

## **Master Planning for Heritage Conservation in Al Ain Oasis, UAE**

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### **Introduction**

As a high-income country located in the Middle East, the United Arab Emirates presents an unusual and fascinating case of extreme rapid development, bearing with it many implications on the cultural and natural environment. As the high-rise urban centers of Abu Dhabi and Dubai have been springing up ambitiously, the challenge of sustainable development is exacerbated by the high demand and supply for energy-consuming measures to alleviate the region's harsh climate, the availability of these measures due to the country's extreme wealth, and the infancy of an urban tradition that could question and moderate this pattern of development. Nevertheless, many initiatives are being launched to promote more sustainable alternatives that are based both on new, cutting-edge technologies, and on the age-old traditions reflected in the surviving historic environment. In Abu Dhabi, the largest of the emirates, initiatives of the latter kind are centered around the efforts of the Abu Dhabi Authority for Culture and Heritage (ADACH), aimed at the conservation of the physical environment and the promotion of local sustainable architecture. This paper focuses on the ADACH efforts for master planning of oases in the city of Al Ain, in particular the Al Ain Oasis Cultural Quarter Master Plan. This ongoing effort involves the development of a cultural quarter in the heart of Al Ain that connects the historic oasis with the modern fabric of the city, and facilitates its preservation as a local environmental resource. The challenges involved faced in both the planning and implementation of this project have already begun to provide valuable insights and lessons for spatial planning, governance and sustainable urban development in this part of the world.

### **ADACH and Preserving Al Ain's Tangible Heritage**

#### ***Abu Dhabi Emirate Cultural Heritage Management Strategy***

A confederation of semi-nomadic tribes surviving on a basic subsistence economy for much of its history until unification in 1971, the United Arab Emirates has been transformed through its new-found oil wealth into the booming economy and futuristic landscape that the world knows today. The distinction of the post-Oil UAE from the pre-Oil period is clearly marked by the country's social and physical developments, but this neither precludes the fascinating pre-Oil heritage of the region, nor the continuum and layers of history left in this transition. In fact, efforts of the young country for the study and recognition of its history started early on, most notably in Abu Dhabi Emirate, with agencies such as the Center of Documentation and Research, the Department of Antiquities and the Ain Economic Development and Tourism Promotion Authority (AAEDTPA). In 2003, these efforts took on a new, more comprehensive form, as the AAEDTPA asked for the support of UNESCO for the preparation of a plan and vision that would help preserve and promote the cultural heritage of the city of Al Ain and its surrounding area. The resulting Abu Dhabi Cultural Heritage Management Strategy, taking Al Ain as its core but covering the wider emirate, promoted an integrated approach to the management of the cultural heritage of Abu Dhabi, and recommended the establishment of a new body, the Abu Dhabi Authority for Culture and Heritage (ADACH) to implement this vision. The founding Law no. 28 of 2005, charges ADACH with a broad mandate for this end, and places it among several new Abu Dhabi government agencies that are expected to guide Abu Dhabi's ambitious future development.



Figure 1. ADACH Logo (Source: ADACH)

To deliver its mandate, ADACH has developed its Entity Strategic Plan, the current cycle covering 2010-14, which defines twelve Priority Areas and more than 90 Strategic Initiatives. For the Priority Area related to 'conserving the emirate's tangible heritage', programs are being developed for the documentation, conservation, and promotion of cultural properties, ie museum collections, historic buildings, archaeological sites and cultural landscapes, which also include the oases of Al Ain. The initiatives forrelated to the oases focus on physical master planning, to deliver some of the emirate's needed cultural and technical infrastructure through careful development, and to promote contemporary design in harmony with the historical setting and local vernacular building forms. With the awareness that such forms are also environmentally sustainable, another Priority Area is for research on sustainable architecture; these kinds of initiatives provide an opportunity to explore the wisdom of the Pre-Oil period, in which the limited environmental resources were used in an efficient way, and adapt them for contemporary building practices.

