Tell el-Amarna Site Management Plan 2020

Submitted to the Egyptian Ministry of Tourism and Antiquities
January 2020

Tully, G., Stevens, A., Kellawy, H., Spence, K., Kemp, B. and Reyad, F.A.

CONTENTS

LIST OF FIGURES

FOREWORD

The archaeological landscape of Egypt is rich in tombs and temples but offers little in the way of intelligible and easily accessible places where ancient Egyptians actually lived. In Tell el-Amarna (Amarna for short) we have the greater part of a major city: its public buildings, its housing neighbourhoods, the decorated tombs of its governing class and the cemeteries of the ordinary people. Having been occupied for only about twenty years it preserves unique evidence for how people lived in the past. As the creation of Pharaoh Akhenaten, it also serves as a powerful introduction to the individual and his ideas.

Archaeologists have worked at Amarna for over a century. But the place needs more than their expert attentions. Like many sites around the world, Amarna is threatened by the effects of rapid modernisation and population growth. The Site Management Plan presented here seeks to anchor Amarna more firmly to the current development policies of the Egyptian government. These emphasise the importance of co-operation amongst the varied sectors of Egyptian society, both those of the government and those constituted by local communities. The Plan seeks to guide the decision-making of the future in the hope of securing Amarna as an educational resource for generations to come.

The Plan itself has been an exercise in co-operation. We wish to thank all those who have assisted. They comprise the many officials of the Ministry of Tourism and Antiquities, in Cairo and in the inspectorates of El-Minya Province, local community leaders at Amarna and, not least, representatives of the local inhabitants including those of school age.

Barry Kemp

ACKNOWLEDGEMENTS

PART ONE – THE MANAGEMENT PLAN AND THE SIGNIFICANCE OF AMARNA

A Vision for Amarna

The Site of Amarna is of universal importance. It is the city built by the pharaoh Akhenaten in the mid-2nd millennium BC to express his revolutionary 'monotheistic' theology. Hence has a unique place in the history of ideas, as well as being associated with a new and equally revolutionary style of art, marked by exaggerated forms and sensuality. It is also a remarkably complete survival of an ancient Egyptian city, offering an unparalleled view of how people of all ranks lived and worked. The Site is unique for the range and density of surviving religious, administrative and domestic buildings, and cemeteries. These, together with the surrounding limestone cliffs, river Nile and desert plain, form a remarkably complete ancient ceremonial city in a well-preserved setting, combining built and natural landscapes. Amarna's partners will work together to safeguard this distinct area and provide an environment which cares for its archaeology in a way that acknowledges the Site's social, economic, cultural, scientific and educational potential. This will enable us to interpret and present Amarna for present and future generations of visitors, local people and the wider world, helping them better to understand and value the monuments and their landscape setting as part of the legacy of this ancient community.

Amarna in Context – History and Management

Amarna is the location of ancient *Akhetaten* – 'Horizon of the Aten' – the cult centre of the sun god Aten created by pharaoh Akhenaten. Akhetaten was occupied for c. 15–20 years in the late 2nd millennium BC (c. 1350–1335 BC), during which time it served as home to the royal court, the religious capital of Egypt and supported an estimated population of around 50,000 people. Shortly after Akhenaten's death, in the reign of his probable son Tutankhamun, the city was mostly abandoned.

The ancient territory of *Akhetaten* was defined, approximately, by at least 16 large rock-cut inscriptions that Akhenaten had cut into the limestone cliffs that form the edges of the Nile Valley. These are known today as the Boundary Stelae. They mark out a tract of land running c. 20–25km east-west and c. 13km north-south, incorporating a large bay on the east bank of the Nile River and an extensive zone of land on the west bank.

The hub of Akhetaten lay in the eastern desert bay, which reaches c. 10km from its north to south headland and nearly 5km at its broadest point. Here, Akhenaten built temples and shrines to the Aten and the royal family, palaces for the royal family, and established a new royal burial ground in a remote valley in the eastern cliffs (outside the area encompassed by the Boundary Stelae: Figure 1). The city included administrative buildings, workshops and thousands of houses. These cultic and settlement areas spread along the riverbank, running some 7km from north-to-south. In the eastern cliffs, Akhenaten's officials cut elaborately decorated rock-cut tombs, which convey unique themes of Aten worship, including the famous 'hymns to the Aten', written in Akhenaten's voice. Most of the rest of the population was buried in pit-grave cemeteries on the desert floor, or within valleys in the cliffs. Four such cemeteries have been identified, likely containing more than 10,000 graves. The low desert between the cliffs and the riverside city was also home to several isolated temple complexes, two likely tomb-workers' settlements (with their own small cemeteries), and an extensive network of ancient roadways and checkpoints.

Although parts of the east-bank city have been lost under cultivation and modern occupation, large expanses of it survive as either exposed ruins, some of which have been partially reconstructed, or buried

archaeology. The name Amarna is usually used to refer to these east-bank ruins. Around two-thirds of the land within the eastern bay is owned and managed by the Egyptian MTA, and this is 'the Site' referred to in this document. Although the Site does not encompass all of the original territory of Akhetaten, it contains its urban and ritual hub, elements key to its Outstanding Universal Value. The west bank territory of Akhetaten, which was probably used mostly for agriculture with farming villages, is today heavily settled and farmed; the only remains of Amarna period activity known to survive here are Boundary Stelae A, B and F (Figure 1). Archaeological survey has indicated that activity areas connected with Akhetaten, primarily stone quarries, also extended up to 10km north of the Amarna bay on the east bank of the river. The quarry site of Hatnub, in the high desert c. 20km south-east of Amarna, was also exploited for both limestone and alabaster in the Amarna period. For reasons of practicality, the west bank and the peripheral quarries are excluded from this plan.

Amarna has an extensive research history, with survey, epigraphic and excavation work conducted (discontinuously) at the Site since the end of the 18th century AD, most extensively over the past century (for a site bibliography see http://amarnaproject.com/pages/publications/index.shtml). Over 1000 buildings have been excavated, leaving Akhetaten by far the most intensively studied ancient Egyptian city (Kemp 2012). Excavations at Amarna have produced such iconic discoveries as the painted bust of Nefertiti, and the Amarna Letters, clay tablets documenting foreign diplomacy across the Bronze Age Mediterranean. Recent work has focused on the role of the Site in elucidating urban life in ancient Egypt. Amarna retains very significant research potential and there is little doubt that there is still much to learn from the Site.

The first step towards a Management Plan was undertaken in 1995 in the form of the *Tell el-Amarna Strategy for Conservation and Development*. This was submitted to the MTA (at the time the Supreme Council for Antiquities) and revived discussions on Amarna becoming a World Heritage Site. Since then, specific management initiatives have been pursued, through the support of British Academy funding via the Egypt Exploration Society up to 2006 and other funding sources since. These include the consolidation of the North Palace, ongoing consolidation of the Great Aten Temple and forthcoming boundary work at the Desert Altars/North City. In addition, local MTA staff work to maintain the Site and address management issues on a daily basis. The 2020 Plan is the first joint initiative between the MTA, the University of Cambridge and the Amarna Project to develop a cohesive management strategy that will enable further steps to take place in terms of applying for World Heritage status.

Many of the original conservation and development strategies from the 1995 plan have been achieved (see **Part 3**). However, the review process undertaken as part of the current Management Plan has highlighted elements that continue to provide challenges, and has facilitated the identification of new approaches which will address ongoing issues.

This Management Plan outlines the overarching strategy for the sustainable use of Amarna. Addressing access, economic development, conservation, knowledge transfer and social cohesion, the plan aims to balance the needs of both visiting and resident communities in order to promote and sustain the Outstanding Universal Value of the Site in its setting. The Aims, Policies and Actions section of the plan (**Part 5**) sets out how partner individuals and organisations will work together to achieve this aim and provide the multifaceted approach necessary to support the Site for future generations. The Management Plan will be reviewed in 2025/26 to evaluate progress and meet best practice procedures for site management.
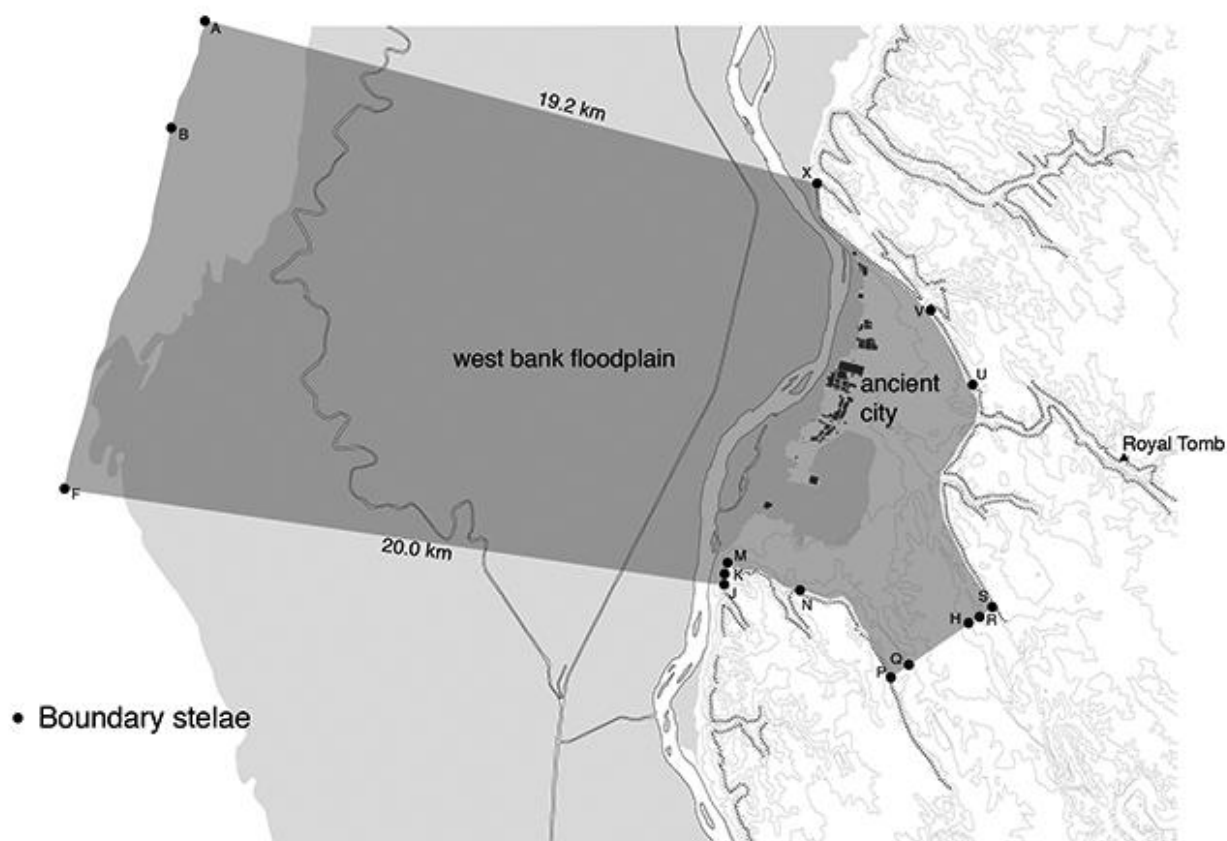
Figure 1. Area of the Site encompassed by the Boundary Stelae (Courtesy of the Amarna Project)

Preparing the Site Management Plan: An Overview

The Site and setting of Amarna are part of a dynamic landscape which has been evolving over more than three thousand years. The climate, contemporary population and tourist pressures, alongside complex land ownership, the involvement of multiple state agencies and competing land uses create complex challenges for the management of the Site.

Amarna is not a World Heritage Site. However, the Egyptian Government, through the MTA, believes that Amarna is worthy of inscription on the World Heritage List as it meets UNESCO's definition of Cultural Heritage (2017: 18) and Outstanding Universal Value (Ibid: 25, see below).

In addition to these components, Amarna demonstrates 'integrity and/or authenticity' as set out in the enhanced Nara Document (UNESCO 1994 [enhanced 2017]: 88-94) and meets criteria *i–vi* of the qualities considered to provide Outstanding Universal Value (UNESCO 2017: 25-26) as explored further in the Management Plan.

World Heritage Status, however, is largely 'conservation'-focused. The current situation at Amarna must also recognise the needs of the living population and plan for both current visitor impacts and the upturn in future visitor numbers that World Heritage Site designation would bring (Baird-Naysmith 2018: 35).

The Management Plan must, therefore, take a holistic and strategic approach to provide a framework for management which conserves the Site but acknowledges the inevitability and necessity of change (with or without WHS inscription). Appropriate management of change, to meet the needs of contemporary society while maintaining the Outstanding Universal Value of the Site, is at the core of this Management Plan. Building on UNESCO recommendations for Sustainable Use (see below), Site Management Policies have therefore been built from the core issues affecting the Site (see **Part 3**) and designed to address competing values and land uses. The Management Plan provides a tool for mitigating conflict and balancing community, economic, access, interpretation, conservation and research interests within the available means.

UNESCO definitions of Cultural Heritage and Outstanding Universal Value

II.A. 45, Article 1 - For the purposes of this Convention, the following shall be considered as **"cultural heritage";**

- monuments: architectural works, works of monumental sculpture and painting, elements or structures of an archaeological nature, inscriptions, cave dwellings and combinations of features, which are of Outstanding Universal Value from the point of view of history, art or science;

- groups of buildings: groups of separate or connected buildings which, because of their architecture, their homogeneity or their place in the landscape, are of Outstanding Universal Value from the point of view of history, art or science;

- sites: works of man or the combined works of nature and of man, and areas including archaeological sites which are of Outstanding Universal Value from the historical, aesthetic, ethnological or anthropological points of view.

II.A. 49 **Outstanding Universal Value** *means cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity.*

UNESCO definition of sustainable use:

II. F 119 - World Heritage properties may support a variety of ongoing and proposed uses that are ecologically and culturally sustainable and which may contribute to the quality of life of communities concerned. The State Party and its partners must ensure that such **sustainable use** *or any other change does not impact adversely on the Outstanding Universal Value of the property. For some properties, human use would not be appropriate. Legislations, policies and strategies affecting World Heritage properties should ensure the protection of the Outstanding Universal Value, support the wider conservation of natural and cultural heritage, and promote and encourage the active participation of the communities and stakeholders concerned with the property as necessary conditions to its sustainable protection, conservation, management and presentation.*(UNESCO 2017: 32)

Egyptian Law, Site Management and the World Heritage Convention

The main national legislation protecting archaeological sites is Law 117/1983, the Protection of Antiquities Law. The latest amendments to almost all of the 199 articles in this law took place in July 2018 (approved November 2018). Within this law, the MTA is the legal guardian of archaeological antiquities (any object movable or immovable over 100 years old, or objects or sites selected by Prime Ministerial decree and therefore public property). The recent amendments focused on increasing the severity of punishment for the theft, smuggling, destruction or illicit excavation of immovable or movable antiquities. In addition, the amendments have given the MTA the right to remove violations found at archaeological sites and set regulations for the activities on these sites. This addition is particularly significant in the light of increased illegal settlement and agricultural expansion since the 2011 Revolution.

