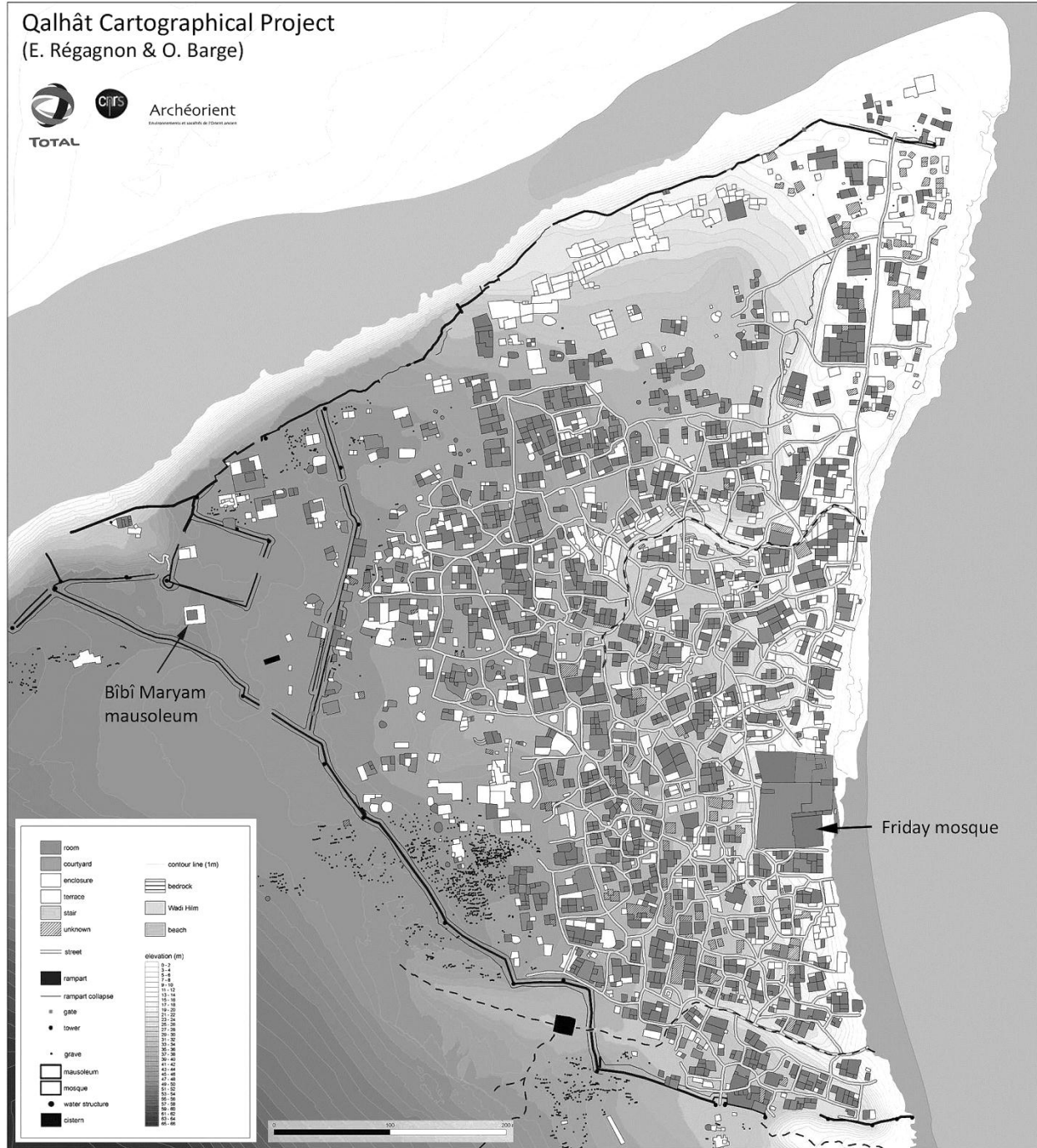
Image 1

b

Types of survey methods map



a



c

Reliability map

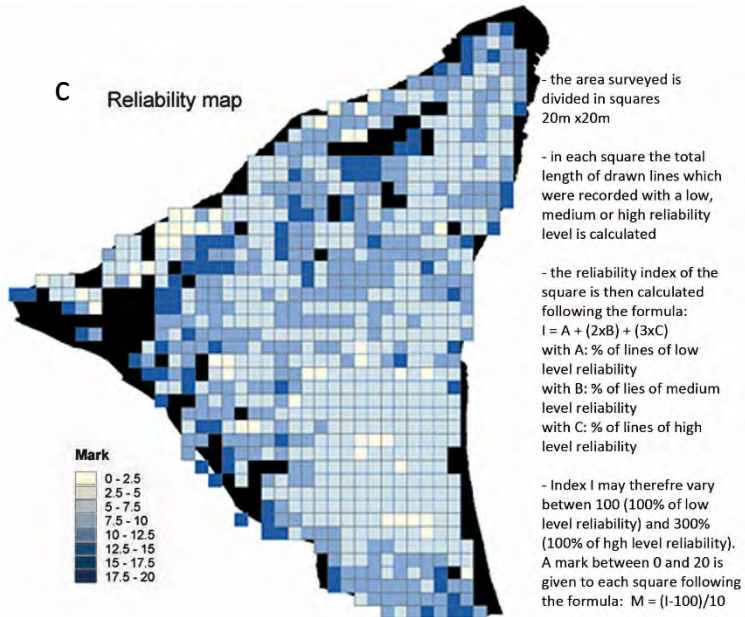


