

# WORLD HERITAGE

## *Special Issue* **World Heritage in Qatar**



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Cover: Al Zubarah  
Archaeological Site, Qatar

Each year, the special issue of *World Heritage* coinciding with the annual World Heritage Committee session gives us the opportunity to focus on the heritage of a particular country or region. This year the 38th session of the Committee is hosted by the State of Qatar so we are taking a closer look at the cultural and natural heritage of this country, which deserves to be better known.

While Qatar adopted the World Heritage Convention in 1984, its first site was inscribed on the World Heritage List in 2013. Al Zubarah Archaeological Site is an excellent example of a fortified town linked to other settlements for the pearl trade, and was a key point in the development of urban centres in the 18th and 19th centuries in the Gulf region. Several articles present the history of this remarkable site and the archaeological works undertaken to shed light on its development and significance to the region.

In addition, we cover the natural site on Qatar's Tentative List, Khor Al-Adaid, known as the Inland Sea. This breathtakingly beautiful site is a large tidal embayment with a lagoonal structure. We also discover the archaeological heritage of pre-Islamic Qatar, and the joint Qatari-German research project involving archaeological surveys and excavations in the south of the country. Further articles present mysterious rock carvings, including 'board games'; the challenges of heritage preservation in the face of urban development; and the Old Palace of Doha, currently under restoration to become the central point of the new National Museum of Qatar.

Qatar is committed to developing its rich cultural life through many aspects, whether art, music, festivals, activities and especially institutions, including museums. In this way, culture becomes not only an aspect of the identity of the Qatari people, but a powerful vector for sustainable economic growth and an effective means to create ties with other peoples and cultures, uniting and educating along the way.

We are pleased to publish an interview with H.E. Sheikha Al Mayassa Bint Hamad Bin Khalifa Al Thani, Chair of the World Heritage Committee and Chair of Qatar Museums Authority, where she describes the critical role of culture as a driver of education and the economy in her country.

I would like to thank the authorities of the State of Qatar for generously hosting the 38th session of the World Heritage Committee, which is sure to be an effective and meaningful contribution to preserving our World Heritage.

**Kishore Rao**  
Director of the UNESCO World Heritage Centre



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**World Heritage would like to thank the staff of Qatar Museums Authority, and especially Professor Thomas Leisten, for their invaluable contribution to the preparation of this special issue.**

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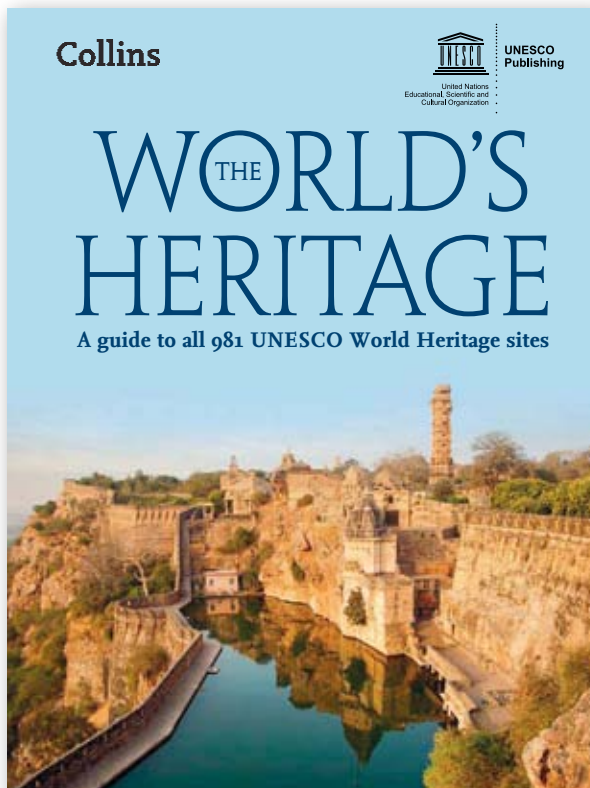


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## Message by Irina Bokova, Director-General of UNESCO

This special issue of the *World Heritage* review is dedicated to the heritage of Qatar, on the occasion of the 38th session of the World Heritage Committee held in Doha this year and chaired by H.E. Sheikha Al Mayassa Bint Hamad Bin Khalifa Al Thani.

This is an opportunity for all to discover the fascinating heritage of Qatar and its people. Qatar's first World Heritage site, Al Zubarah Archaeological Site, was inscribed on the World Heritage List in 2013. Protected and preserved by the desert sands, this is an outstanding example of a walled coastal town that thrived as a centre for pearling and trade in the late 18th and early 19th centuries. Al Zubarah was one of a long line of prosperous, fortified trading towns that developed across the region from the early Islamic period, around the 9th century onwards, establishing a symbiotic relationship with inland settlements.

Qatar also boasts remarkable intangible heritage, such as the tradition of falconry. Inscribed in 2012 on the Representative List of the Intangible Cultural Heritage of Humanity, in conjunction with twelve other countries, falconry forms the basis of a wider cultural heritage, including traditional dress, food, songs, music, poetry and dance, sustained by the communities and clubs that practise it. This is just one example of the power of heritage to



© UNESCO

tighten the bonds across cultures and to promote intercultural dialogue for peace and mutual understanding.

Over recent decades Qatar has also emerged as a thriving cultural hub where traditions and history mingle with contemporary culture. Qatar is breaking new ground in creating institutions, museums and festivals that highlight its own history while showcasing and connecting with other cultures. After the Islamic Art Museum and the Mathaf:

Arab Museum of Modern Art, the National Museum of Qatar and the Orientalist Museum will soon open their doors to the public. A Children's Museum will be inaugurated in 2017. These institutions contribute to the development of the region's cultural life and cultural tourism, as well as to the educational goals of the country. All this bears witness to a clear vision to harness the power of culture, creativity and human potential as our ultimate renewable resource for sustainable development. With 70 per cent of the Qatari population under the age of 30, Qatar has taken the firm decision to invest in education and culture as priorities – and this is a powerful message to be shared with the rest of the world.

I am confident that the 38th session of the World Heritage Committee will be an opportunity to take this commitment forward and to make the most of our shared cultural heritage to shape a more sustainable development agenda. As all societies seek new ways to promote social inclusion, confidence and inclusive development, we must join forces to promote and protect our shared heritage as a wellspring of innovation, mutual understanding and human dignity. We must do so in full respect of the highest standards of excellence, in the name of the Outstanding Universal Value and rights that we have the responsibility to uphold. This is the role of UNESCO, and this is the message all states must carry forward as they meet in Doha. 🌐

## Interview with H.E. Sheikha Al Mayassa Bint Hamad Bin Khalifa Al Thani

H.E. Sheikha Al Mayassa Bint Hamad Bin Khalifa Al Thani is Chair of the Board of Trustees of the Qatar Museums Authority and Chair of the World Heritage Committee

### World Heritage:

**Qatar's economy has in recent years experienced one of the highest growth rates in the region, which has been accompanied by spectacular development. What role do you attribute to culture and heritage in this transformation?**

**H.E.:** As Qatar undergoes a rapid transformation towards a country with modern institutions and a contemporary infrastructure, having become part of the global economy in the process, the cultural sector is taking on an enormously important role for our people. I see the role of culture not merely as that of presenting art and cultural objects, or as a decorative appendage and side-effect of Qatar's economic development. Culture is envisioned to serve as a catalyst in the critical discussion of societal practices with a focus on education, employment and the economy. In this capacity, fostering culture can be understood as the establishment of a shared system of communication that involves everyone and offers space for articulation and critique. Culture can thus become a binding element within Qatari society that creates values and meaning, transfers and disseminates knowledge, broadening outlook and leading to more creative actions by the individual but also to stronger cohesion and human development within society at large. Culture, heritage and the protection of what we cherish about our own past will also be playing an important role in sustainable socio-economic development in the region, as culture and heritage tourism will contribute to the diversification of Qatar's economy over the next decade or so.

**WH: In your capacity as Chair of the Board of Trustees of the Qatar Museums Authority, you have been a great supporter of contemporary art. What is the relation, in your view, between heritage and creativity?**

**H.E.:** Creativity is a very complex interaction between the artist, a medium, and the culture or heritage that surrounds the artist. Creativity in art can change the environment and alter the culture in which an art object is being created, but the creative process includes either picking up elements relating to heritage or completely rejecting them. In either case this means that the act of being creative always includes a reaction to the cultural setting (and that includes heritage) in which art is being created. If we keep in mind that all art was once contemporary and a reflection of the society in which the artist lived, we can understand contemporary art as a similarly pioneering and dynamic – a creative – system of reference to culture, society, politics and religion in our time.



Sheikha Al Mayassa Bint Hamad Bin Khalifa Al Thani.  
© Qatar Museums Authority (QMA)

**WH: How do you see the interaction between museums and World Heritage sites: can they play a new role in interpretation?**

**H.E.:** Definitely so. As approximately 10 per cent of all museums and visitor centres worldwide are said to be located in the proximity of World Heritage sites, this number alone demonstrates that the interpretation of context, buildings and objects has been identified as an important and successful strategy to address visitors. Beyond this obvious function, visitor centres relating to World Heritage sites offer the opportunity to include in their displays information about the region, its population, their crafts and in general the existing, living, culture in which the site is located. This could very well include elements of intangible heritage such as customs, beliefs and oral traditions. The benefit of such an approach would be to convey not only concepts of cultural diversity and tolerance but also to create a link between a monument of world status and its visitors, on the one hand, and contemporary local communities on the other. An extension of the traditional concept of a museum as a place of presentation of objects and information, towards a place of encounter and staging ground for cultural events, might also open the door to the creation of a sustainable local economy and employment opportunities in the heritage sector.



**WH:** Qatar is a small country, but in recent years has had considerable influence at international level by promoting a dynamic and ambitious global image, including innovative cultural and communication initiatives (e.g. Al Jazeera). In your view, how can governments reconcile the need to maintain the cultural distinctiveness of their countries with the challenges and opportunities associated with globalization?

**H.E.:** It is a common misunderstanding that globalization has contributed to a loss in local identities and has led to cultural homogenization in which everything everywhere is blandly culturally uniform. A closer look reveals that globalization has, particularly in the past thirty years, in fact led to a surge in the creation of robust identities whether on the level of culture, society or in the form of distinct national identities. It may be true that the places we live in are increasingly penetrated by the connectivity of a globalized world, but while we as Qataris are perfectly able to retain our distinctiveness through actively celebrating, preserving and often rediscovering our specific heritage, this distinctiveness is at the same time no longer – as it may have been in the past – the single most determining factor of our cultural experience. A globalized world allows us to compare our culture with that of other peoples, to appreciate theirs and ours through their diversity and

**Culture, heritage and the protection of what we cherish about our own past will also be playing an important role in sustainable socio-economic development in the region.**

the fascination of finding out what is distinctive about them, while at the same time understanding Qatari culture as both distinct and connected with other world cultures.

**WH:** What do you consider to be the main challenges facing the World Heritage Convention in coming decades? How do you, through your role as Chair of the World Heritage Committee, intend to contribute towards addressing them?

**H.E.:** Today, the World Heritage Convention is certainly a successful document of best practice of United Nations efforts to support education, environmental and heritage conservation and sustainable development in communities all over the world. In recent years the Convention has operated with the understanding that it needs to make an intensely cooperative effort with the public and private sectors, and to increase its capacities to communicate with a more diverse public to mobilize greater support for heritage protection. Nevertheless, as the current inscription procedure adds some twenty sites each year, we will be looking at an approximate number of over 1,500 cultural sites and 300 natural heritage properties twenty-five years from now. While any of these sites is adding a unique and particular aspect of past human activity or a distinct natural habitat, one of the questions that will have to be tackled by UNESCO in the near future is whether the world community has the capacity and the will to face the challenges of the effective conservation of sites and natural properties. Another pressing issue is to rebalance inequalities in the regional distribution of cultural and natural World Heritage sites and the processes that have led to such underrepresentation. A serious step towards addressing this issue is vital for the continuing credibility of the Convention and its effective role at international level. 🌐



Sunset in the dunes.

© Peter Dowley

# 18th-century Al Zubarah and the genesis of the modern Gulf region

## Archaeological perspectives

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### *Acknowledgements*

*The staff of the Qatar Islamic Archaeology and Heritage Project extend their deep appreciation to H.E. Sheikha Al Mayassa Bint Hamad Bin Khalifa Al Thani (Chair of the Board of Trustees of the Qatar Museums Authority) and H.E. Sheikh Hassan Bin Mohammed Bin Ali Al Thani (Vice Chair) for entrusting us with the exciting task of uncovering Al Zubarah's archaeological and cultural heritage potential. In addition, we thank Professor Thomas Leisten, Professor Sultan Muhesen, and Mr Faisal Al Naimi of the Qatar Museums Authority for their ongoing support.*

Aerial view of Al Zubarah.

© QMA/QIAH



“Al Zubarah, as a fortified town linked to settlements in its hinterland, exemplifies the string of urban foundations that rewrote the political and demographic map of the Gulf during the 18th and early 19th centuries through building on the strategic position of the region as a trading conduit. Al Zubarah can thus be seen as an example of the small independent states that were founded and flourished in the 18th and early 19th centuries outside the control of the Ottoman, European and Persian empires. This period can now be seen as a significant moment in human history, when the Gulf States that exist today were founded”. (UNESCO World Heritage Committee 37th session, 2013, Phnom Penh, Cambodia)

The deeply etched tracks of human achievement in the Gulf region since prehistory reflect a dynamic interplay between local, neighbouring and inter-regional agencies. Geography, resources, the exchange of commodities and the transfer of ideas elevated the status of the Gulf to that of a major regional player; a busy conduit in which peoples from diverse backgrounds lived fully and communally, and soon attracted the direct intervention of neighbouring empires.

In the study of the vibrant historical events that marked the subsequent emergence of a post-colonial Gulf from the 18th century onwards, archaeology is now making a significant contribution to documenting and explaining the principle social, political and economic factors that came to shape that period of fundamental change. Of the many social transformations that occurred between the later 18th and mid-20th centuries, none was more significant than the foundation and development of the modern emirate states along the south coast. The yoke of imperial control – real or threatened – was cast off and replaced with an indigenous political, cultural and economic independence; a transforming achievement, attained through astute leadership by the coast’s main ruling families in a strategic response to the rapidly changing global realities of the time.

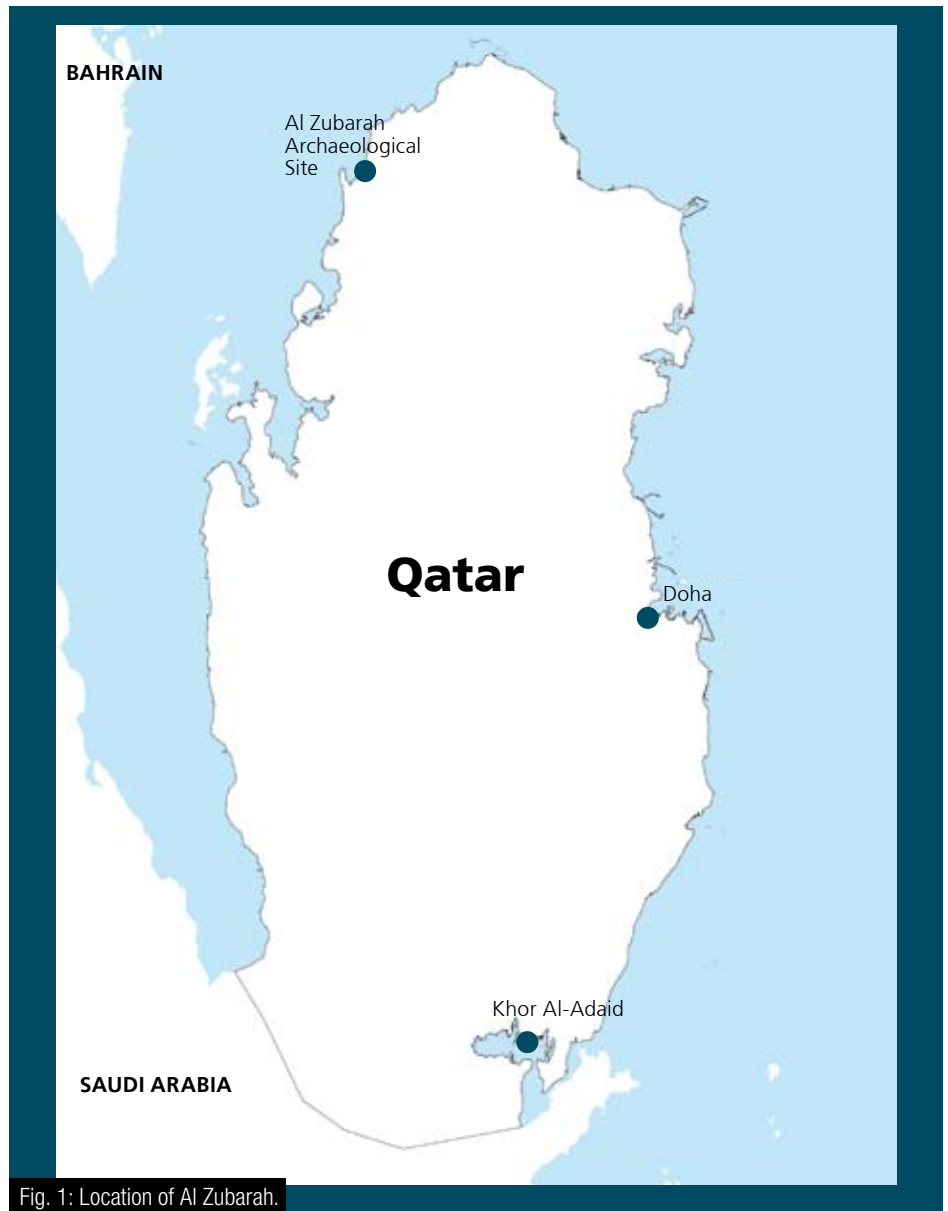


Fig. 1: Location of Al Zubarah.

### Background to the foundation of Al Zubarah in the 1760s

To address the major research anomalies brought about by the near total absence of any meaningful archaeologically derived information on the emergence of the Gulf’s emirate states, the Qatar Museums Authority has commissioned a pioneering programme of original and comprehensive archaeological research and heritage studies at the pivotal urban site of Al Zubarah (pronounced Az Zubārah) on the north-west coast of the Qatar Peninsula (Figure 1). At the invitation of H.E. Sheikha Al Mayassa Bint Hamad Bin Khalifa Al Thani (Chair) and H.E. Sheikh Hassan Bin Mohammed

Bin Ali Al Thani (Vice Chair) of the QMA, the University of Copenhagen has, to date, completed five years of site mapping, field excavation, documentation and research into the archaeological and cultural legacy of the walled town of Al Zubarah within the context of its densely populated hinterland. To effectively frame the work, a multi-disciplinary and cross-institutional project was established under the banner of the Qatar Islamic Archaeology and Heritage Project (QIAH), the broader programme of which also encompasses heritage initiatives, site restoration, and community outreach. The aim of the archaeological component of the project is to wholly place Al Zubarah



Fig. 2: Aerial view of Al Zubarah, looking south.

© QMA/QIAH

within its geopolitical context; a time and place scenario typified by shifting allegiances among the world powers between the 18th to 20th centuries, especially those with pressing imperial ambitions in the Gulf. In an age that witnessed the waning power of Portugal, an ongoing Ottoman presence that stretched (incompletely) to Qatar, the omnipresent exercise of authority by Great Britain, and the rising engagement of the United States; in this age of considerable volatility yet multifarious opportunity, the people of Al Zubarah chose not to sit out or even avoid any direct engagement with the fullness of the changes they found swirling around them. Instead, they were active players over a full half century dating to around the 1760s to the 1810s, with profound cultural, political and economic ramifications that still resonate throughout the region today. The background to the initial foundation of Al Zubarah in the 1760s speaks to this very outlook: coalesced tribal groups prefaced by the collective name of Utub relocated from around Al Basrah and Kuwait at the head of the Gulf to a waterless rocky knoll draped with white sand so as to escape the expanding imperial ambitions of Persia and, through this action, ensured the continuation of a treasured social and economic independence.

### Surveying the site

Archaeology, by formulating a window of exceptional clarity on the past, can provide an unmatched instrument with which to observe and understand the distinctive character and historical significance of societal developments, such as those that played out in the daily life of 18th- and 19th-century Al Zubarah. After five years of concentrated archaeological work at Al Zubarah, as well as across its extensive and widely populated hinterland, the discoveries are detailed, varied and highly informative. Tasked to expose, document and explain the symbiotic relationship that once existed between people and their environment in the past, archaeologists seek to describe a dynamic interplay that was created, influenced and sustained by social and cultural practices. Accordingly, the archaeology of Al Zubarah encompasses two interconnected programmes: full site planning matched with strategically placed excavations at the UNESCO World Heritage listed property; and regional survey work to ascertain site densities, functions and representative chronological periods in adjoining territory. From this comprehensive approach, the full extent of human adaptation to a challenging natural

environment on the Qatar peninsula in Islamic times is being revealed; a way of life that brought together, in a hugely successful way, a regional maritime outlook with local land-based opportunities. This more nuanced and socially oriented approach fleshes out an overly simplistic economic model based solely on a pearling narrative that has, until recently, been widely applied in the Gulf.

Attention initially focused on documenting and analysing the walled town of Al Zubarah, which benefits from a location on the eastern shore of a broad, north-facing bay with sweeping sand beaches and safe anchorage (Figure 2). As a first step, as in any programme of archaeological work, a full, systematic ground plan of Zubarah was undertaken, after which the recorded data were decoded. Although a major task, given the 60 ha size of the site within its 2.5 km circuit wall, the work was substantially completed in 2009. The surveyor, Hugh Barnes, walked daily over the whole site with a sketch-board, recording and thinking about what he saw in the mounds of building debris that typify the site (Figure 3). He followed his initial assessment with a detailed plan using a total station, in which the intricacy of Al Zubarah's town

plan was revealed, made up of a complex arrangement of stone-built circuit walls, gates, street systems, mosques and building complexes, set within zones of open space and middens of urban waste (Figure 4). Upon this very solid research foundation, informed decisions could be made on where to begin strategic archaeological excavations. The intention was to gain an insight into the wide range of social and economic activities that took place in Al Zubarah in its heyday, and to track the decades of urban contraction thereafter until its eventual abandonment as a settlement.