In addition to State law, the Egyptian Government is a signatory to the World Heritage Convention (ratified 07/02/1974). Six Egyptian cultural sites and one natural site are already inscribed onto the World Heritage List. These include: Abu Mena (inscribed 1979); Ancient Thebes with its Necropolis (inscribed 1979); Historic Cairo (inscribed 1979); Memphis and its Necropolis – the Pyramid Fields from Giza to Dahshur (inscribed 1979); Nubian Monuments from Abu Simbel to Philae (inscribed 1979); the area of Saint Catherine's Monastery (inscribed 2002); and Wadi Al-Hitan (Whale Valley, inscribed 2005) (http://whc.unesco.org/en/statesparties/eg). The Egyptian Government has undertaken to identify, protect, conserve, present and transmit these World Heritage Sites to future generations (UNESCO 1972, Article 4).

At present, 33 other natural and cultural sites are on the Egyptian State's 'Tentative nomination list' (Ibid.). Amarna is yet to be added. To facilitate this process and subsequent inscription, a detailed Site Management Plan or 'Management System' is essential as stated in II.F, clauses 108 – 118 of UNESCO's Operational Guidelines for the Implementation of the World Heritage Convention (2017: 31-32).

At present, not all of Egypt's World Heritage Sites have full Site Management Plans (see only Weeks & Hetherington 2006). However, the Egyptian Government and its international partners recognise the importance of developing management frameworks as demonstrated by the multiple management documents that have been compiled for other World Heritage Sites in Egypt over the last decade (e.g. Kamel & El Sayed Hassan 2014, Sadarangani 2017a, b, Sadarangani & Jones 2017, Sadarangani & Perry 2017, Baird-Naysmith 2018, UNESCO 2012, Koufopoulos & Marina Myriantheos 2013, el-Sharief 2015, Demas & Agnew 2012-2016). MTA staff responsible for Egypt's non-World Heritage sites (of which there are many thousands, spanning prehistory to the modern period) are keen to extend this best practice to their areas of work.

The Status of the Plan

Management Plans provide an advisory policy framework for guiding and influencing planned or potential management initiatives at a variety of scales and for different purposes. This Plan brings together policies and aspirations from diverse bodies connected to the Site and relies on partnership working and consensus among these stakeholders to achieve the agreed objectives over the life of the Plan. Currently under review by the MTA, once endorsed the Management Plan will provide the primary strategic document for the Site and form the basis for any proposals for 'Tentative' World Heritage Site listing.

The Purpose of the Plan

Amarna has been a site of interest to a wide range of stakeholders, from scholars to looters, for generations. This attention has both enhanced international understanding and endangered the survival of the Site. Natural (environmental/animal) and human (visitors/habitation) actions within the archaeological area and its surroundings continue to present challenges for the sustainability of the Site. As such, the main purpose of the Management Plan is to sustain the Site and its Outstanding Universal Value for future generations by identifying effective protection, conservation, interpretation and presentation measures. The Outstanding Universal Value of the Site, and its importance to all of humanity, necessitates effective management and protection of all the components which contribute to the integrity and authenticity of Amarna. In the context of this Management Plan, 'conservation' encompasses initiatives that ensure the physical survival (and, where possible, improvement) of the Site and its associated monuments (including subterranean or ephemeral features) alongside enhancing the landscape setting of the Site and its associated interpretation and understanding. Continued research into all aspects of the Site is therefore fundamental to the Management Plan to increase the knowledge base from which all future management and interpretation will be built. In addition, ongoing research into best practice in visitor management and stakeholder collaboration in site management is of equal importance as tourist numbers and local populations are predicted to increase in the coming decades (see **Part 2**).

The Plan therefore builds on the needs of various partners and stakeholders, with varying sets of values, and provides an integrated approach to site management. The Aims, Policies and Actions for achieving an appropriate balance are set out in **Part 4** of the Management Plan.

The Process of Developing the Plan

The need for a review of the 1995 Conservation and Development plan and creation of a comprehensive Site Management Plan for Amarna was prompted by various factors:

- Growing concern over the increasing loss, and increased potential for loss, of antiquities land and a need to quantify and draw attention to this through formal documentation
- Recognition of the need for a Site Management Plan to help break down the range of site management tasks into manageable and fundable subprojects and help identify suitable responses to threats
- Recent focused interest within the MTA to add Amarna to the World Heritage List, including the recognition that the city itself, not just the rock-cut tombs, should be included in the application
- Growing interest in moving towards greater collaboration between the Amarna Project and the MTA
- Securing of a joint funding resource (British Council Newton Mosharafa Fund)
- Recognition that a Site Management Plan may help to secure further funding
- Desire to ensure work at Amarna is in keeping with best practice in heritage management to the best of site partners' abilities, i.e. collaborative working and community involvement.

The Plan reflects the Outstanding Universal Value of the Site and brings together the aspirations, expertise and knowledge of the diverse stakeholders at Amarna, including Egyptian and international researchers, MTA staff, local communities and visitors, with the existing management documentation that has been

prepared for the Site over the last 25 years. The Plan provides a comprehensive framework for management and a single reference document for site managers alongside all other interest groups, and has promoted the formalisation of management decision making through the development of Amarna Steering Committees (currently under discussion). A full list of documents consulted in the preparation of the Plan is included in the Bibliography.

Data Sources and Methodology

The Management Plan has drawn on the data collected for all preceding conservation and development work at the Site, as well as site reports, historic and research documents (as listed in the Bibliography). Official data from the Egyptian State on landuse/ownership, tourism and security at Amarna have also been incorporated into the plan.

In addition, a comprehensive review of Site Management, Archaeological/Cultural Resource Management (ARM/CRM) Conservation and collaborative engagement in sustainable site management research and best practice was carried out (see https://www.icomos.org/centre_documentation/bib/Management_plans_bibliography.pdf). *Managing Cultural World Heritage* (UNESCO 2013), a resource manual was particularly useful in underlining the need for heritage sites to deliver mutual benefits to the property, its surroundings and modern communities to enhance 'long-term survival'.

Site Management Plans and other management documents from comparable sites both in Egypt and internationally (as cited above) were also reviewed as they offer strong 'replicable models' upon which this Management Plan has drawn. From the foundations of this research, the methodology for the Site Management Plan was developed. This included both on-the-ground surveys, from updated conditions reports to local consultation, as well as the structure and content of the Management Plan document itself. The methodology aims to create a comprehensive and holistic approach to the Site and the wider issues of sustainable development. Looking forward, the plan also fulfils UNESCO's specification that any World Heritage Site must have a Management Plan or equivalent (2017, II.F. 108: 32) that details potential mitigation approaches to both enhance and protect the archaeological site.

Sequential components of the methodology, including interrelated projects, include:

- Literature and archive review of Amarna documentation
- Literature review of site management documentation and associated resources
- Heritage Impact Assessment/identification of risks to site and site setting
- Conditions surveys/conservation assessments of monuments and associated remains
- Tourism assessment of visitor numbers, visitor management, facilities and impacts on the Site and its setting
- Stakeholder assessment of needs/values/communication surrounding the Site and its management
- Review of current site care and management procedures

Priorities for 2020–25

The central purpose of this Management Plan is to provide site care and management guidance to all those individuals and organisations with an interest in Amarna. By directing partners towards the unified *Vision* (see above), this will help protect, present and conserve the Site in order to enhance and sustain its Outstanding Universal Value for present and future generations.

The ongoing and overarching priority of the Management Plan is to encourage the sustainable management of the Site of Amarna in its setting by balancing the archaeological needs with those of the local community, ecology, access and information dissemination. To achieve this, management priorities have been outlined for the first 5 years of the management plan.

Management Priorities 2020–2025 (Please note, these initiatives are targets. They have not been promised by the Amarna Project or the Ministry of Antiquities and are likely to take more than 5 years to achieve)

1. Protect buried archaeology and standing remains at risk of encroachment by working with local communities to raise awareness of the significance of the Site, define boundaries and consider 'trade-offs' regarding the encroachment of modern farming and urbanism (including transport links). This should include erecting areas of site fencing/walling and/or restoration work on antiquities land at high-risk. The latter include Kom el-Nana, the Desert Altars, the Great Aten Temple, the Great Palace and housing areas, especially parts of the North City, North Suburb and Main City (Figure 2). MTA approval for a walling scheme at the North City/Desert Altars has recently been granted to the Amarna Project, with funding from the American Research Centre in Egypt. This process will also focus on the importance of maintaining individual elements of the Site within their 'city context', i.e. as a historic landscape, as the integrity of the ancient city and its connection to the natural landscape as a whole is what makes it unique. Any walling or 'zoning' projects therefore need to be carefully managed to ensure areas of the Site do not become 'severed' from their wider setting. This concern also extends to modern settlement patterns regarding the need to address potential encroachment which could sever visual and/or physical connections across the ancient city.

2. Repair/restoration/conservation work on unique mud-brick structures under threat from environmental damage (weather, flora and fauna) such as the bridge between the King's House and the Great Palace.

3. Targeted archaeological excavation to extract and preserve data on architecture, stratigraphy and material and environmental remains. A sampling strategy for mud-brick housing areas would be beneficial to document this aspect of Amarna more systematically before structures are lost to weathering and human and animal damage.[1] This will be especially important in unexcavated areas, such as parts of the Main City, but also in areas only excavated before the advent of modern archaeological methods, including the North Suburb and North City. Areas where urban encroachment poses a particular threat to mud-brick remains should also be prioritised.

4. Photogrammetry/laser scanning to record threatened structures. The Boundary Stelae are a priority for work of this kind.

---

[1] Excavated structures are backfilled following excavation to protect remains.

5. Improve interpretation and the visitor experience of the Site in its wider landscape setting through installation of new, more comprehensive site signage, in English and Arabic, and through the provision of a dual language guidebook.

6. Enhance visitor facilities, access and site conditions to encourage greater dwell time and enjoyment of the Site (e.g. provision of more seating, shade, rubbish bins, establishing site maintenance and cleaning procedures, enhancing the rest house through increasing the refreshment and souvenir offer, consider disabled access, pathways and hand rails etc.) in ways that are visually sympathetic

7. Increase the number and capability of site guards to help better protect the Site, better facilitate tourist visits and act as points of liaison with the local community

8. Encourage local community engagement with the Site through: i - a programme of events and outreach activities run by the Amarna Visitor Centre; ii - dual language site signage; iii - dissemination of a children's book about the Site

9. Establish an independent annual budget for the Visitor Centre to facilitate 8i, enhance the visitor experience through more effective maintenance, and enable the Centre to become a hub for Site Management meetings between local stakeholders (Figures 3 and 4)

10. Encourage sustainable archaeological research and education to improve and communicate the understanding of the Site, both locally and internationally, and contribute to any future application for World Heritage Status

11. Create a process of accountability and measurable deliverables through defining organisations' stakeholder roles and responsibilities in terms of the implementation of the Site Management Plan. This includes facilitating Site Management communication between parties and regular Site Management Meetings to improve collaboration between different Ministries, security services and local communities and better manage competing interests

12. Spread the economic benefits related to the Site to the wider community by enhancing tourist opportunities through new craft products or hospitality facilities

13. Targeted backfilling to protect vulnerable remains where practicable, e.g. the tombs at the Stone Village and structures at Workmen's Village

The structure of the Plan

The structure of the Plan comprises:

Part 2
- A description of the Site and its values

Part 3
- Evaluation of the Site, previous work, current threats and forward planning

Part 4
- Current Policy and Management

Part 5
- The aims (long term), policies (short to medium term) and actions of the Site Management Plan

Part 6
- The new management structure, monitoring and implementation of the plan

Note: Supporting information is provided at the end of the Plan as appendices

Equal Opportunities Statement

The Site Management Plan is committed to equal opportunities. Thus, all actions and policies have been designed to eliminate discrimination, harassment, and victimisation and to advance equality of opportunity and foster good relationships between all persons in order to meet standards enshrined in the Universal Declaration of Human Rights, Egyptian and UK Law.

Figure 2. Proposed alignment of the protective walling identified in point 1 (Courtesy of the Amarna Project)

Figure 3. The exterior of the Amarna Visitor Centre (Courtesy of the Amarna Project)

Figure 4. The interior of the Amarna Visitor Centre (Tully 2018)

PART 2. DESCRIPTION AND SIGNIFICANCE OF THE SITE

2.1   Location and Boundary of the Site

Location

 Country: Egypt

 Province: Minya + Asyut

 Towns & villages: El-Till Beni Amran, El Hagg Qandil, Ezbet Bardisi (El Azayza), Ezbet Abdul Razak, El-Amariya il Sharqia

 Name of Site: Tell el-Amarna (Figure 5)
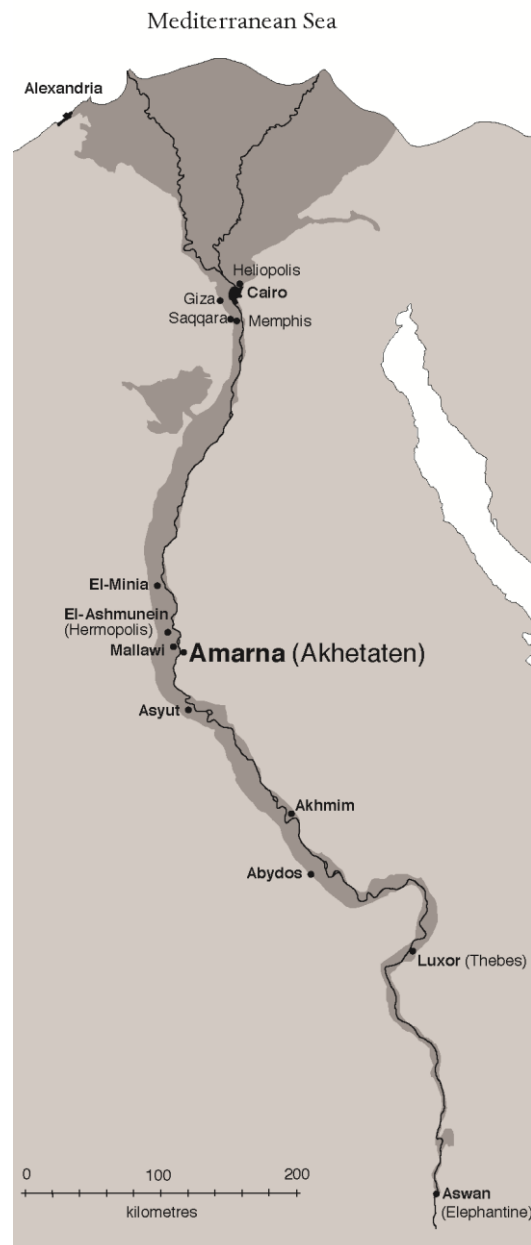
Figure 5. Location map of Amarna (Courtesy of the Amarna Project)

Description of the Site and its boundaries

The Boundaries of Amarna

Amarna is one of few ancient cities for which we have a record of original boundaries (which were probably not intended as rigid borders). The limits of Akhetaten – the territory assigned to the cult of the Aten – were defined by a series of rock-cut stelae inscribed into the cliff face. Sixteen of these Boundary Stelae still survive (15 large stelae and one small stela, e.g. Figure 6), likely representing the full original set or close to it (Figure 1). They indicate that Akhetaten encompassed an irregular area of land c. 20–25km east-west and c. 13km north-south, on both east and west banks of the Nile River. Its ritual and urban hub was located in a large crescent-shaped bay on the east bank. Large areas of the ancient city survive, although buildings immediately along the riverbank have been lost, as have areas beneath the towns of El-Till and El-Hagg Qandil, and at the southern end of the desert bay (Figure 7). On the west bank of the river, the territory defined by the Boundary Stelae encompassed large tracts of agricultural land, and associated settlements. Today, this area is heavily settled and cultivated and there is little surviving trace of Amarna period activity. The main exceptions are three of the Boundary Stelae (A, B, F) in the western cliff face. Two of these, Stelae A and B, are managed by the MTA as part of the archaeological site of Tuna el-Gebel. Boundary Stela F is not on Antiquities Land (and it is not clear if it still survives). Archaeological survey has demonstrated that activity areas connected with Akhetaten also extend well north of the Amarna bay on the east bank of the river, beyond the area defined by the Boundary Stelae; most notably, an area of quarries and transport networks spreading northwards up to 10km (De Laet el al 2015). These quarries have a long use history and activity connected with the occupation of Akhetaten can be difficult to isolate.