Image 2

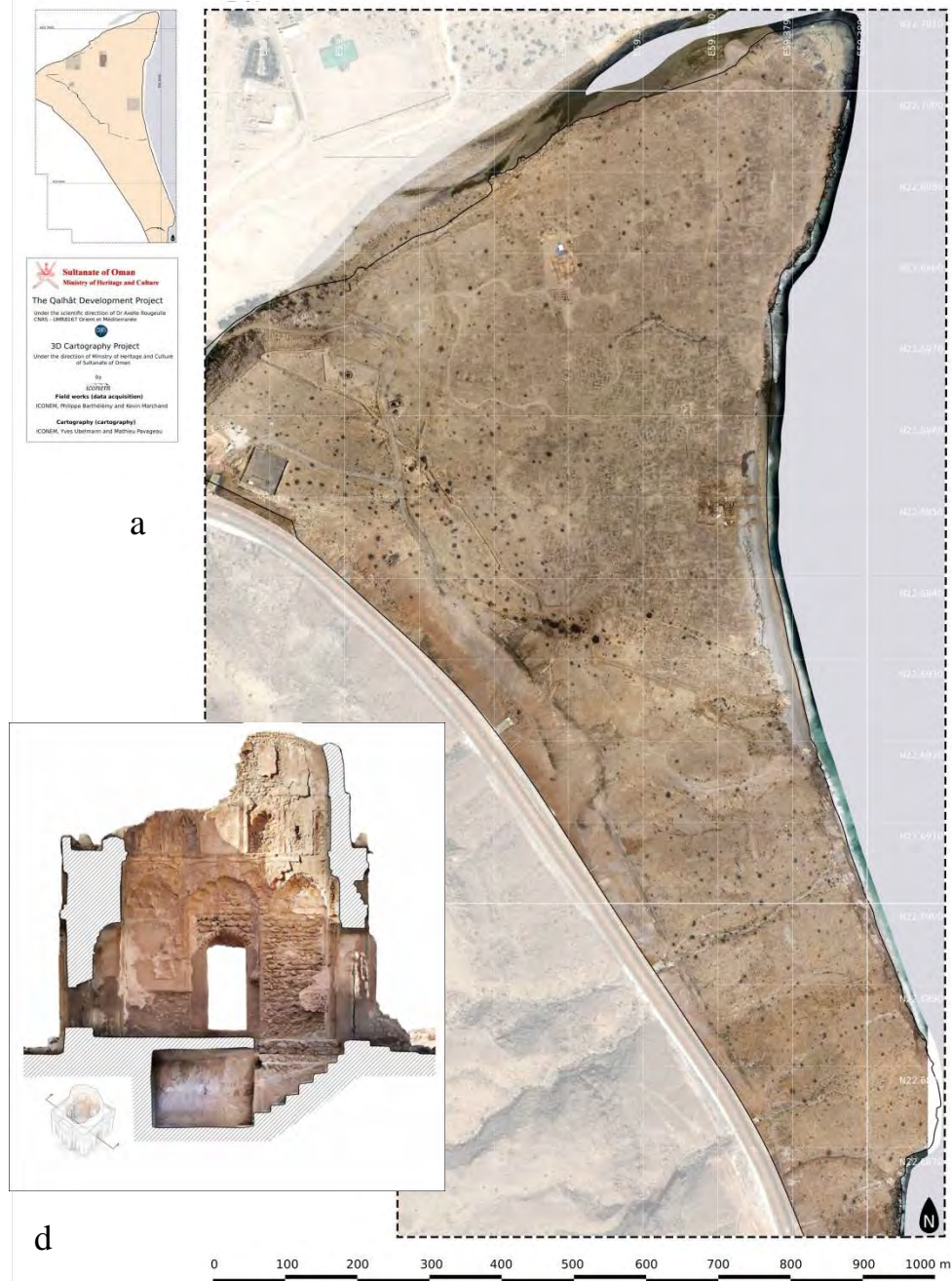
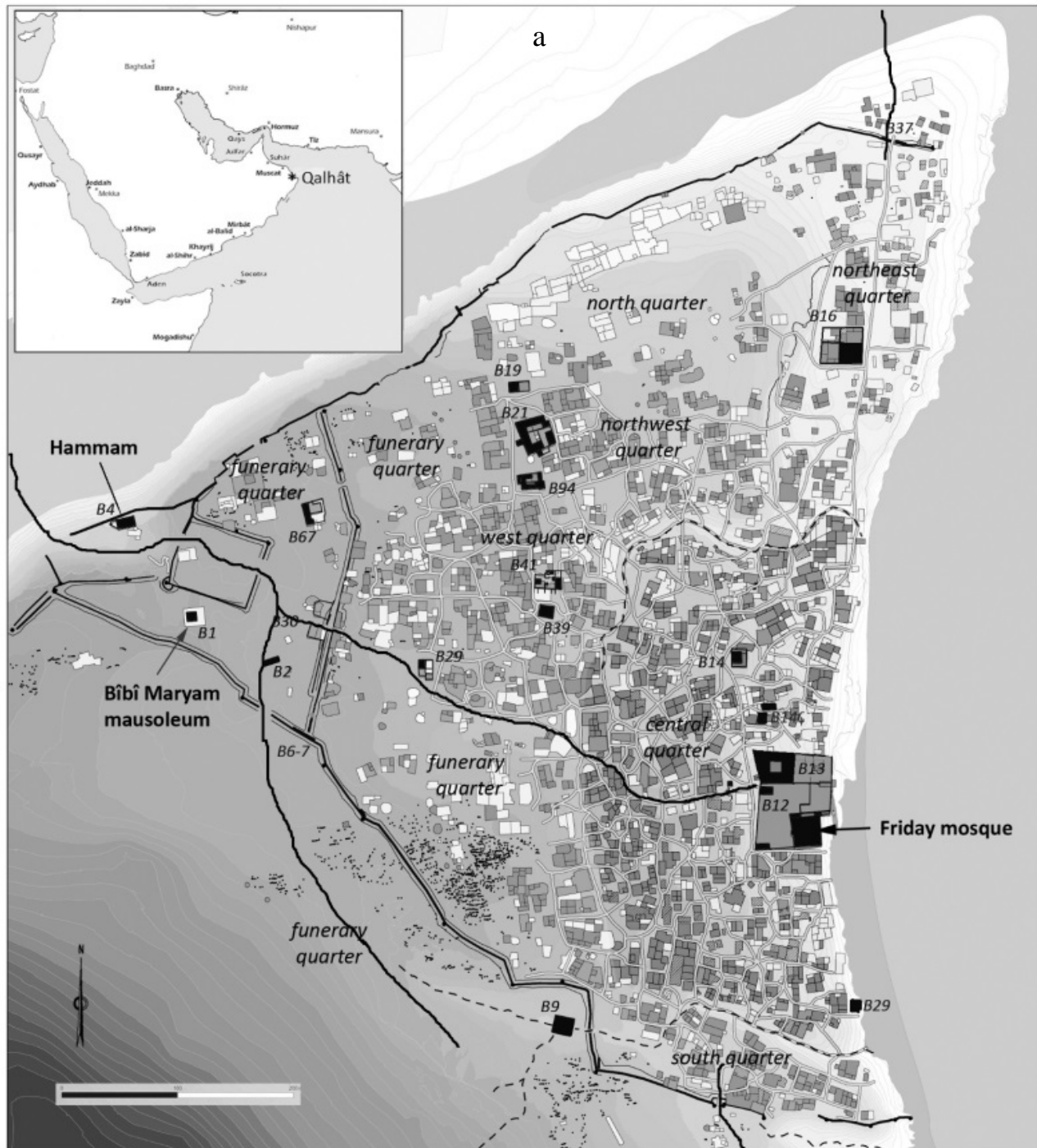
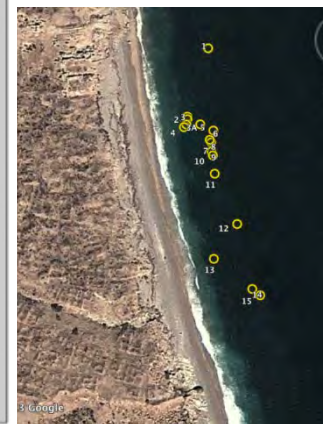


