Data standards, documentation and responses to cultural heritage management in Qatar

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Abstract: Qatar, like several other countries in the Gulf region, is experiencing very rapid and extensive urban development that constitutes a serious challenge for the institutions and entities in charge of cultural heritage management at a national level. This paper illustrates procedures, tools and solutions that are being developed in Qatar to effectively undertake the tasks of documentation and protection of cultural heritage in a rapidly changing environment.

In Qatar, cultural heritage management operates on several different levels, ranging from data collection, site assessment and site monitoring to processing planning applications, conservation and public outreach. At each of these levels, teams of specialists collect distinct sets of information about Qatar’s cultural heritage and as a whole these form a network of highly interconnected data.

It is clear that this complexity of interrelated information requires careful management. The Qatar Museums Authority therefore decided to develop a solution that delivers an effective and sustainable tool for heritage, conservation and cultural tourism managers, allowing them to make informed decisions, evaluate resource allocations and to perform strategic planning, all in the context of the protection and promotion of terrestrial and submerged heritage assets.

The solution is based on the latest Open Source web technologies and contains a wide array of modules suitable for each specialist area. Together these modules form a unified and integrated system covering all aspects of cultural heritage management in Qatar.

Keywords: database, documentation, open source, geographical information system, web application

Background

Qatar is a small and young State with a long history: It covers an area of 11571 km² and has been an independent State since 1971. More than 5000 heritage areas of different size and significance have been discovered so far. They range from the Neolithic period to the present time and from settlements, cemeteries or rock carvings to solitary fortifications, mosques, dwellings, ship wrecks, temporary camps, wells and find spots.

Since the 70s Qatar has seen industrial and urban development, but it is mainly in the last decade that this expansion intensified on a large scale and at an increasing rate (fig. 1). This development, associated with an increasing population, has gradually become a threat to the cultural heritage assets of the country. This state of affairs has stimulated the activities of research and protection of the tangible heritage by the local institutions as well as by foreign missions working in the country.
Since 2005 the Qatar Museums Authority (QMA) has been the government institution that develops, promotes and sustains museums, art and heritage in the State. More precisely, the Department of Archaeology, Architectural Conservation and Cultural Tourism is the authority’s section that is in charge of managing, conserving, protecting, enhancing and promoting archaeology and cultural heritage in Qatar through an integrated approach.

Within the Department responsibilities and main tasks are divided as follows:

- **Archaeology Section**: is in charge of the investigative activities (surveys, excavations), research, management of archaeological sites and artefacts & ecofacts (rescue, collection, research, conservation, exhibition, storage), mitigation procedures, site monitoring, safeguarding and education activities
- **Architectural Conservation Section**: is responsible for the mapping of Old Doha, historic buildings research, conservation, restoration and rehabilitation of standing buildings and heritage sites (mainly dating back to the last two centuries), mitigation procedures and site monitoring
- **Cultural Tourism Unit**: focuses on promotion and dissemination of Qatar’s cultural heritage sites and values at national and international level

In Qatar the legal protection of tangible cultural heritage is defined by the Antiquities Law no. 2 of 1980, by the additions and amendments in Law no. 23 of 2010 and two Emiri Decrees of 2009.

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Some relevant Antiquity Law articles define e.g. responsibilities and competent authority\(^2\) for the management of cultural heritage, or mention which types of assets are regarded as heritage as in article 1 of Law no. 2 (1980):

\[\textit{An antiquity is considered to be anything left by civilizations or left by previous generations, [...] which dates back more than forty years.}\]

In other words, cultural assets that are older than 1940 are considered “antiquity”, thus deserving protection. In addition and according to Law no. 23, applications for construction permits need to be submitted to the Qatar Museums Authority which then evaluates any potential impact or threat that any construction project may have on heritage areas above or below the ground. Following a survey by the staff of the Department of Archaeology and Architectural Conservation and in case of absence of, or no impact on, heritage assets, the Department issues a so-called No Objection Certificate (NOC).\(^3\)

Although institutional and legal frameworks do exist, they are both very recent (in comparison to many other countries)\(^4\). The enforcement of the law, precise and clear definitions of competences and the implementation of best practices in regard to applications for construction permits, mitigations procedures, restoration and conservation of heritage buildings, application of international standards, etc. still need to be further enforced, enhanced, and partially reviewed and/or redefined. In other words, the country does not have a long tradition in cultural heritage management, and the development of management strategies, best practices and standards are still being tested and need to some extent to be further finalised. This is an ongoing process which the QMA, mainly through its Archaeology and Architectural Conservation sections, is committed to. Noteworthy is also the fact that dialogue, cooperation and information exchange with other important entities and partners like the Ministry of Municipality and Urban Planning, Ministry of Environment, Ministry of Culture and various universities and institutes have been intensified in recent times and these partners have joined forces successfully.