Figure 6. Approach to Boundary Stela U (Tully 2018)
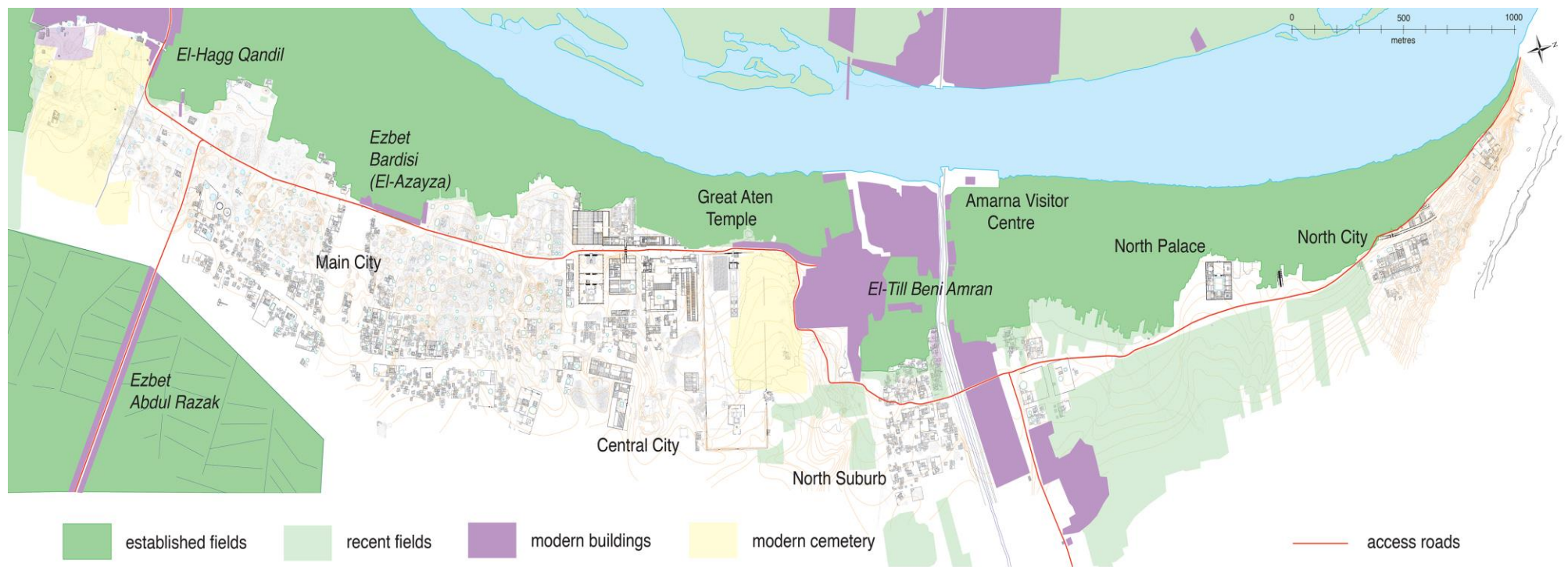
Figure 7. Map of modern settlements overlying Amarna (Courtesy of B. Kemp)

The large and diverse landscape necessitates compromises as to how much of the ancient territory of Akhetaten as defined by the Boundary Stelae, and its peripheral activity zones, can be managed as a cohesive landscape. The boundaries of the Site are therefore restricted to the east-bank bay, and specifically those areas of land owned by the MTA ('Antiquities Land'). This covers c. 70 sq. km², around half of the bay. This area contains all elements that provide the Site with Outstanding Universal Value. These include ancient 'features' such as buildings, cemeteries and roadways, but also large areas of open land. The latter are integral to the Site, forming survivals of its original setting and natural landscape, rarely preserved for ancient cities.

The original boundaries were mapped in 1998 by the MTA in conjunction with the Directorate of Survey. They are open to modification, particularly as the MTA seeks to purchase additional Antiquities Land. The boundaries of the Site are reproduced approximately in Figure 8. They encompass most of the preserved areas of the riverside city, the low desert and the monuments within the cliff face and its wadis. The Site is, for the most part, one contiguous area, although there are two isolated monuments surrounded by private farmland, the North Palace and Kom el-Nana; further isolated pockets of Antiquities Land lie north of El-Till and along the southern cliff face between Boundary Stelae J, K, M and N (governed by Asyut). The MTA also has a current bid in to purchase 30 *feddan* of land around Boundary Stelae H, R and S.

On the ground, the Site boundaries are largely unmarked and are not identified as official borders by signage or other means. The boundaries often follow natural landscape features or modern infrastructure like roadways and canals. The clearest boundary is the eastern one, formed by the vertical cliff face of the high desert (Figure 9). At the far northern end of the bay, the cliffs rise to c. 100m, enclosing the ancient city between the cliffs and river, including boundary Stela X (Figure 1), a protected part of the site of Sheikh Said, where there is also a number of rock-cut tombs created during the Old Kingdom, around a millennium before the occupation of Amarna . To the south, the Amarna bay widens and the cliffs drop off in height. Cut into the cliff face, and thereby encompassed by the Site boundaries, are two well-known groups of decorated rock-cut tombs for Akhenaten's officials (the North and South Tombs). The eastern boundary is also recognised by the MTA and international researchers to extend into those wadis (valleys) in the cliff face that contain the royal tombs and pit-grave cemeteries for the general population of ancient Amarna. The latter lie in two large wadis adjacent to the North and South Tombs; there are other pit-grave cemeteries on the desert floor below the cliffs. The entire length of the Royal Wadi leading up to and including the rock-cut tombs of the Amarna royal family is also considered by the MTA to be Antiquities Land.

---

[2] The 70 sq. km excludes the area around Boundary Stelae H, R and S, which the MTA are currently trying to purchase.
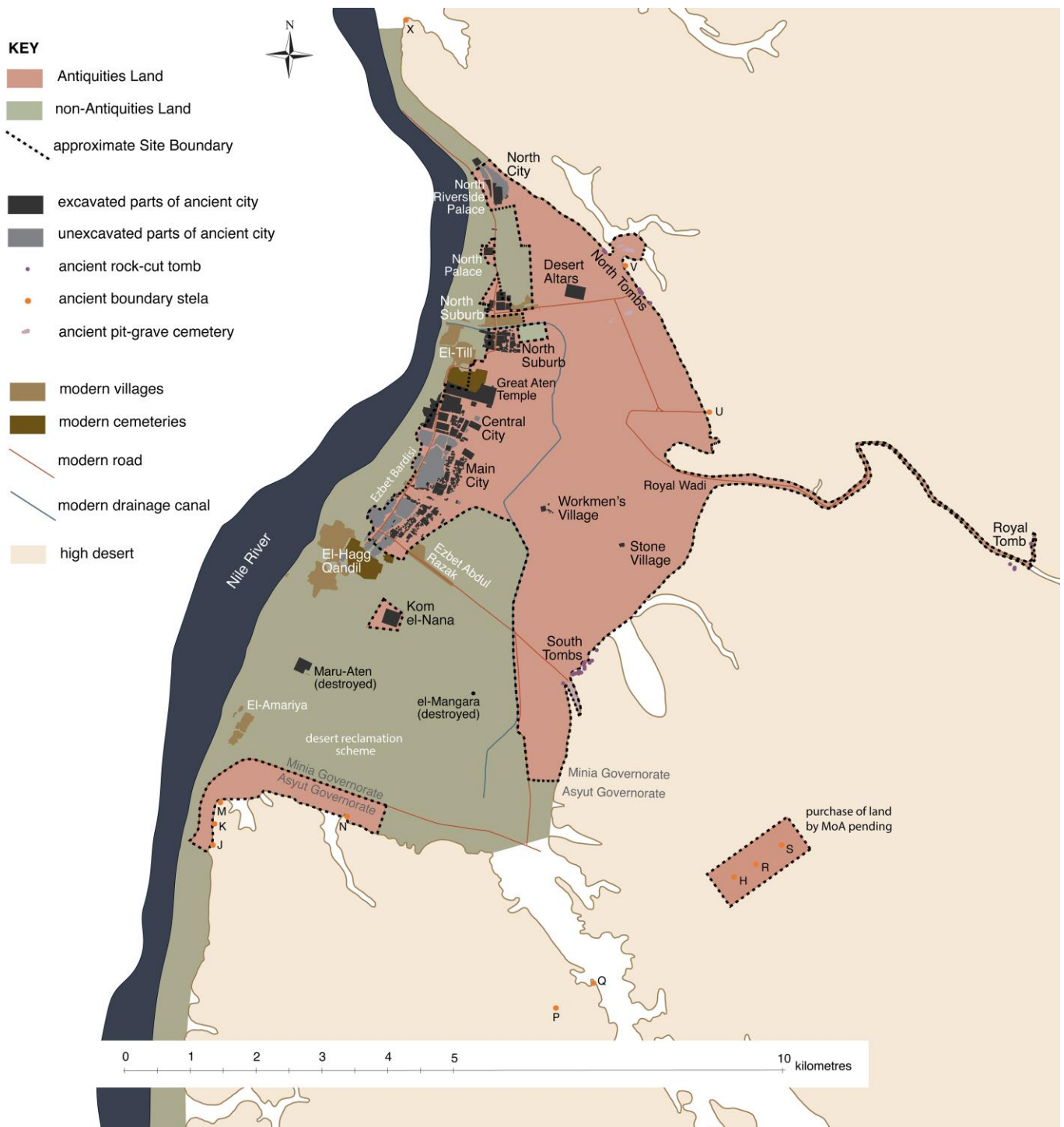
Figure 8. Amarna's current Site boundaries (Base map B. Kemp/H. Fenwick. Boundary overlay A. Stevens)

Figure 9. View east towards the cliffs from the Small Aten Temple (Courtesy Amarna Project)

As the cliffs curve to meet the river at the north end of the Site, they define part of the northern boundary of the Site, adjacent to the area of the ancient city now known as the North City (Figures 10 and 11). A wedge of land between the cliffs and the river, however, is not owned by the MTA. When the Site boundaries were surveyed in the 1990s, it was thought that modern settlement was unlikely to ever extend this far north; subsequent population growth and the development of the modern roadway in the area has since changed this view. The area beyond the Site boundaries here includes the very northern end of the North City, most notably a large mud-brick complex (the North Administrative Building) and some mud-brick buildings immediately to its south. The northern boundary also excludes an area of Amarna period ruins, perhaps an industrial quarter, in a wadi in the northern cliffs at the site of Sheikh Said; and a group of quarries nearby the latter.

Figures 10 and 11. Views north across the North City, showing where the cliffs, agricultural land and river Nile meet, and where the modern road demarks the western limit of the Site (Courtesy of the Amarna Project)

The western boundary of the Site is less well defined. In discussing this boundary, an important feature is the modern road that runs through Amarna from north to south, at times following the route of the main thoroughfare of the ancient city (now known as the Royal Road). At the north of the Site, the modern road marks the western Site boundary as far as the south end of the ancient North City. At a point c. 150 metres south of the abandoned Dig House here, the boundary steps eastwards, running around the edge of an approximately rectangular parcel of privately-owned land of 100 *feddan* (0.42 sq. km). This is known locally as *il-biaa* ('the sale'). This land was set aside for sale in the 1960s as part of President Nasser's 'reclaiming the desert' project, although it was mostly sold off, in small portions, in the 1990s. It extends into the northern edge of the modern town of El-Till. On the west side of the road c. 1km south of the North City, one of the ancient palaces (the North Palace) is protected on a parcel of Antiquities Land measuring c. 155 sq. m., a barbed-wire fence encircles the ruins of the palace (Figures 12 to 15).

Figure 12. Looking north showing the north south road, and barbed-wire fencing protecting the archaeological remains (Tully 2018)

Figure 13. Looking south-west   Figure 14. Looking west   Figure 15. Looking north-west

Figures 13 to 15. Details of the North Palace fencing and adjacent privately-owned agricultural land (Tully 2019)

The Site boundary is less clearly defined, and much disputed, through the town of El-Till. El-Till is built over the area of the ancient city known as the North Suburb, and so over areas of Antiquities Land. One particularly disputed area extends northwards of El-Till, towards the North Palace. It is technically Antiquities Land, but has been occupied for a long time by local farmers. Mud-brick houses of the ancient North Suburb now survive mainly through the eastern part of El-Till, mostly to the east of the modern road, but to some extent to its west. Here, there seems to be a local understanding that the edge of the visible houses forms the western boundary of the Site (Figures 16 and 17).

Figure 16. View east-north-east across the North Suburb showing proximity to modern El-Till (Tully 2018)

Figure 17 - View east across the North Suburb showing the extent of archaeological remains (Tully 2018)

South of El-Till, the western Site boundary follows the road for a short distance before veering westwards, skirting along the boundary between the visible, largely mud-brick, standing ruins of the Great Palace and the long-established field systems along the riverbank. The boundary is partly defined, and reinforced, by a strip of palm trees and a series of 'spoil heaps' left from archaeological excavation in the 1930s (Figures 18 and 19). The western boundary continues in this general fashion southwards (Figure 20). Beyond the southern end of the Palace, however, the ancient ruins are less monumental and largely unexcavated, and the boundary is no longer reinforced by spoil heaps (Figure 21). The modern settlement of Ezbet Bardisi (Al-Azayza) is spreading across antiquities land west of the modern road (Figure 22).