Image 3

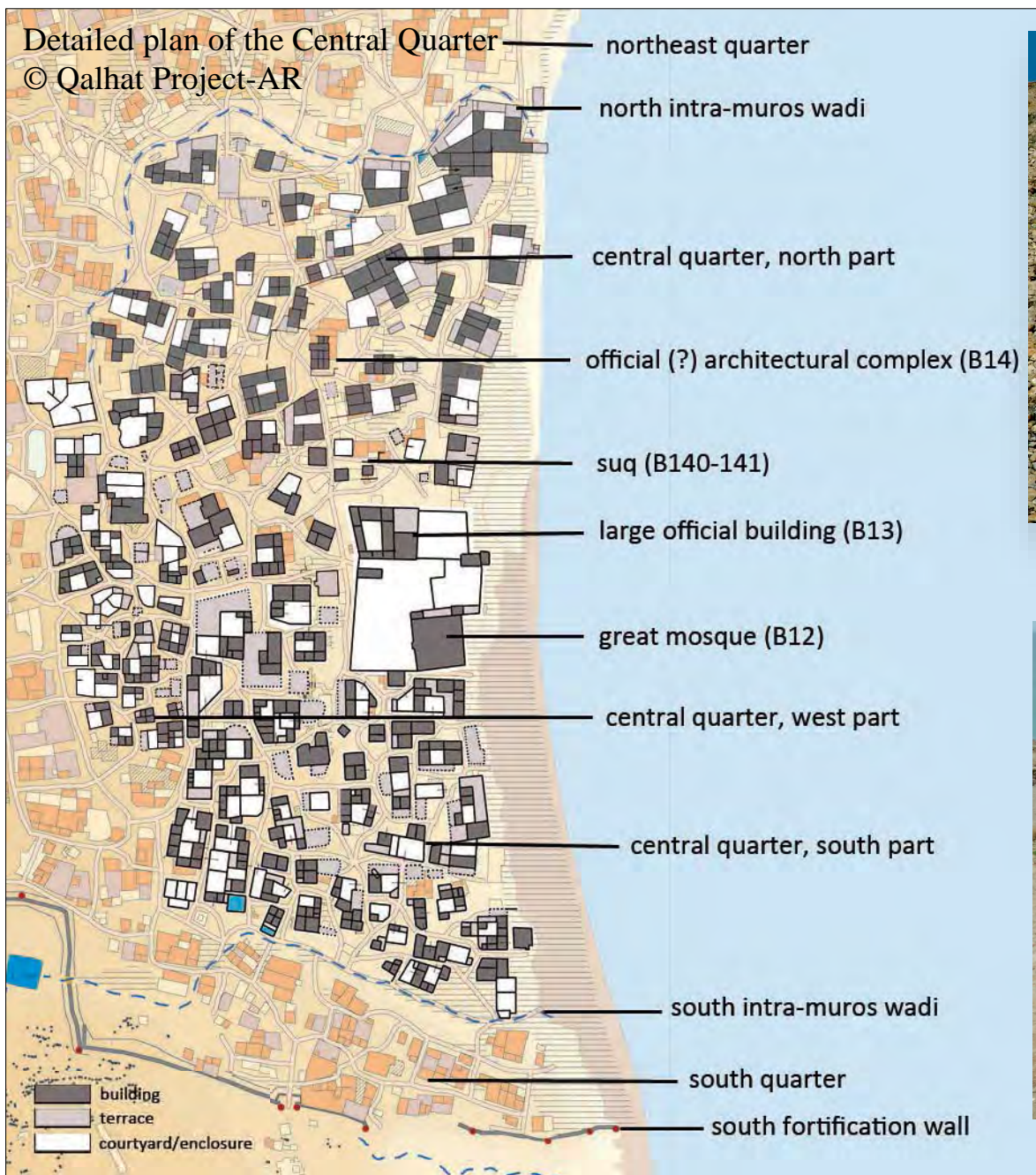


- B1: *Bibi Maryam Mausoleum*
- B2: *Intra-muros cistern*
- B4: *Hammam*
- B6-7: *Defensive wall*
- B9: *Extra-muros cistern*
- B12: *Great Friday Mosque*
- B13: *Probable public building attached to the Friday Mosque complex*
- B14: *Large complex with possible khan, hospital, etc.*
- B16-17: *Possible palace (only soundings)*
- B19: *Platform mosque*
- B21: *Possible warehouse*
- B29: *Platform mosque*
- B30: *West city gate*
- B37: *North city gate*
- B39: *Craftwork workshop*
- B41: *Pottery workshop*
- B67: *Funerary mosque*
- B94: *Twin houses*
- B140: *Suq*