## Organization of a living Islamic town

Protection of the town – its people, resources and wealth – was a clear priority, and the 2.5 km main circuit wall of Al Zubarah testifies to an extraordinarily high level of social planning, community organization and management of natural and human resources. The mid- to late-18th century was one of the most politically fluid periods in the Gulf with the loss of empire and the emergence of emirate states, and the provision of adequate defences was the concern of the whole Zubaran community, especially since the site lent itself to assault by land and sea. Fortified by over twenty towers spaced at approximately 100 m intervals, the stone-built wall was faced by a parapet with a walkway behind, most likely to provide elevation for gunners. Planning the site also revealed many intricate details about the internal layout of the town. Between the arc of the circuit wall on the east and the white-sanded beachfront on the bay to the west, a network of thoroughfares was laid out in a generally radiating pattern, and linked by cross streets running north–south. The deliberate arrangement of space within the walls by Al Zubarah’s first settlers, based on experience of living in south Iraqi towns (Iraq has a millennia-old history of ordered urban planning), served to generate a core layout focused on building allotments, thereby creating an urban grid into which could be inserted the various public and private buildings that constituted a living Islamic town (Figure 5). Residential structures predominated, although many units appear to have combined domestic and commercial functions in one place. Each



Fig. 3: The layout of Al Zubarah has been preserved under the desert sands.

© QMA/QIAH

block, usually rectangular in shape, was made up of adjacent courtyard buildings in gypsum-coated stone, or groups of two or three larger complexes with multiple courtyards, which suggests close relations between block inhabitants along familial, clan or tribal lines. The relative unity of plan over a large area implies that many blocks were constructed in a single comprehensive development of the urban structure, and reveals an advanced degree of town planning and social cooperation in its execution. The product was impressive in local and regional terms: a town that once stretched some 1,500 m from north to south and up to 650 m from east to west, and may have supported a permanent population of 5,000–6,000 and a transient population of many more during the summer pearling season.

Planning of the site also raised questions as to the purpose and date of a second and smaller inner defensive wall, also towered, which had been interpreted in earlier studies as belonging to a supposed original nucleus of the settlement. Middle Eastern cities are often seen as growing out from an original core, yet usually features of the original settlement become swamped by the demands for space, especially the primary walls, as in the case of medieval Cairo. Yet Al Zubarah’s inner defensive wall seemed comparatively well preserved, and

adjacent structures stood disconnected from it; a question of chronology, and thus function, invited resolution.

After the site planning programme was completed, decisions on where to undertake excavations were not so difficult to make, with each area chosen because of specific research questions we hoped it would address on social and economic conditions at Al Zubarah. Immediately the issue of the inner wall attracted attention, in that it could inform greatly on the eclipse and desertion of the town, as did the social and economic role of the central section of Al Zubarah’s sandy beach, at a point where the coastal reef ended and at a spot ideal for drawing dhows out of the sea.

## A glimpse into past lives

The excavations around the inner wall demonstrated categorically that it had been built directly over an earlier block of houses, and had been strengthened with circular towers ascended by an external spiral staircase (Figure 6), seemingly more for observation and possible rifle sniping than concerted defence. Thus the inner wall represents a contraction in the settlement to about a third of its original size, and defended a town not only much reduced in size but also in settlement concentration. We can speculate that the total population shrank even more, to an eighth or even tenth of its original



Fig. 4: Site Plan showing Al Zubarah and Murair.

© QMA/QIAH



Fig. 5: Aerial view, close up, of residential blocks in north of Al Zubarah, facing west.

© QMA/QIAH



Fig. 6: Excavated tower.

© QMA/QIAH



Fig. 7: Aerial view of ZUEP01, north to top.

© QMA/QIAH

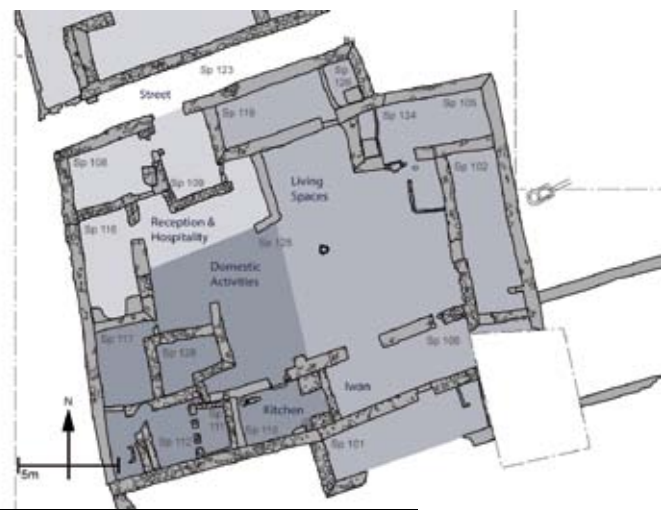


Fig. 8: Plan of ZUEP01, Compound 1, Phase 5.

© QMA/QIAH



Fig. 9: Dhow etching, faint lines scratched into wall plaster.

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size. How abrupt this reduction was and its immediate cause is still the subject of study, but large areas of later burning in the town's buildings following the contraction are a vivid reminder of the ongoing external challenges that Al Zubarah faced, in spite of the tenacity shown by many of its inhabitants.

Investigation of the structures lying under the inner wall revealed two residential units of gypsum-plastered stone located either side of an east–west thoroughfare between coast and wall (Figure 7). A study of these units has identified how the inhabitants carried out their household activities within the confines of these walled compounds, a glimpse into past lives otherwise lost to history. Particularly interesting has been the ability to recognize lines of movement and different zones of activity within the households from a range of archaeological discoveries. A single entrance from the street gave access to the residential units, each built around an open central courtyard (Figure 8). Spaces within the residence were devoted to different activities: reception of guests, domestic activities such as food preparation and storage, and living areas consisting of a wide shaded recess (*ivan*) opening out onto the courtyard and adjacent private rooms often with a corner *hammam* (washing cubical). One room featured a scaled image of a large dhow, expertly etched into the plastered wall surface (Figure 9). Architectural features such as doorways and entrances to *ivan* were tranquilly decorated with geometric patterns cut into the gypsum plaster; an

ancient tradition in this region and an indication of those areas of the household frequently used for social purposes. In another section, food preparation was an important activity, and most houses feature at least one date press (*madbasa*), food preparation areas and a kitchen with ovens (*tannur*). The food waste recovered from the kitchens proved to be highly rich in information on food sources and diet, in which fish, sheep, goat and camel played a primary role.

Central to Al Zubarah throughout its history was the harbour beachfront and, abutting onto it, the main commercial centre (*sug*) of the town, overseen by a rectangular fort built on a rocky projection into the sea (Figure 10). Given that the *sug* served a leading role in town life, evidence for a wide range of primary activities – commerce, politics and social interaction – could be expected. The results exceeded our expectations and promise many more revelations. Ongoing excavations have uncovered two large enclosed courtyard warehouses separated by parallel access streets, each of which led down to the broad sandy beach of the bay – perfect for hauling up sea craft. One of the warehouses features a central courtyard enclosed by elongated rooms, and include three large date presses side by side as well as storage rooms. A doorway gave direct access from the beach area to the west. Elsewhere, a wide range of activities have been identified, including the redistribution of commodities and artisanal enterprises. The floors of some shops were

littered with potsherds in their hundreds, these being remnants of containers for goods sold in the market. Local wares were identified, as well as ceramics brought in from across the Gulf, such as pots from Julfar in the United Arab Emirates (Figure 11). A large windlass anchor of stone, used to haul up and secure the beached dhows, was also recovered where it was abandoned – somewhat oddly blocking a doorway, but then it does weigh some 12 kg. Immediately north of the khans, on the other side of a street, very recent excavations have exposed banks of date presses built along streets running parallel to the coastline (Figure 12). This remarkable discovery, still ongoing, reveals the importance of the date trade and syrup (*dibis*) production in the Gulf and its primary role in the economy of food processing at Al Zubarah.

### Treasures of the palace midden

Al Zubarah contains two distinct palatial precincts, which are common urban structures in the Gulf. The largest is situated on the southern edge of the town, and is defined by rectangular perimeter walls of 110 m by 100 m with solid circular towers at each corner (Figure 13). The very solid construction of the excavated south-west tower, buttressed with cross-walls, suggests that they were surmounted with small cannons. The absolute size, lofty walls, cannon-equipped towers and dominant position of this palace in the urban landscape would have spoken decisively of the owner's elevated status in Zubaran



Fig. 10: The beach fort at sunset, looking north-northeast.

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society, and is indicative of the existence of a degree of social stratification within a prevailing tribal order. Whoever owned the palace, it is clear from the excavations that they left Al Zubarah in an orderly manner, as the building was selectively stripped of all useful architectural features and mobile objects before abandonment. It may have been occupied for two or maybe three decades only; it seems possible that it was left by one of the leading families that migrated to Bahrain in the 1780s.

Inside its outer walls, the palace was subdivided into eight large courtyard compounds, which together covered an area of just over 1 ha. Excavations since 2010 have fully revealed the south-west compound and half of that to its north, both originally two-storeyed given the presence of staircases. In the south-west compound, one room housed a well-preserved date press, while other rooms have been identified as kitchen and storage areas, as well as living rooms each with a *hammam*. In a rare, direct, connection with past humanity, a footprint of a person was found beautifully preserved in the soft earth floor of a room (Figure 14). Overall, the south-west compound indicates that it served a residential function. Quite different in purpose, however, is the newly excavated compound to the north. Here a very different warehouse-like layout of rooms can be seen, suggesting a commercial function. This conclusion is fully supported by the startling discovery of multiple etchings of boats in the wall plaster of rooms (Figure 15); images not simply intended to be decorative but, rather, suggest a detailed inventory of vessels.

A further clue as to the higher social status of the occupants of the palace building has come from the excavation of a rubbish heap, or midden, dumped outside the south wall of the building. Middens – grey, grimy, ashy and featureless – conceal beneath this visually unwelcoming sheath a veritable treasure of broken objects and discarded waste that, together, presents a full insight into the lives of Al Zubarah’s inhabitants: their economic activities, consumption habits, material culture choices, foods and diet, and social status.

The palace midden turned up many expected but remarkable finds: a vast array of broken pottery and porcelains, discarded metal fittings, broken glass vessels and numerous coloured bracelets and anklets, bones from meals of sheep, goat, birds and fish. But among the waste was also the unusual: evidence of hunted game, notably gazelle, often seen as indicative of princely



Fig 11: Drawing of a jar.  
© QMA/QIAH

behaviour built around extended leisure time, the chase, and communal feasting. In this light the high position held – or at least aspired to – by the inhabitants of the south palatial compound finds confirmation in the garbage they discarded outside the compound wall.

### Commercial and cultural life

In all areas, the excavations within Al Zubarah have produced a rich assemblage of objects that capture, in a deeply individual way, the lives of the inhabitants. Of particular note is the discovery of diving weights (Figure 16), once widely used by pearl fishers in the recovery of molluscs around Qatar, made from a heavy, dark stone, in a courtyard building near the sea front. Another reminder of the key role of the pearl trade in the economic life of Al Zubarah was the recovery of a pearler’s chest of the later 18th century, sadly devoid of its contents (Figure 17)! The many thousands of ceramic pieces recovered by the excavations reveal the wide reach of Al Zubarah’s commercial and cultural activities. Most of the coarse everyday wares used for

cooking and storage are locally or regionally sourced (Figure 18), but more appealing are the fine porcelains from places as far away as China and Japan (notably 18th- and 19th-century blue-and-white wares), European (especially Dutch) transfer-decorated ‘china’ (mostly later 19th to early 20th century in date), and various Iranian glazed wares and imitations. The widespread appearance of ceramic tobacco pipe bowls and hookah parts by the early 19th century (Figure 19) is indicative of a rapidly growing social addiction to smoking tobacco and a more reluctant acceptance of the practice in the Gulf and Iran at that time. Likewise the small, handleless cups in decorated fine porcelain used for drinking Arabic coffee, most of Chinese origin, are ubiquitous in the archaeological record at Al Zubarah covering all periods.

The exceptional level of planning that went into the creation of 18th-century Al Zubarah can be further seen in the deliberate organization of space immediately outside the walled town. Situated on a low coastal rocky hillock, separated from the low plateau of the Qatar Peninsula by muddy, supratidal *sabkhas* (salt flats), Al Zubarah lacked one of the most precious resources needed to sustain life: fresh water. A secure water source is even more critical in the hot and arid climate typical of Arabia. To exploit and control access to water, a fort and settlement called Murair was built in the 1760s nearly 2 km east of Al Zubarah on the edge of the desert scarp, where wells could tap a shallow lens of fresh water that lay over the brackish, saline groundwater of Qatar (although the best drinking water came from Shuwayl, where there is also a fort of 18th-century date, at the greater distance of some 3 km east of Al Zubarah). Provisioning of the Murair fort was facilitated by a long and broad sea canal, sliced with great effort through slippery mud flats and tough bedrock for some 2 km inland, a remarkable testimony to the ingenuity, resourcefulness and commitment of the town’s inhabitants (Figure 20). To protect the land link between Al Zubarah and Murair over boggy salt flats, two long screening walls with engaged towers were erected, which with the stout town walls of



Fig. 12: Aerial view of ZUEP02 date presses mid-excavation, north to left.

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Fig. 13: Palace.

© QMA/QIAH



Fig. 14: Footprint.

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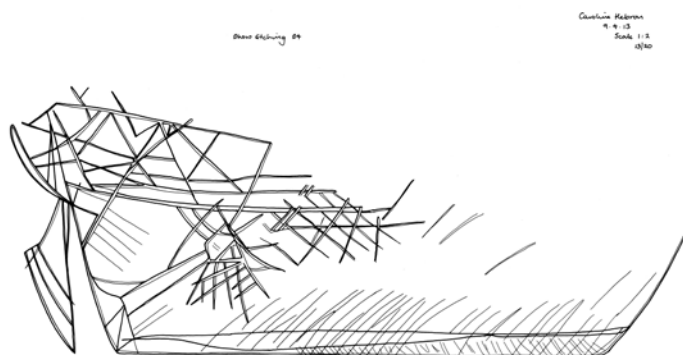


Fig. 15: Drawing of a dhow.

© QMA/QIAH



Fig. 16: Group shot of ZUEP02 diving weights.

© QMA/QIAH

Al Zubarah reveal a constant concern about security, eventually an important factor in the eclipse of the town. Taken together, the walled town of Al Zubarah, the fort at Murayr, the conjoining screening walls, and the remarkable sea canal are testament to a high level of social organization and communality, in which new settlers sought to negotiate between a harsh, arid and unsustainable desert setting and the bountiful, yet always dangerous, possibilities of the sea. Fifty years of prosperity and more indicates their success at striking a deal that balanced the natural environment with the demands of human society.

## Resource-driven landscape

The importance of understanding the surrounding landscape, on which all urban sites are dependent to survive (and Al Zubarah is no exception), was emphasized in the World Heritage Committee's ringing endorsement of Qatar's application for inscription of Al Zubarah Archaeological Site, achieved at its session in Phnom Penh in June 2013. Beginning with the 2009–10 season, and expanded in the years following, survey and mapping teams have delved deep into the countryside north and east of Al Zubarah in the quest to discover, document and classify the villages, hamlets and encampments in the hinterland of the town, with a view to evaluating the nature of cultural, political and economic interactions between them and Al Zubarah. Of special interest was the impact that would have been made by the sudden arrival of a large and comparatively wealthy group with the founding of Al Zubarah in the later 18th century within an existing network of coastal villages and inland pastoral-agricultural settlements, and what distortions that arrival may have produced. The subsequent 19th-century recovery strategies of the regional sites with the physical and economic decline of the town are of equal importance. Such developments on the north-west coast of the Qatar Peninsula are instrumental

in understanding the emergence and formation of the modern State of Qatar.

The map (Figure 21) shows the abundant results of a comprehensive investigation undertaken by the QIAH team of the cultural landscape of northern Qatar. In a number of ways, the quantity, range and significance of the results from pioneering



Fig. 17: Compartments of a pearler's chest, with remnants of rusted lid hinge.

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Fig. 19: Tobacco-smoking equipment: a hookah bowl.

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geomorphological fieldwork undertaken by QIAH team member Dr Phillip Macumber went far to identify a resource-driven landscape revolving around water resources, compact yet valuable agricultural fields, and extensive pastoral opportunities. Spread across the entire north of the Qatar peninsula is a peppering of sites with, understandably, the most significant profile clustered around the main water sources. Field systems, many from the same period as Al Zubarah, have also been recorded associated with the main water sources, and where the desert *rawdah* ('garden') soils were also present. Sites closer to Al Zubarah have wide evidence for occupation during the heyday of the town, with water management often enforced by the construction of forts at the wells, perhaps not all controlled directly by Al Zubarah (the principle of 'secure and deny'). From this work, it is apparent that Al Zubarah was supported in part by a complex arrangement of natural and human resources in its hinterland, indicative of a social system increasingly reliant on inclusion.

Once concealed by undulating mounds of rubble and sand, recent work at the archaeological site is beginning to reveal a

dynamic cultural past, one that extends far beyond a reliance on the pearl trade story as the be-all and end-all of Al Zubarah's existence. The unfolding story from the work of the archaeologist tells of local endeavour and regional achievement on a huge scale, and an outlook that spanned continents. Al Zubarah was a crucial stepping stone on the path of Arab independence – culturally and politically – in the Gulf, a journey to unshackled nationhood finally reached in the mid-20th century CE. As H.E. Sheikh Hassan Bin Mohammed Bin Ali Al Thani noted in his preface to the 2013 Supplementary Dossier to Qatar's Nomination Document for World Heritage Listing of Al Zubarah Archaeological Site, Al Zubarah is exceptional in the history of the Gulf in that it offers a profound 'testament


to the ingenuity, community aspirations, and commercial acumen of Gulf society as it moved – decisively – to forge a new and locally sourced identity'. The work of the modern archaeologist creates a knowledge-sourced foundation from which a much more ambitious and nationally attuned cultural journey can proceed: to bring to the people of Qatar, the region and the wider world a fresh, relevant and dynamic engagement with the past through eye-catching museum displays and an innovative visitor experience at a world-class, World Heritage listed, cultural site. In the wake of the archaeological discoveries comes the responsibility of protecting, conserving, presenting and managing the cultural heritage of a historic site. Once dug and documented, the exposed buildings of Al Zubarah require preservation in compliance with UNESCO's strict guidelines, while the whole site is to be made accessible and understandable to the visitor through a comprehensive management plan, involving a Visitor Centre, walkways, points of interest and cutting-edge information technologies under the direction and supervision of the Qatar Museums Authority. 



Fig 18: Ceramics from ZUEP02, single locus 2179, showing variety of wares.

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Fig 20: View of channel and screening walls towards Murair, north to left.

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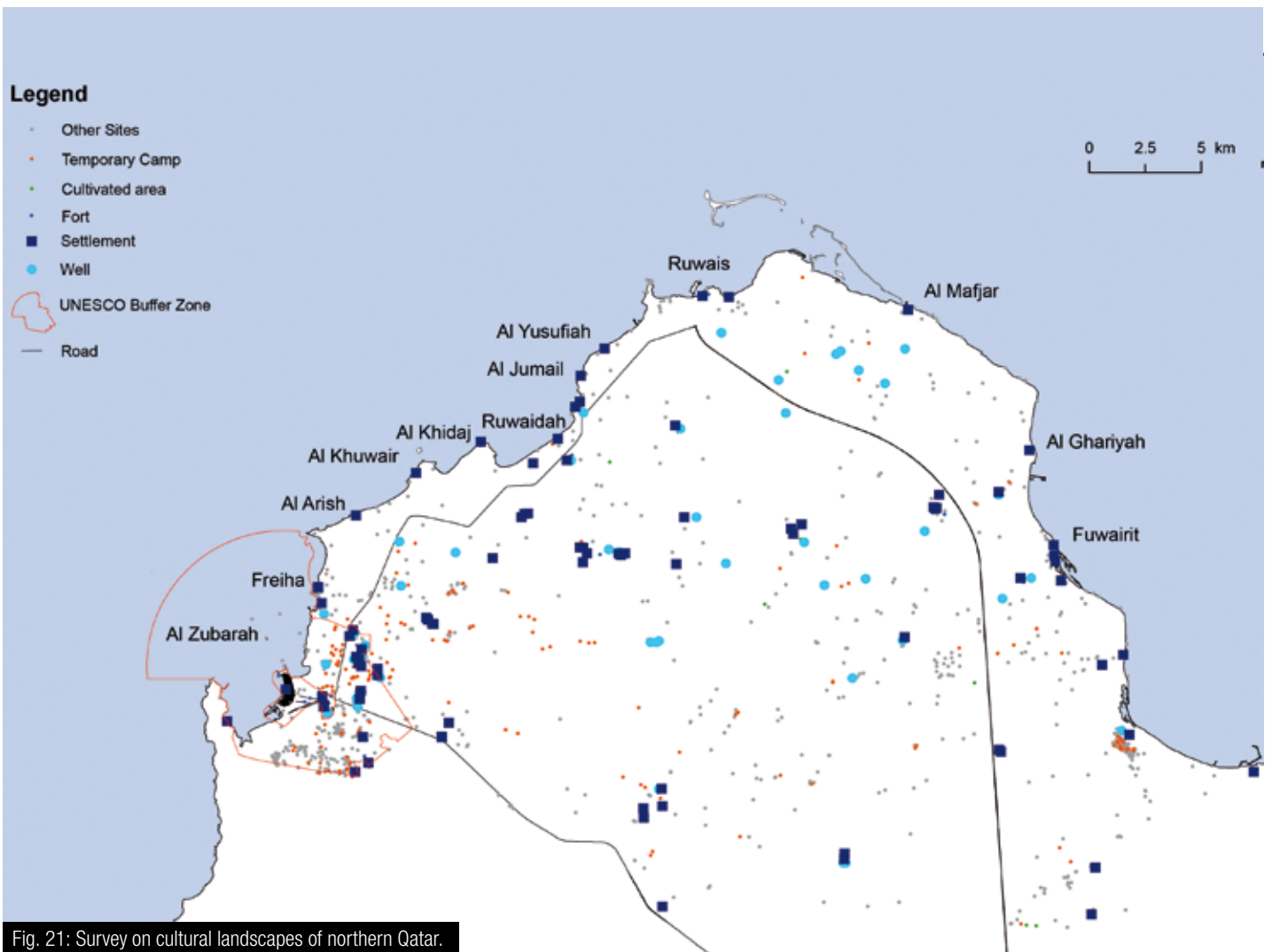


Fig. 21: Survey on cultural landscapes of northern Qatar.