Although these efforts and initiatives are essential and important to build a solid foundation for cultural heritage management, the reality on the ground calls for immediate action and efficiency: Qatar has been experiencing for the last five years a development boom with large construction projects everywhere in the country, and with a particular concentration in the capital Doha. Within ten months in 2013 around 130 new

\(^2\) As in the Antiquity Law no. 2 (1980), article 4. Besides the responsibilities, the same article stated that the Department of Tourism and Antiquities within the Ministry of Information was in charge of cultural heritage management. This data was amended and updated after the establishment of the Qatar Museums Authority within the Antiquity Law no. 23 (2010), article 1.

\(^3\) Antiquity Law no. 2 (1980), article 7 and amendments in Law no. 23 (2010) establish that it is not allowed to construct any buildings in the archaeological sites or taking any materials, remnants, or plants from these sites unless there is a prior written consent from the Competent Authority of Qatar Museums Authority (2010). In other words, the authorization requests of construction firms and entities to proceed with building activities in areas that can potentially contain heritage assets needs also to be approved by the Qatar Museums Authority.

\(^4\) For further data see e.g. UNESCO Database of National Cultural Heritage Laws (see [http://www.unesco.org/culture/natlaws/](http://www.unesco.org/culture/natlaws/)).
applications for construction permits have been submitted to the QMA Department. Large and major projects are e.g. Qatar Rail\(^5\) with metro lines and high speed railway layouts, renewal of all streets and roads (pavement and drainage/sewage) and the construction of completely new cities (Lusail City - 38 square kilometers,\(^6\) Doha Airport City – 10 square kilometres,\(^7\) 200.000 people) or quarters (e.g. Msheireb Downtown Doha project 31 hectares)\(^8\) (fig. 2).

![Fig. 2 – view of the heart of Doha: Old Doha structures (in the foreground) and the modern quarter of Msheireb Downtown Doha under construction in the middle (Helicopter photo, 2013, photographer: Timothy Makower).](image)

The Department of Archaeology, Architectural Conservation and Cultural Tourism faces some challenges to cope with this overwhelming development. The tasks it has to accomplish include not only a constant survey of the potentially threatened areas, and monitoring activities during the construction period, but also the management of the heritage sites and assets, the collection of data and the sharing of information at governmental level (e.g. with the Ministry of Municipality and Urban Planning, the Centre of GIS - Qatar) and at public level (e.g. private construction companies, engineering firms, architects etc.).


This state of affairs called for the development of an effective and sustainable information management system, which serves the Department of Archaeology, Architectural Conservation and Cultural Tourism as a tool for informed decision-making, resource allocation, and strategic planning to carry out initiatives for the protection and promotion of the archaeology and heritage of the country.

The systematic data collection about heritage areas within Qatar started in 2009 as a cooperation project between the University of Birmingham and the QMA, entitled the Qatar National Historic Environment Record (QNHER)\(^9\), aiming at recording field survey, remote sensing and marine geophysics project data; in other words information about archaeological sites, buildings and other elements pertaining to the national historic environment; their bibliographic references and information about investigative activities. Recently the first system was migrated to a bespoke web-based system.\(^10\)

Based on the challenges of cultural heritage management in Qatar and the need for the QMA Department to collect and manage various other datasets, including a register of artefacts and ecofacts, historic buildings and archaeological excavations, conservation activities, numerous projects and administrative procedures, the implementation of a system extension was launched. The new system, the Qatar Cultural Heritage Information Management System (QCHIMS) is designed to manage all key datasets in a central, integrated database which is easily accessible by all staff and stakeholders (fig. 3).