b - © T. Vosmer

Image 4



b

a

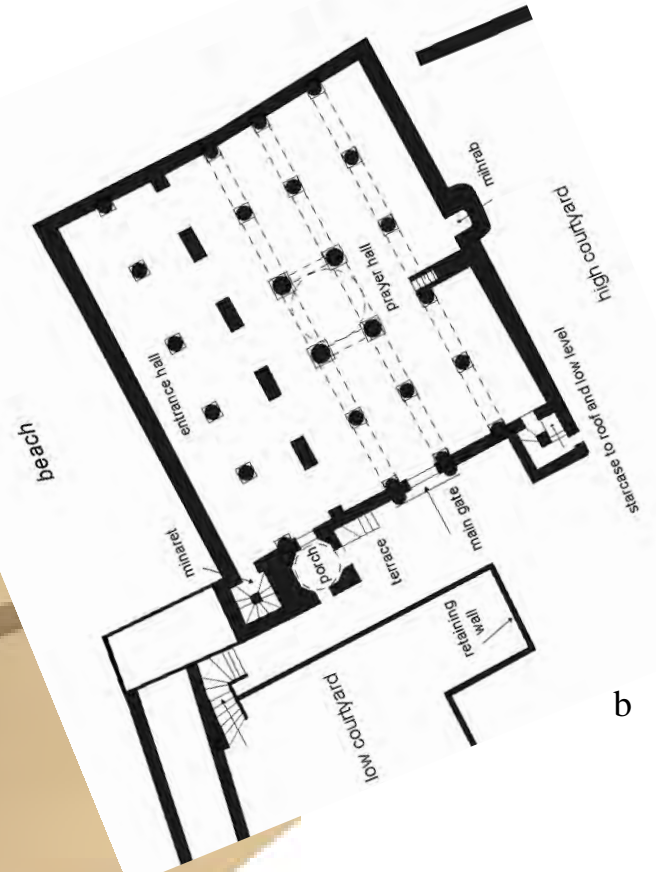


c

Image 5



Image 6



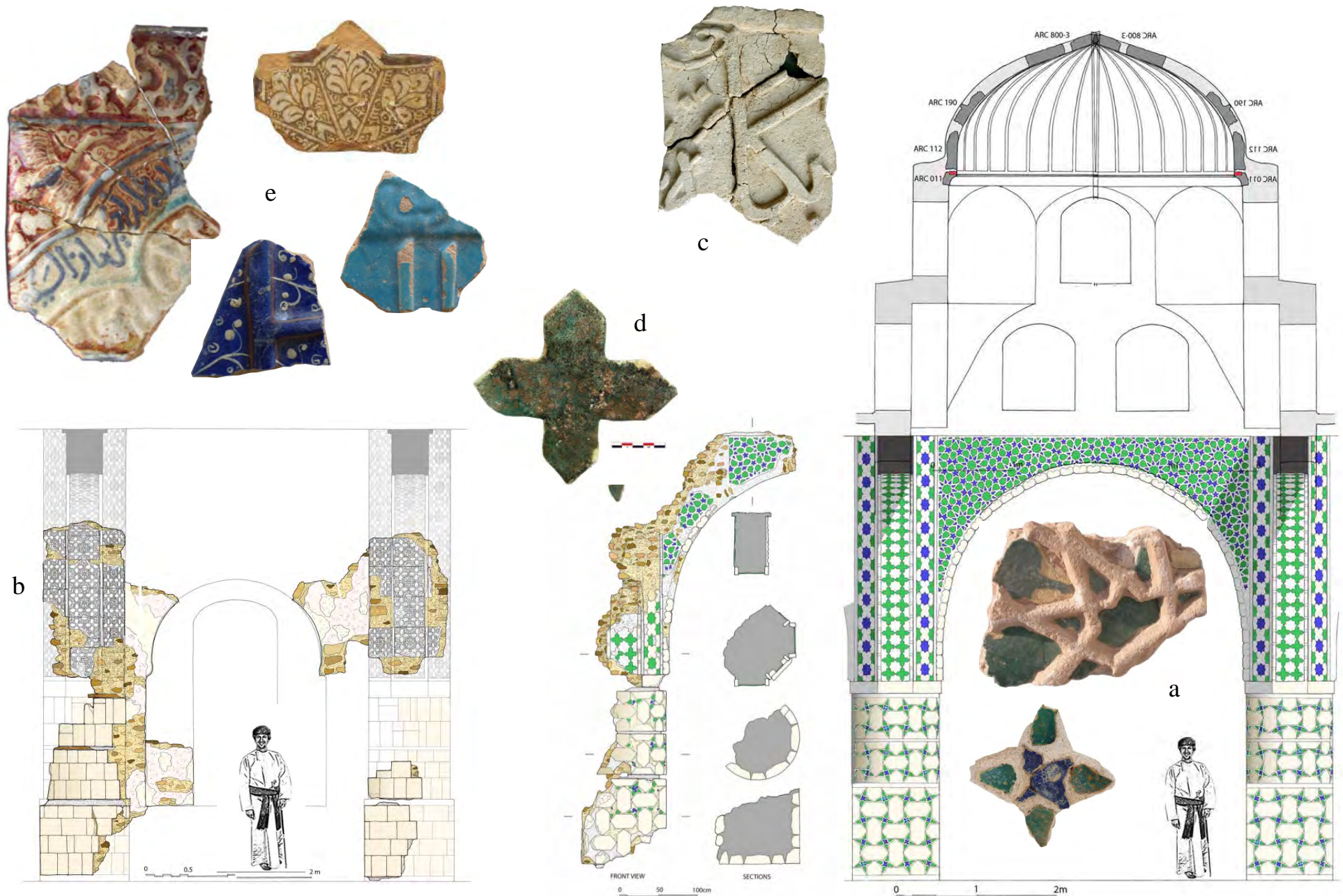
b



a

c

Image 7



(Engaged columns and window in the south wall;
excavated fragments and restitution)