### ***World Heritage Site nomination***

The city of Al Ain, meaning 'the Spring' in Arabic, is located in the Eastern Region of Abu Dhabi Emirate, 160km from the capital city Abu Dhabi on the border with the Sultanate of Oman. It is the fourth largest city in the UAE with a population of 474,421 recorded for 2006, at a growth rate of 24.45% over five years from 2001. It is also considered the most 'authentic city' within the emirate; with a cultural legacy that dates back to the 5th millennium BC, Al Ain boasts of a diversity of cultural assets, which continue to mark the character of the city. Archaeological investigations show that Al Ain has been continuously inhabited since the Late Stone Age period, with evidence of settlement from the Neolithic, Bronze Age, Iron Age, Hellenistic, pre-Islamic and Islamic eras. Its strategic location at the foot of the Hajar Mountains afforded both the availability of water running off from the mountains, and the function of a trading post, notably for copper, with other civilizations in Mesopotamia, Persia and the Indus Valley. The 3rd millennium BC saw the creation of permanent settlements, followed by the growth of oases, where land could be farmed through the utilization of a complex water management system the falaj around which sprung defensive oasis towers and associated communities . This combination of elements formed a special landscape, reflecting an ancient culture based on the creative use of available water sources in the region.

In recognition of the importance this fragile historic landscape, ADACH has initiated the bid for inclusion of 'The Cultural Sites of Al Ain (Hafit, Hili, Bida bint Saud and Oases)' on UNESCO's list of World Heritage Sites. The cultural significance of the series of interrelated sites in Al Ain is expressed in the Statement of Outstanding Universal Value (OUV) made in the application, which describes the sites as "reminiscent of the cultures of Hili, Hafit and Umm an-Nar, set together in a landscape characterized by the oasis, the desert and the mountain, and constituting an assemblage of sites that bear witness to unique cultural traditions, which developed on the crossroads of ancient routes (...). These sites are the last remaining

representatives of a vanished culture which manifested itself via distinctive technological developments such as the ingenious falaj system, through specific architectural traditions such as the circular fortified settlement at Hili 8 and through the specific funerary traditions of Hafit and Hili Grand Tomb and Tomb N architecture, among others" (ADACH 2010b). Already inscribed on the tentative list (UNESCO 2008), the process of full inscription is underway, with the final decision scheduled for Summer 2011. Although a long and complicated process, the World Heritage Site nomination has been a key element of ADACH efforts to protect the historic environment in Al Ain, as an awareness-raising issue for other stakeholders, as a tool of persuasion to control development trends, and as a target that drives many of ADACH's heritage management activities.

### **Development and planning context of Al Ain**

In putting heritage protection efforts such as those mentioned above within their wider context, an overview of Al Ain's state of physical development reveals a particular combination of tradition and modernity. While the fast pace of rapid change brought about by the discovery of oil in the late 1960s was sweeping through coastal settlements such as Abu Dhabi and Dubai, Al Ain has preserved its strong local character and sense of place, largely due to vision of the late Sheikh Zayed Bin Sultan Al Nahyan, founder and first president of the United Arab Emirates, and the former Ruler's Representative in Al Ain. Through Sheikh Zayed's instructions, the overall structure of the city was largely kept to the human scale, and its oases protected from the urban development occurring around them. Al Ain's traditional green character was reinforced with the creation of parks and gardens, while the low-lying aspect of the city was safeguarded via a strict law that restricted building heights to 'G+4 storeys'. Protection of the oases' physical fabric and farming practices was legally guaranteed by decrees issued in 2004 and 2005, although a large part many of the traditional mudbrick structures around them were replaced by modern ones. As for the other Cultural Sites of Al Ain, these have largely retained their integrity and authenticity, their allocation as archeological sites by earlier agencies being largely respected. The modern urban fabric, although its concrete-based building forms are of a different morphology to the cultural sites, does not conflict greatly with these sites due to its relatively low scale and density. However, this has been accompanied by an expansive network of wide vehicular roads and a car-dominated transport system, which has effectively caused a sprawl-like pattern that is increasingly harder to sustain vis-à-vis the population growth projections.

In the past few years, Abu Dhabi Emirate appears to have entered a distinct new period of accelerated development. As Abu Dhabi's wealth is channelled towards strategic investments to into the development of the physical infrastructure and the creation of more wealth, new actors are being created next to existing ones, bringing with them new projects and approaches. For Al Ain, the main existing stakeholder has been Al Ain Municipality (AAM), encompassing the Town Planning, Infrastructure, Area Services and other sectors. The AAM has operated with its own established system of administration, based on the long-standing codes and traditions of the local Emirati community. At the emirate level, the Abu Dhabi Environment Agency (EAD) has been leading activities for the protection and management of the natural environment, including Environmental Impact Assessments based on federal laws of 1999. This setting has begun to be affected, however, by new emirate-wide agencies set up in the last five years, such as the Abu Dhabi Urban Planning Council (UPC), the Department of Transport (DoT), Abu Dhabi Tourism Authority (ADTA), and indeed, ADACH. As for the new projects brought about by these bodies, the UPC has produced the Plan Al Ain 2030 Urban Structure Framework Plan (winner of the 2009 ISoCaRP Award for Excellence) and is now preparing the local structure plan for the