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# Preserving and presenting Al Zubarah Archaeological Site

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Al Zubarah Archaeological Site was inscribed on the World Heritage List in 2013.

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Fig. 1: Aerial view of Al Zubarah Archaeological Site.

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Archaeological excavations are always a dilemma. Excavation is, on the one hand, the ultimate destruction of remains from the past, but on the other hand it is the only opportunity for scholars to study ancient material culture. Archaeological sites are therefore always a challenge for heritage management. The question is what to excavate and what to leave buried in the ground. Furthermore, for archaeological sites of national and, in the case of UNESCO World Heritage, international significance and public interest, heritage management is called upon to provide consistent programmes for conservation, preservation and presentation specific to the challenges of each site.

Al Zubarah Archaeological Site is a fine example of such a situation. In order to be inscribed on the World Heritage List and thus declared as Outstanding Universal Value for the world community, the implementation of best practice in conservation, preservation

and presentation was imperative. Two main principles underlie all scientific investigation and heritage management of the site: a non-invasive methodology and sustainability. Non-invasive methods reduce to a minimum intervention in the historical remains and their possible alteration. Sustainability optimizes the longevity of results and protects the environment where the site is embedded.

### Non-invasive excavation

Any excavation is a major intervention in the material remains of a past culture. Al Zubarah Archaeological Site contains the architectural remains of a large 18th–19th centuries town on the north-west coast of Qatar, including objects which might have been left and survived almost 300 years of deposition in a matrix of debris (Figure 1). The site is composed of wall fragments and features covered by collapse of superstructures and windblown sand. On the surface, a first impression of the well-covered building contours is one of

good preservation under layers of sand; this unfortunately is not the case.

The site's location immediately on the beach of the Gulf, where it was an important harbour town, constantly exposes it to a high concentration of salt from both the sea and the highly saline ground water (Figure 2). Salt is everywhere, and it soaks into the walls and features from the air, the sea and the very ground on which they are built. Analyses of the building materials show that a concentration of above 20 per cent of salt in the building materials can be expected in worst conditions. Depending on climatic and depositional conditions, salt and its matrix can be dissolved in liquids, solidify into crystals and chemically interact with other minerals in the building materials (Figure 3). The extreme climate conditions of the region, with temperatures exceeding 50 °C during the summer months and with heavy thunderstorms during the winter, the salt and the ruins of Al Zubarah's buildings turns into a fatal chemical cocktail. This in itself is a tremendous challenge to architectural





Fig 2: Saline environment at Al Zubarah. Crystallizing salt at *sabkha* pond and salt at plaster surfaces.

© Kinzel, Thuesen & Sobott

conservation; it is made worse by the fact that the most popular building material of the time was a soft beach rock that has turned the conservation of the buildings into a nightmare for excavators and conservators. A solution had to be found if the site was to be inscribed as World Heritage.

### Minimizing risk to authentic materials

Before the Qatar Islamic Archaeology and Heritage (QIAH) project was launched by the Qatar Museums Authority (QMA) in 2009, archaeological excavations already had taken place on the site, starting in the 1980s. Some buildings had been exposed and the walls conserved according to the standards of the time, using various lime and cement mortars. Today the result is clearly manifested: only the applied lime mortars have survived while the exposed original walls have largely disintegrated, leaving little more than empty shells of conservation. This presented one of the

most important lessons and challenges for the new excavation and conservation strategies of the architecture.

Today, archaeologists and conservators are aware that exposure of architecture also means a high risk of decomposition of authentic materials. Under normal circumstances, backfilling of the excavated areas is an adequate solution: the pre-excavation situation is intended to be re-established by returning the excavated materials into the ruins of the buildings and thereby stopping degradation of structures due to exposure. However, observations of the behaviour of the remains indicate that even when covered by debris and sand, the disintegration processes remain active, although on a smaller scale and speed than when exposed. Thus arises the most important challenge for the preservation of Al Zubarah: excavate and risk destruction by exposure, or leave it and risk destruction by nature. Rising sea levels, for example, are clearly a threat to the site.

This paradox has been approached by guiding the archaeological excavations with non-invasive investigations of the entire site in order to obtain information on the character of the town plan and its buildings. Most important are visual observations: surveyors, architects, archaeologists and restorers have walked systematically across the site several times and studied and recorded its topography. The patterns of dune systems that hide and obscure the lines of walls and streets of the town have been carefully mapped. Aerial photos – some going back to the 1950s – are studied to identify major arrangements such as street systems, gates and community buildings (Figure 4). In addition, conditions allowing, ground-penetrating radar analysis or measurement of resistivity in the ground can reveal the location of the original walls without excavating them. However these techniques have not yet been very successful at Al Zubarah.

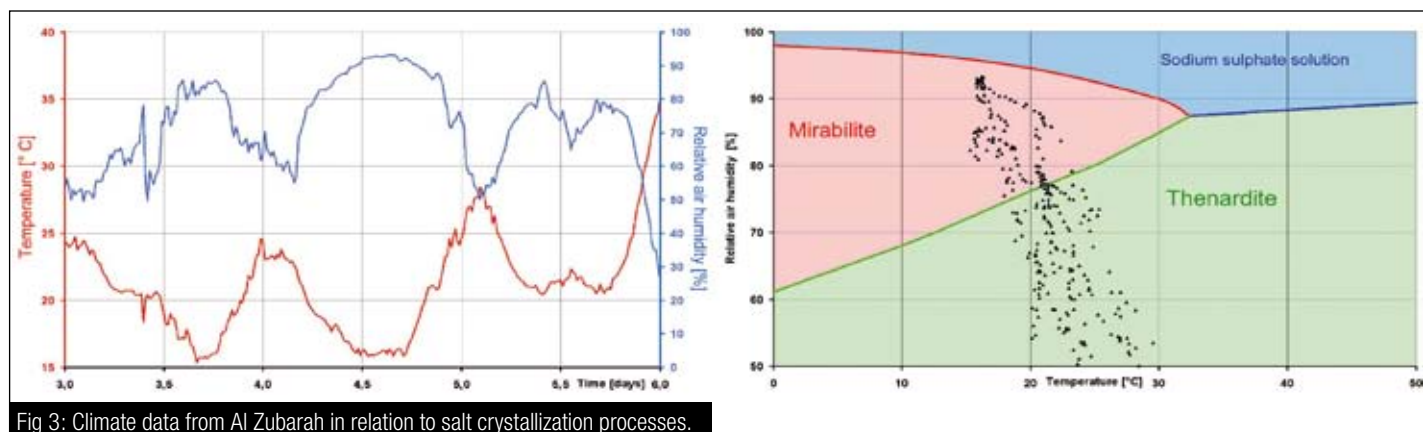


Fig 3: Climate data from Al Zubarah in relation to salt crystallization processes.

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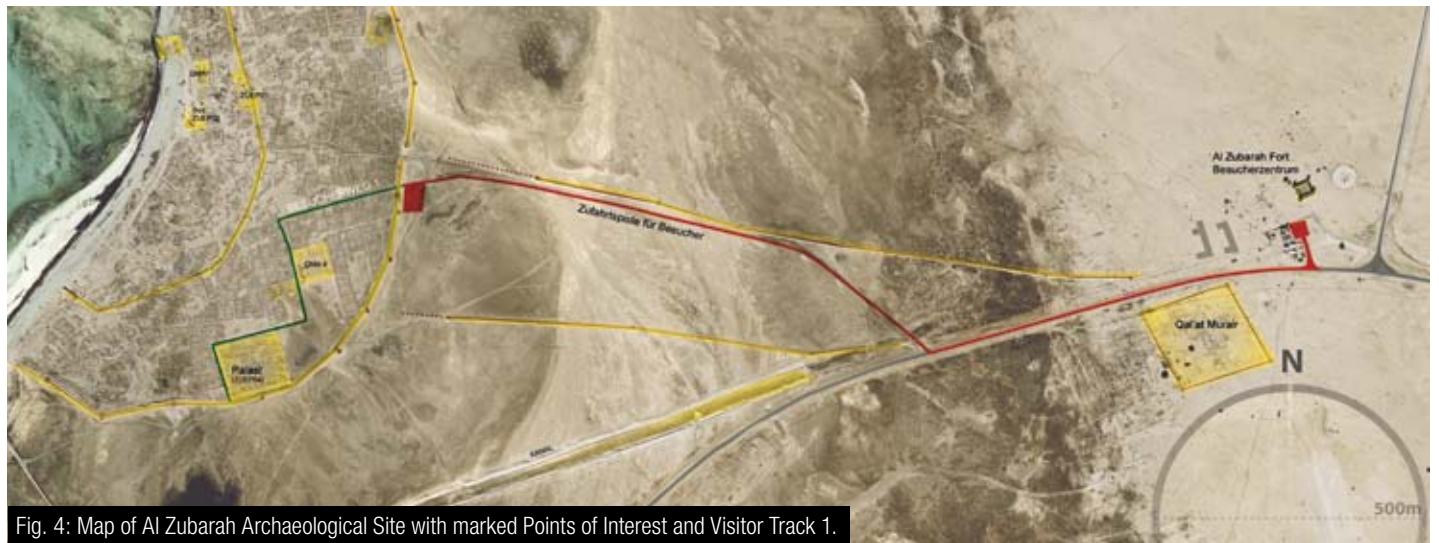


Fig. 4: Map of Al Zubarah Archaeological Site with marked Points of Interest and Visitor Track 1.

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The town plan revealed through this methodology gave the team of scholars an important tool for making decisions on where to open an area that would allow maximum documentation of the past culture without extensive exposure that could lead to rapid decay.

The non-invasive studies of surface topography also allowed for the planning of visitor tracks and facilities prior to excavation. Consequently the QMA has been able to develop a detailed and efficient management plan for handling up to 1,000 visitors to the site per day. Coordination of excavations, conservation and presentation is crucial for the successful heritage management of Al Zubarah.

### Conservation Handbook

Keeping the authenticity of the remains and protecting their integrity is a major task for architectural conservation. First, a concept for preserving the original wall structures and features of the site had to be found and tailored to the extreme conditions described above. There is no strategy before knowledge. Gathering information involved a set of analyses ranging from identifying the chemical composition of plasters, mortars and building stones, to measuring physical properties such as the strength of various building materials and structures. In addition, historical building techniques had to be understood. Another important aspect is the continuous and year-round monitoring of temperature, humidity and

wind, as these are the major agents in changing and dilapidating the original structures of the town. Therefore the site is now equipped with climatic sensors (data loggers) placed at different locations within the architecture. Al Zubarah's health situation is constantly followed.

The results are being assessed by an international team of experts that has contributed to developing a *Conservation Handbook* for the site, which addresses three major phases of conservation. Firstly, degradation has to be stopped or reduced to a minimum. Next, the remains have to be consolidated by repairs in the best and most sustainable way. Finally, the structure may need restoration work in order to present it to visitors.



Fig. 5: Consolidation works at town wall segment 16/17 in winter 2014.

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Fig. 6: Testing and sampling of building materials by Dr Robert Sobott, University of Leipzig.

© Qatar Museum Authority (QMA)

for instance very fragile decorations in the plaster. The archaeologist and the architects, in the best case trained as building archaeologists, together identify the building techniques applied in the past by describing all building components, stones, mortars, plasters and, where necessary, the chemical composition of the materials by taking samples (Figure 6).

### First digitalized record

The next important step is a comprehensive and detailed documentation of what has survived from the past. This involves recording sheets and log books describing the discoveries as they occur during the excavation, associated with traditional photography. In addition, a team is brought in to produce a 3D model of the remains by advanced laser scanning technology. This records all surfaces down to details of a millimetre and is the first digitalized record of the building (Figure 7). The laser scans, the most objective record of the discoveries, have the advantage that they can also be used for 3D virtual reconstructions.

After exposure and documentation, a decision has to be made on whether or not the findings are to be part of the presentation of the site for visitors. If not included in the presentation concept, the remains are stabilized and backfilled, and eventually the original surface from before the excavation is re-established. If the exposed structure is to be kept as a point of interest for visitors, a phase of consolidation with materials close in nature to the original materials follows:

The major problem for the preservation of the architecture of the site is, as mentioned, the high concentration of salt in combination with extreme climatic conditions. As intervention here is neither possible nor desirable, solutions had to be developed. Focusing on the importance of maintaining the authenticity and integrity of the site, the practice of re-creating ancient traditions and technologies was introduced (Figure 5). During Al Zubarah's lifetime people certainly experienced similar problems with climate and nature, not to mention the threat of an attack from hostile tribes in the region. Al Zubarah was vulnerable to both humankind and nature.

The common practice at the time was regular maintenance by repairing and

re-plastering of the architecture. The *Conservation Handbook* describes a methodology that is close to the original construction techniques in Al Zubarah. If the structures cannot be fully protected or consolidated, they can be repaired with authentic materials and techniques and so maintain their integrity.

The conservation of the buildings and features is, therefore, a process involving several activities and experts. First, the archaeologist excavates the remains and records all findings. At this stage, the presence of a conservation architect and a restorer is crucial for the optimal planning of the protection of original materials and structures: some materials may need immediate consolidation during exposure,



Fig. 7: 3D laser scanning at the palatial compound.

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holes in walls are repaired and original plasters are stabilized. Finally, some reconstruction work is carried out in order to strengthen the walls and make it easier for visitors to understand the plan and function of the building. Both the reconstruction and repairs use high-quality products that follow the old traditions but extend the lifetime of the structure.

Where reconstructions are implemented, they take place according to non-invasive principles. Visual differences are made between the original surface of the wall as it survives from the past, and the non-structural surface caused by destruction and collapse, such as the top of the walls in the ruins.

The *Conservation Handbook* for Al Zubarah therefore gives a comprehensive description of all aspects of architectural conservation. It will be updated and adjusted as new technologies are developed and new discoveries are made regarding the best and least invasive preservation methodologies.



Fig. 8: Al Zubarah fort as Visitor Centre for Al Zubarah Archaeological Site: An introduction to Al Zubarah's history and archaeology.

© D. Britton

### Augmented reality presentation

When the archaeologists have made their discoveries and the conservators and building restorers have preserved the remains so that they can be exposed over a long time, the next and final stage in the management of the site begins: preparing for visitors.

A visit to Al Zubarah Archaeological Site consists of three main experiences: first

there is a visit to the iconic fort of Al Zubarah, which has been repaired and refurbished into a modern Visitor Centre. In the rooms of the fort, visitors are introduced to the history of the site through back-lit panels, videos and interactive screens (Figure 8). Descriptions of how archaeologists and conservators work are complemented by overviews of the most significant environmental characteristics, plants and animals of the region. A gift shop sells heritage

souvenirs, and there is a designated area for children where they can rebuild Al Zubarah houses using LEGO. Galleries are available for temporary presentations, such as the scientific analysis carried out in collaboration with Maersk Oil Qatar's research facilities in Doha. At the top of the north-west tower, visitors will find a platform with a spectacular view overlooking the archaeological site. Close to the Visitor Centre, a small temporary



Fig. 9: Visitors at Al Zubarah fort.

© M. Kinzel



Fig. 10: School visit to Al Zubarah Archaeological Site.

© Qatar Museum Authority (QMA)

exhibition hall shows typical finds from the excavations. This is the second stop and visitor experience (Figure 9).

The third and final experience is a visit to the archaeological site itself, which is about 1.5 km from the fort (Figures 1 and 4). Visitors can drive to a parking lot outside the old town wall. From here a track leads into the town, taking in several points of interest. Two additional tracks are planned to show other parts of the site. Limited and guided access of the site again follows non-invasive strategies to ensure the protection of Al Zubarah's authenticity and integrity. Through this restricted access the impact of visitors is reduced and can more easily be monitored. The first track was opened in 2013, taking visitors to the largest building compound in the town, the so-called palatial complex. All along the track are interpretive boards explaining sights.

As the project has a special focus on schoolchildren and youth (Figure 10) new presentation technologies are being developed and implemented, the most important of which is augmented reality.

A tablet or mobile phone app is being developed in cooperation with DNP-Japan, professionals in museum presentation technology. This intends to bring history back to life in the ruins themselves, and is geared particularly towards a younger audience. Moving the presentation to a mobile ICT platform allows access to more comprehensive data as well as alternative presentation methods such as sound and video. Augmented reality of the virtually reconstructed buildings allows visitors, guided by markers along the track, to be fully immersed in a historical setting (Figure 11). This new technology also follows the principles of non-invasive methodology: the need for interpretive boards on site is reduced. The app can be freely downloaded to a mobile phone and become a virtual souvenir from the visit to Al Zubarah. The first version is in both

Arabic and English, with further languages foreseen as the site attracts visitors from all over the world.



Fig. 11: Screenshot of augmented reality application.

The QMA is determined to develop Al Zubarah as a World Heritage site according to best practice. With the need to apply non-invasive technology where possible and to prioritize sustainable interventions, a number of technicians, scientists and scholars have joined efforts. The management plan for Al Zubarah Archaeological Site follows this strategy and combines archaeology, conservation and presentation

in a holistic multidisciplinary approach. The project aims not only to excavate but to envisage, before the first trowel touches the ground, the preservation and presentation of the cultural history of Al Zubarah as of one Universal Outstanding Value for all humankind today and in the future. ♻️

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# Zubarah, the Gulf and local and international trade

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Overview of part of the possible market and date-processing area close to the beach and harbour.

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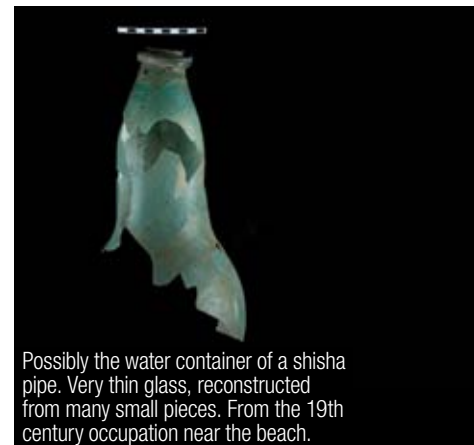
Creamy sandy ware 3-handed jar, probably from Bahrain.

© Qatar Museum Authority (QMA)



"Maastricht bowl"; refined white earthenware with maker's stamp from Holland.

© Qatar Museum Authority (QMA)



Possibly the water container of a shisha pipe. Very thin glass, reconstructed from many small pieces. From the 19th century occupation near the beach.

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Shaft and bowl of a tobacco pipe, found on a floor covered with broken ceramics in the warehouse by the beach.

© Qatar Museum Authority (QMA)



Pearl merchant's wood box after conservation. No content was recovered. The box was once richly decorated, as remains of coloured textiles and facilities for inlays demonstrate.

© Qatar Museum Authority (QMA)

The history of the Gulf is part and parcel of a structural pattern with several independent dynamics that often intertwine. As in other parts of the world, some of these dynamics were local in nature while others were related to developments in the interior of the Arabian Peninsula, the Iranian plateau or Iraq. These local and regional dynamics were further affected when the Gulf region became involved in a new global trade system dominated by Europeans.

The interdependency of these various local and regional dynamics has been the primary driver of the social, economic and political changes that came about in the course of history. Tribal migration in these regions is documented as a recurrent phenomenon over several millennia and points to the ongoing struggle between tribes and the limited natural boundaries for agricultural extraction on the one hand, and the domestication of animals on the other. This locally rooted struggle for survival has left an imprint in written sources, annals and letters from individuals and from powerful

dynasties, or passed down by accumulated oral traditions, giving some understanding of the structure of this locally and regionally historical dynamic although not in any chronological depth.

### Dynastic struggles for domination

Archaeological analyses of different sites have documented patterns of trade stemming back millennia between the upper Gulf, areas around Hormuz and further east towards the Indian subcontinent. The extensive Arabic geographical literature written under the Abbasid dynasty from the 9th to the 12th centuries documents trade as far as South-East Asia, Indonesia and China as well as along the east coast of Africa, while the East African interior became part of a wide and ramified cluster of caravan routes. Historical annals reveal how and why individual families as well as dynasties were involved in an ongoing struggle for political and economic domination in order to gain access to the wealth generated by international trade, local agricultural production and the domestication of animals.

With the final mapping of the direct connection by sea from Europe to the Far East in 1498, the many regions around the Indian Ocean gradually became integrated into a trade structure of a different kind. European traders and companies imposed a new presence linked to the dynamic already in existence in the region but rooted in European centres, adding another layer to the many different intertwining local and regional trade structures. In the ensuing centuries this new trade structure came to play a crucial role in historical development as first Portuguese, then British and French, and finally Dutch traders imposed their presence on the local markets.

### European influence

In a wider perspective it is, however, important to understand the limitations of the new presence of European traders and companies. The Europeans did not destroy the age-old local trade patterns as the thriving point of departure for local and regional history. Thus the emerging new structure supplemented those trade patterns already in existence with demand



Small jarlet from orange sandy ware, possibly from Iran.

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Jugs/cups from Julfar (UAE), dated to the 18th century. Recovered from a domestic compound.

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for products required by Europeans, as well as introducing produce from faraway Europe to local and regional markets.