Image 8

(Columns and arches under the cupola in the axial nave; excavated fragments and restitution)



a-b

suq

B14

suq



e



c



d

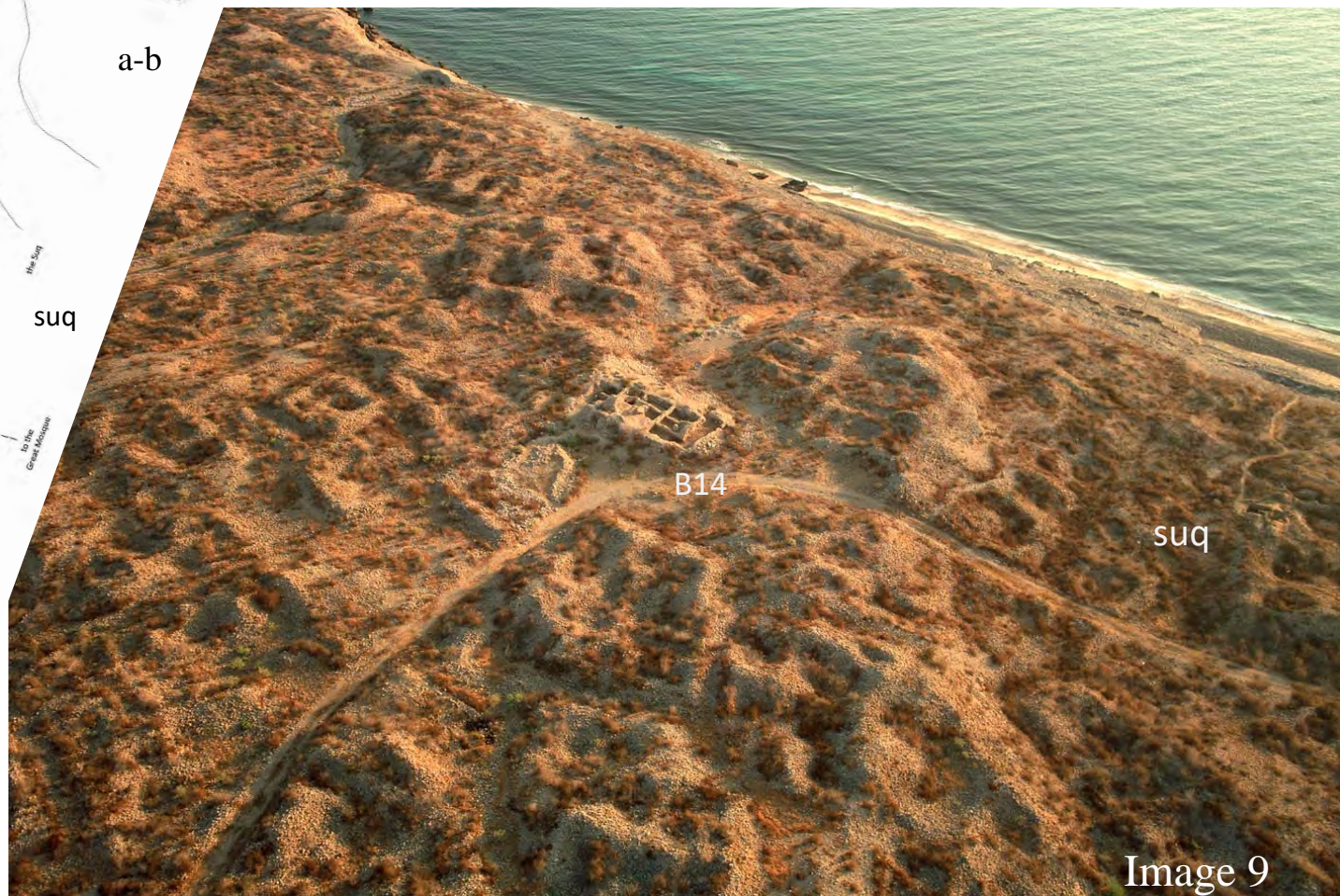
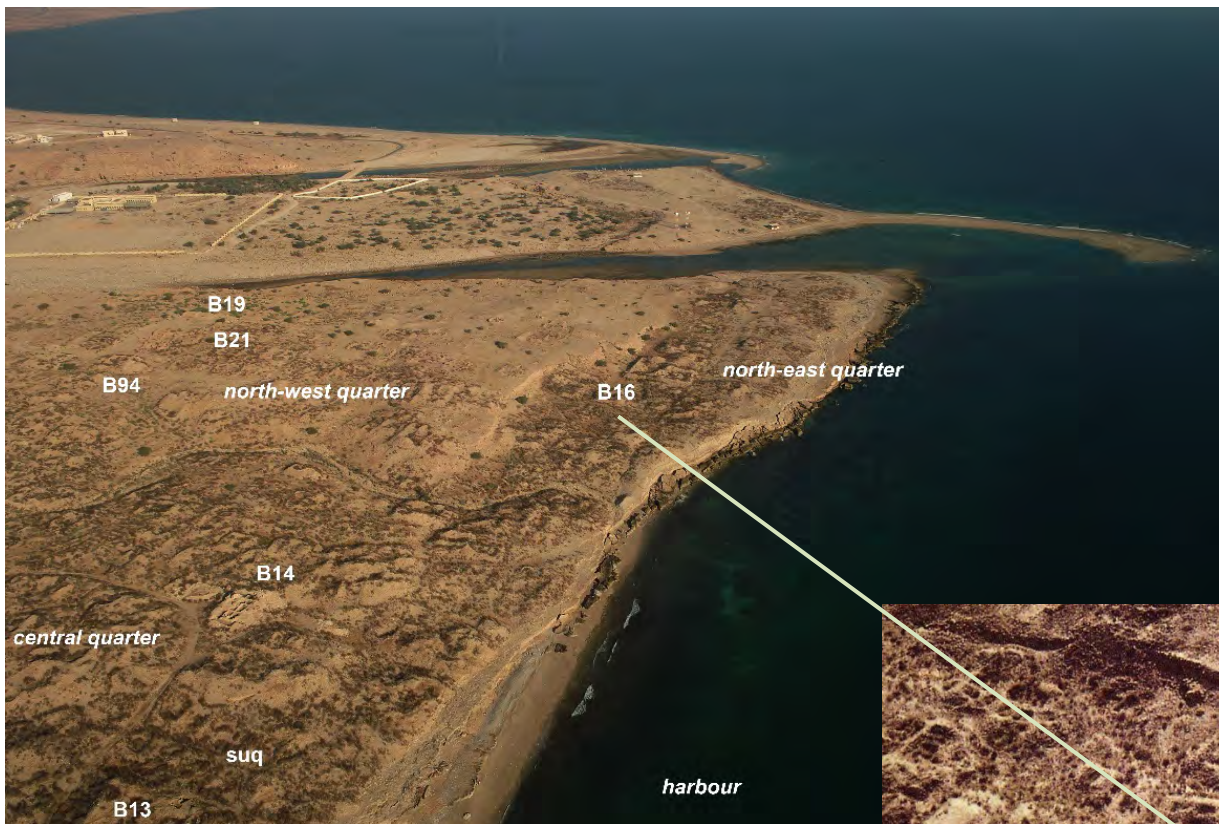