Central District (Wasat Madinat) as the first phase of implementing Plan Al Ain 2030 at a more detailed level. The DoT has been engaged with improving the bus network in Al Ain and preparing the Surface Transport Master Plan (STMP), among other activities. As for ADACH, the initiatives related to the tangible heritage of Al Ain mentioned earlier, most notably for oasis master planning, are part of this new wave of activity, adding to them a layer for cultural heritage conservation. The first of the oasis master plans to be initiated is the Al Ain Oasis Cultural Quarter Master Plan, explained in more detail in the next section. Meanwhile, the AAM is developing new projects of its own, such as the City Image Management Strategy, and site-specific upgrading of roads and parking capacity.

The changes in actors affecting Al Ain's development are not limited to government agencies; private developers, often large companies sponsored by wealthy local families, have an increased interest in investing in Al Ain, with new shopping malls, hotels and mixed-use developments. The leisure and hospitality industry also has an interest in developing properties in Al Ain, often next to culturally significant areas. Although not in the same way as Abu Dhabi or Dubai, Al Ain has now entered its own process of accelerating urbanization. Plan Al Ain 2030 has recognized that Al Ain has reached a crucial turning point in its development, where an expanding population and a policy of large plot allocations have filled out most of the available land. Based on these constraints, the Plan proposes a framework to accommodate the large growth projected, by 'growing in a sustainable way, leveraging economic opportunities without sacrificing agricultural character' (ADUPC 2009). Some principles it advocates are densification of the fabric to avoid further sprawl into the surrounding natural environment, guiding commercial development along a transit corridor extending west along the Abu Dhabi road, and regenerating downtown Al Ain as an attractive destination for Emiratis as well as visitors from elsewhere.

As these initiatives find their place in Al Ain's planning and development framework, a striking issue that is emerging is that of inter-agency coordination, among the old and new stakeholders, as well as better internal coordination within each body. This in turn brings issues of increased transparency, a redefining of legal procedures and a general readjustment of the local culture of government to accommodate what are accepted as 'global best practices'. These could be considered as 'growing pains' of the local governance as it transitions from one administrative setting to a more complex one. The physical environment, of course, is where all of these dynamics come together, and where all aspirations are ultimately reflected in juxtaposition with each other. Even more critical is the implication of these overlapping dynamics on the historic landscape, as the potential damage to cultural sites is often irreversible, rendering ADACH's mission to protect them within this process all the more urgent and relevant.

## **Al Ain Oasis Cultural Quarter Master Plan**

### ***Significance of Al Ain Oasis***

As a central element of Abu Dhabi's cultural heritage, the oases have always been a driver for change and evolution in Al Ain, providing water and the means for human settlement. A major component of the proposed World Heritage Site, the assemblage of six oases, ie Al Ain, Mutared, Muwaiji, Hili, Qattara and Jimi Oases, forms a cultural landscape of palm groves, falaj irrigation systems, and traditional buildings such as defensive towers, dwellings and mosques. Their values are many-fold, encompassing symbolic value, as the national heritage of the UAE; cultural and architectural value, as the historic urban core of the Al Ain settlement reflecting local building traditions and lifestyles; ecological value, as important urban green areas; and finally, socio-economic value as a daily landscape embedded in city life and a featured tourism

attraction in the Emirate of Abu Dhabi, and as an agricultural resource that is today on the decline and in need of protection by managerial means (ADACH 2010a).