This is why the port city of Zubarah grew in importance for local and regional trade during most of the 18th century. As far as we know, neither European companies nor individual European traders were placed in the city, and the importance of Zubarah for the region during the 18th century was embedded in local and regional dynamics. The Al Zubarah Archaeological Site was inscribed on the World Heritage List in 2013 to enrich understanding of local dynamics in general and as a specific example of 18th-century local and regional urban planning to be revealed as further archaeological excavations are carried out.

Through the ages a number of cities along the coast gained importance for local as well as regional and international trade. In the upper Gulf the city of Basra was for centuries a centre for both local and international trade, while Bandar Abbas on the Strait of Hormuz was built when the Safavid dynasty realized the magnitude of wealth embedded in local, regional

## The history of the Gulf is part and parcel of a structural pattern with several independent dynamics that often intertwine.

and to an increasing extent international trade, an experience with which the city of Muscat had long been familiar. Rather than destroying the local and regional dynamic, the presence of European traders and companies added new participants in the endeavour to extract a profit from their ever-widening trading, as borne out by the factories set up by Europeans at Kharg Island and later city of Bushir. The fast growth and impressive size of Zubarah illustrates this beyond any doubt, being an excellent example of how local and regional trade continued in spite of the presence of European traders and companies.

### Land and sea trade routes

About 1674 the Utub, a federation of groups of people of Nadjdi origin dominated by three clans, al-Khalifah, al-Sabah and al-Djalahima, who all claim genealogical

descent from the Anaza, one of the great tribes of the central Arabian Peninsula, moved towards the Gulf region, settling temporarily at various places before making a permanent home in Kuwait. To what extent the Utub were involved in trade prior to their migration is uncertain, but some of them soon engaged in local and regional trade, challenging the recently established dominance of the Hwila, who were active in the whole region in alliance with the Banu Khalid in al-Hasa.

Precisely when Zubarah was first inhabited is unknown and the early layers of settlement will have to await the results of archaeological research. But the famous geographer Ibn Khordadbeh (died 885 or 912) mentions Qatar in his work *Kitab al-Masalik wa'l-Mamalik* (Book of Roads and Kingdoms), a careful description of a number of land or sea trade routes followed



The date-press complex under excavation. This area contained at least sixteen date presses and a possible warehouse, all individually constructed.

© Qatar Museum Authority (QMA)

### **Precisely when Zubarah was first inhabited is unknown and the early layers of settlement will have to await the results of archaeological research.**

by merchant caravans across the Gulf area, presumably collected by the author as a handbook for the caliphal administration as well as the postal service (he was also postmaster general). The biographer and geographer Yaqut (died 1229) also mentions Qatar in his *Mu'jam al-Buldan* (Dictionary of Countries), as does Pedro Teixeira, a Portuguese explorer who travelled in the Gulf region in the early 17th century.

#### **Rise of the pearl trade**

In 1766 part of the al-Khalifa clan left Kuwait and settled in Zubarah, a migration that was intimately linked to the political situation in the upper Gulf at the time. The expanding Persian Zand dynasty (1750–94) a few years later occupied Basra from 1776 to 1779 and the Persian occupation seems to have invited others to join the traders who had settled in Zubarah. One of the migrants was Ahmad ibn Muhammad ibn Husain ibn Rizq, who invited his biographer

Uthman ibn Sanad al-Basri (1766–1826) to come to the city and act as supreme judge (*qadi*).

This biography, first published in Bombay in 1813 and re-edited and published in Doha in 2007, contains an impressive amount of information on the city under the leadership of the trader Ahmad ibn Muhammad ibn Husain ibn Rizq, who had become engaged in harvesting pearls. In the following decades the city's importance grew in local and regional trade, and ibn Sanad gives very detailed information on its physical development. He also mentions a number of eminent scholars who, like himself, settled in the city, among them Abd al-Djalil al-Tabatabai (1776–1853).

The increasing importance of Zubarah was apparently linked to the fact that the port could be visited and used for trade with minimal taxes due to the local authorities for the use of the facilities. The local dynamics set in motion by the agreement signed in

Dariya al-Nadjd in 1744 between al-Saud and Muhammad ibn Abd al-Wahhab (1703–91/92) seem to have contributed further to the growth of Zubarah, as horses, weapons and daily sustenance such as grain and rice were needed to ensure new alliances to extend their control of first al-Hasa and later other territories.

We have only very limited knowledge of the way in which Zubarah was ruled under the formal leadership of al-Khalifa, who in 1782 successfully fended off an attack from Bahrain on behalf of the Persian rulers and in 1783 succeeded in wresting Bahrain from the control of the city of Bushir. Ibn Sanad states that al-Khalifa decided to move to Bahrain, but how the city of Zubarah was ruled is unknown. Its significance as a local trading city seems to have continued, but the expansion of al-Saud had consequences for the city and its survival. Al Djalahima in the last decade of the 18th century challenged the rule of al-Khalifa and later the city came under the control of al-Thani, who for long had been settled in the eastern part of present-day Qatar. An attack on Zubarah by Omani troops in 1811 resulted in its final demise as an important trading city in the Gulf. 🌀



Selection of diving weights used in the recovery of oyster shells from the seabed. The stones are not locally made and are probably from Oman or Iran.

© Qatar Museum Authority (QMA)



Jeton/"Rechenpfennig". Displaying a two- or three-masted galleon and the motto "Plus Ultra," commonly used by German and Spanish merchant families. This piece was probably struck in the early to mid 18th century, and was discovered in a domestic compound.

© Qatar Museum Authority (QMA)



Pearl bead, showing the use of not fully or perfectly formed natural pearls as ornaments.

© Qatar Museum Authority (QMA)



Date and peach seeds recovered from a midden in Al Zubarah. Dates were imported whole and processed here.

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Lead shot, possibly from the destruction/abandonment phase around 1811. Recovered from the souq/date-press processing quarter.

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# Khor Al-Adaid Nature Reserve

## Qatar's globally unique Inland Sea

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Khor Al-Adaid Nature Reserve is on Qatar's Tentative List for potential nomination to the World Heritage List.

© Denny Hamonangan





**K**hor Al-Adaid, also known as the Inland Sea, is a large tidal embayment system in the south-east corner of Qatar. It extends for about 15 km from north to south, up to 12 km from west to east, and is shared between Qatar and Saudi Arabia with shores in both countries. The embayment is connected to the outer sea by a narrow, deep channel. The Inland Sea is an area of breathtaking beauty and there is no comparable lagoonal system of this type anywhere on Earth. This desert marvel of Qatar features backdrops of large, crescent-shaped sand dunes on the water's edge – remarkable landscapes that offer world-class experiences to visitors of both the terrestrial and marine environments.

A feasibility study performed in 2000, for a network of National Parks in Qatar, singled out Khor Al-Adaid as the most outstanding of six potential areas, but little was known about its natural history until 2005, when Qatar Tourism Authority (QTA) and the Supreme Council for the Environment and Natural Reserves (SCENR), in conjunction with UNESCO's Doha Office, conducted a field survey with an international team of sixteen multidisciplinary experts. The results of their studies, highlighting the area's globally unique combination of geological and geomorphological features, formed the basis for the submission of Khor Al-Adaid to Qatar's Tentative List in 2008, for possible nomination to the World Heritage List. These features have created diverse scenery of exceptional natural beauty in a very unique wilderness area.

A great variety of bottom substrates and highly diverse water bodies form an exceptional range of aquatic and terrestrial habitats of considerable conservation value. The property is uninhabited and much of the area is either still in near-pristine condition, or with low levels of human disturbance. In 1993, 120 km<sup>2</sup> were declared a protected area, where commercial fishing is prohibited. In addition, Khor Al-Adaid was identified as a wetland of international importance for potential designation under the Ramsar Convention. The area proposed

as a World Heritage site includes most of the mobile dune area and the entire lagoonal ecosystem. The size of the property is sufficient for the ongoing functioning of essential geological, geomorphological and biological processes.



Northern lagoon.

## New landforms evolving

Qatar's southern territory is characterized by outstanding examples of ongoing processes in the evolution of landforms. Key landscapes of the area include tidal embayment systems, coastal and inland *sabkhas* (salt flats), large mobile barchans and parabolic sand dunes, recently discovered 'salt hummocks', stony deserts, mesas and other rocky outcrops, which are the result of ancient and ongoing geological processes, weathering and erosion. This assemblage of terrestrial and marine environments, with large tidal embayments within an area of mobile dunes and *sabkhas* is globally unique.

Sand dunes are the result of the accumulation of sand grains transported by the wind. As sand deposits continue to be mobile, sizes and shapes of dunes keep changing constantly. These processes occur rapidly in the Khor Al-Adaid area. Large mobile dunes reaching the sea coast, where they spill into the sea in the immediate vicinity of a large tidal embayment, are unparalleled on the Arabian Peninsula and in the world.

*Sabkha* is the Arabic term for flat, salt-crusted desert areas without vegetation. They are a characteristic feature of the western Gulf, where they may occur in coastal areas or inland. While 'classic' *sabkhas* are mainly composed of calcium carbonate of marine origin, those in the Khor Al-Adaid area consist of quartz sand being blown in from dunes by the dominant north-north-west shamal winds. This process of rapid *sabkha* formation has not been observed anywhere else. The source of sand being finite, the *sabkha* system will eventually stop expanding once all available supplies have reached the sea.

Pisolites are sedimentary rocks made up of concretionary grains. Those of Khor Al-Adaid are the only ones known to exist in a matrix of quartz sand, another globally unique feature of the area. The hyper-saline ground waters in the more landward parts of the *sabkhas* contain very young primary dolomite crystals, one of very few examples of dolomite actively precipitating underneath the surface in a quartz-dominated sandy environment, a largely unsolved mystery of modern geochemistry.

Hummocks, small mounds of sand in *sabkha* areas, which usually support plant growth, are a common feature of the coasts in this region. In Khor Al-Adaid a new variety, so-called 'salt hummocks', was discovered during the 2005 surveys. These are hummocks covered by a salt and gypsum crust, which might perhaps be attributed to late Pleistocene and Holocene fluctuations in sea levels. Table mountains, known as mesas, elevated areas of land with flat tops and usually steep sides, are common in the higher parts of the area and on islands of the Inland Sea.

As is obvious from the study of satellite images, the area is a scene of progressive filling-in of the lagoon. Until present, tidal currents keep it open near its entrance, but once shallow lagoons farther inland are filled, tidal currents are expected to decrease and the rest of the inland sea may accrete. There is no doubt that the Khor Al-Adaid area is an outdoor laboratory for remarkable geological and geomorphological processes.



Inland Sea.

© B. Boer

### Desert ecosystems and biodiversity

Assemblages of plants and animals in the terrestrial habitats of the Nature Reserve are representative of much of the Arabian Peninsula. Many species are widely distributed in Arabia and beyond, yet not occurring in the same combination in any other single locality. About forty species of plant have so far been recorded from the area. Vegetation cover is characterized by a pronounced seasonality. While in some areas the amount of cover may be high after the winter rainfall, it is usually low during the dry season, ranging from less than 1 per cent on dunes and up to 10 per cent in some other areas. Lichens are frequently found on these gravel plains.

While terrestrial invertebrates in the area have not been studied to any significant degree, some observations are available for vertebrates. The 2005 surveys recorded thirteen species of reptile, among them blue-headed agama, spiny-tailed lizard, sand skink and hooded malpolon, to name a few. The

actual number of species is certainly much higher, with horned viper, sand boa, monitor lizard and various geckos very likely to occur.

Khor Al-Adaid is recognized as an Important Bird Area by BirdLife International and more is known about birds than any other animal group. Populations of some bird species in the area are of national and regional importance. The osprey is the most important breeding species, with seven occupied nests found in 2005, all on islets in the tidal channel. Other breeding species include western reef heron, Caspian tern, sooty falcon, Kentish plover, black-crowned finchlark, desert lark and hoopoe lark. A large number of species visit on migration, particularly waterfowl.

The 2005 surveys identified eleven species of terrestrial mammal, among them lesser jerboa, Arabian hare and red fox, but many more species are expected to be discovered. Sand gazelles roam the relatively undisturbed terrain to the west, while the reintroduction of Arabian oryx in the hinterland of Khor Al-Adaid is being considered.

### Marine species in the desert

Marine habitats of the Nature Reserve include coastal waters, a narrow and deep tidal channel (*khor*), a southern lagoon reaching depths of up to 10 m, and a shallow northern lagoon with a mean depth of less than 2 m. While terrestrial biodiversity is comparatively low, the area supports a relatively high number of marine species and species assemblages, including intertidal blue-green algal mats, macroalgae, seagrass beds, coral communities, molluscs, crustaceans, fish, marine reptiles and marine mammals.

Macroalgae show a pronounced seasonality in their growth. During the cooler winter months they flourish, often densely covering hard substrates including living coral colonies, while most of them completely disappear for much of the year during the warm season. Three species of seagrass have been recorded and seagrass beds in the wider area are probably among the most productive in the world.



A sand gazelle.

© F. Krupp

Large colonies of dead corals are found in several parts of the Nature Reserve, indicating rather extensive coral assemblages before elevated sea surface temperatures in 1996 and subsequent years resulted in widespread die-off. Corals have symbiotic algae in their tissue, which provide them with nutrients and energy. At extremely low or high temperatures these algae are lost from the coral, which then turns transparent, exposing the white skeleton. This process, which has occurred in recent years, is called 'bleaching'. If extreme temperatures prevail for extended periods of time, corals die. Despite mass mortality of corals, dead colonies still shelter diverse assemblages of invertebrates as long as the framework structure persists. While the Khor Al-Adaid area has one of the most extreme temperature regimes of any marine environment where corals occur, reefs have started to bounce back and the study of the recovery process is expected to give important insights into processes

of great scientific significance for coral reef conservation in other parts of the world.

During the 2005 surveys, twenty-three species of fish were recorded in the area, among them several of commercial importance, such as groupers, snappers, emperors and sea breams. In coastal areas, fish species normally associated with coral reefs occur and the yellowbar angelfish was particularly abundant, while the black-spotted butterflyfish, which depends on live corals, was rare. Formerly, commercial fishing was an important activity in the area. This was banned when Khor Al-Adaid was declared a protected area in 1993, which obviously has a positive effect on fish abundance. Recreational fishing is still allowed.

Nine species of sea snake have been recorded in the region, and more studies are needed to determine which of these occur in Khor Al-Adaid. Two species of sea turtle, the green and the hawksbill, which IUCN lists as globally endangered and

critically endangered respectively, use the area as a feeding ground. So far there are no nesting records.

A number of cetaceans have been recorded in Khor Al-Adaid and adjacent waters, including Indo-pacific humpback dolphin, bottlenose dolphin, finless porpoise and Bryde's whale. The area's seagrass beds support an important population of dugongs, which IUCN lists as vulnerable.

The diverse ecosystems of Khor Al-Adaid are home to a great variety of marine plant and animal species. More surveys covering complete annual cycles will give more insight into population dynamics and seasonal fluctuations. Species occurring here are interesting in their adaptation to extreme environmental conditions, such as a wide range of temperatures and salinities. Further studies should also reveal to what extent the fishing ban in the Nature Reserve contributes to the replenishment of fish stocks in adjacent areas. Fishing pressure is high and several species of commercial

importance are threatened with extinction.

A new IUCN report identifying severe gaps in marine World Heritage sites was launched at the 3rd International Marine Protected Areas Congress (IMPAC) in Marseille (France) in 2013. The World Heritage List includes a relatively small number of sites recognized for their marine Outstanding Universal Value. Even though oceans cover 70 per cent of the Earth's surface and 95 per cent of its habitable space, they represent only 20 per cent of natural World Heritage and less than 5 per cent of total World Heritage. There is not a single natural World Heritage site in the Gulf Region. Khor Al-Adaid will no doubt contribute to filling this gap.

### Ancient human settlements and future opportunities

Preliminary surveys have revealed the diverse cultural heritage of the area. A minimum of seven archaeological sites have so far been identified, five of them in the desert and two on islands. The presence of late Islamic pottery (19th century), graves and stone structures attest to former human activities in the



A genus amphiprion, clownfish.

© F. Krupp

Nature Reserve. According to British naval archives, the area was a stronghold of pirates throughout the 18th and 19th centuries. The rocky desert supported Bedouins and their grazing livestock. Traditional farming and fishing settlements existed in the area, but this lifestyle is now virtually lost. Prehistoric sites were found on the small islands inside the *khor*. Further studies are needed to reveal the full extent of former human settlements in the area, and their interaction with

the environment. More evidence of ancient human occupation is surely hidden underneath the large mobile dunes.

There can be no question as to the geological, biological, historical, educational and cultural significance of Khor Al-Adaid. The pure beauty of the area alone is a testament to this. Today, many local and international tourists visit the area. There is great potential for the development of sustainable nature-based tourism, but unregulated recreational activities need urgent attention.

In early 2013, staff members of UNESCO and Qatargas, the liquefied natural gas company, again discussed the overwhelming importance of the

area for the study of geological processes, including climate change-related sea-level changes in coastal *sabkhas*. Opportunities exist for the completion of a large number of research projects and these across a variety of disciplines. Qatar, with its chosen path of intellectual and higher educational development, is determined to take advantage of this for the Khor Al-Adaid area in a manner that will ensure preservation of the area while at the same time allowing a human presence. ♻️



Dunes in the Khor Al-Adaid Nature Reserve.

© B.Sloane

# Archaeological heritage of pre-Islamic Qatar

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An early 7th-century AD homestead at Qasr Al Melaihat, to the south of Wakra.

© Qatar Museums Authority (QMA)

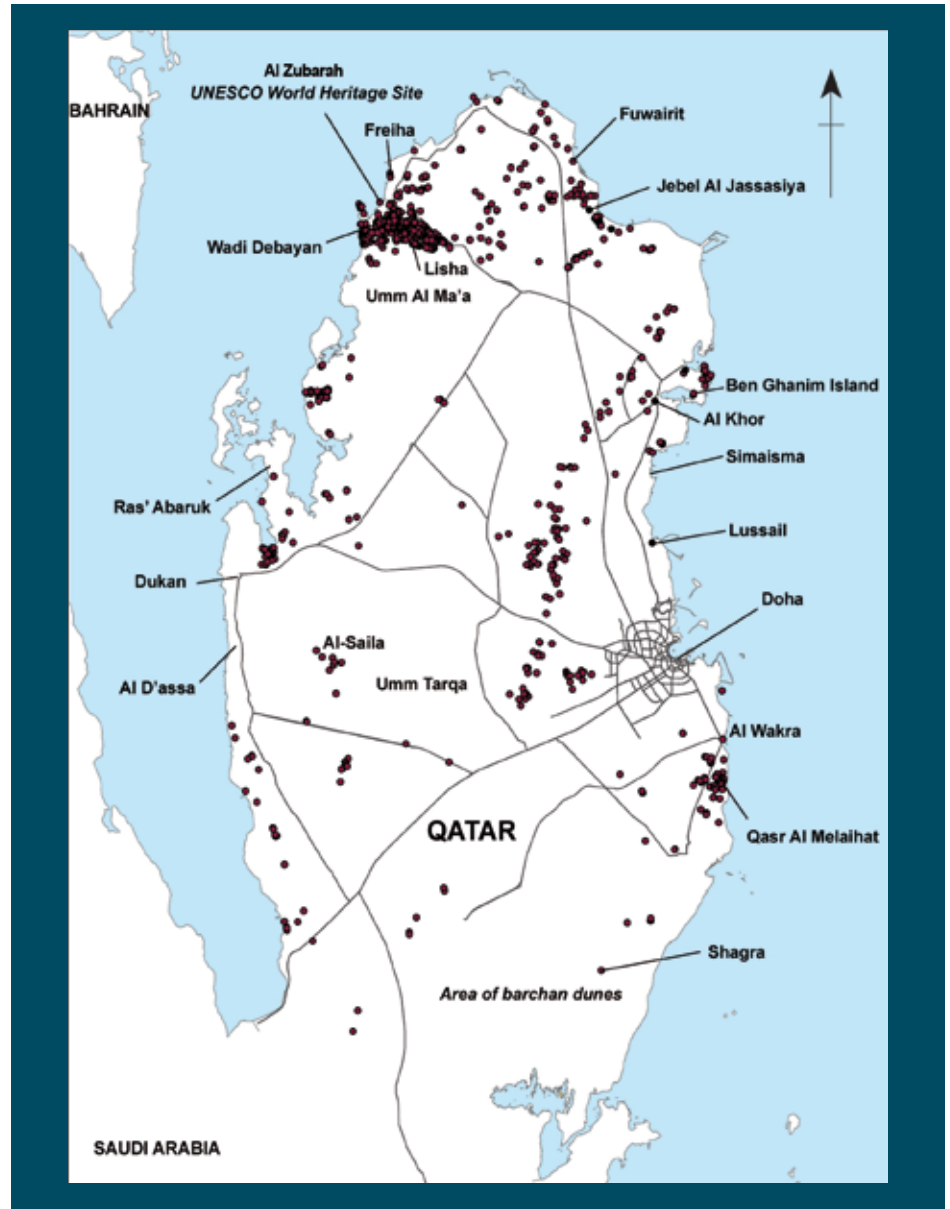


The recognition of Qatar's first World Heritage property with the listing of Al Zubarah Archaeological Site in 2013 is a cause of great pride to the nation, and a welcome recognition of the important role of Qatar in the rise of the modern Gulf. With this success, attention is beginning to turn to the nation's heritage before the Islamic period, and in particular the evidence for prehistoric occupation across the peninsula. This article offers a 'first view', and as such is work in progress that contains preliminary comments at the start of a major study on the archaeology of prehistoric Qatar. It covers some core points in this study: geography, the progress of archaeological research, and a brief account of the following: prehistoric, Bronze and Iron ages, and the period of Graeco-Roman and Parthian/Sassanid influence. The evidence is still patchy and incomplete, but nonetheless reveals a long history of human activity on the Qatar peninsula.