Image 9



(From Salimi, Gaube and Korn 2008, *Islamic Art of Oman*, Muscat, Al Roya Press & Publishing House, p. 185)



a



c



b



Image 12



a



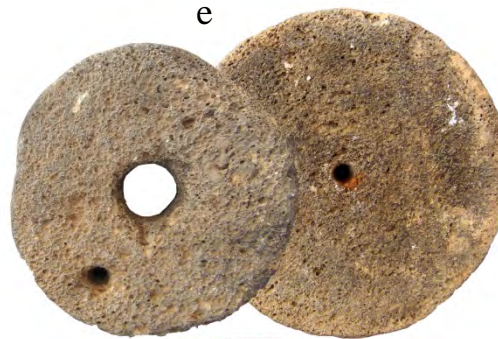
b



c



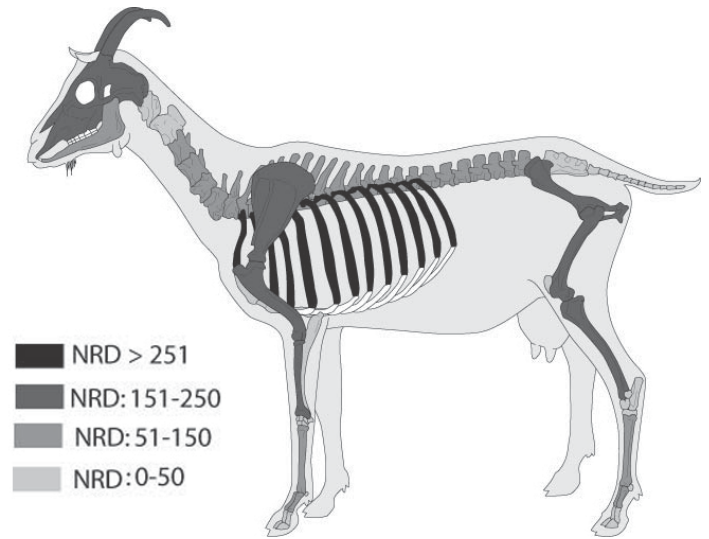
d



e



f



g

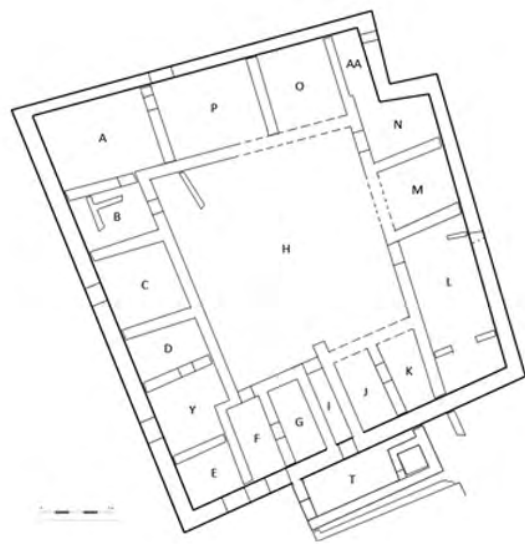
Image 13



a



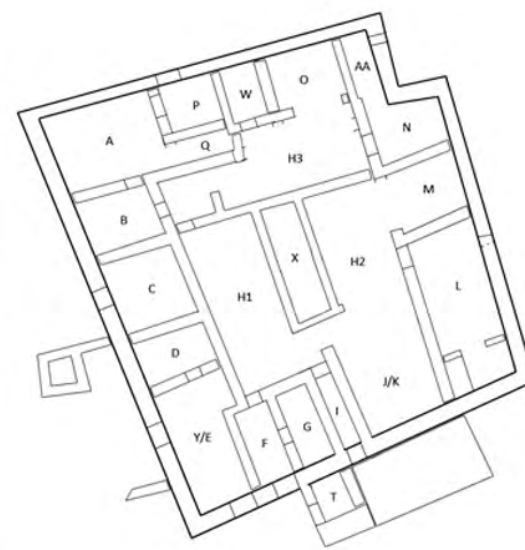
b



c



e



d

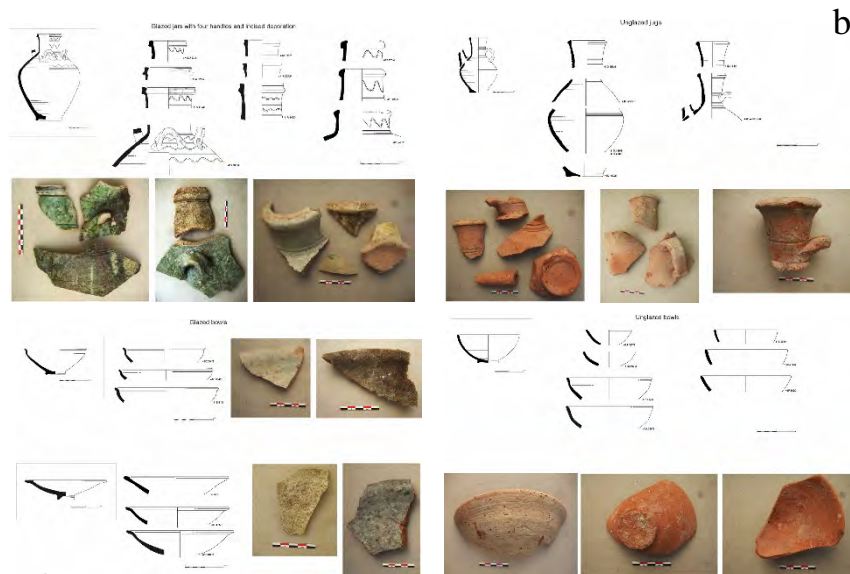
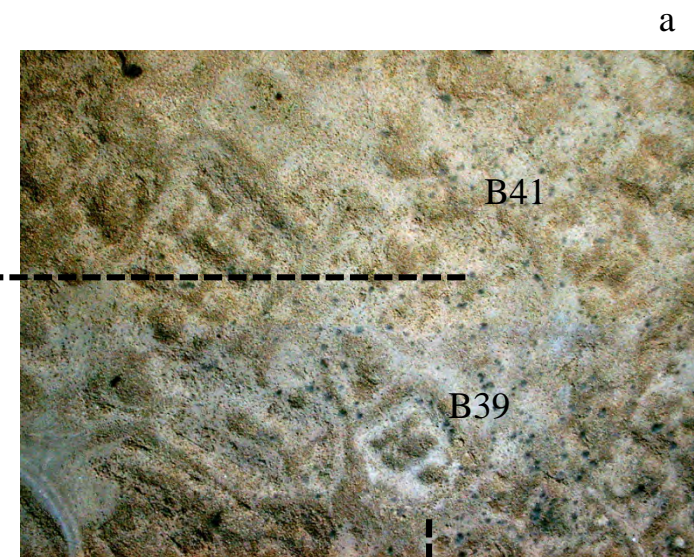
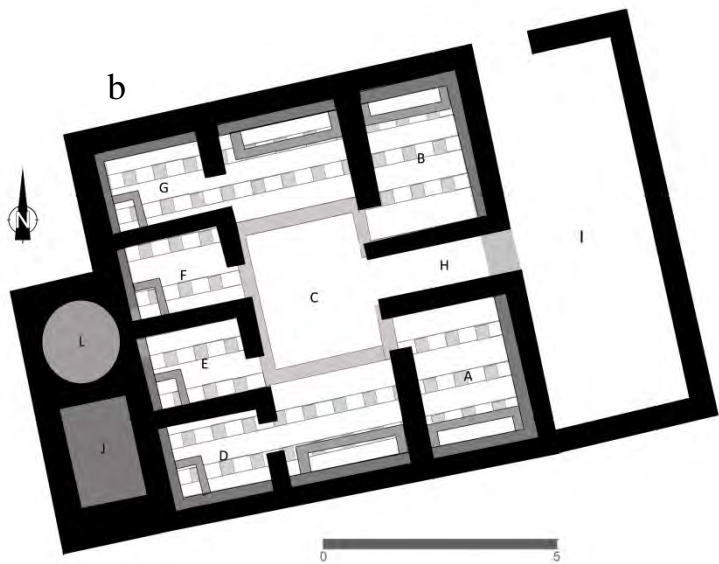