The oases no longer play the decisive role in the subsistence mode of Al Ain that they did in the pre-Oil era, having suffered loss in agricultural productivity and changes in crop regimes. However, they have maintained a basic level of cultivation, supported by the Municipality's Aflaj Directorate which manages irrigation by way of pumping water into the traditional falaj network (El-Masri and Yildirim 2010). They have also maintained their dense physical fabric, as the relatively moderate level of development in Al Ain has left them largely untouched, encircling rather than developing them. Various factors do continue to affect the oases' integrity and authenticity. These include a certain degree of urban encroachment along the oasis fringes; unsympathetic developments affecting their visual setting; littering within their boundaries; and natural factors of wind and water erosion acting on the fragile earthen materials of the historic buildings in and around them, coupled with human factors of previous incorrect repairs creating conjecture in original architectural styles and maintenance issues; and increased use and visitation potentially exceeding their carrying capacity. Further factors are related to the effects of deeper social and economic changes. These include physical interventions by the AAM necessitated by the new model of subsidized agriculture, such as widening of oasis pathways, and replacing their original mudbrick surface and boundary walls with concrete; the traditional knowledge of oasis management being lost to the younger generation of Emiratis, as they prefer to employ Asian expatriate workers to manage their gardens; and the abandonment of the historic buildings around them in favor of modern dwellings elsewhere in Al Ain, while the new development belts around them fail to maintain their organic connection with the rest of the city.

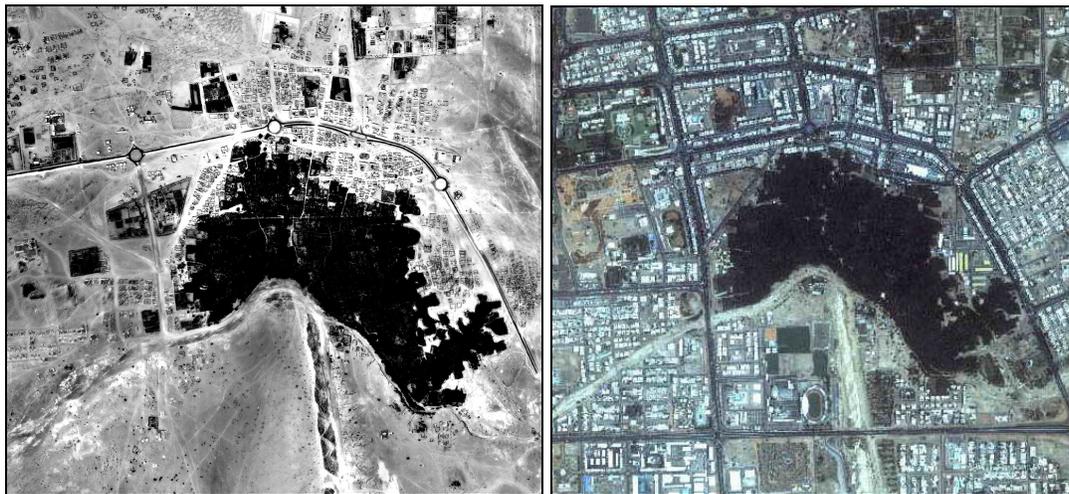


Figure 2. Aerial photograph of Al Ain Oasis taken in 1968 (Source: Blue Sky)

Figure 3. Aerial photograph of Al Ain Oasis taken c. 2002 (Source: ADACH)

Focusing specifically on Al Ain Oasis, one observes most of the factors described above to be true here as well. Located in Al Ain's Central District (Wasat Madinat), Al Ain Oasis is the largest and possibly the oldest of the oases, as the namesake of the town. It is bounded on the west, north and east sides by major urban thoroughfares, and to the south by retained *wadi* (riverbed) channels. Shaped roughly like a downward-facing crescent, the Oasis spans about 2.5 km both in an east-west and north-south direction, and consists of privately-owned plots of densely planted date palm farms, reached via public pathways. The original form and context of the Oasis can be gleaned from aerial photographs taken in 1968, showing Al Ain

before its modern development, with the traditional settlement areas around the Oasis intact. Although having disappeared from the streetscape today, these areas present both potential archaeological discoveries beneath ground level, and a vernacular urban pattern that can be taken as a point of reference in contemporary design. Unlike the traditional dwellings, several landmarks associated with the Oasis continue to exist at its interface with the city. Some of these are historic mudbrick structures, such as Murabbaa Fort and Eastern (Sultan) Fort to the east; Sheikh Zayed Palace Museum, Jahili Fort and Jahili Mosque to the west, and Naqfa Fort to the south; others are more recent structures built using modern techniques, but which maintain a historic and cultural function for Al Ain, such as the Al Ain National Museum, built by Sheikh Zayed in 1969 as the country's first museum, and the central Al Ain Souk, built again by Sheikh Zayed before 1960 in mudbrick and replaced with a new concrete structure some years later. As for the interior of the oasis, two mudbrick structures, Bin Shehail Al Mottawa Al Dhahiri House and Rashed Bin Mutawaa Al Dhahiri Mosque remain, while several small mosques rebuilt in concrete are scattered throughout.