Figure 18. Looking south-west

Figure 19. Looking north

Figures 18 and 19. Views across the remains of the Great Palace towards the tree-lined boundary (Tully 2018)

Figure 20. Tree line beyond the Great Palace which defines the western boundary, as seen from the east of the Small Aten Temple, looking across the main north-south road (Tully 2018)

Figure 21. Close up of the western boundary, as seen beyond the southern end of the Great Palace (Courtesy of the Amarna Project)

Figure 22. View south through the Main City, showing how the roadway is only just holding back the encroachment along Ezbet Bardisi (Courtesy of the Amarna Project)

The western boundary continues southwards until it meets the modern town of El-Hagg Qandil. El-Hagg Qandil marks the north-west corner of a large zone of privately-owned farmland and housing, created through the Nasser government's desert reclamation scheme in the 1960s (Figures 23 and 24). This scheme encompasses most of the south end of the bay. There were once several outlying temples (and potentially other features) in this part of the bay. The only one that now survives is that at Kom el-Nana, which also has later Monastic ruins. This is preserved on a pocket of Antiquities Land measuring c. 460 sq. m., surrounded by cultivation (Figure 8). Its boundary is partially marked by a barbed-wire fence. The other temple sites in this area have now been destroyed by the cultivation project (Maru-Aten, el-Mangara, the Lepsius Building).

Figure 23. The southern extent of the western boundary where it meets modern El-Hagg Qandil (Tully 2018)

Figure 24. Close up of the western boundary as it meets Hagg Qandil. The column bases in the centre of the image mark the location of the house of the official Nakht, which was once one of the grandest of the excavated houses but has now been almost entirely lost to exposure and encroachment (Courtesy of the Amarna Project)

The eastern, and part of the northern, limit of this land parcel is defined mostly by a modern drainage channel built in the 1960s, although part of its northern edge runs directly across the desert just north of El-Hagg Qandil. There is nothing to mark the latter part of the boundary on the ground, and it cuts off the southern end of an area of ancient housing known as the Main City. El-Hagg Qandil itself is built over the very southern end of the ancient riverside city, including an area of possible settlement dating to immediately after Akhenaten's reign. The southern boundary of the desert-reclamation project ends approximately along the line of a modern east-west road through the southern end of the Amarna bay, and possibly up to the southern cliffs in places. The road demarcates land managed by the Minya Antiquities Inspectorate (to the north) and the Asyut Inspectorate (to the south). The Asyut Inspectorate manages a parcel of Antiquities Land of 880 *feddan* in the very south-west corner of the Amarna bay which encompasses Boundary Stelae J, K, M and N (Figure 1) (as well as a Roman Period cemetery known as *Gebanit el-Arbaain*). In the south-east area of the Site lie two further clusters of Boundary Stelae. Stelae P and Q lie in an area where the cliff face is broken by a broad wadi (Figure 1). They are not on Antiquities Land. To their north-east lie Boundary Stelae H, R and S (Figure 1). These are also not currently protected, although the MTA has a bid in to purchase 30 *feddan* of land around the stelae, which would allow them to be registered as Antiquities Monuments.

The Site has little in the way of buffer zones. This Site Management Plan includes recommendations for creating more effective boundaries and buffers through the reconstruction and consolidation of monuments and the building of boundary markers.

Land ownership is complex. Non-archaeological areas are primarily under the control of the National Directorate of Survey. The protected archaeological/antiquities land, comprising c. 70 sq. km (excluding the pending purchase at Boundary Stelae H, R and S) is controlled and managed by the MTA on behalf of the State. The modern towns (including their cemeteries) and associated agriculture overlie both core areas (El-Till and Ezbet Bardisi [Al-Azayza]) and the fringes (El-Hagg Qandil and Ezbet Abdul Razak) of the archaeological site (Figure 7). This includes privately owned land and illegally occupied land, in both archaeological and non-archaeological areas, which is divided among many hundreds of families. A great deal of the archaeological remains, including parts of significant monuments such as the Great Palace, North Palace and North Riverside Palace, lie within these various land parcels, much of which is lost under the agricultural land to the west bordering the Nile. The need for further farmland, housing and cemeteries to support the growing population provides ongoing challenges for MTA staff, local security/police forces and communities. The issues of a lack of space for burial (for the growing population in the area) is a particular problem. It is widely known that the cemeteries at El-Hagg Qandil and El-Till are being used for people from over a dozen villages, including a number of the west bank. This is an alarming development, perhaps connected with increased access to the east bank (discussed below), but may also be connected with the perception that the desert is 'empty'.

The Cultural Heritage of Amarna

The key areas of the Site today comprise:
   i)   Urban, ceremonial, administrative and domestic buildings in a band along the riverbank.
   ii)   A low desert hinterland east of the riverside city used for workers' settlements and ritual
           buildings.

iii)   The eastern cliff face and its environs, used for a new royal cemetery, rock-cut tombs of the city's elite, extensive public cemeteries, quarries, and as a vantage point for security for the city.

i) The Riverside City

Royal Road

A north–south road, now called the Royal Road, linked the palaces at the north of the Amarna bay to the Central City and then continued southwards, with a change of direction, through the Main City (Kemp and Garfi 1993). The road may have been used to help lay out the Site and was an important organizing element, serving as a processional route for the king as he traveled between the city's temples and palaces, displaying his divine status. It was a crucial component of the city's axial symbolism. As the king moved north–south on the road, the Aten moved east–west in the sky above. The current north–south road that runs through the Site, the main modern transport corridor, still approximates the line of the Royal Road, and in places follows it exactly. It is possible that part of the northern stretch of the Royal Road was raised on an embankment, a mud-brick structure north of the North Palace, cleared briefly in 1925 (Whittemore 1926: 9-10), perhaps serving as an access ramp (Kemp and Garfi 1993: 44-46). Part of this 'ramp' survives today, largely hidden beneath sand and gravel.

Much of the line of Royal Road south of El-Till has been given an asphalt surface, but where it passes through the Central City a long stretch has been left without it, to preserve the desert appearance of the Site (Figure 25). The asphalting has had the effect of confining vehicles to a strip of limited width, whereas before it was constructed the softness of some areas, especially opposite Ezbet Bardisi (Al-Azayza), led to the road becoming ever wider as heavy lorries sought to avoid becoming stuck. The asphalt, laid over a bed of local limestone hardcore, thus protects the ancient surfaces.

Figure 25. Meeting point of the asphalt and dust roads, south of the Great Aten Temple in the Central City (Tully 2018)

The North City and North Riverside Palace

The North City is an area of settlement at the far north end of the Amarna bay, originally separated from the rest of *Akhetaten* to the south by a stretch of open desert. The North City would have been dominated by the North Riverside Palace, most of which is now presumed lost under cultivation. The full extent of the palace has never been mapped and all that is visible today is a part of the thick, buttressed eastern enclosure wall, although excavations in 1931–2 exposed a small area of the interior of the complex. To the north of the palace, and perhaps once part of it, is a large terraced complex containing open courts and magazines known as the North Administrative Building. The land to the east of the palace is occupied by houses that include several large, regularly laid out estates, and smaller houses beyond, running all the way to the sloping base of the cliffs. The North City has a distinctive character, isolated at the north of the Site. Many of the people who lived here were perhaps palace workers. The distant setting of the North Riverside Palace has prompted suggestions that it was the main residence of Akhenaten himself. The administration of imported goods and securing of the city's northern boundary were probably also a focus of activity here. In 2012, the line of the modern north–south road through the Site was changed from its long-standing path in front of the entrance to the Riverside Palace, to cut behind the eastern face of the entrance, over the buried remains.

Around half of the North City has been excavated, leaving many unstudied houses. It is one of the least well-published parts of the Site. The Egypt Exploration Society excavated here in 1923–4/1924–5 and again in 1930–1/1931–2, producing preliminary reports on the work (Newton 1924; Whittemore 1926; Pendlebury 1931, 1932). There has been little modern excavation in the North City, apart from some re-clearance and re-planning in 1981 (Jones 1983). No conservation or protection initiatives have been undertaken in this area of the Site.

Another noteworthy feature of the North City is the North Dig House, built and used by excavators working for the Egypt Exploration Society in the 1920s and 30s. Built over the remains of a large ancient villa, the Dig House stands as a prominent mud-brick ruin. It is an important symbol of the role of archaeology and its impact on the Site. Debris left in rubbish deposits beside the house contribute to making it an archaeological site in its own right. The house is also significant for featuring in the archaeological memoir *Nefertiti Lived Here*, written by EES secretary Mary Chubb (first published 1954 and still in print). It is known that many surplus finds from the excavations of this time were buried in the vicinity of the house.

The North Palace

Situated around 1 km south of the North City is a second royal residence, the North Palace. It is one of the best-preserved palaces from ancient Egypt and the most extensively studied of the Amarna palaces, first excavated in the early 1920s (Newton 1924; Whittemore 1926) and re-cleared and restudied in the 1990s (Spence 1999). It is famous for its elaborately painted wall decoration showing scenes of river and plant life, connected to the life-giving aspects of the Aten cult (Weatherhead 2007: 143-214). The wall paintings were largely removed in the 1920s and are now found in museum collections in Egypt and abroad. The North Palace is also of interest for its association with Akhenaten's little-known secondary wife Kiya, and with Princess Meritaten, both of whom are named in inscriptions at the Site.

The palace was built around two open courts separated by a pylon or possible Window of Appearance, the second court containing a large basin that housed a sunken garden. Opening off each courtyard was a series of smaller secondary courts containing altars, magazines, an animal courtyard, probable service areas, and a throne room. The eastern part of the North Palace has been the subject of consolidation work by the Amarna Project/Egypt Exploration Society intermittently from 1990 onwards. It was surrounded by a barbed wire fence in 1984, erected by the MTA, which remains largely intact. Today the North Palace is a common stop on tourist itineraries.

The North Suburb

The North Suburb is the second largest of the housing areas at ancient Amarna, located just north of the Central City. The houses of the North Suburb were arranged in three main strips, divided by two north-south thoroughfares, a broad wadi further dividing the houses into a northern and southern group. The western strip of residences included a group of small, closely packed houses, although to the east and north the houses were more widely spaced and include larger walled villas. It is possible that many of the people who lived in the North Suburb worked as scribes and lower officials in the Central City, but there is much still to learn about the character of this housing zone. Some of its occupants might have been buried in a large pit-grave cemetery recently excavated beside the Tomb of Panehesy (North Tomb 6), who was an important official in the Aten cult. People would have trekked out to the cemetery to bury their dead, and perhaps occasionally to leave offerings for them, forging links between the riverside city and its desert hinterland.

The North Suburb is now partly lost under modern settlement and fields belonging to the town of el-Till, although much of its south-eastern zone survives, imminently threatened by urban expansion. The North Suburb is the only housing area at Amarna to have been almost fully excavated, by the EES from 1926-1931 (Frankfort and Pendlebury 1933), although small pockets of unexcavated ground seem to remain. There has been no modern fieldwork in the North Suburb.

The Central City

The Central City was the ritual and administrative hub of Akhetaten, home to the city's most important temples and palaces (Figure 26). It is by far the most intact city centre to survive from ancient Egypt. Although the main temples are often preserved only to foundation level, their expansive ruins serve in tandem with the remarkably detailed scenes in the rock-cut tombs – which show Aten worship within the city's temples and palaces – to convey the centrality of the solar cult at the ancient city.

The Central City was excavated extensively, and rapidly, by the EES in the 1930s (Pendlebury 1951), following small-scale work by Petrie in the late 19th century. Its most important buildings front on to the modern road, which here follows the line of the ancient Royal Road.
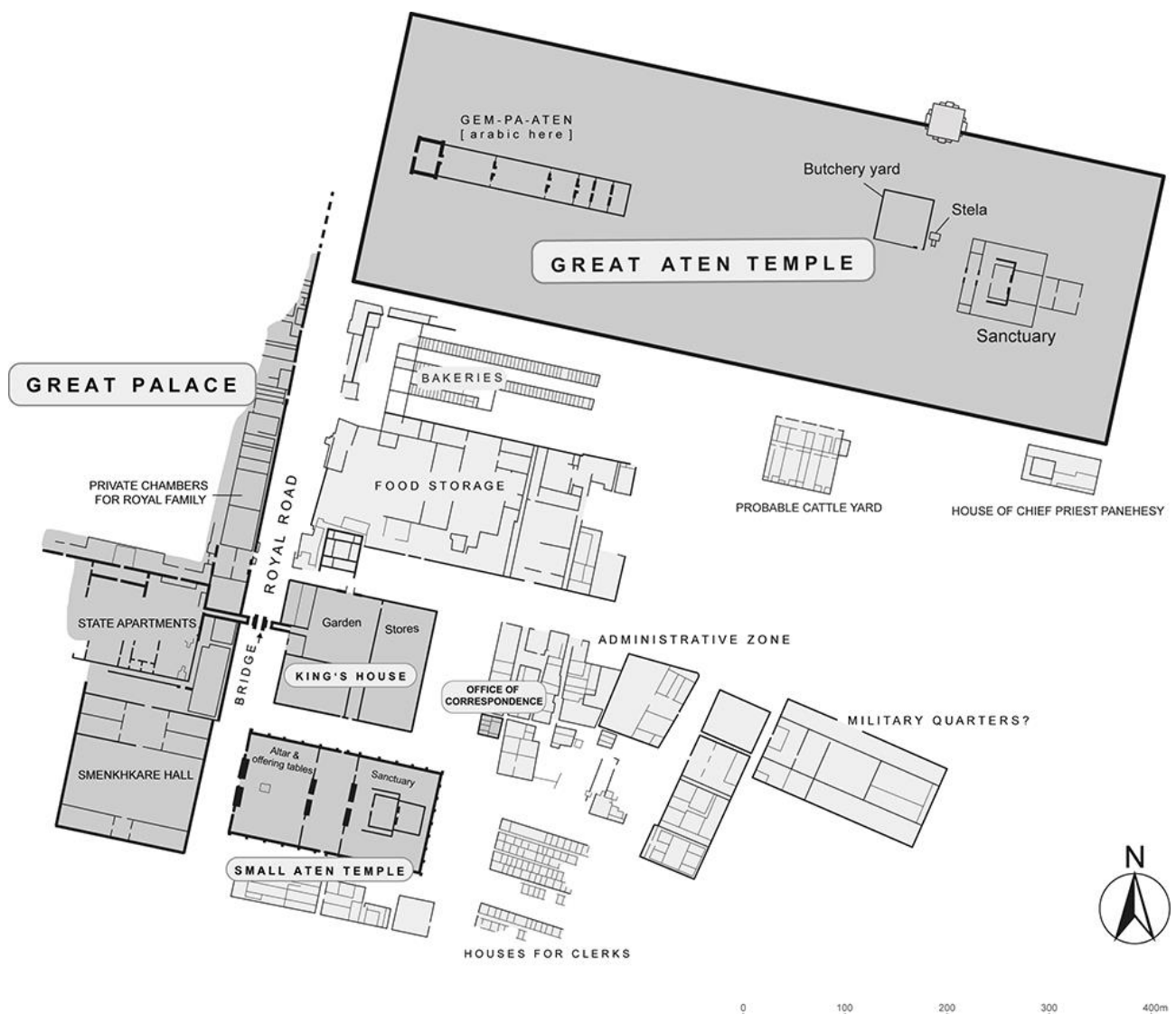
Figure 26. Plan of the Central City (Courtesy of the Amarna Project)

Great Palace

The Great Palace extended some 580m north-south along the west side of the Royal Road, dominating the waterfront. Parts of the building were lavishly decorated with faience and hard stone inlays. Some of its mud-brick walls and floors were decorated with coloured paintings. It is the find spot of one of the most famous pieces of Amarna art, a great painted pavement discovered by Flinders Petrie in the late 19th century. The painted floor is currently on display in the Egyptian Museum, Cairo, its fragments having been rescued and restored following vandalism in 1912.