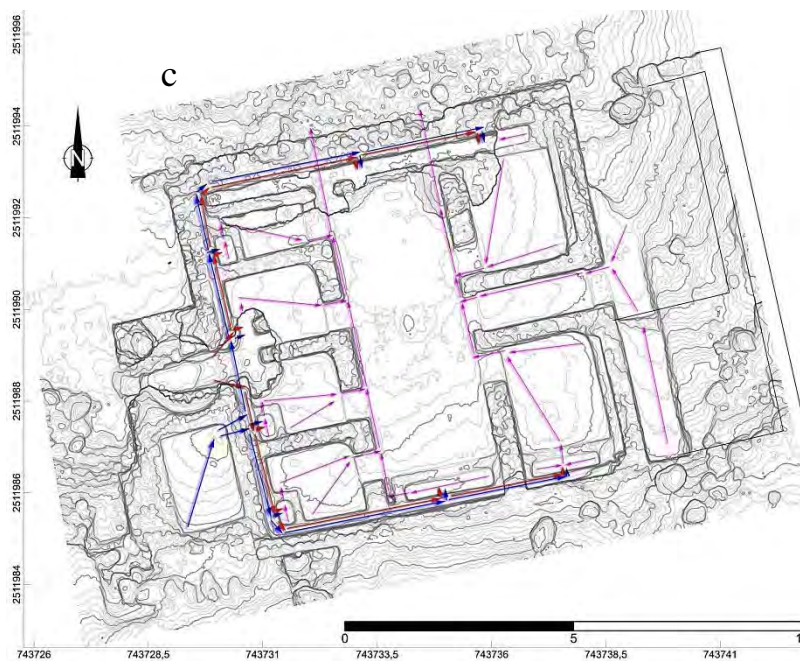
Image 15



d



e



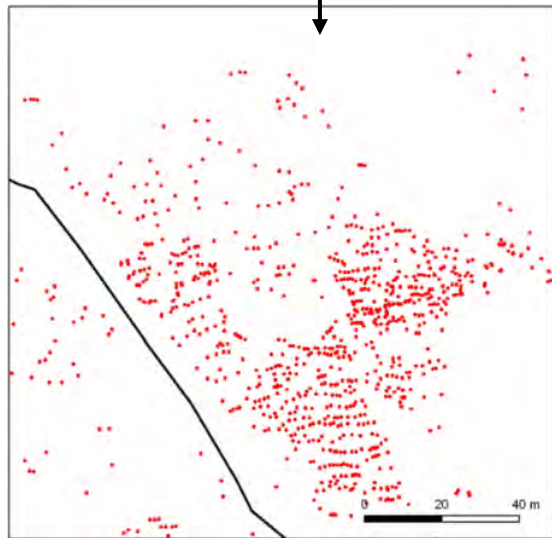
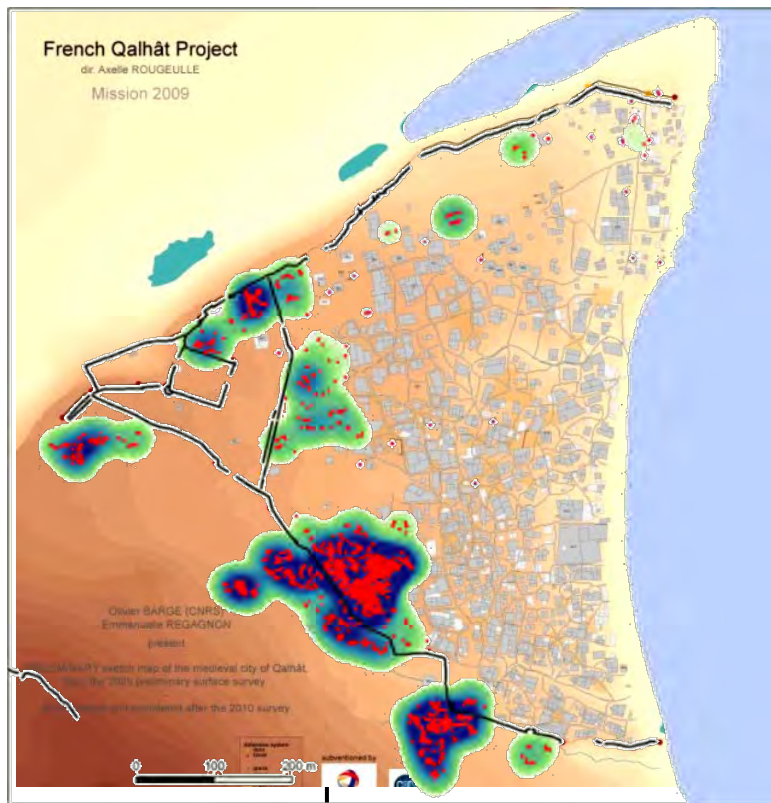
a



Image 16



Image 17



c

d

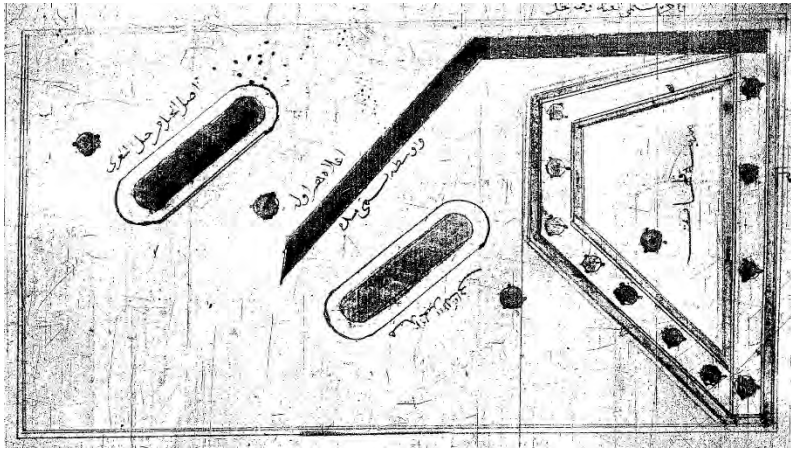


e



f

Image 18



a



b



c

e

d



Image 19



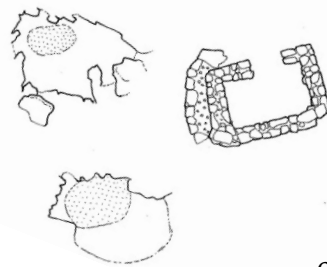
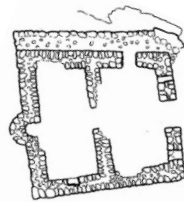
a



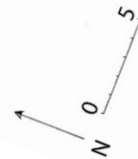
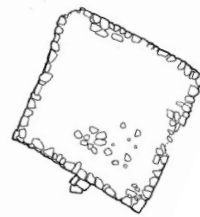
b