### Geography of Qatar

The physical geography of Qatar is that of a peninsula projecting from mainland Arabia northwards for 180 km, covering an area of about 11,000 km<sup>2</sup>. The geology of the peninsula is mainly lower/middle Eocene limestone and gypsum rocks, overlain by Miocene morels. The landscape is relatively flat, with a low elevation above sea level (120 m at the highest point) with low rainfall, long summers and sparse vegetation. The geomorphology is distinguished by three main landscape forms. The first is the most varied and comprises limestone plateaus, with depressions, hills, swells and mesa along the western side of the peninsula; the second is represented in the south and south-east by large barchan (crescent-shaped) dune systems and desert zones; while the third features coastal regions with bays, inlets and intertidal *sabkha* (salt flat) formation.

For much of the late Pleistocene large amounts of water were locked in ice sheets in the northern hemisphere, leaving sea levels more than 125 m lower than the present day. Since the sea is shallow, lower sea levels left the seabed exposed as a river valley through which flowed the continuation of the Tigris and Euphrates



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rivers. Geomorphological studies have shown that between approximately 30,000 and 13,000 years ago the rivers provided water for three large lakes and areas of contiguous marshland.

### The Stone Ages

Based on the outcome of extensive archaeological research since the 1950s by international and Qatar teams, the image of Qatar pre-Islamic archaeology from the prehistoric to the end of the 1st millennium BC can be drawn as follows.

There are many surface scatters of stone artefacts, particularly in the south of Qatar, which can be attributed to the Palaeolithic

on a technological and typological basis. These are flakes, cores and bifacial pieces obtained by typical hard-hammer, middle Palaeolithic techniques. These assemblages are awaiting further analysis and publication; however, more field data are needed before reaching firmer conclusions.

The first well-dated prehistoric sites can be attributed to the Neolithic and provide evidence for hunting and fishing, with groups exploiting fish, turtles, dugongs, birds, gazelles, onagers, wild plants and fruits, and probably occupying sites on a seasonal basis. The sites are low, deflated mounds, normally associated with the coast



or located beside oasis depressions and small wadis. Due to erosion, the majority are surface sites with a deflated stratigraphy, which has often resulted in multiple periods of occupation being represented at one level.

One of the most characteristic sites of this period was found at Shagra in south-east Qatar on a former shoreline, from a period when eustatic sea levels were approximately 2 m higher. Excavations by a French team in the 1980s revealed an oval structure with two rooms, measuring 5 m by 3 m and constructed using embedded stone slabs. Bifacial pieces and barbed and tanged arrowheads are the most characteristic stone tools. Basalt, quartz, sandstone and diorite were also used for tool-making. Fish bones and marine molluscs were abundant, in addition to a human skeleton. Similar workshops, more or less contemporary to Shagra, were found at several places: Al-Saila, Lussail, Umm Tarqa, Jubeljib and others. At Al-Saila chipped blades resembling Amuq points were produced using bidirectional naviform cores, a

technique known to originate from the Levant during the time of the pre-pottery Neolithic. This may demonstrate some connection between the lithic industries of the Levant and the stone tool industries of Qatar.

A range of stone tools dated to the late 7th and 6th millennia BC demonstrate very high skills of technological stone preparation and pressure-flaking that produced fine and beautiful arrowheads, bifacial pieces, blades, scrapers and cores, attributed to a technocomplex that are loosely termed the Arabian Bifacial Tradition.

Prehistoric occupation in Qatar between the late 7th and early 5th millennia BC shows evidence for contact with southern Mesopotamia (the Ubaid period according to Mesopotamia chronology). Al Khor, Ras' Abaruk and Al D'assa on the western coast, south of Dukan, are key sites for this period. The Danish, British and French excavations at these sites brought to light workshops of stone artefacts, fish-curing complexes and numerous hearths, but no structures. Among stone tools were

points, scrapers, knives, querns, pounders, hammers, grinding stones and so on. Yet the most important discovery from these sites was Ubaid painted pottery, which although fragmentary included some sophisticated examples found for the first time in Qatar. This indicated strong links with southern Mesopotamia, where the pottery was manufactured. These sites have also produced other trade items including carnelian beads, imported from sites possibly as far away as India. Ubaid pottery also came from sites excavated by the French team in Al Khor, where a workshop with bifacially retouched flint was found along with the cremated bones of a young woman interned in a sunken pit.

One further important Ubaid site has recently been discovered at Wadi Debayan in north-west Qatar, and is currently under excavation by a team from the University of Birmingham. It is a well-preserved site, with evidence for some of the earliest structures in Qatar, dated to the mid-6th millennium BC. The material culture includes shell jewellery, bifacially-worked



A selection of barbed and tanged flint arrowheads of the Arabian Bifacial Tradition, dated to the 6th millennium BC.

© Qatar Museums Authority (QMA)

knives, barbed and tanged arrowheads, flint scrapers, stone axes and the largest assemblage of Ubaid pottery recovered from Qatar to date. The lithics artefacts also include fragments of obsidian imported from eastern Turkey, demonstrating early Neolithic trade networks with areas 3,000 km to the north. Wadi Debayan represents a relatively undisturbed landscape, comprising occupation sites, burial mounds, relict (fossil) beaches and middens. Occupation in the wadi appears to have come to an abrupt halt with evidence for a high-energy event, which left extensive marine deposits on relict beaches around the mid-3rd millennium BC.

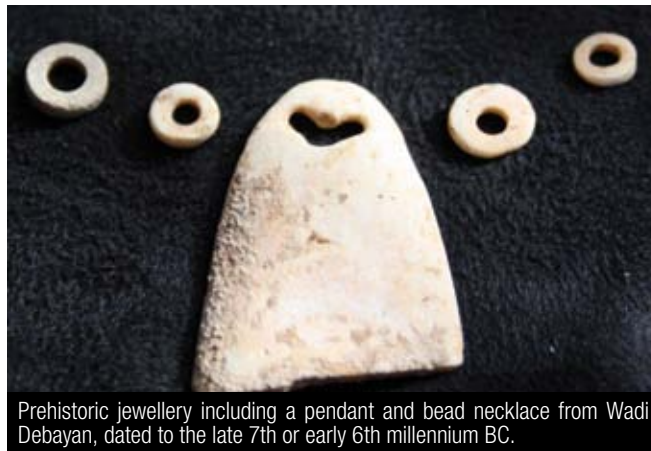
Surveys in recent years have also highlighted the presence of significant numbers of prehistoric burial cairns, particularly across the northern half of Qatar. The earliest of these have been radiocarbon dated to the mid-5th millennium BC, a burial practice that continued until the later Iron Age. Neolithic cemeteries have been discovered at Wadi Debayan, Simaisma and at Al Khor, where a French team excavated eight cairns to reveal flexed skeletons and beads of obsidian. Another imported material includes hematite, which was used to produce polished stone axes found at Wadi Debayan and during a DAI survey in the south of Qatar.

## The Bronze and Iron Ages

The environment may have become slightly wetter during the early Holocene, but by the end of the 4th millennium BC the climate had become more arid, a phenomenon reflected by a reduction in the number of archaeological sites in Qatar between the 3rd and 1st millennia BC. We know from Sumerian texts and archaeological discoveries that Dilmun in Bahrain was a prosperous kingdom during the 3rd and 2nd millennia BC. It is likely that Qatar was a part of this trading kingdom, with networks from Mesopotamia, along the eastern coast of Arabia to Oman in the south. Fine red pottery with typical 'Barbar' ridged decoration from 3rd-millennium Dilmun has been found along the western

coast at Ras' Abaruk and at Al Khor along the north-eastern coast of Qatar.

By the mid-2nd millennium BC, the influence of the Kassites had extended into the Gulf with evidence for Kassite ceramics found at a purple dye-processing workshop on Ben Ghanim Island in the bay of Al Khor. Excavations revealed low



Prehistoric jewellery including a pendant and bead necklace from Wadi Debayan, dated to the late 7th or early 6th millennium BC.

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**There are many surface scatters of stone artefacts, particularly in the south of Qatar, which can be attributed to the Palaeolithic on a technological and typological basis.**

mounds containing millions of shells of *Thais savignyi*, *Circe callipyga* and *Turbo coronatus* that were used to produce the Tyrian purple dye for clothes worn by the Kassite elite of Babylonia. In fact, this is the first evidence from Arabia for the extraction of this dye at a time when similar processes were taking place across the eastern Mediterranean.

By the 1st millennium BC, occupation in Qatar became more extensive and characteristic, giving a clear indication of a coexisting way of life between the nomadic and sedentary populations. There is evidence for cultivation, and nomadic pastoralists herding goats and sheep and keeping camels. These groups may be considered as the early antecedents to the later Bedouin. While these populations were interdependent, they exchanged commodities and facilities. The Greek historian Herodotus wrote in the 5th century BC that the inhabitants of

this region were excellent sailors and good tradesmen. Archaeological remains of this period are documented by stone structures, hearths, workshops, and especially by hundreds of burial cairns that are evident across the country, especially at Ras' Abaruk, Umm Al Ma'a and Lisha. These cairns are of various sizes and types, and were built using stone blocks or cut into the rock. Iron Age burials represent one of the largest site types to be excavated to date, and have been found to contain pottery, beads, amulets, alabaster vessels, weapons, and human as well as animal bones. As many of the graves were robbed in prehistory it is often difficult to give precise dates, and while the majority are considered to be of 1st millennium BC date, a few are clearly older, some dated to the 5th millennium, as radiocarbon dating showed.

## The later pre-Islamic period

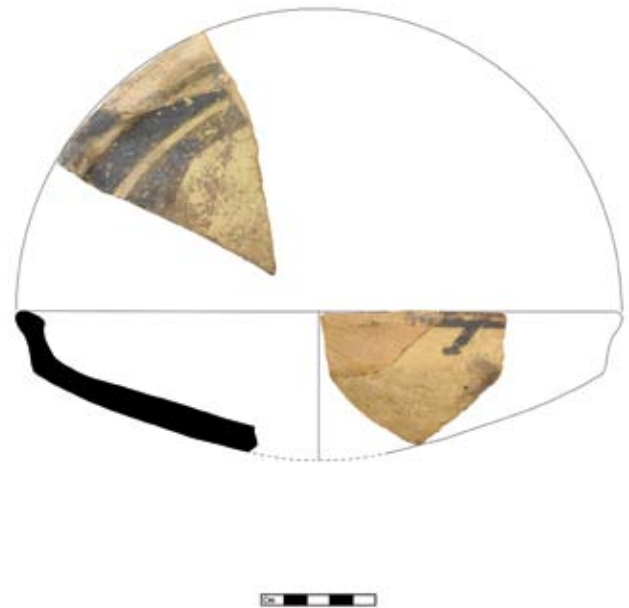
Qatar came under the influence of the Graeco-Roman kingdoms and of Parthian/Sassanid Persia, but we have little information about this period, with the exception of fishing and pearling stations and possible burials from Ras' Abaruk which produced Seleucid pottery. The same can be said of the Parthian period, when the Gulf and Qatar formed part of an important commercial conduit between the Indian subcontinent and the Mediterranean world. This role continued during the succeeding Sasanid period to the mid-3rd century. Excavations at Qasr Al Melaihat, south of Wakra, revealed a small, stone-built building with three rooms. Hearths from the building provided radiocarbon dates between AD 600 and AD 630, while the pottery assemblage suggests expanding regional trade.

In addition to cairns, prolific areas of rock art present another defining characteristic of Qatar archaeology. Rock art occurs at many sites, notably Jebel Al Jassasiya, Fuwairit and Freiha in northern Qatar. Various patterns of cup-marks, small circular pits, boats, animals and so on are cut into low, rock outcrops. The date, cultural affiliation,



Another barbed and tanged flint arrowhead of the Arabian Bifacial Tradition, dated to the 6th millennium BC.

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Decorated Ubaid pottery found at Wadi Debayan, north Qatar.

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**Iron Age burials represent one of the largest site types to be excavated to date, and have been found to contain pottery, beads, amulets, alabaster vessels, weapons, and human as well as animal bones.**



Hematite axes found in southern Qatar and at Wadi Debayan.

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Hematite axe.

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An alabaster vessel recovered from a prehistoric burial cairn to the north of Simaisma.

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and the interpretation of these carvings are still under debate, as chronologically these could date from any period of late prehistory to the later Islamic periods.

### Conclusions

To sum up, Palaeolithic occupation in Qatar is currently only evident as surface scatters of lithics, as well-dated stratified occupation is represented by later periods in prehistory. However, it is already clear that there is little doubt that Palaeolithic groups did, albeit intermittently, live in Qatar. The challenge for future researchers is the discovery of stratified archaeological deposits relating to Palaeolithic occupation. While the land surface of Qatar is deflated, Qatar has numerous sediment bowls and karstic systems that may contain quaternary sediments and have significant potential for stratified Palaeolithic remains.

Archaeological research over the past fifty years has begun to highlight two main golden ages, the first being the Neolithic/

Ubaid period, 7th to 4th millennia BC, while the second is the Islamic period, stretching from the 9th/10th centuries AD to later Islamic times (19th century). However, this suggests that much research remains to be done to understand the nature of occupation from the Bronze Age (3rd millennium BC) to the early Islamic (9th century AD), which is still poorly understood. While this was a period of climatic deterioration and hyper-aridity, it does not mean that Qatar was unpopulated, and it is likely that further research will shed more light on this enigmatic period.

Most prehistoric sites are small fishing/hunting/gathering camps, or workshops for the treatment of fish and are invaluable for piecing together the prehistory of Qatar. Another important class of monument is burial cairns, found throughout the country. Systematic research of these cairns may yet provide important answers to questions about the so-called 'Dark Millennia' (3rd to 1st millennia BC), both within Qatar and the wider Arabian Peninsula.

Note however that although Qatar is less intensively occupied as it may seem at first sight, the potential of Qatar archaeology is not yet fully understood. Major questions need to be answered, such as the Palaeolithic occupation, the origin of the Neolithic, and the reasons for the absence of evidence of 3rd to 1st millennia BC occupation, particularly why so few habitation sites have been discovered compared with the number of workshops. Wider research must include comparisons and the relationship of prehistoric cultures in Qatar to neighbouring cultures, especially the Ubaid of southern Mesopotamia, and the economic and social life of the people. As the discipline of archaeology develops further in Qatar, research into environmental changes, DNA, and sea-level change will provide the opportunity to place such prehistoric sites within a framework of Holocene environmental change and their original landscape context. 🌐

**Systematic research of burial cairns may yet provide important answers to questions about the so-called 'Dark Millennia' (3rd to 1st millennia BC), both within Qatar and the wider Arabian Peninsula.**



Prehistoric burial cairn and chamber excavated at Umm Al Ma'a, northwest Qatar.

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# Sheki

## The pearl of the Caucasus

Sheki city is situated in the north-western part of the Republic of Azerbaijan, 700 metres above sea level on the southern slopes of the Greater Caucasus Mountain Range which linked the trade routes of Near and Far Eastern countries with the West.

According to many ancient sources, the history of Sheki dates from approximately 2,700 years ago in the I century B.C. although the history of Sheki land is much more ancient. The mountains surrounding the city were formed 11 million years ago.

Sheki is one of the most ancient cities of the Caucasus. In the sources related to the medieval centuries its name was indicated as "Shaki", "Sheka" and "Shakki".

Sheki was called "Nukha" for a long time. The ancient writer, Claudius Ptolemy, denoted that there was a human habitation of "Niga" within the ancient Albanian towns. The name "Sheki" is associated with the Sak tribes that traversed through the passage of Derbend from the shores of the Black Sea to South Caucasus, and from there to Asia Minor in the VII century B.C.

During certain historical stages Sheki was one of eleven provinces of Caucasian Albania. The remnants of many extant medieval buildings, temples and fortresses prove that statement. The favourable geographical situation, mild climate, and fruitful lands of Sheki paved the way for the development of the city as an economic, cultural and administrative centre of Caucasian Albania.

During the Arab invasion, it became one of the most important cities of Azerbaijan. The province of Sheki was included in the 3rd Emirate. When the Caliphate weakened, an independent dukedom emerged in Sheki. When the state of the Hulakis collapsed in the first half of the XIV century, Sheki, in parallel to the state of the Shirvanshakhs, also gained independence. In 1551, Shakh Tahmasib put an end to Sheki's independence, and Sheki was from then on conjoined with the state of the Sefevis. The Sheki khanate, established in 1743, being one of the most powerful feudal forces among Azerbaijani khanates, turned into the main political and economic city.

Sheki city, where centuries-old traditions and culture, abundant ancient tangible cultural heritage and architectural monuments exist, is especially distinguished from the other regions of Azerbaijan. Along with the other tangible cultural monuments, the existence of defence structures in Sheki prove its great strategic significance, ancient history and rich construction. Being a classical artefact related to the medieval age in Azerbaijan, the Sheki Khan Palace is a monument with special importance all over the world with its specific beauty and originality. The Sheki Khan Palace was built in 1761-1762, years in the reign of the first independent Sheki Khanate of Azerbaijan. It consists of two storeys with six rooms, four corridors and two glass verandahs. The main façade of the building is composed of unique wooden latticeworks (*shebeke*) and the doors are covered by the smallest mosaic of coloured glass divided into different geometrical figures set in between the wooden pieces. Each square metre of the wooden latticeworks consist of on average 5,000 wood and glass latticeworks, but in the complex parts they number 14,000. Nails or glue were not used in the construction of the building but involved wood and glass pieces inserted into each other. The length of the building is 31.7 metres, the width, 8.5 metres, and the height, 10 metres. The ornaments of the palace walls, the various patterned wooden latticeworks and the carvings on the alabaster attract a lot of attention. The geometrical ornaments, the botanical drawings, the paintings of birds, the stalactite carvings, the fighting and hunting scenes, are widely visible inside the building. The niches, shelves, mirror fireplaces which were elegantly trimmed are regarded as original works





of art. The palace is surrounded by annex walls which are a characteristic feature of ancient eastern cities. The mansion was built in the shade of two magnificent giant “Khan Chinar” (Khan Plane) trees that were planted in 1530. The height of the trees is 34 metres with a diameter of 7.3 metres.

“Kish” village is located a few kilometres from Sheki. The remnants of the ancient defence walls in the different estates of the village are evidence of its rich history. However, the ancient temple built by the Catholic Faddey Yelisey with the consent of the heathen priests in the I century makes this village much more famous. In recent years, as a result of the scientific-research works conducted by an international expedition group it was determined that this temple had been built before Christianity arrived to the area where the heathens performed religious ceremonies. The temple of Kish was the centre of the spiritual life of the Caucasus Albania throughout the centuries.

Located on the Great Silk Road, being a city of craftsmanship, silkworm breeding and trade, Sheki combined the trade centres of other khanates and many foreign countries by way of caravansaries. In the XVIII-XIX centuries, the caravansary buildings built in the city were considered not only for the caravans and travellers to stay there but also to implement different trade operations. Two of five large caravansaries – Yukhari Caravansary (Upper Caravansary) and Ashaghi Caravansary (Lower Caravansary) – distinguish the architecture of Sheki for their planning structure, large design and convenience for recreation and trade.

As a consequence of its fascinating nature, rare historical-architectural monuments, developed craftsmanship, colourful cuisine and preservation of rich historical-cultural heritage, Sheki has become an important tourism region of Azerbaijan.

**We invite you to visit Sheki.**

**[www.mct.gov.az](http://www.mct.gov.az) | [www.azerbaijan.travel](http://www.azerbaijan.travel)**

# The rock carvings of Qatar

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Fig. 5: 'Rosettes' at Jebel Al Sudan with a night view of Doha in the background.

© Courtesy of Robyn Pelling





**R**ock carvings are found the world over, with some incredibly imaginative designs and, perhaps even more so, creative interpretations. The corpus of text that surrounds this discipline is as informative as it is varied: the diverse nature of conflicting theories being almost as compelling as the petroglyphs themselves. Over the past fifty years those situated across the *jebels* (hills) of Qatar also have generated their fair share of mystery, discussion and debate.

Carvings were first recorded in 1957 by P. V. Glob as part of the Danish Archaeological Qatar Expedition by highlighting their presence in a few places around the north of Qatar. Subsequent research expanded this handful of areas to at least thirty-eight known sites around the country. This includes protected areas, such as Jassasiya; arguably the most extensively carved area in the country, as well as many other individual locations (Figure 1). Many of the sites are in the north, particularly the north-east coast between Al Ghariya and Al Huwaila, and the north-west coast between Al Areesh and Al Zubarah. There are also sites at Al Thakhira, Al Dhaayen and Doha. An extensive site is also reported in Al Wakra, however since 1991 the area has been fenced off as part of a radar station and, while protected, the extent of these carvings is still to be recorded.

**Previous work**

Of the various sites around the country, the most assiduously catalogued is Jassasiya (Figure 2). After their initial discovery by P. V. Glob and T. G. Bibby, an extensive record was made by Holger and Hans Kapel, in which they catalogued over 800 individual carvings. This work allowed later researchers to further study these enigmatic carvings. Later surveys of Jassasiya include those by Frances Gillespie in the early 1990s, and an extensive 3D laser scan (Figure 3) by a team from the University of Birmingham. Laser-scan surveys provide a sub-millimetre accurate dataset that can be used for future reference to monitor the extent of erosion caused by the exposure of the carvings to the natural elements. Other areas have not been so extensively catalogued, however surveys of important locations such as Jarr Umm Tuwain, Jebel Fuwairit and Fraiha



Fig. 1: Map of the locations of rock art.

have added to the corpus of information. Currently a comprehensive catalogue of all the rock carvings in Qatar is being compiled by a local specialist, Mohamed Al Suwaidi.

**'Board game' carvings**

Cup marks and channels are the most prevalent examples of carvings. Ubiquitous throughout the country, they often appear as individual cups, sometimes paired with a connecting channel, as well as in groups.