The western part of the palace was dominated by stone-built state apartments. A large courtyard containing statues of the royal family led to a series of courts and halls, and a possible Window of Appearance. The western side is thought to have been lost under cultivation since at least the mid nineteenth century, although there has been little attempt to test what might remain. The eastern side of the courtyard and the main stone halls to the south are largely covered by old EES spoil heaps which are serving to protect it. Local farmers now claim portions, although illegally. The eastern part of the palace still survives, largely as a standing ruin. It was built primarily of mud bricks, and included magazines; an area identified by the EES excavators as the 'harem quarter', featuring a sunken garden and the painted

pavements discovered by Petrie; and a set of housing quarters and storerooms. Late in the Amarna Period, a large pillared or columned hall was added to the southern end of the palace, with stamped bricks bearing the cartouche of Smenkhkare. This is the only known monument for King Smenkhkare, one of Akhenaten's successors. Some investigation of the Smenkhkare Hall and adjacent buildings was made between 1996 and 2000. It survives as an open ruin, in poor condition.

in 1990 a length of barbed-wire fence was erected extending from the south-east corner of the Smenkhkara Hall to a point beyond the Bridge and the 'harem quarter'. The purpose was to stop farmers and often tractors and trucks from driving diagonally across the Site, between Royal Road and the modern fields. Within a few years local people had removed the fence entirely, except for the broken stumps of the iron fencing posts. The experience was a good lesson in how far one can go in interrupting what farmers see as their rights of way. By contrast, across the road, in front of the Small Aten Temple, a barbed-wire fence erected at the same time is still there, the reason being that it does not interfere with the habits of the local inhabitants.

Great Aten Temple

The Great Aten Temple was the most important building at Akhetaten, built on the eastern side of the Royal Road at the northern end of the Central City. Most of it survives now as little more than foundations, partly exposed and partly buried below sand.

The Temple covered an area of c. 800 x 300m, surrounded by a mud-brick enclosure wall. In its final phase, the enclosure contained at least two main buildings built from stone: a structure now termed the Long Temple (originally perhaps the Gem-pa-Aten) towards the front by the road, and the Sanctuary to the rear. This left vast open spaces in between, perhaps to accommodate crowds during festivals. The Long Temple contained a series of open-air courtyards occupied by several hundred offering tables. Along its front was a series of pedestals surrounded by white- plastered basins, possibly used during mortuary rituals. The Sanctuary, in its final form, comprised a rectangular stone building divided in two parts, each open to the sky and filled with offering tables. A mud-brick building comprising four suites of rooms with lustration slabs was built across the northern enclosure wall, perhaps as a purification space for people entering the temple. To the south there was originally an altar or similar construction that supported a round-topped stela, pieces of which have been recovered during excavation, and probably a statue of the king, as shown in tomb scenes. To the west of the stela lay a butchery yard, used to provide meat offerings to the Aten.

Immediately south of the Great Aten Temple is a series of buildings that probably also served the temple cult, especially the preparation of food offerings. These comprise: a house of the high priest Panehesy; a building containing several columned halls with stone-lined floors and lower walls, troughs, and ovens, perhaps connected with meat processing; a bakery formed of chambers often containing ovens, near which lie large dumps of pottery bread-mould fragments; and a set of storerooms and associated buildings.

The temple was rapidly cleared in the 1930s but re-excavation undertaken since 2012 has demonstrated that considerable stratigraphic information remains, especially important for understanding the temple in its earliest phases. This work programme has including the recapping of parts of the front of the temple to turn the temple foundations into a visible monument. The temple is one of the most immediately threatened parts of Amarna. Around one-third of the complex has been lost under the adjacent cemetery

of El-Till, including during a period of land-grabbing in the years after the 2011 Egyptian revolution, although the cemetery has been in existence since at least the early 19th century.

King's House and Bridge

South of the Great Aten Temple is a walled complex now termed the King's House, which perhaps served as Akhenaten's private quarters in the Central City. It was wholly built from mud bricks and comprised a tree-filled courtyard leading to a columned hall with peripheral apartments, one of which contained a probable throne platform. One of the most famous pieces of Amarna art, a wall painting showing two princesses relaxing on patterned cushions, originates from this building. It is now in the Ashmolean Museum (AN1893.1-41[267]). Other painted scenes include foreign captives (Weatherhead 2007: 75-142). The complex also contained, in its final form, a large set of storerooms. The King's House was excavated and back-filled by Petrie in 1891–2. Its main buildings survive as a standing ruin, likely to be in better condition than most other excavated buildings in the Central City.

The King's House was connected to the Great Palace by a 9m-wide bridge, which seems to have been partly decorated with painted wall scenes. Mud-brick supports for the Bridge survive on either side of the Royal Road. They are in urgent need of consolidation. One of the electricity pylons which carries power lines also more or less along the line of Royal Road stands exactly at the point where the Bridge crosses the road.

Small Aten Temple

The Small Aten Temple, or *Hut Aten*, was Akhetaten's second largest temple. It lay immediately south of the King's House, occupying a walled enclosure of 191 x 111m. Its function is not fully understood: it was perhaps a place where Akhenaten worshipped the Aten privately or a form of royal mortuary temple. The axis of the temple lines up approximately with the mouth of the Royal Wadi in the eastern cliffs where the royal cemetery was located, perhaps supporting a link with royal mortuary cult. The Small Aten Temple offers one of the clearest illustrations of the symbolic connection between the ancient city and elements of the natural landscape.

The temple was divided into three courts. The first contained a field of offering-tables and a large mud-brick platform. The second court contained a house-like building with small dais that was perhaps a throne base. The final court contained the stone Sanctuary, very similar in layout to that at the Great Aten Temple and again containing many offering tables. The Sanctuary was flanked by trees, and there were several small brick buildings in the ground around it.

The Small Aten Temple was re-cleared and re-recorded between 1987 and 2007, during which time its walls were also recapped with modern mud bricks and stone. A full-size replica of one of its columns was erected in front of the Sanctuary. It acts as a local orientation point and conveys the monumental vertical scale of the original buildings. It was given extensive maintenance in 2013. Today the temple is one of the most visited monuments at Amarna, including by groups seeking a meditative experience.

South of the Small Aten Temple was another set of chambered structures recalling those beside the Great Aten Temple which may likewise have been bakeries, in addition perhaps to serving the production of faience and glass items to decorate the Central City buildings.

Administrative zone

Extending beyond the King's House to the east was a series of administrative buildings, roughly arranged into a block, and built predominantly of mud brick. These include the 'Office of Correspondence of Pharaoh' where, in the late 19th century, a collection of around 400 clay tablets incised with Akkadian cuneiform were found, documenting ancient diplomacy across the ancient Near East. The Amarna Letters are one of the most important assemblages of Bronze Age texts. Other buildings here include a 'House of Life' where priests were trained to read and copy sacred texts, and a 'House of the King's Statue', seemingly a chapel where Akhenaten himself was worshipped. To the south is a set of uniformly laid out houses that may have been occupied by administrators employed in the Central City (Shaw 1995: 233-237). In the desert to the east lies a complex that possibly served as military/police quarters.

There has been no modern work on this area of the Site, which lies as open ruins. Many of the buildings have been heavily eroded, whilst others have been protected by adjacent spoil heaps.

Main City and South Suburb

The large residential zone that spreads southwards from the Central City is termed the Main City. The area is interrupted by a large wadi and is sometimes divided into two: Main City North and South, with a few buildings at the south end sometimes given the name South Suburb. The Main City and South Suburb combined cover about 2.5 km of ground, north to south. The Main City was organized around at least three north–south thoroughfares: East Road South, West Road South, and Main Road. Fieldwork has focused mostly upon the area east of the Main Road, which is occupied by fairly dense housing, smaller houses generally forming clusters around larger estates. The officials who owned the large estates often built shrines in the gardens of their houses where they erected statues of the royal family.

Some of the buildings in the Main City can be identified as workshops from the detritus left behind by their occupants. There is a notable concentration of sculptors' workshops through the northern end of the Main City, on the outskirts of the Central City. One of these workshops was the find-spot of the painted bust of Queen Nefertiti now in the Egyptian Museum, Berlin, in addition to other masterpieces of ancient Egyptian art.

The Main City has been characterized as a vast but loosely structured 'factory' where people lived and worked in the service of the state. Many of the people living in the Main City were probably buried at a huge pit-grave cemetery some 3km away at the eastern cliffs, beside the South Tombs. Some might have participated in festivals to the Aten in the Great Aten Temple, perhaps in remembrance of deceased family members.

The Main City saw intensive excavations from 1911–1914 under the DOG (Borchardt and Ricke 1980) and from 1921–1922 and 1923–1925 by the EES (Peet and Woolley 1923: 1-36 for the early seasons; the work of the later seasons is largely unpublished). The current expedition to the Site has also undertaken excavations in workshops and houses here (Amarna Reports IV: 1-168; Amarna Reports VI: 1-101; Kemp and Stevens 2010a, b). The area survives both as exposed ruins of previously excavated mud-brick houses and as zones of unexcavated, but looted, archaeology. The buildings to the west of the modern road remain mostly unexcavated and are now largely lost under cultivation other than in certain areas adjacent

to the road. It is not known to what extent they had the same residential character. A large part of the South Suburb is lost under the modern village and especially the cemetery of El-Hagg Qandil. The large spreads of easily accessible domestic architecture at the Main City are unparalleled anywhere in Egypt and there remains much to learn about this area of the city through modern archaeology. No large villas, for example, have been excavated since the 1920s, nor has much work been done on external spaces or at the level of neighbourhoods. There remain many questions about the interactions between people, and with the built and natural environment, that gave Akhetaten life and shape.

ii) The Desert Hinterland

Desert Altars

The Desert Altars lie on the desert floor around 1km from the North Tombs. The Altars are a predominantly mud-brick complex covering c. 220 m. sq., formed of two enclosures containing foundations that once supported altars and chapels. The Site has suffered badly from erosion, and other original elements are now likely to be lost. It remains, nonetheless, a unique example of Akhenaten's ritual architecture. The Altars may be associated with the funerary cult of Akhenaten's officials buried nearby at the North Tombs, making them the only monumental private ritual monuments at the Site. Alternatively, they have been suggested as the location of the famous 'Reception of Foreign Tribute' shown in the nearby tombs of Huya and Meryre II.

The Site is unprotected and vulnerable, lying as a shallow layer of ruins on the desert surface. It was cleared by the EES in 1931–1932 (Frankfort and Pendlebury 1933: 101-102) and recleared briefly in 2001 (Kemp 2001: 20). For a long time protected by their relatively isolated setting, the Desert Altars are now highly threatened by encroachment. During 2016 and early 2017, there was a rush on the desert east of the ticket office, land which is legally owned by the MTA. The field systems reached to within less than 50m of the Desert Altars. In May 2017, the local council, as part of an Egypt-wide initiative to reclaim illegally occupied government land, cleared the fields. Since then, attempts to farm the land have recurred. If no barrier is erected the fields will inevitably spread all the way to the cliffs. If so, the Desert Altars will eventually be lost, and settlement will encroach upon the fragile landscape of the North Tombs, which includes important, unprotected pit-grave cemeteries containing several thousand burials, highly vulnerable to looting. Further burial grounds may remain unidentified on the desert floor nearby.

Kom el-Nana and the southern temples

Akhetaten originally had at least four Sun Temples devoted to the royal women of Amarna on its southern outskirts, forming a kind of ritual zone. The only one that now survives is that at Kom el-Nana. Kom el-Nana comprises a large enclosure some 228 x 213m, divided into a northern and southern court. The latter was dominated by a podium (the 'central platform') supporting rooms including a columned hall with stepped dais, possibly the location of one or more Windows of Appearance. South of the central platform was a long narrow processional building (the 'southern pavilion') containing columned spaces and two open courts with sunken gardens, and to its north the so-called South Shrine, which likely included a set of chambers on the east and a columned portico to the west. The southern court also contained a series of houses and garden plots. The northern court housed a second stone shrine, along with a bakery and brewery complex.

The stone shrines were demolished at the end of the Amarna Period, leaving thousands of pieces of smashed-up stone blocks, under long-term study (Williamson 2016). The Site is one of few ritual complexes at Amarna where the decorated blocks were not removed for reuse after Akhenaten's reign and it offers a unique chance to try to reconstruct the programme of an Amarna temple. Inscriptions on the blocks identify the Site as a Sun Temple, probably dedicated to Nefertiti; other inscriptions suggest it was connected with the provision of mortuary offerings (Williamson 2008, 2013).

Kom el-Nana was excavated by the Egyptian Antiquities Organization in the 1960s and the current expedition to the Site from 1988 to 2000, taking in parts of both the Amarna Period and Early Christian ruins later built partly over the temple (Kemp 1995: 433-438). Large parts of the Site remain unexcavated. Today the Site appears as a combination of standing, poorly preserved ruins of mud brick and gypsum/lime plaster foundations, and buried archaeology. Surrounded by modern fields, it is one of the most threatened parts of Amarna, and substantial areas of the Site have been lost in recent years. The core parts have been surrounded by barbed-wire fences on two occasions. The first fence (1990s) was gradually removed; its replacement in 2016 still stands

The other southern temples are now lost entirely under agriculture (Kemp 1995). The Maru Aten incorporated a Sun Temple dedicated to Meritaten, lying at the far south end of the Amarna plain. The Site is known for having been elaborately decorated, including with painted pavements. Many pieces of architecture and painting are in museum collections in Egypt and abroad. It was excavated in 1922 by the EES (Peet and Woolley 1923: 109-124), in haste and with limited record keeping. Nothing of the Site now remains. A few hundred metres southwest of the Maru Aten there likely stood another stone-built cult or ceremonial complex, noted briefly in 1843 (the 'Lepsius Building'), while at the Site of el-Mangara, about 1700 m southeast of Kom el-Nana, evidence was also collected in the 1960s for a stone-built complex, in the form of largely intact decorated blocks, mud brick, and Amarna Period sherds.