The role of Al Ain Oasis in the city today can easily be described as having been obscured within the clutter of random development around it, and an having under-realized potential as a visitor destination and community amenity that is now in the process of being uncovered. The protection afforded by the Oasis decrees and the general understanding of plot owners' privacy has been a good foundation, but further measures are warranted to improve accessibility and ensure careful development of its potential through conservation and adaptive reuse, which forms the basis of the relevant master plan currently in preparation. Coincidentally with the UPC having begun implementation of Plan Al Ain 2030 in the city's central district, ADACH has also begun its oases master planning program with Al Ain Oasis. The combined processes of planning, conservation and heritage management for the Oasis and its urban environs will be a critical pilot case, due to its location in the heart of Al Ain, with a high concentration of established and potential urban uses, and the functional core of Al Ain's historic landscape.



Figure 4. Oasis pathway (Source: ADACH)

### ***Scope of the Master Plan***

The Al Ain Oasis Cultural Quarter Master Plan (AAOCQMP) is a major strategic initiative of ADACH aimed to revitalize the Oasis and its role within Al Ain, introduce programming that will help build the cultural infrastructure of the emirate and cater to the needs of the local community. Beyond the Oasis itself, the master plan is a vehicle for exploring questions related to reinforcing urban character and quality of life, and how cutting edge design can bring a new functional aspect to the oases while being sympathetic to the local character and historic legacy. In response to

these questions, the master plan seeks to rehabilitate the cultural and socio-economic institutions situated at the fringe of the Oasis, and include them within a comprehensive cultural interpretation approach, thus forming the Al Ain Oasis Cultural Quarter; the Oasis will not only act as a hub connecting these institutions, but will provide the natural and cultural setting for their programs, thus activating the open spaces within the Oasis (El-Masri and Yildirim 2010).

In early 2008, ADACH engaged the services of lead designers Machado Silvetti Associates, heritage interpreters Barker Langham, and other sub-consultants for sustainability, engineering, landscaping and lighting, to develop the master plan content, under the supervision of its internal departments responsible for Strategic Planning, Project Management, Conservation, Archaeology and Heritage Management. Under the overarching vision of preserving and improving Al Ain Oasis as a landmark by connecting it to the city, proposals are made for: a network of cultural venues and public spaces; reestablished visual and physical relationship with the surroundings; pedestrian activities at its edges and throughout its interior; sustainable restoration of traditional UAE farming practices such as intercropping; commercial programs in the souk to facilitate coexistence of tourist interest and resident life; and interpretive themes for water, date harvesting, local crafts and practices, to promote appreciation of the Oasis to visitors and residents (Machado and Silvetti Associates 2010). All of the above are to take place without compromising the archaeology of the oasis, and in a manner that supports the wider planning initiatives within the Central District to ensure a cohesive and vibrant urban center.

The specific building components proposed in the master plan will mainly be grouped on the eastern edge of the Oasis, namely the Eastern Cultural Campus, which will comprise: a reinvigorated National Museum that boosts ADACH's capability for cultural resource management, with the historic Sheikh Sultan (Eastern) Fort interpreted minimally to complement the Museum; a Centre for Music in the World of Islam; a Visitor Centre introducing people to the Oasis; interpreted walking trails along the pathways and canopy of the working Oasis; a boutique five star hotel; a protected area of desert landscape that will emphasize the historic and harsh relationship between the Oasis and the surrounding desert; and finally, an underground car parking to serve the. All underground construction will be subject to the constraints informed by geophysical and geotechnical survey results related to potential impact on archaeological remains.

Further developments on the perimeter of the Oasis will include: the redesign of the Al Ain Souk in a manner that is sensitive to its genius loci and functional identity and continues to accommodate the needs of buying/ selling users; re-interpreted and rehabilitated monuments including Murab'a Fort, Sheikh Zayed Palace Museum and Al Naqfa Fort; a mix of accommodation types including a 4-star hotel, B&B's, and seasonal units built in vernacular palm-based architecture; coffee shops and a low-key restaurant replacing an older, obsolete one within the Oasis; and an enhanced network of new Oasis parks, public open spaces and rehabilitated pathways linking permeating the Oasis and its edge.