The groups consist generally of two forms; the first form being a double row of cups, usually around seven per row (Figure 3). These have been traditionally referred to as 'board game' carvings, as they are said to resemble a traditional board game, commonly referred to as *mancala*, often found along trade routes from Africa to South-East Asia. This is known locally as Al Haloosah. However, this theory has been contested in recent decades due to

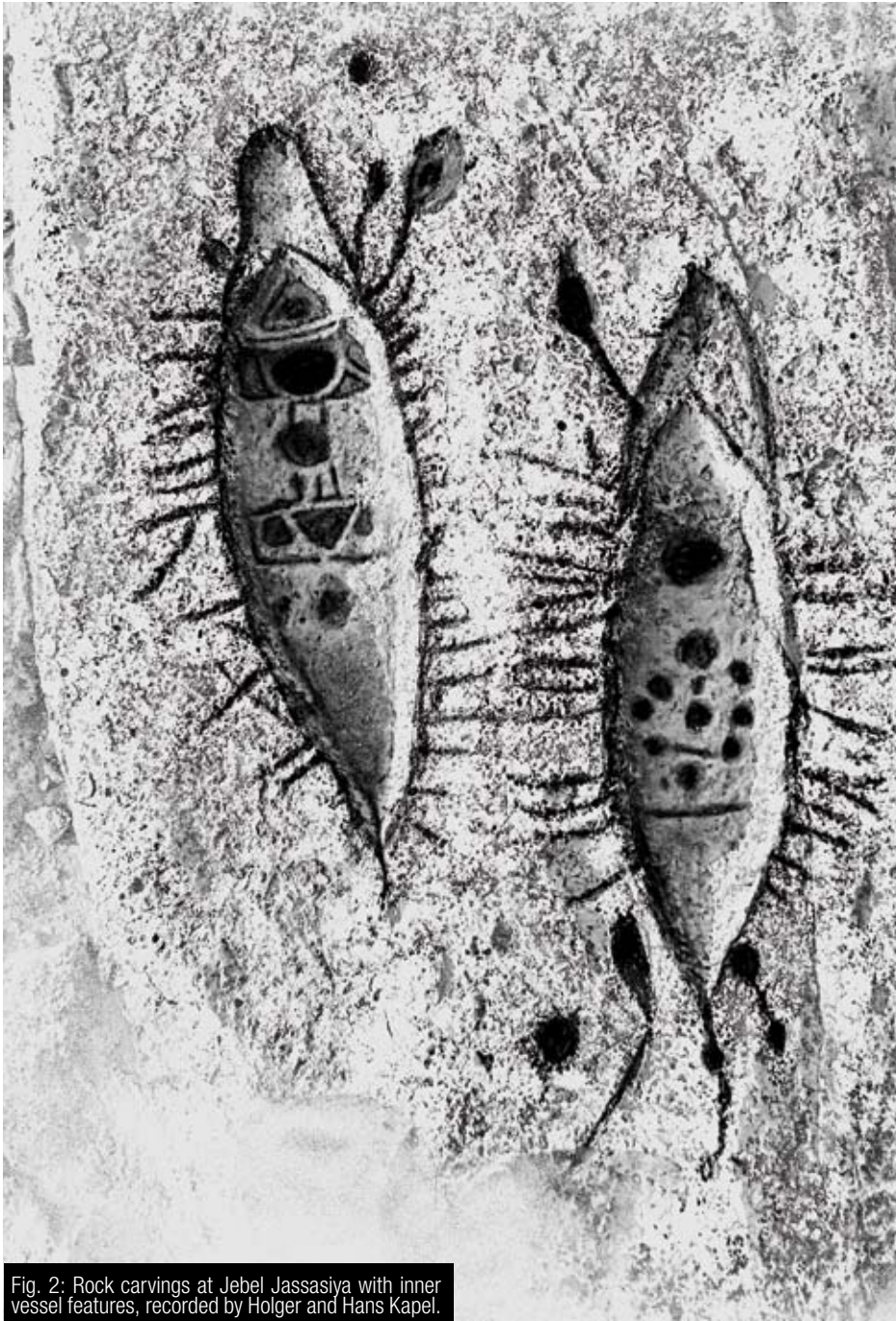


Fig. 2: Rock carvings at Jebel Jassasiya with inner vessel features, recorded by Holger and Hans Kapel.

© Courtesy of Robyn Pelling

their large numbers in small areas, and in some cases, the unsuitability of their location for use as a gaming board as they are often carved on steep slopes. The second form is a circular configuration of cups surrounding a central cup (Figures 4 and 5). These are known as 'rosettes' and have also been said to be boards for gaming, of a variation of the same *mancala* game known in Arabia as Al Ailah, again disputed for identical reasons as the linear

formations. Excavations in Al Zubarah city have uncovered an Al Ailah board still containing its composite pieces. Even if a board for Al Ailah was not the intended use for the 'rosettes', it is clear that they were often used for this purpose.

Other carvings comprise a series of pits of varying sizes and shapes, frequently connected by channels. Unlike the cup marks which can be found relatively isolated, these grouped pits tend to be

around larger concentrations of other rock carvings of differing types. Some of these may represent other features, for example carvings near Jassasiya and Fuwairit show a large, shallow pit with radiating channels ascending the slope upon which they are positioned. These have the distinct impression of a comet streaming across the rock (Figures 6 and 7). It is interesting to note that all 'comet' carvings appear to be flying down the slope of the *jebel* upon which they are carved, and all progress out towards the sea.

### Boat carvings at Jassasiya

Further carvings are more recognizable images; animal carvings as well as small feet with detailed toes. These carvings have a propensity to be smaller, easily missed on a busy *jebel*. However, the third most prevalent type of carvings are those of boats, predominantly around Jassasiya (Figure 8), with a limited number found elsewhere. Two forms of boat carvings are evident; primarily those in plan, as well as some in profile. Those in plan are most prolific as small, pointed oval boats with visible oars. Bigger versions carry anchors, and those larger still have cup marks inside, clearly to denote inner vessel features. These plan carvings can be slightly ambiguous; the general theory is that they are representations of similar boats, as are those in the profile drawings. Certainly the shape and oar numbering is consistent. The linear carvings of the boats in profile show more recognizable features, such as portholes and masts. These closely resemble boats renowned for their use within the pearling trade, such as the larger *battil* and *baqqarah*.

When these carvings were first studied, amidst popular talk of sacrifice and star maps, some suggested idle hands: 'These carvings and sculpture to the laborious idleness of a pastoral people ... they amused themselves by carving and cutting ... on the rocks near them' (Westropp, 1868). In reference to those enigmatic carvings around Qatar, one of the prevailing theories regarding dating and the profusion of certain boat carvings, as initially proposed by W. Facey, is a significant link with pearling fleets in the 17th and 18th centuries. While waiting for the arrival of pearling vessels, 'playing



Fig. 4: 'Rosette' Bala'a carving game boards near Fraiha with Al Zubarah fort in the background.

© Courtesy of Robyn Pelling

board games and chipping pictures of boats with which they were familiar into the rocks'.

Features identified on both the profile and plan boat carvings indicate an age no earlier than AD 900. For example, it is generally accepted that carved stern

rudders were developed sometime between the 10th and 13th centuries. One of the carvings also resembles Portuguese frigates of the 16th century. The datable links are not limited to the carvings themselves. In the surrounding area of the boat carvings at Jassasiya is a significant

amount of pottery that dates between the 17th and 19th centuries, as well as earlier fragments in the wider area, indicating renewed use over a long period.

These sites are mostly along the coast and the sea can generally be seen from the highpoints of the *jebels*. They also appear relatively isolated. However, Facey, working with Carston Niebuhr's map of the Gulf of 1765, illustrates that these northern coasts were well frequented and known as pearling ports. The settlement at Huwaila is already known to have been a major port town in the north-east of Qatar, and using that map Facey identifies Faraha (Fraiha) and Huala (Huwaila) to have been mislabelled and that Huala should be to the east and Faraha to the west. Significantly, between these two settlements is a third town, Jusofie, which he believed to be Jassasiya. These three locations correspond with the highest concentrations of rock carvings currently known, and it seems reasonable to consider that they are linked.

One site, Jarr Umm Tuwaim, in the south-west, is unusual in that it is over 6 km from

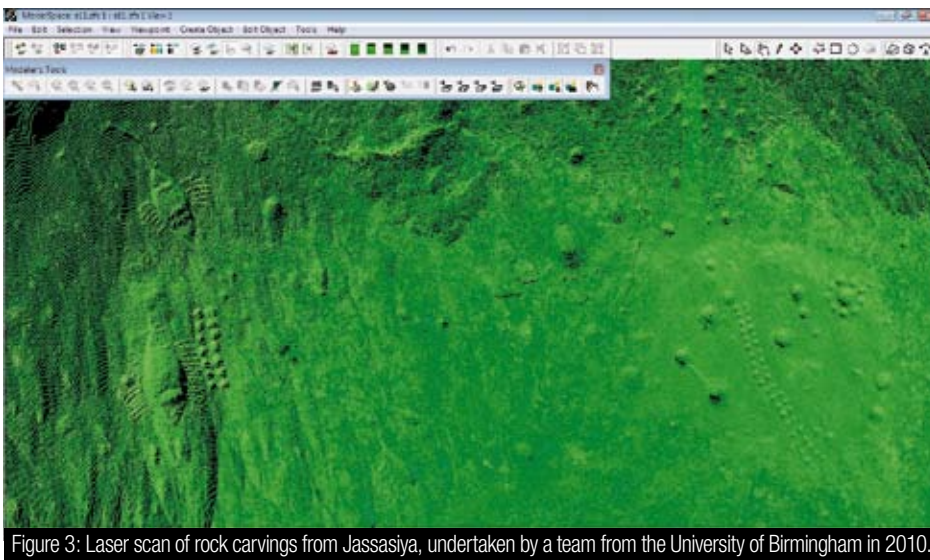


Figure 3: Laser scan of rock carvings from Jassasiya, undertaken by a team from the University of Birmingham in 2010.

© Courtesy of Robyn Pelling

the seashore and is the only known site so far from the sea and so far south. In 1998 a survey of the area revealed a 'variety of *wasm*; double rows of cupmarks; several single or paired cup marks; a single small, shallow oval pit' (Gillespie, 1998). There was also a small reservoir excavated at the base of a *jebel* with associated carved channels leading in to it down the side of the rock. This indicates a specific, verifiable need for carving, which along with the *wasm*, is not generally evident in other parts of Qatar. It is interesting to note that, whereas *wasm* do appear in other areas, many of the *wasm* at Jarr umm Tuwaim are a late addition.

### Dating the carvings

Recognizable motifs are normally relatively datable, the more perplexing cup marks are significantly harder to assign even a broad date. While it is likely that at least some of the linear 'game boards', or even the 'rosettes', are used for gaming purposes it is unlikely that this is the case for all examples. Parallels for this type of carving are found the world over. There are similar game carvings around the Gulf, in Saudi Arabia and Oman, and cup marks are in profusion over Northern Europe. It seems likely that a significant number would have been created around the same time as the boats, due to their proximity and similar state of weathering.

It has been noted that some of the carvings, particularly some of the small animals, 'would not look out of place in a third millennium, or even earlier, Mesopotamian context' (Rice, 1994). However, caution must be undertaken when dating pictograms as later carvings may appear similar to older examples but are often chronologically very different. The carvings are also engraved into limestone, which is known to degrade quickly. Limestone is highly soluble and easily worn away in adverse weather conditions, such as the sandstorms that frequent Qatar.

Recent research by R. Hassiba has dated calcium coxalates on the surface of carvings from Jassasiya. From the analysis of nine different carvings, only three produced results more than fifty years old, and of these the approximate maximum date is 300 BC. There are known flaws with this type of dating, including severe weather

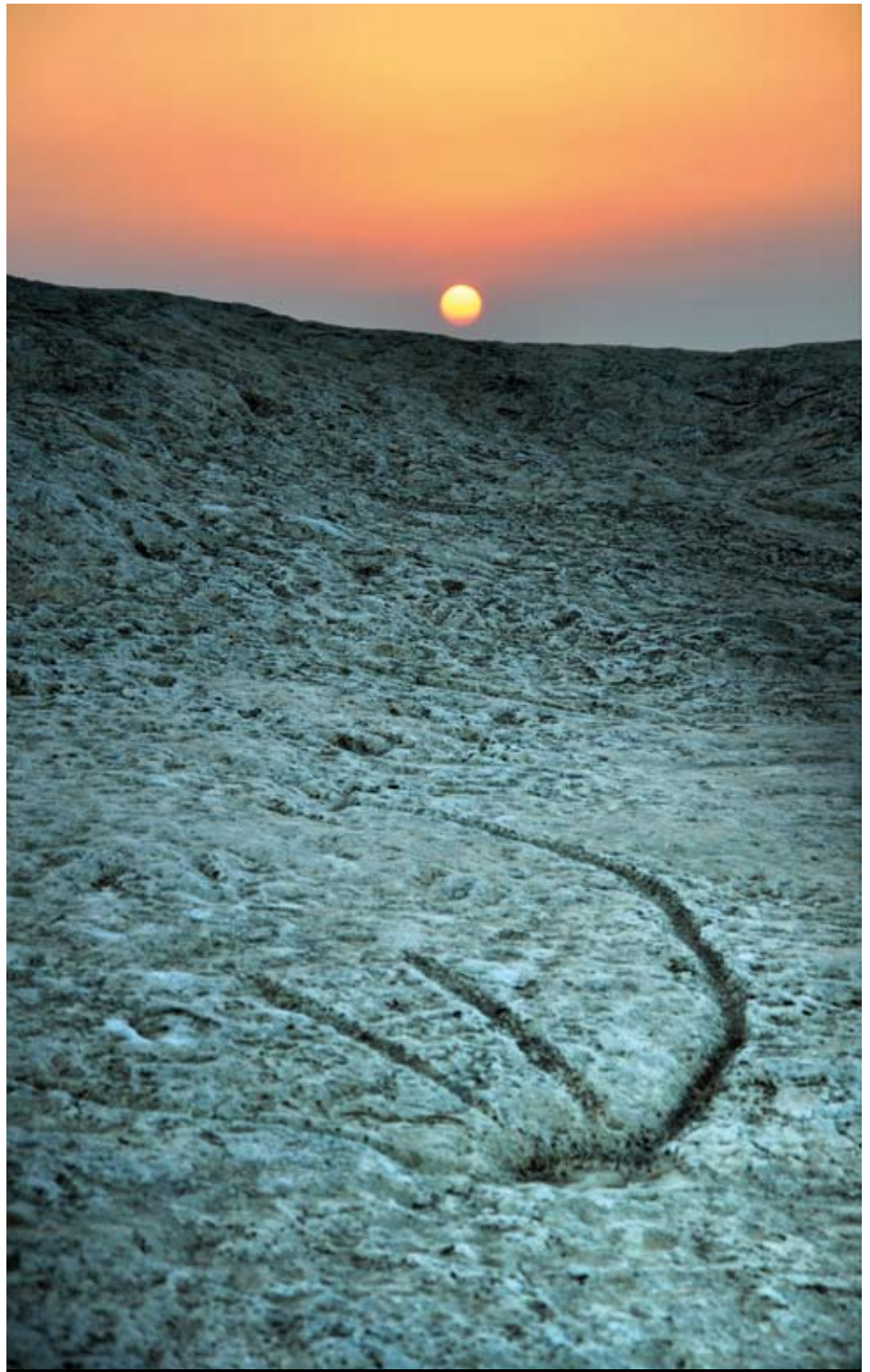


Fig. 6: 'Flying down the *jebel*, and out towards the sea'. Jebel Fuwairit, sunset.

© Courtesy of Robyn Pelling

**Carvings were first recorded in 1957 by P. V. Glob as part of the Danish Archaeological Qatar Expedition by highlighting their presence in a few places around the north of Qatar.**



Figure 7: A 'comet' in black and white. Wa'ab al Jassasiya.

© Courtesy of Robyn Pelling



Fig. 9: Quarried 'rosette'. Bala'a carvings, near Fraiha, at night.

© Courtesy of Robyn Pelling

scouring oxalate formations and preventing significant build-up, and possible changes in geochemical environs inhibiting growth. Hassiba notes that limestone degrades comparatively quickly and so is damaged more easily, and proposes that more conclusive methods of dating are needed for such features.

Even with an assortment of modern techniques, it has been difficult to date Qatari rock carvings with any accuracy. Dating some of the boat carvings confidently by assigning approximate dates according to carved features is so far the most successful. However, an approximate date can be given to others due to their location. A good example of this are those on quarried rock faces at Zubarah and Fraiha (Figure 9). There are carvings located on the quarried face of these limestone *jebels* that were mined to build Zubarah fort, indicating that they must have been created after quarrying had finished.

Dating rock carvings still remains problematic, particularly when studying areas as mysterious as those in Qatar, whose rock carvings are unique in the Gulf, not only through elements of design, but the simple profusion with which they exist in concentrated locations. This is especially highlighted with the focused reuse and multitude of designs in most areas. The mystery that surrounds the enigmatic carvings deepens further when considering such sites as Jarr Umm Tuwaim and Al Ghashamiya, which are unusual even for Qatar. With further study, as techniques develop, we can hope to understand such exquisite and poignant carved art. 🌀

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Fig. 8: 'They are altogether strange, sinister and, seen at sunset with the dying sun glancing across them, rather disturbing' (Rice, 1994). Jebel Jassasiya at night.

© Courtesy of Robyn Pelling

# Tabasco, *the Eden of cacao*

Tabasco, a southeastern Mexican state, birthplace of the Olmec and Mayan cultures, offers the visitor a wide range of tropical environments surrounding the most modern city in the South-east. Tabasco is one of the country's main producers of cacao, so that its cultural offerings are intimately tied to this fruit and its derivatives. From the harvesting of cacao beans right up to tasting the chocolate, a visit to the cacao plantations in the century-old haciendas can turn your visit to Tabasco into an intense and aromatic encounter with the ambrosia of the gods.

## Its History...

Cacao cultivation was begun by Mayan tribes on the Atlantic coast of Honduras and Guatemala around the 4<sup>th</sup> century A.D., but it did not become popular in what is now Tabasco until about 500 A.D. Cacao from Tabasco was taken to the central plateau inhabited by the Aztecs and used to elaborate a drink that accompanied special ceremonies and was offered to the Spaniards, becoming what we know today as *chocolate*. The coastal climate of the Gulf of Mexico favored the crop and turned the Tabasco region into the most important cacao region of the country.

"Rich in infinite cacao" was how the Chontal Indians described it to the Dominican Friar Tomás de la Torre who, accompanying the recently appointed Bishop Friar Bartolomé de Las Casas in 1545, traveled through Tabasco on their way to Chiapas. It would have been hard for him to have thought otherwise since the group of friars hiked through part of the Chontalpa region before getting to the difficult stretches of the sierra. There, quite a diverse panorama awaited them, until they descended down to Ciudad Real, seat of the Bishopric.

After the Conquest, the Spaniards tried to take over the cacao regions because of their economic importance, at the very same time that the central highlands and the South of New Spain was inventing and popularizing a cacao-based drink called *pozol*, and leading the inhabitants of the region to dedicate their crop to it exclusively.



## Like water for...pozol

This is the most popular drink in the state, reminding us of the pre-Hispanic uses of cacao. It is prepared starting with cornmeal, water and ground cacao, strained and served in half gourds made in the municipalities of Jalpa de Méndez, Centla and Emiliano Zapata, though the inhabitants of the coast substitute them with coconut shells.



Ever since pre-Hispanic times, *pozol* was drunk for its high energy value and was served to refresh workers during planting and harvesting. It is said that *pozol* paste mixed with water, would take the place of any foodstuff during long journeys. But it was a basic foodstuff in Tabascan homes, especially at sunrise when Indian families prepared it to take with them to refresh themselves on their long journeys over to their fields.





# Welcome to the House of the Comales



The pre-Hispanic city of Comalcalco is a Mayan site that flourished between 800 B.C. and the 12<sup>th</sup> century. Its name comes from the Nahuatl language and means “house of comales” or “house of bricks.” A *comal* is a clay, nowadays metal, griddle where tortillas and other foods are cooked over an open hearth. This well-known city was built of baked brick because there were no rocks in the region, just the clay, sand, oyster shells coming from the Mecocacán lagoon.

The archaeological site of Comalcalco is of utmost importance for the history of the state of Tabasco and for Mexico, given the unique, valuable and extraordinary nature of its settlement. The preservation of its archaeological elements, such as architecture (vestiges of this site show areas of palaces, both a pre-Hispanic ceremonial center in a superb state of preservation, as well as the rural dwelling area), sculpture (an ornamental architectural element of great importance because of its symbolic content and high aesthetic quality) and building materials (such as oyster shell, brick and clay).

## Pamper your Senses

In Tabasco, there are haciendas which, from the end of the 19<sup>th</sup> century or beginning of the 20<sup>th</sup> century, produced and elaborated cacao and its derivatives. At least three haciendas—Hacienda la Luz, Hacienda Cholula and Hacienda Jesús María—offer the visitor a tour of the plantations and small factories that highlight their history and tradition.

During the guided tours of the haciendas, besides the cacao plantation itself, you can see how the Chontals cook and work, both artisanal as well as industrial, to transform cacao into chocolate. The visit includes the growing, gathering, cleaning, toasting and milling of chocolate, as well as the combining of condiments to produce the different derivatives. Each hacienda has set up activities for the visitors and, in all of them, you can try the exquisite artisanal ground chocolate.

## Chocolate Festival

Such is the pride of Tabascans of their cacao and chocolate that, during the month of November, the most important gastronomic fair of the state is held, with some 72 exhibitors and the participation of outstanding representatives of the region’s cooking. Keynote speakers give talks on chocolate, as well as workshops on cooking, baking, chocolate confections and chocolate tasting.

Tabasco has developed a culture that pivots around cacao and extends, as did its origins, to sacred spaces. Each May, the producers of Comalcalco present the patron saint in their church offerings of cacao, both in pods and seeds, woven into giant rosaries. Together with dozens of other products cacao offered, they erect platforms, so that the church ends up, as historian Mario Humberto Ruz so well pointed out, like a “sky of vines,” just like a tropical forest not unlike those “beautiful, harmonious” fields where cacao has been grown ever since pre-Hispanic times.