This ensures that information is collected in a consistent manner, can be interrogated easily and disseminated to other government agencies as required. It enables more efficient working practices by providing access to integrated information on the cultural heritage resource and its associated investigative and management works. The system will be fully bi-lingual: Arabic and English.


\(^10\) For more details see CUTTLER, et al. 2013
System design and modules

Overview
Staff working at the QMA Department of Archaeology, Architectural Conservation and Cultural Tourism has a wide array of responsibilities, ranging from data collection, site assessment and site monitoring to processing planning applications, conservation and public outreach. At each of these levels, teams of specialists collect distinct sets of information about Qatar’s cultural heritage and as a whole these form a network of highly interconnected data.

As each of these teams has distinct requirements, the system needs to reflect these through context-specific user interfaces which are designed to support specialised roles within the Department. At the same time, all of these user interfaces interact with one central API (fig. 4), database and storage facility, which ensures that all data is integrated into one platform.
Cultural Heritage Interface

The core of any cultural heritage management system is a set of accurate inventories, including:

- heritage areas (sites, historic buildings and structures such as wells)
- heritage assets (artefacts/ecofacts)
- heritage conservation
- heritage activities
- resources (images and documents)
- actors (organisations and people)

These inventories include textual, visual and spatial information and record initially at a high level the types of heritage that exist, their value, condition and location. Secondly and mainly in regard to historic buildings and structures such as wells, detailed data about their architectural components and historic framework are recorded. A section is also dedicated to the documentation of the conservation activities applied to a building (assessment of state of preservation, conservation proposal, conservation report, monitoring and threat assessment). Additionally these inventories describe which activities have taken place (including excavations, surveys, desk-based assessments, etc.), who carried them out and what documentary evidence these produced (photos, plans, excavation reports, publications, etc.). (fig. 5)
Management Interface

Whilst the cultural heritage interface is concerned with an accurate index of what heritage exists and what has happened, the management interface reflects internal processes within the Department.

Modules in this interface include:

- Translation Module
- Administration Module
- Project Module
- Communication Module

The Translation Module ensures that any information recorded in the system in one language is also translated into the other language (Arabic/English and vice versa).

The Administration Module deals with all processes that the Department is involved in, including for example the tracking of development control requests and the issuing of No Objection Certificates. Not only does this module record each step in the relevant workflow, but it also generates and archives any external communications, such as letters sent in response to enquiries. In addition, a further essential function of this module is the record of data related to the classification process of tangible heritage areas, which are systematically assigned to one out of three categories based on different values.

The Project Module is used to plan and execute project management activities relating to Heritage Areas (for example fencing, facilities and street signage) and Heritage Activities (for example education activities and workshops). In addition, it supports the management, data storage and retrieval of various projects like those organized by the Cultural Tourism Unit, by the International Relation Unit (UNESCO, Gulf Cooperation Council (GCC), Foreign Missions campaigns), the Department’s Library, etc.
Finally the communication module allows staff to discuss their planned work in relation to projects and administration and enables them to cross-reference interactively to any record within the system. (fig. 6)

**Excavation Interface**
Cultural Heritage Management is usually only concerned with recording and managing a high-level index of information. In Qatar, however, the QMA also carries out its own excavations and therefore the system will also manage detailed excavation records, including contexts registers, architecture and burial records (fig. 7)
Perspective

The conceptual design phase for all modules has already been accomplished and the implementation of the first modules has recently begun. The system extension will proceed in modular stages and its full functionality is foreseen for summer 2015. Foreign archaeological or conservation missions and research institutions who take active part in the research and rehabilitation of the cultural heritage of Qatar will be offered the full or partial use of the QCHIMS. The system will be a unique opportunity for the cultural heritage managers and researchers in Qatar to implement on a large scale best practices and standards, not only within the competent Authority but also among the other actors and stakeholders. Furthermore, it will increase and strengthen the opportunities for research since data exchange and comparison will be easily accessible to all partners. QCHIMS is designed as an effective and sustainable working tool primarily for the QMA Departments and several stakeholders and entities in the country. In a second stage the system may be further developed with the addition of a social experience module for public access of information about heritage areas, historic buildings, etc. It will bring the heritage assets closer to the public in Qatar and vice-versa.

The system modules will be also made available free of charge to entities involved in cultural heritage management in other countries.

References