Building conservation projects are also defined within the scope of the AAOCQMP, with varying approaches for intervention and reuse based on their existing condition. Such landmark buildings are important as catalysts for wider revitalization around them, and as foci to draw visitor interest to the area. Al Jahili Fort, immediately to the west of Al Ain Oasis, was already rehabilitated and opened in 2008 as an information center housing two exhibition spaces. The AAOCQMP features three types of conservation cases: for earthen, pre-Oil era buildings that have been previously restored, refurbishment of their internal spaces to accommodate new uses or enhancement of old uses, and to reinstate authentic significant architectural elements where possible (Al Murab'a Fort, Eastern (Sultan) Fort and Sheikh Zayed Palace Museum); for modern, post-Oil era buildings, rehabilitating and partially redeveloping them to enhance existing uses (Al Ain National Museum,

Al Ain Souk); and for ruinous earthen or stone buildings that exhibit an archaeological character, consolidating them in their current state and treating them as open air sites (Naqfa Fort, Bin Shehail House). Apart from the buildings themselves, ADACH is planning to rehabilitate the pathways using materials and techniques that are compatible with the Oasis character.

The AAOCQMP is a comprehensive, multi-faceted initiative, straddling many levels from urban planning through to architectural conservation. The finalization of the Concept Master Plan and its approval by the emirate's higher leadership in late 2009 has been a significant achievement for ADACH; the current phase of the Detailed Master Plan, nearing completion, has already ushered in the implementation phase, as site surveys and detail designs of some individual building components are underway. Implementation of master plan works both 'downwards' toward the construction level, and 'upwards' toward the urban governance level, as legal validation and effective support by Al Ain's other active stakeholders will enable its successful realization.

### ***Integrating heritage management within the planning process***

The efforts to bring the Al Ain Oasis Cultural Quarter Master Plan to the level of Al Ain's urban planning context, in an 'upward' direction as mentioned above, has been the occasion to integrate planning instruments with those for cultural heritage management.

The fundamental point of reference for ADACH, as well as any other agency, in implementing its vision for Al Ain is the legal mandate, ie its Establishment Law (no. 28 of 2005), that charges it with the integrated management and promotion of the cultural heritage of the Emirate of Abu Dhabi. However, this mission often overlaps with other environment-related missions that are adopted by agencies such as AAM, UPC and EAD. At this point, a clear understanding and agreement of specific role division and methods of cooperation become critical, to avoid counterproductive competition and problems of coordination. In the case of the AAOCQMP, a general acceptance has developed of ADACH's lead in the master planning of the Oasis and its immediate edge incorporating the Al Ain Oasis Cultural Quarter, and in rehabilitating historic landmarks, which are more clearly heritage-related issues. Meanwhile, other functions supporting heritage protection, such as development control, public realm design and water management emerge as the joint responsibility of ADACH, AAM, UPC and DoT, among others.

Another major area of work is related to linking plans and regulations prepared by different agencies for the same parts of the city. A highly positive step was taken jointly by ADACH and the UPC by mutually recognizing that the AAOCQMP would be 'embedded' into the Wasat Madinat Plan as the 'Al Ain Oasis Special District' overlay. This will in turn be followed by the process of joining development codes; the Development Code being prepared as part of the Wasat Madinat Plan is to incorporate a section covering the Al Ain Oasis World Heritage Site Buffer Zone Development Guidelines. This kind of collaboration is currently unfolding with the DoT's Al Ain Surface Transport Master Plan (STMP), both for the AAOCQMP and Plan Al Ain 2030. A further occasion of collaboration is expected with the upcoming Conservation Management Plan for Al Ain Oasis, to complement the AAOCQMP for the long-term, which is described in more detail in the last section.

Research and survey activities can act as a heritage management tool informing the planning process. The cultural resources of Al Ain need a continuing, long-term effort of research, investigation and interpretation to understand the full extent of the resources and their significance and inform relevant parties engaged in the Emirate's development. For Al Ain Oasis, the dissemination of the World Heritage Site Statement of Significance/ OUV to other agencies has been a means for ADACH to gather support for the WHS nomination. Surveys focused on identifying underground archaeology have been essential in validating the AAOCQMP proposals

before on-site implementation begins. ADACH has also been following the recent studies other agencies, such as the Strategic Economic Review and Tourism Sector Study (2000), and the State of the City Report issued as part of the Al Ain City Image Management Strategy (CIMS).