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# The Old Palace of Doha


## Conservation and rehabilitation

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Old Palace of Doha before start of works.

© Courtesy of Seiler Architekten Ingenieure, Berlin, Germany.



The development of the modern state of Qatar has been so rapid and comprehensive that it has left little space for the preservation of historic buildings. There is currently a growing awareness of the need to conserve and protect what is left of this built heritage. The Old Palace of Sheikh Abdullah bin Jassim, the father of modern Qatar, is one of the most important monuments in the country. The project for its conservation aims to set a new standard for the treatment of historic buildings and to catalyse a new movement towards architectural conservation both within Qatar and the wider Gulf region.

## History

In 1880, Sheikh Jassim bin Muhamed ordered the construction of a new palace for his son Sheikh Abdullah bin Jassim next to his own palace in Al Salata, east of central Doha. The complex was expanded with new houses and quarters for retainers added over the next decades. Sheikh Jassim wished to be located away from the Ottoman administrative centre near the current Amiri Diwan.

After the Ottoman withdrawal from Doha, a new and grand central *majlis* was commissioned from a renowned Bahraini architect in 1918. The design and scale of this *majlis* was to showcase the emir's new position of dignity. Around 1923 the emir and his household relocated to the Amiri Diwan in central Doha and by the 1950s the complex was completely abandoned.

When Sheikh Khalifa bin Abdullah assumed power in 1972, one of his first acts was to commission the National Museum of Qatar. The palace was restored using the best techniques available at the time and complimented by a new museum building. The project won the Aga Khan Award for Architecture in 1980.

Now the Old Palace is to be restored to once more become the focal point of the new National Museum of Qatar designed by Atelier Jean Nouvel. The Berlin-based company Ziegert | Roswag | Seiler Architekten Ingenieure was approached to conduct the restoration to the highest standards in monument conservation using international expertise and appropriate technologies.

## Restoration aims and philosophy

The palace will be restored in its original fabric without the use of air conditioning, to create a living gallery exhibiting a way of Qatari life that has almost been lost amid the rapid expansion of the last forty to fifty years.

As the building has been restored, complemented and refurbished numerous times since its construction, all these time layers are valuable in the telling of its rich history.

Its building elements are almost unique in their historical significance and the 1970s additions are also important examples of Qatari craft and skill that must be preserved and exhibited. New elements will also contribute to the living narrative of this project. They will be implemented where structurally necessary or where 1970's concrete or cement materials are damaging the delicate historic structure. At the time of the 1970s restoration these materials were the most appropriate for use in such a project, now with our enhanced knowledge it is clear that they are causing major problems for the historic structure.



Dismantling of the damaged arcades.

© Courtesy of Seiler Architekten Ingenieure, Berlin, Germany.



Removal of cement-based plaster from masonry.

© Courtesy of Seiler Architekten Ingenieure, Berlin, Germany.

These include rising humidity and salinity in the walls, also the cement is much more rigid than the softer earth and lime building materials used traditionally and has caused uneven loading.

With this knowledge a series of 'conservation guidelines' were drawn up, in which the original historic material from the 1920's building phase will be preserved at all costs. Decorative and constructive elements from the 1970s will be preserved as far as possible. Elements that no longer have a structural function and can be kept will be repaired appropriately, while elements that cannot be repaired or are inappropriately constructed will be replaced accordingly.

### Knowledge transfer

The project will be conducted as a contemporary restoration, not a reconstruction. For a restoration, knowledge of the historic building techniques and material are required, the aim being to strengthen and develop the local building traditions through the restoration process.

Conducting the restoration are Ziegert | Roswag | Seiler Architekten Ingenieure, an integrated office of twenty-five architects and engineers. The office focuses on the development of sustainable building solutions using natural building materials. Their projects range from earth and timber houses and a timber plus-energy workshop building in Berlin, through earth and bamboo schools in Asia and Africa, to the conservation of historic monuments on the Arabian Peninsula. The office has already completed successful projects in Al Ain (United Arab Emirates), Amman (Jordan) and Herat (Afghanistan) ([www.zrs-berlin.de](http://www.zrs-berlin.de)).

A team of local artisans will be trained over the course of the project in cooperation with conservation and traditional building experts. The palace will be restored in a historically faithful fashion while ensuring the skills taught remain in Qatar. The training programme began during the Emergency Conservation phase and will be complemented by several other specialist workshops including wood treatment, restoration of ornaments and painted ceilings and treatment of historic

plaster surfaces. All works are being closely supervised by specialists on-site and conducted in close collaboration with Qatar Museums Authority (QMA).

### Work stages

During an initial visit of the site a fact-finding mission was undertaken to assess the situation and scope of work required. Regular workshops with QMA were held both in Berlin and Doha throughout the investigation and design phases.

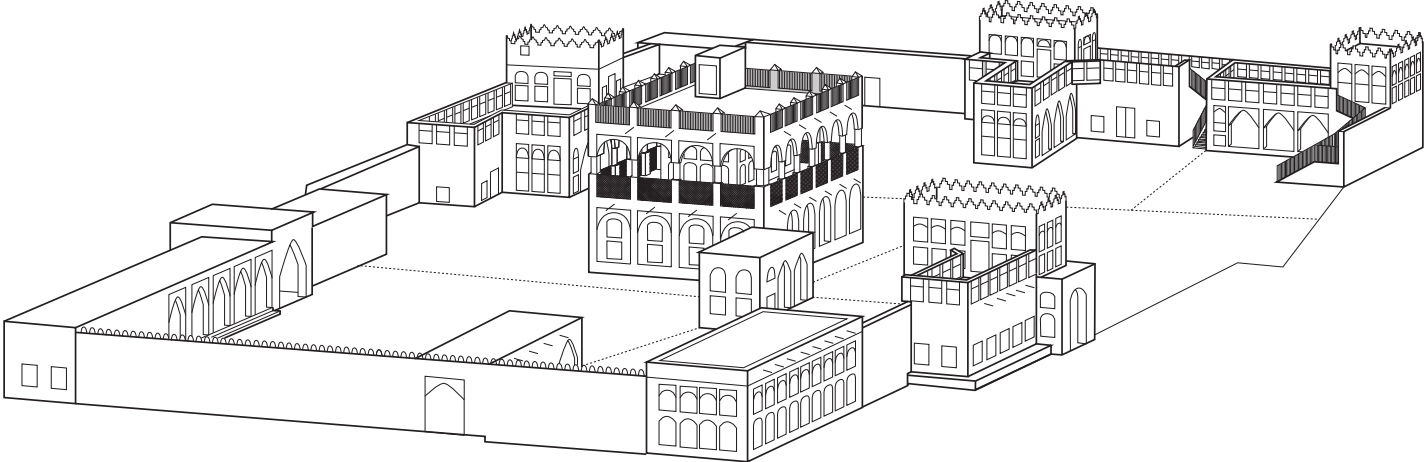
Subsequently a detailed investigation of all buildings was carried out. This involved the making of 'findings' in order to ascertain where the different building phases come together. Specialized experts in wood, conservation and material supplemented the on-site investigation team.

This was followed by the design phase, where all the information from the investigation was used to produce a comprehensive and detailed individual design for each building. The input from other experts was used to produce a fully informed strategy.



Detail of a 1970s carved gypsum ornament on outer façade of B01 - the North Gate.

© Courtesy of Seiler Architekten Ingenieure, Berlin, Germany.



Overview of Old Palace complex.

© Courtesy of Seiler Architekten Ingenieure, Berlin, Germany.



Dismantling of a damaged reinforced concrete ring-beam element.

© Courtesy of Seiler Architekten Ingenieure, Berlin, Germany.

### Emergency conservation

From the outset it was clear that some parts of the palace were in a critical condition. Groundworks for the new National Museum site had already begun, including heavy draining of the ground and strong vibrations due to rock excavation using heavy machinery. It was clear that immediate action had to be taken to protect the buildings from collapse.

This consisted of the propping or partial dismantling of elements in imminent danger. Major works were required to secure the central building of the complex, the inner *majlis*, which contains the most historic building elements. This included a new foundation system that transfers the building's structural loads onto a grid supported by micropiles. The deterioration of 1970's concrete elements involved dismantling the roof and arcades of the upper floor, and the staircase also required significant temporary structural measures to avoid collapse.

### Main construction

During the main construction works, initially all elements that are beyond repair will be dismantled. Additionally all cement plaster, currently causing serious damage due to the ingress of humidity and salinity, has to be removed up to a certain height.

The second phase involves the rebuilding of these elements using appropriate materials. For example, stiff concrete ring beams damaged by carbonation and rusting reinforcement will be replaced with new trass lime elements reinforced with glass fibre. The trass and glass-fibre beams are more flexible and breathable, making them far more compatible with the historic building fabric. Additionally decorative elements and painted ceilings will have to be rehabilitated and all timber fittings, beams and lintels will be treated *in situ* against termites and other decay mechanisms. Finally, historically accurate plasters and mortars will be developed

and applied and new trass lime floor slabs installed to provide stability.

### Documentation

The documentation process is running in parallel to the on-site works and forms an integral part of the project. All site activities, findings, recovered samples and removed elements are being thoroughly and accurately documented. The final documentation will contain all the knowledge gathered throughout the course of the investigations as well as a record of the works themselves. It will aim to provide a kind of 'road map' to anyone working on the palace in the future.

Following all these principles, the Old Palace will be a fitting central exhibit for the new National Museum. Displaying and preserving built Qatari heritage, it will not only complete the modern building surrounding it, but also form the link between the past and the future of this fast-changing country. 🌐

# Between heritage and urban development

## Challenges for the management of cultural heritage in Qatar

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Doha from the sea.

© Christine und Hagen Graf





The remarkable urban development that is in full swing in Qatar and the wider Gulf region poses a great challenge to those authorities, entities and professionals who are responsible for the safeguarding, conservation and management of heritage assets at regional level. The urban and industrial growth, which has intensified in the last decade, occurs speedily and on a large scale; it affects the territory and represents a potential threat to the country's widespread heritage.

The new development reshapes not only the empty spaces where new urban areas will be built, but also intervenes in those areas where towns and settlements have already risen or where evidence of older occupation persists. If, on the one hand, development responds to the new needs and requirements of an evolving country with a growing economy and an increasing population, for cultural heritage managers, on the other hand, the questions are how development interacts with the cultural heritage assets in the territory, how the past (or a selection of it) may live on in the present and how continuity and change may influence decision-making so that many heritage assets will be defined and preserved.

The Department of Archaeology, Architectural Conservation and Cultural Tourism is the section within the Qatar Museums Authority (QMA) in charge of managing, conserving, protecting, enhancing and promoting the archaeology and cultural heritage of Qatar through an integrated approach. The department deals daily with the challenge to preserve, in different forms and ways, the manifold heritage assets of the country.

### Heritage assets considered to be antiquities

According to Antiquity Law No. 2, in force in the State of Qatar since 1980, article 1 defines what has to be considered heritage as follows: 'An antiquity is considered anything left by civilizations or left by previous generations, ... which dates back more than forty years'; meaning that heritage assets existing before 1940 are considered to be antiquities and, as in article 4 of the same law, they have to be



A traditional mosque in Doha surrounded by several construction sites and parking lots.

© F. Sakal/Qatar Museums Authority

## The Department of Archaeology, Architectural Conservation and Cultural Tourism deals daily with the challenge to preserve, in different forms and ways, the manifold heritage assets of the country.

documented, safeguarded, protected and promoted.<sup>1</sup>

The achievement of this aim begins with and focuses on the documentation of all heritage areas and assets legally considered antiquity. The implementation of the recording procedures occurs through various steps which range from surveys, i.e. the high-level collection of data, to more detailed documentation carried out through excavation or systematic recording of many specific elements of a heritage asset, its historic, architectural or environmental context, its construction techniques, its materials, etc. The basis of an efficient and successful documentation methodology is the application of a coherent system of standards and well-defined working procedures, to which the Department of Archaeology, Architectural Conservation and Cultural Tourism is committed and

has established based on international standards and best practices.<sup>2</sup>

### Development projects that will reshape the landscape

The records about a heritage area also allow its significance to be determined and its value and importance classified according to specific criteria, such as architectural and/or historic value, national or local significance, integrity and authenticity. When the value is high the asset is untouchable, must be restored and monitored, whereas a medium to low value may impact the existence of the asset, i.e. the asset must be fully documented and recorded and, if it stands in the way of a relevant infrastructure project, it may then be dismantled. The classification of heritage areas is relevant for the master plan, supports informed decisions at municipal



Aerial view of Doha in 1956.

© Courtesy Centre of GIS-Qatar



Satellite image of Doha in 2013 (25°16'33.42" N and 51°30'26.26" E. Google Earth).

© NASA, 2014 DigitalGlobe

level for strategic urban planning in respect of cultural heritage and allows an integrated approach during the planning and design phase for infrastructure projects.

Before the present urban development the landscape of the Qatari peninsula was unchanged by human action, unlike the case in many countries worldwide. There was no major agricultural use of the land nor a highly developed web of streets or railway lines. Therefore many archaeological remains and heritage assets are still undisturbed.

This is a unique situation that is also a challenge for archaeologists working in the country, as many large-scale projects are under way simultaneously. Notably, such major projects as the Hamad International Airport (2,200 ha), the New Port Project (2,650 ha), the Qatar Rail Development

Program (17,000,000 m<sup>3</sup> of excavation), the Qatar Local Roads and Drainage Programme, the Inner Doha Re-sewerage Implementation Strategy (IDRIS), the Qatar–Bahrain Causeway Project, the Sharq Crossing Project, the Qatar 2022 Supreme Committee Projects for Qatar's 2022 FIFA World Cup™, Lusail City (3,800 ha), will reshape the landscape and have an impact on the still existing heritage areas.

The best method for documenting this impact is pre-development research based on desktop and field surveys. The Qatari peninsula attracted foreign researchers who started extensive surveys as early as the 1950s. While those first surveys mainly discovered the archaeological areas with extensive remains, others are still not recorded. In cooperation and on behalf of the QMA, the major foreign projects

have, over the last five years, undertaken a systematic survey of the whole peninsula. The respective projects are the Qatar Islamic Archaeology and Heritage Project (QIAH) of the University of Copenhagen (Denmark); the Qatar National Historic Environment Record (QNHER) project of Birmingham University (United Kingdom) and the South Qatar Survey Project (SQSP) of the German Archaeological Institute (DAI).

### QMA's No Objection Certificate

The collected data have been archived in the QNHER database, which harbours over 5,000 records of all kinds of archaeological or heritage areas. Despite this impressive amount of data, several areas of the country still need to be surveyed in detail. As already mentioned, the majority of the heritage

## Notes

<sup>1</sup> The latest developments concerning the identification, documentation and protection of Modern Heritage suggest also for Qatar a modification of this date in order to include some examples of the Early Modern and Modern architecture otherwise in danger of disappearance. The fact that the Sydney Opera House that was officially opened in 1973 was inscribed on the World Heritage List underlines this necessity. A joint programme for the identification, documentation and promotion of the built heritage of the 19th and 20th centuries has been launched by the UNESCO World Heritage Centre, ICOMOS (International Council on Monuments and Sites) and DOCOMOMO (Working Party for the Documentation and Conservation of buildings, sites and neighbourhoods of the Modern Movement) seeking to protect Modern Heritage. For more information about the Programme on Modern Heritage see <http://whc.unesco.org/en/modernheritage/> and <http://www.docomomo.com/index.php/>

<sup>2</sup> The department has worked out several guidelines and forms to carry out the mapping of urban fabric, standing building survey, building condition survey, excavations, artefacts and ecofacts documentation procedures, classification of heritage areas, etc.. The majority of the guidelines and related forms are bilingual, Arabic and English. The implementation of the guidelines is an ongoing process that is adapted according to the changing needs of the department.



Helicopter view of the heart of Doha. In the foreground are the quarters of Al Asmkah and Msheireb and in the background the modern Diplomatic Area.

© Timothy Makower

areas are not yet under legal protection and their footprints are not available in the system of the Centre for GIS, the country's Geographic Information Centre. Therefore real-estate companies, as well as the local authorities who run the country's major urban development projects, still have to collect this information from the QMA's Department for Archaeology, Architectural Conservation and Cultural Tourism through the so-called No Objection Certificate (NOC).

A building or development permit procedure of a real-estate project begins in the design phase. The application letter handed in at the department must include detailed maps and design sketches of the project. Through a preliminary desk-based assessment and the results of earlier surveys, the project's effect on known heritage areas will be analysed. In a second step the area, if not yet surveyed, will be surveyed by members of the department

or in cooperation with one of the projects mentioned above. The results of the survey and the mitigation suggestions for individual heritage areas will be discussed within the department and then presented to the developer. In certain cases the developer has to change the design of the project according to the results of the survey and the mitigation decision by the department.

The NOC process has clear advantages for both the developer and the Department of Archaeology, Architectural Conservation and Cultural Tourism. While the companies may, already in the design phase, be informed about the impact their project is going to cause, they have the opportunity to include heritage areas in their design or to change their design according to the existing heritage areas. The procedure clearly helps to avoid long delays in the development. For its part, the department

benefits from this procedure by being incited to undertake systematic soundings, excavations and detailed documentation of the heritage areas.

### **'Mapping Old Doha' project**

The old city of Doha is not excluded from the transformation and development process, and the buildings constructed in the first half of the last century as well as the Early Modern ones (built in the 1960s and 1970s) are threatened.

The mapping of the old city of Doha provides an example of survey and documentation in an urban context. Based on a previous workshop on 'Mapping Living Heritage', held in October 2012, the Department of Archaeology, Architectural Conservation and Cultural Tourism picked up the baton and has organized a further systematic data collection of the old urban fabric in the heart of Doha. The first phase

of the 'Mapping Old Doha' project was carried out in cooperation with the University College London Qatar (UCL Q), the Ministry of Municipality & Urban Planning (MMUP), Msheireb Properties, the Qatar Faculty of Islamic Studies (QFIS), Qatar University (QU) and Carnegie Mellon University.

The aim of 'Mapping Old Doha' is to record in a consistent and complete way the heritage assets in the core of the old city, starting with two central quarters (Al Asmakh and Al Najada). Each building within the selected areas has been documented on a form following a series of criteria regarding building type, use and structural condition. Three main types were distinguished:

- Traditional Building With Courtyard and Arcades or Without Arcades (mainly dating back to the first half of the 20th century);



Members of the Department of Archaeology during a survey.

© Kh. Yassin/Qatar Museums Authority

- Early Modern Building (1950s to 1970s);
- Modern Building (after the 1970s).

In addition, the exact location of each building, the interior features of the traditional buildings and all decorative elements were recorded.

The textual documentation on the ground is completed by aerial marked-up

photos and plans, and images of each building and its attributes. The collected data are entered in a GIS-based database, and the evaluation of the recorded data has already provided first results that became the framework for informed decisions about interpretation, conservation and rehabilitation/reuse, and management of the heritage assets in the old city of Doha. Moreover, the data are available for all stakeholders thus making possible a good coordination of strategies and plans in

terms of restoration, demolition and a new architectural approach, and the new data will stimulate informed decision-making in the framework of sustainable urban development that takes into account the still existing cultural and historical components that nourish the collective memory of the city and the country. ☺

**The Historic Centre of Macao** was inscribed on the World Heritage List at the 29<sup>th</sup> Session of the World Heritage Committee in July 2005.

**The Historic Centre of Macao** is the product of East-West cultural exchange, constituting the most unique blend of cultural heritage existing in China's historic cities. It is a living representation of the city's historic settlement, encompassing architectural legacies interwoven in the midst of the original urban fabric. Together with Macao's traditional Chinese architecture, it stands witness to successful East-West cultural pluralism and architectural traditions.

# Macao World Heritage

# Joint Qatari- German project

## Exploration and visualization of cultural heritage in south Qatar

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Cairn of large size and a high amount of collapsed building material.

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The South Qatar Survey Project (SQSP) is conceived as interdisciplinary research cooperation between the Deutsches Archäologisches Institut (DAI, Berlin) and the Qatar Museums Authority (QMA). The joint project was initiated with the aim of undertaking archaeological surveys and excavations in Qatar and to train Qatari and German students in archaeological fieldwork in Qatar. Additionally, it is conceptualized to further education, training and capacity-building and to improve the skills of scholars, services and logistical initiatives. The SQSP concerns all regions south of the road connecting Doha and Dukhan. Since it was launched in 2012, two field campaigns (2012, 2013) have been successfully carried out.

During these campaigns several aims were set for the investigation, combining the rescue documentation of sites that are imminently endangered by construction works (such as railway lines, buildings, highways) and research on cultural heritage, which is subdivided into three categories: the documentation of landscapes in south Qatar and their heritage potential; research in the Neolithic site of Asaila; and a state-of-the-art rescue documentation of the endangered site of Umm el-Houl.

### Landscapes of south Qatar and their heritage potential

Despite the fact that almost the whole Qatar peninsula is a flat limestone plateau, different landscapes can be distinguished. Some of these have already been visited, and first impressions of the site settings and their remains allow preliminary insights into the settlement history of southern Qatar.

South-western Qatar comprises the coastal area west of the Dukhan Ridge south of Umm Bab. Three site settings can be identified in this landscape: the first is the coastal strip within a beach ridge sequence, as documented near Al Sirriya. Several ridges visible on the surface were sampled in order to get a chronology of the local coastlines during the Middle and Late Holocene period. The investigations have shown that the sea level reached its Holocene high stand during the 5th and 4th millennia BC. At that period, sites on the western plateaus of the Dukhan Ridge overlooking the sea may have been just off the shoreline. Here, sites of the Middle Neolithic are situated (Figure 1). They are characterized by typical stone tool assemblages (Figure 2), remains of fireplaces, shell middens and some pottery fragments whose origin may be traced to southern Mesopotamia. The third site setting is also on these plateaus, but directed inland.