Workmen's Village

The Workmen's Village is the larger of the two settlements on the eastern desert plain, lying in a bay on the south side of a low plateau. The village probably housed workers who cut and decorated the royal tombs, and perhaps those of the city's officials. The workers' community may have been relocated to Amarna from the well-known workers' settlement of Deir el-Medina at Thebes. The Workmen's Village is remarkable for the richness of its archaeological remains, preserving a full eco-system of village life including supply, subsistence, cult and death, and for the sense of continuity between the communities of ancient Amarna and Thebes. It is an important case site for the study of labourers' settlements in ancient Egypt and is also notable as one of the sites where modern archaeological methods were first implemented in Egypt.

Because of its isolated setting, the village formed a self-contained sub-community of Akhetaten with its own garden plots, animal pens, rubbish dumps and cemetery. It is one of few housing areas at Amarna to have been formally planned, and was surrounded by a thick perimeter wall. The village houses have a tripartite plan that differs from that found in the riverside suburbs. Perhaps quite soon after the village was founded, its occupants modified and added to their houses and settled the land outside the village walls, constructing elaborately painted chapels, tombs, animal pens and gardens (Kemp 1987). The isolated location of the Site, and lack of a well, made it dependent on supplies from the riverside city. An area of jar stands known as the Zir Area on the route into the village represents the standing stock of water for the village; it was supplied by deliveries from the city which followed route still marked by a spread of broken

pottery vessels (Site X2). Near the end of the sherd trail there is a small building (Site X1), which may be a checkpoint connected with the importation of commodities. The internal history of the village is not easy to reconstruct. At some stage an extension was added to the walled settlement, possibly to accommodate a growing workforce to help complete the royal tombs. Excavations at the Site have produced a relatively high proportion of jar labels and faience jewellery from the final years of the reign of Akhenaten and those of his successors, suggesting a burgeoning of activity at this time. The village site was still known later in the New Kingdom, when people occasionally buried their dead at the Site.

The Workmen's Village is one of the most extensively studied areas of Amarna, having been excavated in 1921 and 1922 (Peet and Woolley 1923: 51–108), when some of its walls still stood almost to roof-level, and again from 1979–1986 (Amarna Reports I-IV; Kemp 1987). Between these two periods of work, the Site was heavily looted. Many of its buildings were damaged and objects were undoubtedly removed. Anecdotal evidence suggests that the looting may have been carried out by villagers from El-Till over the course of just a few days, at the prompting of outside antiquities dealers. This finds some corroboration in the discovery of pieces of 'modern' paper and packaging among looted deposits at the Site. The Stone Village, and possibly also the North Cliffs Cemetery below the Tomb of Panehesy, might have been targeted in the same campaign. They show similar signs of disturbance.

The Workmen's Village survives as a semi-covered ruin. Just under half of the walled village remains unexcavated. Many of the exposed structures are weathering. Most structures are made of mud brick, but others, such as animal pens, are made of unworked boulders mortared with local clay. As the clay weathers, the stones fall out of the walls. It is a vulnerable site – there is no clear path around the ruins that does not involve walking directly over or very close to the structures and deposits. For now, the isolation of the Site offers it some protection from human threat.

Stone Village

The Stone Village lies on the north face of the same plateau that shelters the Workmen's Village. It is a smaller site and has been less extensively studied. It is built almost exclusively from local boulders mortared with local clay. Like the Workmen's Village, the Site had a central occupation area, around half the size of the walled settlement at the Workmen's Village. Excavations here revealed remains of both roofed structures and external spaces that were in part likely residential, but were not laid out in the same neat arrangement of houses as the Workmen's Village. Part of it seems to have served as a communal kitchen. The occupation area was surrounded, in its latest phase, at least in part by a thin enclosure wall. The extramural area of the Site is also far less developed than that of the Workmen's Village, with no sign of chapels, garden plots, or animal pens, although there are quarries and a small cemetery. Simple stone constructions on top of the plateau were perhaps connected with the supplying and/or policing of the Site. The Stone Village may also have housed workers involved in tomb construction, perhaps those who were less skilled or of lesser social standing than those at the Workmen's Village. It is possible that the Site also had other functions, such as supplying desert-based workforces with food. Together, the Workmen's Village and Stone Village, along with the Amarna tombs, offer a remarkably complete survival of a tomb-building network in ancient Egypt.

The Stone Village survives largely as buried archaeological remains. The Site was only discovered by archaeologists in 1977 (Kemp 1978: 26), and was the subject of a fieldwork campaign from 2005–9 (Stevens 2012a, 2012b). By this time it had already been heavily looted. Only limited excavations have occurred, and

the excavation trenches were back-filled using excavation spoil (other than two chamber tombs, which should be filled in). The Site remains in the same kind of equilibrium as it has since the looting. There are no standing monuments. It is again protected partly from human threat by its isolation.

Roadways

The eastern desert of the city was crisscrossed by a network of roadways: linear stretches of ground, c. 1.5–11 m in width, from which stones have been cleared and left in ridges to mark the road edges. The roads probably served variously as transport alleys, patrol routes, and in some cases as boundaries, and suggest fairly tight regulation of the eastern boundary of the city (Kemp 2008). Particularly well-preserved circuits survive around the Workmen's Village and Stone Village (Kemp 1987: 23; Stevens 2012a: 69-80); a third circuit on the high desert extends around the location of the Royal Tomb. Although ancient roadways are known from other sites (e.g. to quarries), no site preserves anything nearly as complete as the Amarna road network. The roadways are among the most vulnerable elements of Amarna's archaeological landscape, although protected in part by their isolated location. There have been several surveys of the roadways, since the late 19th century. Several roadways plotted on early surveys no longer survive, having been lost to actions such as flooding and modern vehicle damage (Fenwick 2004). These surveys have now been collated and added to with differential GPS survey work by Helen Fenwick, who is preparing a final publication of the road network.

iii) The Cliffs

North Tombs and cemeteries

The North Tombs are a set of elite tombs cut into the cliffs of the high desert towards the northern end of the Amarna bay. There are six principal tombs, numbered 1–6, which belonged to high officials in Akhenaten's court, and several smaller less finished tombs. The scenes in the tombs are of unparalleled importance for the study of Akhenaten's reign, and include images of the royal family worshipping the Aten, hymns to the sun god, and vivid scenes of temple and palace life. The tombs are among the most striking of Amarna's monuments and a standard component of tourist itineraries. The main publication of the tombs is that of Davies (1903-1908). A fuller architectural recording, particularly of the smaller undecorated tombs, would be beneficial.

Three non-elite pit-grave cemeteries for the general population of Amarna have been identified near the North Tombs. The largest is the North Tombs Cemetery, located in a *wadi* between North Tombs 2 and 3. It contains c. 3500–5000 interments. There is a smaller cemetery at the base of the cliffs adjacent to the tomb of Panehesy (no. 6), containing c. 1000 burials (North Cliffs Cemetery), and another in the low desert some 700m to the west of this, with perhaps a few hundred burials (North Desert Cemetery). The graves here generally take the form of simple pits cut into the sand, containing one or more individuals wrapped usually in textile and mats. At the North Desert Cemetery there are also a few shaft-and-chamber tombs. Collectively, the Amarna non-elite cemeteries are the most complete non-elite burial landscape to survive from ancient Egypt. It also is extremely rare, worldwide, to have such short-lived cemeteries, which can be matched so closely to the urban environment they served. The North Cliffs Cemetery is particularly notable for its restricted age profile, containing predominately older children through to young adults, tentatively identified as labourers tasked with building and maintaining Akhetaten for the king. If so, the Site offers one of the most direct and important testaments of ancient Egypt's coerced labour systems.

All three cemeteries have been subject to heavy looting. Much of the looting seems to have occurred in the distant past, but extensive disturbance has also taken place within the last century. This is particularly apparent at the North Cliffs Cemetery. Anecdotal evidence suggests it happened around the mid-20th century, perhaps prompted by outside antiquities dealers. An informal modern track also passes through part of the North Cliffs Cemetery, used by heavy vehicles traveling to illegal limestone quarries in surrounding cliffs. There are several scoops in the sandy embankments within the *wadi* where sand has been removed by mechanical diggers for use in building projects. This activity has not disturbed any ancient burials, but has potential to do so.

Boundary Stelae

The Boundary Stelae are inscriptions carved directly into the limestone cliffs around the perimeter of Amarna (Figure 1). They reach up to 8m in height. Sixteen stelae are known, three on the west bank of the river and the remainder on the east bank. Their purpose was partly to define the limits of Akhetaten, and partly to allow Akhenaten to outline his vision for Akhetaten. They are topped with scenes of the royal family worshipping the Aten, and most had statues of the royal family cut out of the rock at their base. The bulk of each tablet, however, is occupied with inscriptions in the form of 'proclamations', including lists of institutions the king intended to found. An 'earlier proclamation', inscribed in Year 5, is known from three of the stelae, and the 'later proclamation' of Year 6 occurs on 11 examples. Among the most notable and often-cited statements within the proclamations are the king's claims that Akhetaten was previously unoccupied, and his vow to repair the Stelae in the event they are damaged.

Most of the Stelae are now in a poor state of preservation, having suffered from weathering, the carving-out of portions of relief for sale on the antiquities market, and damage in the search for hidden treasure. While much of the man-made damage dates to the 19th and early 20th centuries, in 2004 Stelae S, which had been one of the best-preserved examples, was dynamited and all but destroyed, seemingly in a search for treasure behind the rock face. The human threat to these monuments is an ongoing one. Although one of the stela (A), situated at Tuna el-Gebel on the west bank, was for many years protected behind glass (destroyed after the 2011 revolution), it is difficult to devise strategies for the long-term protection of these monuments. The remote location of most of the Stelae makes them difficult to police. Several lie close to illegal quarries and are at particular risk from the kind of damage inflicted upon Stela S. The southern group, from stela Q onwards, fall within the boundaries of Asyut province and thus come under a separate antiquity's administration.

The Stelae have been published in two monographs (Davies 1908; Murnane and van Siclen 1993), with accompanying black-and-white photographs and partial copies of the inscriptions. Given the emergence of new digital recording and modeling techniques (e.g. laser scanning, photogrammetry), and the ongoing threats to these monuments, a new recording project would be valuable.

Royal Wadi and tombs

The Royal Tomb, one of the foundations listed on the Boundary Stelae, was cut into the limestone bedrock deep in the Royal Wadi in the eastern cliffs, recalling the Valley of the Kings in Luxor. Although unfinished, the tomb was used for the burials of Akhenaten, princess Meketaten, and probably Queen Tiy, whilst a large unfinished tomb annexe was perhaps intended for Nefertiti. At the end of the Amarna Period the

contents of the tomb were partly relocated to Thebes (Davis et al. 1910). The tomb was badly looted shortly after its discovery in the late nineteenth century and has suffered subsequently from vandalism and flooding. The walls nonetheless retain scenes of unique historic importance, including those alluding to the death of princess Meketaten, perhaps in childbirth. A separate valley leading off from the Royal Wadi also contains three additional unfinished tombs, and another chamber that is either a store for embalming materials or an unfinished further tomb lies almost opposite the main royal tomb.

The principal missions in the Royal Wadi in modern times have been those of J.D.S Pendlebury, acting on behalf of the Service des Antiquités in 1931–2 and 1935 (Pendlebury 1931), Geoffrey Martin and Ali el-Khouly (Martin 1974, 1989; el-Khouly and Martin 1987) and Marc Gabolde (Gabolde and Dunsmore 2004).

South Tombs and cemetery

A second group of rock-cut tombs belonging to the city's elite is situated at the cliff-face south-east of the Main City. There are 19 numbered tombs (nos. 7–25) and several unnumbered chambers. The tombs are overall in a less finished state and smaller than the North Tombs but are still vividly decorated with many important scenes and texts, including the longest version of the Hymn to the Aten (in Tomb 25 and partly destroyed). The main publication of the tombs is again that of Davies (1903–1908); further architectural recording, particularly of the smaller unfinished tombs, would be beneficial.

Adjacent to the rock-cut tombs is another very large pit-grave cemetery, the South Tombs Cemetery, contained to a 400m long wadi between Tombs 24 and 25. The cemetery contains c. 6000 interments. Excavations were conducted here between 2006–13, and a sample of c. 400 burials recorded. It was probably the main burial ground for people living in the Main City.

Ancient quarries (Please note, these lie outside the site boundaries but the below information is incorporated for context)

The rock of the cliffs at Amarna and of the high desert behind is limestone that mostly lies in approximately horizontal beds. Much of it is closely fractured or contains hard nodules that make it unsuitable for quarrying. Beds do exist, however, where the rock is fairly fine grained and homogeneous. These were sought out and used in the Amarna Period to supply stone to the city (Harrell 2001). Quarrying continued in later periods, and is still pursued today.

The principal area of ancient quarrying at Amarna is on the desert plateau behind the North City. It is most easily reached via the wadi entrance that separates the North Tombs into two groups and then by following the floor of the side wadi (Wadi Zabeida) that runs north-westwards. At a distance of 2 km a headland juts out on the south side, and towards the top the rock has been extracted to leave two large adjacent caverns. When it was visited in 1892 by Flinders Petrie he found the name of Queen Tiy carved inside. The name was later cut out, but the quarry is still known as Queen Tiy's. It is an example of a managed quarry from which many hundreds of blocks have been systematically removed. As a source of material of value it must have been counted amongst the assets of the estate of the king's mother, Queen Tiy.

The surface of the flattish desert above and beyond Queen Tiy's quarry, as far as the rim of the cliff, contains innumerable surface quarries large and small. The smallest are places where just a few blocks have been extracted. Sometimes a few have been left behind, the work of separation and extraction unfinished. The limestone when first exposed is quite soft and easily cut, although its surface hardens when

weathered. Many of the small quarries are consistent with a policy by the state of demanding blocks from people but leaving it to them to organize the work themselves. It could be that the building of the Amarna temples and palaces relied in part upon a supply of blocks raised as a city-wide tax or obligation to deliver a certain quota (although this has to remain a conjecture on current evidence).

An extensive gallery quarry was developed along the very edge of the cliff overlooking the North City. From here blocks (and also column bases) were taken (by donkey?) along a narrow path above the precipice, eventually joining a steep descent to the desert floor below. Blocks from the quarries further behind were probably taken down the wadi system past Queen Tiy's quarry. A few small individual surface quarries of the Amarna Period occur elsewhere in the desert behind Amarna. Large managed quarries containing inscriptions of the period also extend c. 10km to the north, in the cliffs behind Deir Abu Hinnis (Willems and Demarée 2009).

Limestone was also quarried from caverns not far from the northernmost boundary stela, X, in the place known as Sheikh Said. Some of the extraction might have been for *talatat*-blocks, but mostly it dates to a far later period, documented by rough painted texts on the ceiling that are written in Greek.

Alabaster, and indurated limestone, were also quarried during the Amarna Period from the Hatnub quarries in the high desert some 14km south-east of the South Tombs at Amarna.