As a basic urban planning tool for government institutions, land acquisition has also been important for ADACH in implementing the master plan. Ownership, like in many other places, has a strong connotation in the Emirates, and it is often more difficult to intervene in private plots of Emirati families for regulation or acquisition, in comparison to public. An application was made to Abu Dhabi Executive Council, the official authority that approves ownership changes and issues associated affection plans, for transfer of the land on which the Eastern Cultural Campus components are to be developed. These mostly belonged to other public agencies, which helped the process move forward faster. In contrast, the private farm plots forming the Oasis have not been considered for acquisition, also due to the historical nature of ownership, which should be maintained as part of the site's significance. It is also worth noting that the AAOCQMP, in contrast to other master plans developed by large property investors in Abu Dhabi, has not relied on acquiring the affection plan, as the objective is to regulate and guide other stakeholders involved in the Oasis to ensure their sustainable use of it, beyond building new developments to own and operate. The UPC has recognized this, and accepted the granting of planning approval to the AAOCQMP Concept Master Plan without the standard requisite of the affection plan. In other parts of the Oasis, such as the Naqfa Ridge to the south, land acquisition has been discussed between ADACH and the UPC as a necessary measure to offset intense development pressure from a large developer that has proposed inappropriate uses on the ridge. All of these factors indicate that land ownership continues to be an important tool that should be strategically used to ensure the master plan's effective implementation.

The range of policy tools for preserving the built heritage have been formulated by Schuster et al (1997) in a sequence of most to least conservative, i.e. from ownership and operation, to regulation, incentives, property rights and information. Although the role of ownership continues to have strong presence in Al Ain, as explained above, the next tool on this scale, regulation, is also used actively; other tools are also in development, as a sign of a maturing planning context. Regulation activities of ADACH are focused on development control, administered in the form of the Preliminary Cultural Review (PCR), which forms the cultural component of the Environmental Impact Assessment (EIA) process of the EAD. As required by the UAE Federal Environment Laws no. 23 and 24 of 1999, it is mandatory for all development projects to undertake the PCR, which evaluates potential impact on cultural heritage resources, before being granted construction permits. The UPC has been developing a new emirate-wide Development Review system in recent months, which introduces a series of planning approvals, preceding the permits for project construction. In an ongoing effort to integrate pre-existing legal procedures like the PCR into the new system, ADACH is advocating the retention of the PCR as a mandatory measure to be administered early in the Development Review process so as to ensure the greatest influence on developments. The increasing frequency of large development applications by influential companies in Al Ain has been forcing ADACH and the UPC to seek options for more effective development control. This will be critical in upholding the validity of the AAOCQMP, Plan Al Ain 2030, or any plan being prepared for Al Ain. At the moment, some PCR cases are in process around the Al Ain Oasis, such as a hospitality-oriented mixed-use development on the northwest edge of the Oasis, and a new police station next to Murabba Fort. These cases are progressing in a positive direction for ADACH, as meetings have been held to discuss measures for mitigation of impact to possible underground archaeology and coordination of detailed urban design with the AAOCQMP. These preliminary achievements will only be meaningful if the coordination can be maintained through to the actual construction of the projects.

Some words on the role of urban design can be added at this point. As mentioned earlier, high quality and conscientious design can have a high impact in sensitive cultural sites like the Al Ain Oasis in terms of improving urban character and creating attractive community spaces and tourist destinations. The great amount of emphasis ADACH has placed on the delivery of an excellent design standard with the AAOCQMP, is hoped to bear fruit as other developers in the city take this standard as a model to follow, and as design guidelines prepared for the Oasis Buffer Zone are understood and adhered to. In this way, design specifications are hoped to carry the natural oasis fabric into the surrounding urban quarters, rather than assimilating the oasis into the city as a mere 'urban park'. Also, by promoting the use of sustainable materials that are compatible with the local vernacular architecture, both in the repair of historic buildings, and for contemporary architecture in the historic urban context, physical design can promote the visibility, accessibility and community appreciation of the cultural sites in Al Ain. Communications with developers through occasions like the PCR and with other public agencies through planning workshops provide opportunities to this end.