The coastal sites show a large diversity of site types, which span several millennia. The oldest sites documented are of the Middle Neolithic Period. Further, pre-Islamic sites remain unidentified to date and several burial cairns may date to the 1st millennium BC or the 1st millennium AD. Neatly visible building remains are preserved in Jaww al Nasla, where the ruins of a khan with a square courtyard and rows of rooms on three sides, as well as some additional one-room buildings, do occur (Figure 3). Bedouin temporary camp sites (Figure 4) and graves complete the range of archaeological features.

The earliest sites recorded so far are located south-east of Dukhan, surrounding a former large inland *sabkha* (salt flat) at Asaila. Along the edges of this basin, natural flint scatters and flint knapping sites of the Early Neolithic were found. In this *sabkha* basin the current ground water level is at a depth of only about 1.40 m. The Asaila well just to the East was abandoned some decades ago, presumably when the ground water level dropped due to the increasing salinization of ground water, after the installation of water pumps in the 1970s (Figure 5). Ruins of a fortress on a rocky hill just beside the well may show not only the importance of the well, but also the fact that demands on it were contested (Figure 6).



Fig. 1: Survey of a Middle Neolithic site with a scatter of human habitation remains.

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Fig. 2: Collection of Neolithic lithic tools made by knapping and grinding techniques.

© C.Gerber, Orient-Abteilung DAI



Fig. 3: Jaww al Nasla: courtyard building complex that might be interpreted as a Khan.

© C.Gerber, Orient-Abteilung DAI



Fig. 4: Remains of temporary bedouin camp site with large stones that have served to fix the tent.

© C.Gerber, Orient-Abteilung DAI



Fig. 5: Residues of freshwater pumps constructed with concrete.

© C.Gerber, Orient-Abteilung DAI



Fig. 7: Round cairns made from stones, partly robbed.

© C.Gerber, Orient-Abteilung DAI



Fig. 8: *Riyad* with bushes and trees serve as important landmarks in the desert.

© C.Gerber, Orient-Abteilung DAI

The natural setting offers a place where rainwater collected in wadi depressions, forming natural reservoirs, rather than a groundwater spring. This water is still available in summer, although the surface is dried out by the hostile desert climate. Thus, Asaila was always a preferred site. This is also reflected by many cairn fields and cairn clusters in the surrounding area, which may indicate settlement continuity through the millennia. (Figure 7) Each of these fields and clusters shows particular features either in their building layout or in the – very poorly represented – finds such as potsherds. A date for the single clusters can only be suggested after their archaeological excavation.

A consequence of the limestone structure of the peninsula is the ubiquitous presence of shallow depressions known as *riyad* (singular *rawdah*) (Figure 8). Central Qatar in particular is littered with these fertile depressions where rainwater collects and is stored in the soil for several months. *Riyad* are resilient landscape features with indications of a longer occupational history, as almost all *riyad* visited show traces of occupation. Thus, the *rawdah* is not only preferred by Bedouins because of the presence of soil humidity and shady trees, but also for natural shelter against the strong winds. In this area two different site settings were documented, located either within or at the edge of the shallow depressions, or outside them on the flat surface. Pottery scatters occur over larger areas and are characterized by numerous potsherds of different materials. All the sherds retrieved so far belong to the (late) Islamic period. Stone structures belong almost exclusively to temporary (Bedouin) sites including the so-called field mosques (Figure 9). Larger *riyad* were also used as settling centres, as modern settlements show. Wells were deepened into the limestone underground in order to gain access to fresh water throughout the year. Some of the wells have depths of more than 50 m. All wells visited fell dry in the recent past, and only pump stations supply water for the cultivation of plants.

The landscape of the eastern coast of Qatar, south of Mesaieed/Umm Sa'id, is characterized by large *sabkhas* and barchan sand dunes crossed by limestone ridges. This setting is hostile to human settlement, as confirmed by the very few sherds retrieved, which indicates an almost complete lack of settlement in recent centuries. Several



Fig. 6: Well preserved double row stone walls outlining the ruins of a fortress nearby Asaila.

© C. Gerber, Orient-Abteilung DAI

ancient shorelines could be detected and documented. In this area only small Neolithic sites with flint artefacts are known so far. The new geomorphological information gathered allows a tentative connection between mid-Holocene sites and corresponding shorelines. Thus, the Eastern coast was exploited during the Holocene sea level high stand in analogy to the western coast.

### Asaila: traces of Early Neolithic inhabitants

Tiny pieces of worked flint found in the deserts of southern Qatar reveal the history of Eastern Arabia about 8,000 years ago.

Blades struck from bidirectional naviform cores (Figure 10) by soft hammer percussion and facially-shaped elongated arrowheads closely resemble artefact assemblages of the Pre-Pottery Neolithic B period (PPNB) in the southern Levant. Here, in the western wing of the Fertile Crescent, the introduction of domesticated sheep, goats and cattle 8,500 years ago supplemented hunting as the major economic strategy to supply meat for food. Keeping domesticated animals also made it possible to populate places along the western fringes of the northern Arabian deserts that were formerly uninhabitable. Ameliorating climatic conditions around 8,000 years ago meant that mobile pastoralists started roaming the now well-watered areas in the north of the Arabian Peninsula and finally arrived in Qatar. They established an economy based on the herding of sheep, goats and cattle that lasted for millennia.

The archaeological evidence for the onset of the Neolithic in Arabia still remains sparse. Few archaeological sites that relate to the dispersal of Neolithic pastoralists are known in the northern and eastern parts of Saudi Arabia. But the most compelling evidence comes from flint artefact assemblages found in Qatar. As early as 1967 flint artefacts were described by Holger Kapel, a Danish archaeologist, that show technological and typological reminiscences to southern Levantine PPNB inventories. He termed these industries Qatar-B, following a locally established chronological scheme. Between 1976 and 1982, the French Archaeological Mission to Qatar investigated Qatar-B sites at the northern fringe of the Asaila depression in the south-west of the peninsula. Research foci were the technological and typological characterization of the flint artefact assemblages. But attempts to place the archaeological sites into their natural and social environment remained limited.

In recent decades a major scientific debate arose about the origin of the Neolithic economy in Arabia. Most discussions centred on the relevance of the Qatar-B assemblages. Were they the

material evidence for Neolithic pastoralists who had their origin in the southern Levant? Unfortunately, the exact locations of the Qatar-B sites described by the Danish and French expeditions remained unidentified in the field, thus preventing any new investigations with an advanced methodological spectrum, but also effective protection of this unique cultural heritage.

Thanks to the guidance of Qatari archaeologists, a first blade-dominated site with an artefact assemblage reminiscent of Qatar-B was documented by the SQSP at the north-western edge of the Asaila depression at the base of a low cliff in autumn 2012. The artefacts found on this occasion closely resembled the lithic material previously described from the region (Figures 11 and 12). Subsequent visits led to the discovery and recording of a total of eleven Qatar-B sites that form an almost uninterrupted flint scatter in a spatially restricted area. The location of site Acila 36, the original place excavated by the French expedition, has been identified on the basis of an old published photograph and two benchmarks that still remained at the site.

All of these Qatar-B related sites are characterized by the exclusive occurrence of bidirectional naviform blade cores, core preparation flakes and blades. The repeated observation of crested pieces indicates a decent core preparation strategy. There is a relative predominance of cores over blades, the latter obviously taken to other places by Neolithic people. In addition, tools are very rare. A single fragment of a unifacially chipped blade was documented that resembles typologically the medial part of a Levantine PPNB Amuq point (Figure 13). This piece further strengthens the argument for a Levantine connection to the Asaila industry.

A comparable industry was recognized on top of a low terrace encircling a small depression at the south-western edge

of the Asaila depression. Over an area of approximately 10 m x 10 m, numerous blades, bidirectional naviform blade cores, and crested pieces were documented. The raw material spectrum of this place is homogeneous, with a clear selection towards high-quality flint. Two distinct kinds of raw material have been used for cores: flint nodules with almost tabular characteristics and tabular pieces of natural flint shatter, in accordance with the raw material known from the sites at the north-

western edge of the Asaila depression. Over an area of approximately 10 m x 10 m, numerous blades, bidirectional naviform blade cores, and crested pieces were documented. The raw material spectrum of this place is homogeneous, with a clear selection towards high-quality flint. Two distinct kinds of raw material have been used for cores: flint nodules with almost tabular characteristics and tabular pieces of natural flint shatter, in accordance with the raw material known from the sites at the north-

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Fig. 9: Stone outlining of a field mosque with the mihrab oriented towards Mekka.  
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western edge of the Asaila depression. With the discovery of this site, the presence of a Qatar-B industry was also proven at the southern part of the Asaila depression, suggesting the presence of additional Qatar-B sites in the area.

To date, all documented early Neolithic Qatar-B sites in the Asaila region represent flint workshops with a clear focus on the production of blades. In contrast, evidence for domestic activities or architectural remains that would indicate inhabited sites are conspicuously absent. Therefore the corresponding settlements have to be sought elsewhere.

The (re)discovery of early Neolithic Qatar-B sites in south Qatar provides a unique opportunity to study the origin of the Neolithic in the eastern Arabian Peninsula in the light of recent scientific discourse. Current field investigations consider both

the site was excluded from the area of construction of sediment basins, as recent satellite images show. Since December 2012 the site has been visited by the SQSP team. It is located on a beach ridge running in NNE–SSW direction (Figure 14). The beach ridge is at the coast behind a mangrove swamp, separated from the mainland by a *sabkha*. It consists of the remains of a fortress and a small settlement. Plans of both extended larger buildings with courtyards and many two-room houses are evident on the surface (Figure 15). Walls and construction residues are preserved with a height of up to 1.0–1.5 m. Coins delivered to Qatar Museum Authority and studied by the SQSP team date the settlement to the end of the 19th/beginning of 20th centuries (perhaps late 1890s). This date marks the site as being the only Late Colonial settlement in southern Qatar.

### Rescue documentation on the endangered site of Umm al-Houl

The site of Umm al-Houl on Qatar's south-east coast, south of Al Wakra, being well known to local people before, was first recorded during the New Port Survey as site QNHER #235#. As a result of this rescue survey,



Fig. 10: Bidirectional naviform blade core from Neolithic Asaila.

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Fig. 11: Lithic cortex tools with retouched edges, probably used as scrapers.

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Fig. 12: Collection of Asaila lithic artefacts, dominated by Qatar-B blade industry.

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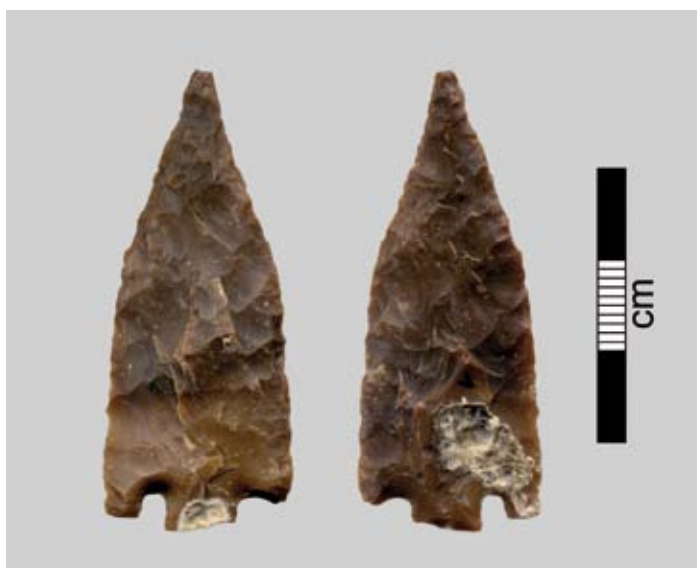


Fig. 13: Unifacially retouched elongated arrowhead, comparable to PPNB Amuq points.

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Fig. 14: Preserved ruins of large courtyard houses at the site of Umm al-Houl.

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Fig. 15: Layout of rectangular rooms surrounding the inner courtyards.

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Fig. 16: Wall remains of two-room buildings from the earlier settlement phase.

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Due to the various building materials visible on the surface, it cannot be excluded that the site had more than one building phase. While parts of the site were flooded by leaking water basins nearby, the water retreat in September 2013 uncovered several new structures. These consist of architectural units made from elaborated walls of dressed limestone (Figure 16). The most spectacular structure is a 20 m long wall ending at a 10 m diameter round tower. The structures indicate a formerly unknown defensive enclosure to the west of the settlement that presumably represents an earlier phase of the settlement (Figure 17). This earlier settlement with a defensive wall and round towers resembles the structures in Zubarah in north-west Qatar. Thus, Umm al-Houl has a much higher potential than expected and the importance of this site for the history and archaeology of Qatar cannot be overestimated.

With the aim of gaining effective results by non-destructive methods, both a geophysical survey of the complete area and aerial ortho-photography in selected areas are planned. The initial step in Umm al-Houl will be to set up a 40 m grid to provide the general positioning of the site in the global and Qatari coordinates system. A grid system is crucial for archaeological work in Umm al-Houl as it allows the geophysicists to follow fixed grid lines and allows ortho-photography, 3D modelling and GIS-based documentation. The geophysical survey will cover the visible and invisible architectural structures on the archaeological site. Aerial imaging will be combined with survey measurement points, so the images can be geo-referenced and joined. They will record the actual state of preservation before any archaeological activities and allow documentation of the existing state of the ruins, fully correct in terms of shape and masonry detail, to be drawn up.

The archaeological investigations, excavation, conservation and heritage presentation of Umm al-Houl will be prepared on the basis of this combination of documentation data.

### Visualization of archaeology: *Crossing Deserts and Seas*

In terms of presentation and visualization of Arabia's past, Qatar was chosen to stage an exhibition combining the supraregional cultural heritage. The DAI, as a cooperation partner of the QMA, proposes the concept of an exhibition in Doha with the preliminary title *Crossing Deserts and Seas – Culture and Commerce along the Arabian Incense Route*. The display is meant to demonstrate that – like Egypt and Mesopotamia – the Arabian Peninsula was the home of early



Fig. 17: Part of the outer city wall measuring more than 100m and connecting the city wall towers.

© C. Gerber, Orient-Abteilung DAI

advanced civilizations and was connected in a wide-ranging network.

The exhibition in Doha will show an international public that Qatar has consciously assumed this cultural heritage of ancient Arabia and undertakes the responsibility for the preservation and presentation of these cultural roots of the Arabian Peninsula. It is a representation of the ancient cultures that attained prosperity through trade, taking into account archaeological material and the preserved written evidence, and includes classical and Islamic sources. Trade history, trading goods and methods, such as the organization of caravan and maritime trade, are also important components of the exhibition. Thereby, for example, the different aromatic substances should be presented in the light of their exploitation, processing, storage, marketing and exchange as well as their use in the sacred, magic and medicinal context and in everyday life.

One important theme in the exhibition concerns the mobility of population groups in the course of trading activities in ancient Arabia. This may pertain to a specific settlement policy for economic interest or to the migration to East Africa in the 1st millennium BC. War and conquest in order to secure trade interests leads to the movement of population groups, the fusion of cultures and the intermingling of people.

The geographical focus of the exhibition is on the Arabian Peninsula, with those areas of the ancient caravan kingdoms that profited from trade. Besides South Arabia, other trade centres of that time, such as Qaryat al-Faw, Dedan and Lihyan, Tayma and Petra, are also considered. The main time frame of the exhibition extends from the end of the 2nd millennium BC, with the expansion of long-distance trade on the Arabian Peninsula, until the 4th century AD, with the gradual decline of the ancient caravan cultures. The rise and fall of these societies were closely connected with trade along the Incense Route. The

last part of the exhibition focuses on the transition from pre-Islamic cultures and societies, as well as trade mechanisms, to Islamic times.

This exceptional exhibition concept differs from conventional forms of presentation. Combining the archaeological and historical contexts, it will use acoustical and visual effects, as well as state-of-the-art techniques such as 3D visualization to optimize the display. The 3D sphere is designed so that the exhibits are more distinct and concise in their impact and, thus, in their intended statement. Visitors should feel just as if they were there and engage with all their senses in the exhibits.

In view of the political upheavals in some Arabian countries, such an exhibition can send a positive signal by highlighting common cultural roots and the impressive economic importance of this region that was already evident in ancient times. ☉

# Slovakia and World Heritage



Since its accession to the Convention concerning the Protection of the World Cultural and Natural Heritage, the Slovak Republic has managed to:

- successfully nominate five cultural and two natural sites into the mosaic of the World Heritage;
- improve the protection of its World Heritage sites through the implementation of regular monitoring, establishment of site management groups and increased financial support of the government;
- engage significantly in the field of international regional cooperation and actively participate in addressing common regional problems as well as global issues (e. g. through an International Training Workshop on the Preparation of Section II of Periodic Reports which took place in Levoča, 2005 and the European Meeting for Improvement of Tourism and Visitor Management Skills in Bardejov in 2010); and
- focus on transboundary cooperation with the Visegrad countries (e. g. through the Summer School on Management of UNESCO World Heritage Cultural Sites and the Heritage Forum of Central Europe)



**Bardejov** town's urban layout, with a regular division of streets around a spacious market square, is evidence that there was European civilization there from the 13th and 14th centuries. Medieval burghers' houses surround three sides of the square showing off their well-developed culture. On the fourth side of the square stands the Roman Catholic Church of St. Giles, a three-naved Gothic basilica with a precious collection of 11 Late-Gothic altars. The Renaissance Town Hall occupies the centre of the square. The town is encircled by a fortification system. Outside the fortifications lies a small well-preserved Jewish suburb built around a fine 18th-century synagogue.





Church of St. Francis of Assisi, Hervartov.

The **Wooden Churches in the Slovak Part of the Carpathian Mountain Area** provide an outstanding example of the synthesis of two great cultures – Byzantine East and Latin West. From the original number of almost 300 sacred wooden buildings, only about fifty of them have been preserved in Slovakia because of natural disasters and socio-political changes. The ensemble of eight wooden churches inscribed on the World Heritage List is an excellent example of 16th to 18th century European religious architecture. The churches are adapted to their geographical and cultural context and express the symbiosis of Christianity and folk architecture through the professional mastery of their creators.

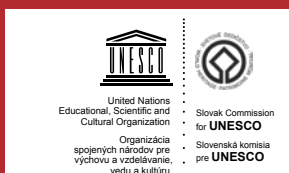


St. Nicholas Church, Ruská Bystrá, iconostasis.



Ochtinská Aragonite Cave.

**Ochtinská Aragonite Cave** belongs to the World Heritage site Caves of Aggtelek Karst and Slovak Karst. It is distinguished by its snow-white aragonite formations resembling bushes, spirals or needles and contrasting sharply with the blue-grey marble from which the cave is created. Ochtinská Aragonite Cave constitutes a unique karst phenomenon of global significance.



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# Chiapas

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# *Most recent underground discoveries in the Imperial Citadel of Thang Long in Viet Nam*

## *A Cultural World Heritage site*

The Thang Long Imperial Citadel of Viet Nam is a World Heritage site of unique and immense historical, cultural and scientific significance, as it introduces the visitor to the millennial traditions of Thang Long in Hanoi.

Despite the very large volume of artefacts that have already been unearthed, there remains shuge potential for archaeological investigation. During the 2011-2013 excavations of the site around the Kinh Thien Palace and the South Gate, for example, Thang Long-



Hanoi Heritage Conservation Centre and the Institute of Archaeology found various original archaeological vestiges including thousands of household ceramic utensils and architectural materials that date back to the Dai La period and subsequent dynasties such as the Ly, Tran, Early Le, Restored Le and Nguyen.

The discoveries have revealed overlapping and alternating architectural vestiges of different historical periods.

Vestiges of the Dinh–Anterior Le dynasties and the Dai La period feature many greyish tiles and bricks as well as pottery items made in Duong Xa.



One remarkable discovery during the excavation was the colossal drainage system, which runs in the east-west and north-south directions, measuring 2 metres high and 2 metres wide. The system was built with square bricks and reinforced on both sides with lines of wooden poles. This is the most substantial brick ‘water way’ of the Citadel under the Ly dynasty and is arguably unmatched by any other archaeological site in Viet Nam.

In the Tran layer, archaeologists have found the remains of three structures whose foundations were made up of debris, with the vestiges of encircling

walls and flowerbeds together with a huge sewer running parallel with the Ly dynasty’s water way.

Excavations have also, to a certain extent, shed light on the layers of bricks and paving of the Dragon Court (known as Long Tri or Dan Tri) dating back to such dynasties as the Ly, Tran, Early Le (reddish and ornamented bricks) and Restored Le (dark grey bricks).

These discoveries have allowed for a clearer identification of the royal buildings under the Ly and Tran dynasties, contributing to a more accurate understanding of the main axis of the Thang Long Imperial Citadel.



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Central Sector of the Imperial Citadel  
of Thang Long - Hanoi  
Inscribed on the World Heritage List in 2010






  
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### The ARC-WH provides:

- 1) Technical assistance to improve Arab States' capacity to implement the World Heritage Convention;
- 2) Logistic and financial support to carry out national, sub-regional and regional activities in conservation and management;
- 3) Information on the World Heritage Convention and its application through the upkeep of a website in Arabic, English and French as well as the preparation, translation and publication of relevant knowledge tools and literature.

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The Great Barrier Reef (Australia).

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### **In Focus: World Heritage and our protected planet**

This year the IUCN World Parks Congress (WPC2014) will be held in Sydney (Australia) from 12 to 19 November 2014, and this issue of *World Heritage* will explore the close ties between World Heritage and Protected Areas.

WPC2014 is a landmark global forum on Protected Areas. Building on the theme Parks, People, Planet: Inspiring Solutions, it will present, discuss and create original approaches for conservation and development, helping to address the gap in the conservation and sustainable development agenda. World

Heritage will be present as a cross-cutting theme across the programme of WPC2014.

This issue will explore the importance of the World Heritage Convention in safeguarding our planet, endangered and threatened species and wilderness areas. It will also highlight efforts to address important challenges, such as the unprecedented elephant poaching crisis, as well as demonstrate the critical role of local communities and indigenous people in protecting these areas.

The new sites inscribed on the World Heritage List at the 38th session of the World Heritage Committee, held in Doha (Qatar) in June 2014, will also be presented. 



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