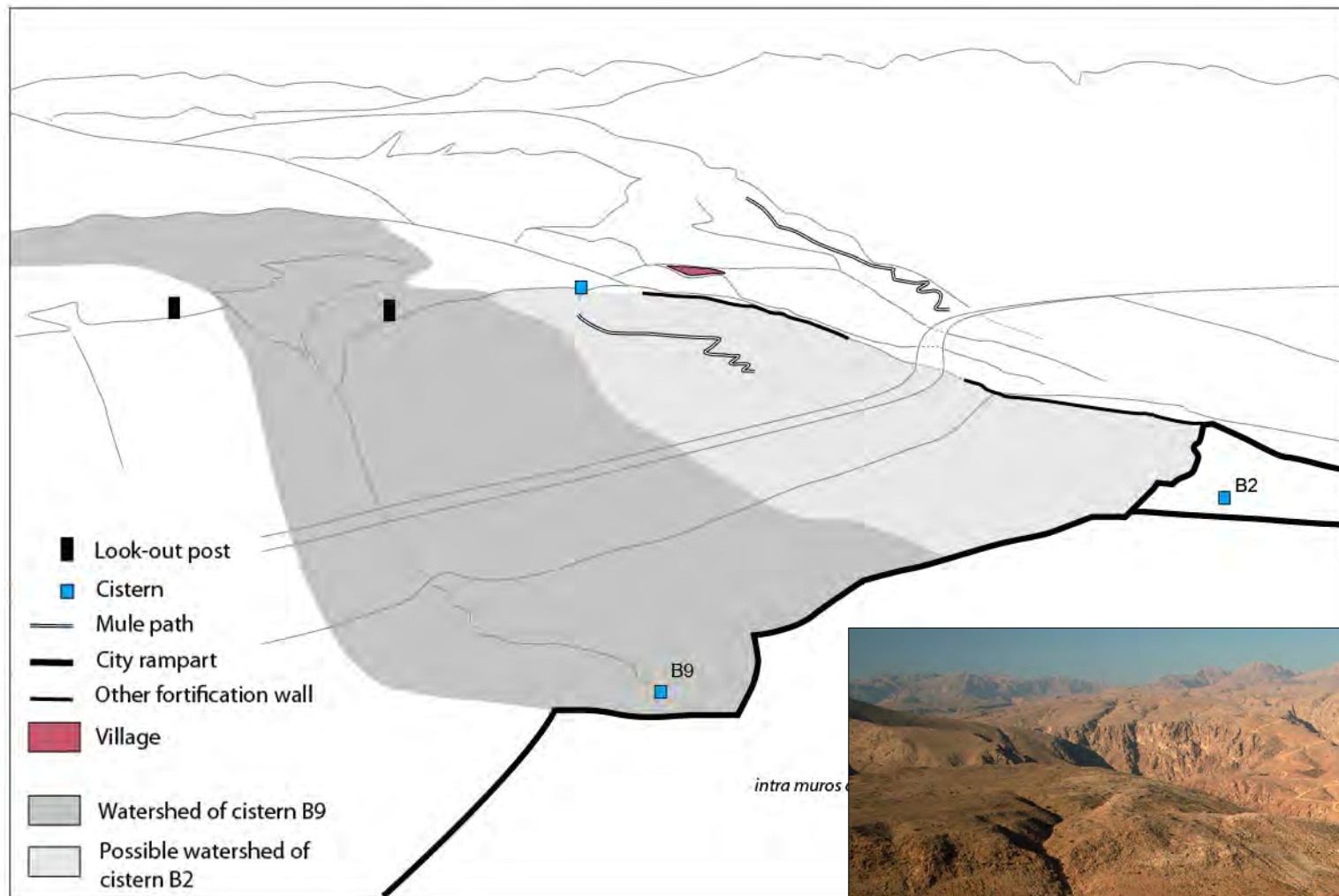
c



e



d

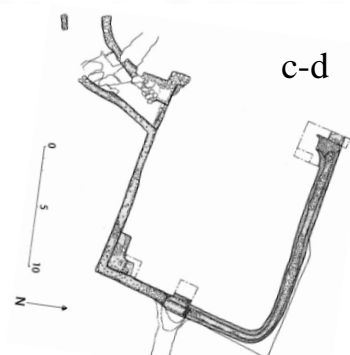


e

a-b



Image 21



c-d





a. City of Muscat in 1876

b. Trustees of the British Museum © Gen. Sykes 1900



Qalhat Development Project

dir. Axelle ROUGEULLE

Provisional plan for site visitation

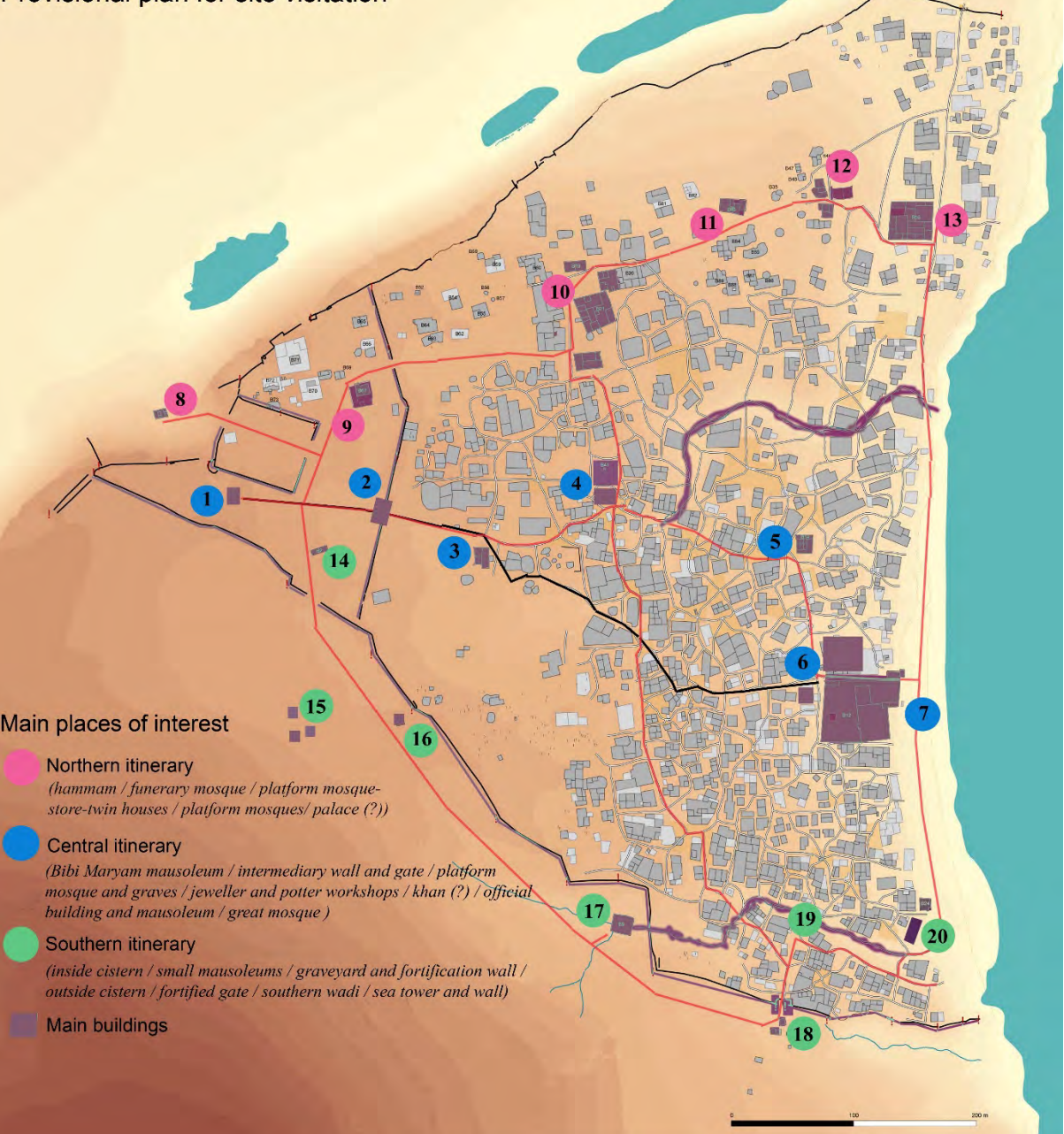


Image 23

59°22'0"E

59°22'30"E

59°23'0"E

QALHAT BOUNDARIES



22°42'0"N

22°42'0"N

22°41'30"N

22°41'30"N

22°41'0"N

22°41'0"N

22°40'30"N

22°40'30"N

Area of MHC Property 1018929 SQM



core zone (MHC property) 693140.49 SQM

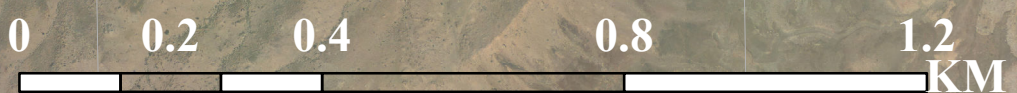


Buffer Zone B 1436435.98 SQM



Buffer Zone A (MHC Property) 325518.51 SQM

Total area of the nominated Site 2455364.98 SQM



59°22'0"E

59°22'30"E

59°23'0"E