Beside physical planning or regulatory tools, the essential role of tourism as an economic driver must be acknowledged. Based on the well-documented global debate of 'tourism versus conservation', it is clear that tourism is a vital force that can help revitalize the oases, but potential pressure on carrying capacities should be monitored and managed. ADACH has aimed to integrate the oasis heritage into the tourism portfolio of Al Ain and Abu Dhabi Emirate, while taking measures to mitigate its negative impact and balance it with the wider community benefits of heritage. Al Ain Oasis and its environs are identified as the focus of tourism activity in the city; Jahili Fort has already established itself as a visitor center and cultural venue for concerts, and the ADTA has requested to place a stand within its premises. This function is set to expand many-fold with the Al Ain Oasis Cultural Quarter, and other new hospitality developments in the area. This is expected in turn to catalyze the development of an attractive, mixed-use downtown; the UPC has expressed a policy to bring back the higher-income Emirati population that had evacuated the area in earlier years. Although this may have implications for gentrification and displacement of the current lower-income Asian workers who use the downtown area actively, the urban design of the public realm envisioned in the AAOCQMP can accommodate a variety of spaces for diverse users within the same district. The strong attachment expressed by the AAM and other community members toward the Souk, which is a heterogeneous space used by Emiratis and expatriate workers alike, is a promising sign that the cultural sites around the Al Ain Oasis can maintain a certain inclusiveness while the quality of the environment is upgraded.

Environmental sustainability is a universal undercurrent of all planning policies of the agencies working for Al Ain, as it is in most places in the world today. The big main challenges to sustainability challenges known to exist in the region, ie management of decreasing water, resource-efficiency in construction, landscape maintenance costs and the car-dominated traffic system, have direct bearings on the Al Ain Oasis. The engineering proposals in the AAOCQMP have addressed these issues in accordance with sustainability standards such as LEED, and Abu Dhabi's own Estidama rating system. The environmentally sustainable qualities of the traditional, vernacular architecture are advocated by ADACH as having an important input in building design guidelines, beside the more general advocacy of protecting the historic landscape, which requires an environmentally sensitive planning approach. However, a large part of the resource issues can only be fully addressed within the wider framework of Al Ain's and the emirate's development policy. As one part of the bigger picture, ADACH proposals for improving the oasis as an agricultural resource will need to be considered with input from the municipality's Aflaj Directorate, the community of farm owners, the Al Ain Distribution Company and other utility authorities.

Perhaps the most critical tool of all in the process of master planning in Al Ain is inter-agency coordination. A great amount of effort has been made in the past two years, at levels of management ranging from agency leadership to technical staff, to develop a system of communication, consultation and information-sharing based on mutual trust and the recognition of shared interests. The fact that so many new agencies have been created in addition to existing ones, their operational legislation and the integration of this into the existing legislative framework is often not fully established, which makes it both a challenge in terms of navigating a system in flux, and an opportunity in terms of laying the foundations for some of these nascent systems. Beside the legislative aspect, the crucial role of the due application of laws and regulations has been observed during ADACH's heritage protection efforts, as problems sometimes occur in the enforcement of the PCR with both private and public developers. Progress in this area requires awareness-raising and promotion of the heritage resources among professional stakeholders and the wider community, and capacity building in terms of the ability of responsible parties to interpret heritage concerns with planning activities.

### **Future prospects and challenges**

The next steps for the AAOCQMP, following finalization of the Detailed Master Plan, will be the completion of the buffer zone design guidelines and their adoption within the context of the UPC's Wasat Madinat Plan Development Code; development of some supporting mechanisms of enforcement for the design guidelines; the implementation of the public realm projects; design and construction of individual building components, and rehabilitation of the historic buildings within the master plan area. Longer term actions will include approaching oasis plot holders for their possible cooperation in agricultural rehabilitation and interpretive schemes; and development and operation of a site management plan within the scope of the prospective World Heritage Site inscription. Site management issues are expected to be a central element of ADACH activities in Al Ain Oasis after the completion of the master plan. The Al Ain Oasis Conservation Management Plan has begun to be prepared, also integrating sections of the Detailed Master Plan related to Facility Management. This will address operational issues of implementing the AAOCQMP and maintaining the significance of the Oasis over the long term.

A key concern for the future is the sustainability of efforts, which can hopefully be achieved through a securing of financial resources, continued institutional capacity building, and coordinated action on the part of responsible agencies. In terms of financial measures, reliability on the emirate's government budget is accepted as a long-term risk, and so feasibility studies and business cases have been prepared, recommending the establishment of a revolving fund mechanism, whereby revenues generated from ADACH's cultural functions in Al Ain are redistributed for conservation, maintenance and heritage management expenses.

With continuing stakeholder collaboration and the institutionalization of agreed processes, it is hoped that the evolving local governance system will be able to address concerns of responsible and sustainable development. The Al Ain Oasis Cultural Quarter Master Plan is proving to be a significant experience as a pilot case of spatial planning, urban design and heritage management, to preserve the character of Abu Dhabi Emirate's foremost historic city for future generations.

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