Earlier and Later Histories

The archaeological remains of Amarna are not limited to the New Kingdom city. Middle/Upper Paleolithic activity is attested in flint scatters on the desert plain (French, 1984), and finds of Old Kingdom pottery suggest the Site served a settlement of this date, probably connected with the Hatnub alabaster quarries in the high desert c. 20km to the south-east. Potsherds found scattered across the city, and in concentrated numbers around the South Tombs, indicate activity during the Third Intermediate Period/Late Period but with as yet no accompanying architectural remains (French 1986; Kemp and Stevens 2010b: 57–65). Visitors to the North Tombs in the Ptolemaic period left inscriptions and images on the walls of the tomb of Huya (no. 1B) (Davies 1905).

The most substantial reoccupation of the Site, before the present day, dates to the Roman and late antique periods, when buildings and cemeteries were inserted among the ruins of the New Kingdom city (Pyke 2014) (Figure 27). Part of the North Suburb was built over, this activity represented by the remains of a large building with a tower and by a cemetery (Kemp 2005). At Kom el-Nana, a walled monastery was built over part of the earlier Sun Temple. It operated in around the fifth and sixth centuries AD (Kemp 1993; Faiers and Kemp 2005; Faiers 2013) and had economic links with the local villages and militia (Clackson 1999, 2005,) and received commodities from north Africa, Cyprus and the Levant (Faiers 2005, 2013). The monastery is unusual in having two refectories and three towers, perhaps a sign of expansion or the provision of separate accommodation and housing for monks and visitors. It included a small church decorated with wall paintings, the apse composition showing Christ Triumphant and the Apostles that is comparable to contemporary images at the nearby monastery at Bawit (Pyke 2003, 2014).

Another early Christian settlement at the North Tombs probably belonged to the same monastic community, living in scattered dwellings reusing the tombs and exploiting natural caves. Remains of the stone-built additions that turned these spaces into dwellings, and of the pathways between them are scattered along the cliff face. Several tombs were heavily modified, in some cases removing

architectural features such as columns and adding loom-pits and niches (Pyke 2010, 2014). The most substantial changes were in the tomb of Panehesy (no. 6) which was converted into a church (Jones 1991; Pyke 2007, 2008, 2009, 2014). Not only was it extensively remodeled, but wall paintings were also added, especially in the apse, the focal image of which is a six-winged eagle. This very unusual image, defaced in antiquity, might represent Christ at the moment of resurrection or ascension and is the best preserved of only three known examples, all of which are in the Amarna region (Pyke 2014). A further component of this monastic community is a solitary dwelling of the same character as those at the North Tombs, located at the mouth of the Great Wadi (Kemp 2005, Pyke 2014).
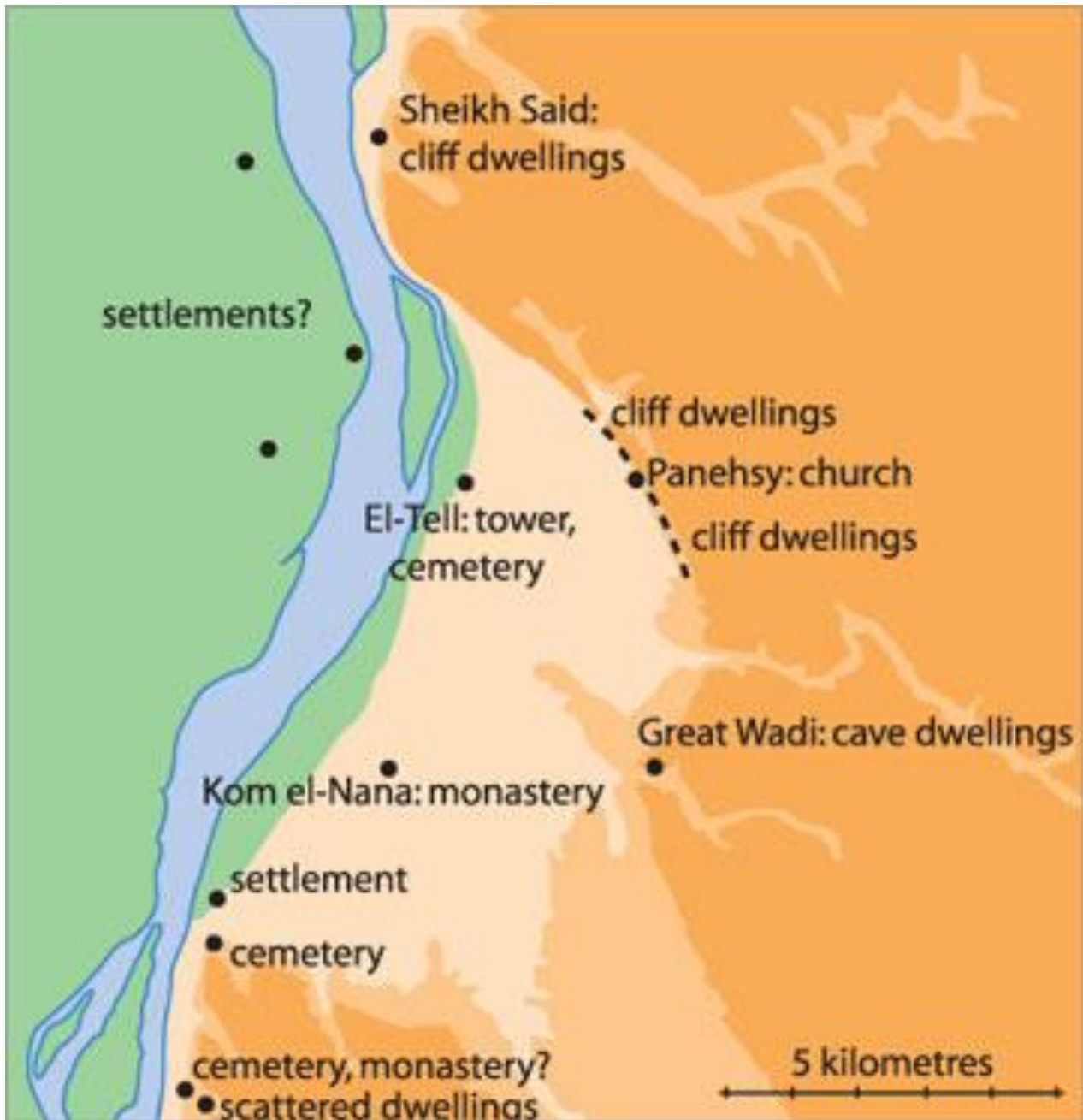
Figure 27. Map of Roman and Late Antique sites at Amarna. Courtesy of B. Kemp.

Archaeological Research

Amarna is one of the most extensively investigated archaeological sites in Egypt. Early European expeditions, from the late 18th century, concentrated on surveying the city and copying its key monuments, especially the Boundary Stelae and rock-cut tombs. The Napoleonic survey of 1798/1799 made the first substantial record of the Site, publishing a partial plan of the city in the *Description de l'Égypte* in 1817. In the 1820s, John Gardner Wilkinson resurveyed the city and copied some of its monuments, with James Burton copying the tomb of the official Meryra (North Tomb 4). Several survey and epigraphic expeditions followed, including those of Robert Hay and G. Laver in around 1833, Nestor L'Hote in 1839, and a party led by Karl Richard Lepsius in 1843 and 1845, who produced the most complete of the early plans of the city. In the 1880s, Urbain Bouriant and Alexandre Barsanti partly cleared the Royal Tomb, which had by this time already been robbed, and from 1901 to 1906 Norman de Garis Davies copied the Boundary Stelae and the rock-cut tombs, producing the first English translations of the Hymns to the Aten and a six-volume monograph set that remains the principal publication of the tombs (Davies 1903-1908). A further event of note occurred in around 1887, with the discovery by villagers of the Amarna Letters, a cache of nearly 400 clay tablets inscribed in cuneiform, most of which document diplomatic correspondence between Egypt and the Near East.

Excavation proper began with the expedition of Flinders Petrie in 1891–2, who excavated in and around the Central City, while also undertaking some broader survey (Petrie 1894). From 1911–1914, fieldwork stepped up in scale and shifted in focus when the Deutsche Orient-Gesellschaft (DOG) obtained the concession to the Site and a team trained largely as architects, working under Ludwig Borchardt, excavated large areas of housing in the Main City (Borchardt and Ricke 1980). The DOG established a grid system that remains the basis for numbering buildings at Amarna today and conducted an extensive survey of the Site and its environs (Timme 1917). The best-known outcome of their work was the discovery of the painted bust of Nefertiti, alongside many other pieces of sculpture, in a workshop in the Main City. However they, and the excavators who followed them, also produced hundreds of detailed plans of domestic buildings that serve as a kind of atlas of ancient Egyptian housing (see Kemp and Garfi 1993). The years 1921–36 then saw large scale excavations of the London-based Egypt Exploration Society (EES); namely, at the Workmen's Village, within housing areas across the North City, North Suburb, and Main City, at the outlying desert shrines, within the North Palace, and across the Central City (Peet and Woolley 1923; Frankfort and Pendlebury 1933; Pendlebury 1951).

Barry Kemp has directed an annual program of survey, excavation, and conservation at Amarna since 1977, under the auspices of the EES with British Academy funding until 2006, and as the independently funded Amarna Project thereafter. This work has seen focused excavation across the Site: primarily, at the Workmen's Village, housing areas and workshops in the Main City, the Small Aten Temple and its surrounds, the North Palace, Kom el-Nana, the Great Aten Temple, and at the city's non-elite cemeteries. Survey projects have included a survey of the eastern desert hinterland and a programme of aerial photography. The second half of the twentieth century has also seen campaigns by the Egyptian Antiquities Organization (e.g. Hamza and Kemp 2000), in the Royal Wadi first by Geoffrey Martin and Ali el-Khouly (Martin 1974, 1989; el-Khouly and Martin 1987) and subsequently Marc Gabolde (Gabolde and Dunsmore 2004), investigations of glass and faience workshops (Nicholson 2007), a study of the Early Christian remains at the North Tombs (Pyke 2007, 2008, 2009), survey and excavations at the Stone Village (Stevens 2012a,b) and other work.

The excavations at Amarna therefore fall into two main phases that coincide broadly with the periods before and after the development of 'new archaeology'. The early excavations of Petrie, the DOG, and the EES were generally characterized by rapid clearance that saw a focus on defining and recording structures. Little attention was given to the nature of the deposits encountered and the systematic collection of artifacts and environmental materials, although one of Petrie's aims was to create a corpus of artefacts that characterized the material culture of the late 18th Dynasty. Around 1000 buildings were cleared during this work. In part, the agenda of ongoing excavations is to provide well-provenanced archaeological materials so that the datasets from the two phases of fieldwork can be used together. Today, Amarna is a case site for a kind of data-driven social archaeology that, initially, sought to investigate how the city functioned and the boundaries between state and private initiative, but increasingly is seeking also the lived experiences of the ancient city's inhabitants. The long excavation history of the Site also provides a case study of the changing character of archaeological methods and approaches in Egypt and of discourse on past urban places.

Modern Settlement

Little is known of the history of modern settlement at the Site, although the towns of El-Till Beni Amran and El-Hagg Qandil are certainly several centuries old. They appear on maps from at least the end of the 1700s. The name El-Tell Beni Amran means 'the hill of [the tribe of] Beni Amran', suggesting that this village was founded by the Beni Amran, one of the Arabian tribes who settled in Egypt over the course of recent centuries. They seem to have been present in the area by at least 1737, when Danish traveller Frederic Norden noted that the general district (not just the east-bank bay) was already associated with the name Beni Amran or Amarna.

Ezbet Bardisi (Al-Azayza) and Ezbet Abdul Razak are much newer, developing within the last few decades. Ezbet Bardisi (Al-Azayza) was built illegally on archaeological land, but has become an officially recognised settlement, being marked on maps from around the 1990 and now provided with electricity and water. Ezbet Abdul Razak has developed legally within the parcel of land designated for the 'reclaiming the desert' project under President Nasser in the 1960s. It does not have official status but does receive some government support and is likely to gain officially recognition soon.

The Relationship between Amarna and the Landscape

Ancient Amarna was intimately connected with its landscape, both in a practical and symbolic sense. The key landscape elements of the Site are the Nile River, and the fertile band of agricultural land along its banks, the low desert plain and the looming cliffs of the eastern desert beyond. The river provided food, water and silt for making bricks and mortar and the city hugged the riverbank to make use of this natural resource. The cliffs provided stone for Akhenaten's buildings and allowed the king and his officials to create ideal burial places: rock-cut tombs protected in the mountainside. Many of the people of Amarna would have spent much of their working day by the river or at the cliff-side quarries. The flat open plain between the cliffs and river probably served, to some degree, as kind of a no-man's-land, a symbolic buffer zone between the living and the dead.

Some scholars propose a deep symbolic connection between the city plan and the natural landscape; there is little doubt that the wide, open desert bay served as a natural arena for the display of the Aten in the form of the sun and its daily progress across the sky, and that elements of the city were designed to engage

with this. The open-air temples were built with this natural spectacle in mind, and the east-west orientation of the city's main temples designed to engage with the movement of the sun. The eastern cliffs were also the domain of the sun god, where the Aten was understood to rise each morning, to perpetually recreate the world anew. One of the wadis in the eastern cliffs (the Great Wadi) has a profile that recalls the hieroglyph for 'horizon' and may have prompted Akhenaten to choose this particular stretch of land for his city. The Small Aten Temple seems to have been built so that its axis lines up, approximately, with the mouth of the Royal Wadi, perhaps indicating that the building was a kind of royal mortuary temple. As the sun moved east–west across the temples in the sky above, the king travelled north–south along the Royal Road, tying the built and natural worlds together in a kind of symbolic framework. Another important feature of the landscape for Akhenaten was the fact that it was unoccupied, allowing him to create a cult centre for the Aten on virgin territory.

The natural landscape also featured heavily in Amarna art, particularly in large painted and inlaid murals on walls and floors, and on columns. Scenes of river life including birds, fish and plants abound in official buildings, and define much of the distinctive character of Amarna art.

Amarna's Broader Landscape Context

The Minya governorate, of which Amarna is a part, is rich in archaeological heritage, like all of Egypt. 23 sites are currently registered in Minya, mostly within the Nile Valley proper; many more likely remain unrecorded. The region is known for its pharaonic tombs and animal catacombs, but includes Ptolemaic to Islamic settlements, under-studied prehistoric sites, fragile quarry landscapes, Coptic heritage and more.

The region is in many ways a typical Nile Valley Egyptian landscape, but has a number of distinctive geographic features, many of which have shaped human occupation of the region. The region is known for its limestone, which has been quarried from pharaonic times down to the present day, and remains an important part of the local economy. The Minya governorate also contains the southern parts of two major canal systems, the Bahr Yusef which runs from Dairut (just south of Amarna) to the Fayum, and El-Ibrahimiya canal on the east bank, running from Dairut to Beni Suef. Both have had significant impact on human occupation in the region, extending the agricultural potential of the land along the Nile. The Bahr Yusef has ancient origins, beginning as a natural offshoot of the Nile but being enlarged in around the beginning of the second millennium BC (well before Akhenaten's reign and the occupation of Amarna). The El-Ibrahimiya canal was developed in the 1960s. Another distinctive aspect of the eastern bank of the Nile River is the presence of a series of crescent-shaped bays, interconnected by complex wadi systems in the eastern desert. The Amarna bay is the southernmost of four such bays, which were each used for settlement from the pharaonic period onwards: Amarna, Deir el-Bersha, Deir Abu Hinnis and Antinopolis. Another unusual aspect of the region is that the pharaonic cemeteries are on the east bank of the Nile, rather than the west as is more typical. This is probably connected to the suitability of the rock here and its proximity to the river. As well as the Amarna tombs, other local archaeological sites such as Beni Hassan and Deir el-Bersha also make use of the East bank cliff face for tombs.

Summary of the Historic Environment and its Values

Amarna is important as a 'complete' ancient landscape, with substantial parts of its built and natural landscapes intact. Unlike most ancient Egyptian towns, it is not buried under a big modern city. The

settlement can be pinpointed to a very particular moment in time and, as a single-phase site (essentially), the urban layout is particularly clear but, for the same reasons, it also has significant differences from most of Egypt's settlement sites.

Amarna is also important as an example of a 'royal city', i.e. a place where the royal family were based for most of the time and therefore played a direct role in shaping the development and daily rhythm of life. While it is a classic case of a Nile Valley settlement in the sense that habitation and industry is located by the river and cemeteries are in/by the cliffs, settlements in other parts of Egypt would have looked quite different due to their different environments. For example, within Delta landscapes settlements are generally located on hillocks to avoid flood waters and necessitated different kinds of elite cemeteries as the geography does not facilitate rock-cut tombs. Other differences between sites, beyond appearance, would include key aspects of their organisation and infrastructure (e.g. access to water etc). In the residential areas of Amarna there were a particularly large number of wells providing the larger houses with private water supplies while gardens within larger estates and temples would have been distinctive. The settlement appears to have been low density and reveals the first stages of infilling open areas and extending houses upwards as the needs of the community changed.

Modern Features of the Landscapes

Since ancient times, the landscape of Amarna has experienced continuous change. While the intensity of these changes may vary, it is important to consider the direction of the current situation and possible future change in order to manage the unique qualities and Outstanding Universal Value of the Site. The contemporary character of the Amarna landscape is strongly shaped by the presence of modern urbanism and agriculture from the growing towns of El-Amariya, El-Hagg Qandil and El-Till Beni Amran (including the suburbs of Ezbet Bardisi [El-Azayza] and Ezbet Abdul Razak) (Figure 7). Amarna has 3 Primary Schools (6-12 year olds), 1 Preparatory School (12-15 year olds) and 1 Secondary School (15-18 year olds). The current population estimate across the villages is 25,000, an increase of c. 10,000 people in the area since the Conservation and Development Plan was released in 1995 (David Philips Associates, 1995: 12). This huge jump in population density is in keeping with general patterns across Egypt (World Population Review, 2018) and is a source of concern across the country as a result of limited resources and social pressures (Karasapan and Shar, 2018). The character of the east bank has changed from housing a few small slow-growing settlements, to a rapidly growing modern urban environment. Whereas the rate of modern growth/threat to antiquities was for a long time broadly commensurate with the pace of archaeological recording and capacities of site management and other antiquities caretakers, modern growth is beginning to far outpace the latter.

The towns of El-Hagg Qandil and El-Till have a long history of occupation dating back to at least the 1700s (as discussed above). Population numbers remained small and cultivation remained close to the river bank until the 1980s when electricity was finally connected from across the river (Figures 28 to 30 from 1977). This development enabled the mechanical pumps installed to fill the canals and other irrigation infrastructure built in a large area of desert around Amarna in the 1960s, during the leadership of President Naser (from 1956-1970), to finally come into use. As a result, farmland, roads, houses and trees continue to spread well into the desert surrounding and on top of the archaeological site. The large agricultural zone through the south end of the Amarna bay is a result of this scheme.

The intensification of farming, bringing more people to the area, has also increased agricultural traffic and, depending on the soil type in different areas, raised the water table. The vibrations from vehicles, increased moisture in the soil and the associated changes in humidity all affect the archaeological remains.

In terms of population growth, incoming and enlarging families initially continued to build with traditional mud bricks. Over the last 10 years, the availability of affordable limestone bricks and some fired bricks, alongside the desire of rural Egyptians to modernise and the need to optimise housing, means that few inhabited mud-brick structures remain. The one- and two-story whitewashed mud-brick architecture, which in many ways resembled the mud-brick structures of ancient Amarna and were visually sympathetic with the ancient landscape, have therefore been replaced (Figures 28 to 30). Today, three to five story brick flats, which are often painted in bright colours sit alongside Amarna's mud-brick and stone remains and inevitably change the wider landscape character (Figures 31 to 34).
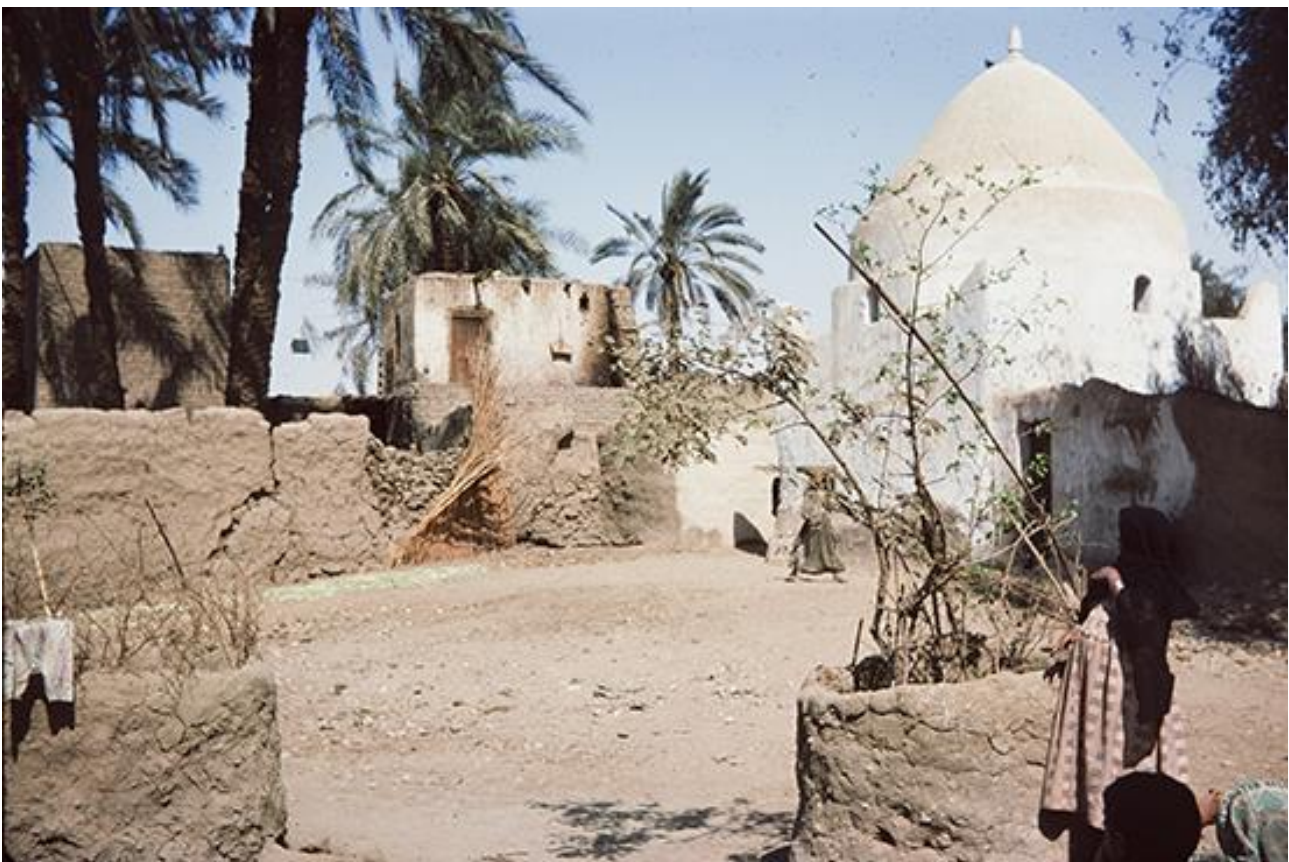
Figure 28. The tomb of Hagg Qandil, recently replastered and painted, in April 1977. Part of the so-called 'River Temple' site is beneath the foreground (Kemp 1977).

Figure 29. El-Hagg Qandil, April 1977, with the remains of an Amarna period structure in the foreground (Kemp 1977).

Figure 30. The village of El-Hawata at the southern end of Amarna in April 1977, partly covering an archaeological mound probably of the Late Roman Period (Kemp 1977).

Figure 31. View of modern El-Hagg Qandil (cemetery, sheiks' tombs and houses) looking across from the most south-westerly standing remains of the Main City (Tully 2018)

Figures 32 and 33. Modern brick architecture at Amarna (Tully 2018)

Figure 34. The southern extent of modern El-Till, parts of which overlie the Great Aten Temple as seen in its semi-conserved state in the foreground (Tully 2018)

Agriculture continues to provide the main form of employment – both through landownership and share cropping. Other employment opportunities are focused in services and industry in the nearby towns of Mallawi and Deir Mawas and the regional capital of Minya, as well as Cairo and overseas. Tourism revenue continues to be negligible, despite the clear potential the sector has as a growth area for the local economy, as outlined in the earlier Conservation and Development Plan (1995: 13-15).

Multiple individuals and agencies are responsible for the administration of the area. There is one main local administrative unit – the Local Council – which is made up of elected representatives. Although there are usually local councils in individual villages, this is not always feasible. At Amarna, the Local Council of El-Till are also responsible for El-Hagg Qandil, El-Amariya and Geziret El-Till. The Local Council manages the concerns/needs of the modern population. The council is chaired by a president and a deputy, who work alongside the other council members. The local administration is then represented by a District Director in Deir Mawas who feeds into the Minya governorate. The general police and tourist police belong to the Interior Ministry. They work independently from the council and each other to manage the security of the area. The MTA are responsible for the management of antiquities land and have to liaise with all the above administrative units when problems arise. (**Further details of these structures are provided in Part 4).**

Land ownership is complex. Non-archaeological areas are primarily under the control of the National Directorate of Survey. The protected archaeological/antiquities land, comprising c. 70 sq. km is controlled and managed by the MTA on behalf of the State. The original boundaries were mapped in 1998 by the MTA in conjunction with the Directorate of Survey. The modern towns (including their cemeteries) and associated agriculture overlie both core areas (El-Till and Ezbet Bardisi [Al-Azayza]) and the fringes (El-Hagg Qandil and Ezbet Abdul Razak) of the archaeological site (Figure 7). This includes privately owned land and

illegally occupied land, in both archaeological and non-archaeological areas, which is divided among many hundreds of families. A great deal of the archaeological remains, including parts of significant monuments such as the Great Palace, North Palace and North Riverside Palace, lie within these various land parcels, much of which is lost under the agricultural land to the west bordering the Nile. The need for further farmland, housing and cemeteries to support the growing population provides ongoing challenges for MTA staff, local security/police forces and communities. A lack of space for burial (for the growing population in the area) is a particular problem for Amarna. It is widely known that the cemeteries at El-Hagg Qandil and El-Till are being used for people from 10-12 villages, including a number of the west bank. This is an alarming development, perhaps connected with increased access to the east bank (discussed below), but may also be connected with the perception that the desert is 'empty'.

Modern roads, while a necessity, are an additional visual and audible intrusion within the archaeological landscape. The main north–south route between villages on the east side of the Nile runs through the centre of the archaeological site. In many places this directly overlies the Royal Road along which Akhenaten and his entourage processed daily in ancient Amarna. In 2005, much of the road, which had been a dirt track, was converted to asphalt by the army. This happened in tandem with the construction of asphalt roads and parking areas to take visitors to the North and South tombs (an initiative which developed out of the earlier Amarna Protection and Development Strategy, David Philips Associates: 1995).

In recent years, considerable development of broader transport infrastructure in and around the Site has also occurred, most significantly the opening of a new bridge across the Nile at the northern entrance to Amarna at Deir el-Bersha (2011) (Figure 8). The road leading through the north part of Amarna, from the bridge to El-Till, was also coated with bitumen and its line shifted, at points, further away from the river. This has increased traffic at Amarna, which was previously accessible mainly by ferries (including for vehicles) which crossed at El-Till and El-Hagg Qandil. A noticeable increase in farming and settlement along the north-south road running through Amarna to the north of El-Till is probably connected with this development, as the road becomes a settlement corridor. The Site is now far more connected to the west bank than it was previously.

The development of regional transport infrastructure, namely the Eastern Desert Army Highway, has also increased traffic flow in recent years. Further transport developments are planned for the region, which while enhancing visitor access, also increases the associated threats connected to urban expansion.

River traffic is also a significant feature of the modern landscape[3]. Fishing in both motor-powered and traditional row boats continues to make up an important part of the local economy. In addition, there are two car/passenger ferry routes which operate daily between El-Hagg Qandil (on the East Bank) and Bani Umran/Nazlit Samhan (on the West Bank), and between El-Till (on the East Bank) and Karf Khozam (on the West Bank). The crossings are part of a busy route for trade, work and personal travel from the east to the larger towns such as Deir Mawas and Mallawi, and the city of Minya on the west. Since 2015, tourist cruisers have also begun to return to Middle Egypt as the 'long route' from Cairo to Aswan is periodically opened due to changing security concerns. Amarna is conveniently placed on this route and there are moorings for large cruisers outside the Amarna Visitor Centre, which, when docked, are an imposing addition to the view along the river Nile (Figure 35).

---

[3] Impact on the historic environment is minimal.

Figure 35. A cruise ship docked outside the Amarna Visitor Centre in 2017 (Courtesy of the Amarna Project).

In 2017, 8.3 Million tourists visited Egypt and numbers are forecast to rise if the security situation stabilises further (Ministry of Tourism 2017, Oxford Business Group 2017, Kamel and Kassem 2018). At present, visitor numbers at Amarna are low compared to other sites in Egypt. Records from the on-site ticket office show that approximately 6,000 Egyptian and international visitors (combined total) bought tickets to enter the Site during 2018. This figure is also low, compared to the 15,000 recorded visitors in 1993 (David Philips Associates 1995), but may reflect increased security concerns in Middle Egypt over recent years.

While Amarna's visitor numbers present a relatively low risk to the Site compared to the 2–3 million people who visit Memphis and its Necropolis each year (GHF 2010), visitor 'flows', security, behaviour, facilities and interpretation still need to be planned for and managed to mitigate potential damage to the Site and to optimise the visitor experience/understanding of Amarna. Anecdotal evidence from local MTA staff also suggest the Site receives a high number of tourists who come for spiritual reasons. A number of these tourists are seeking to perform rituals and draw energy from the Site. As such, they are willing to pay large amounts to Site Guards in order to touch tomb walls, use incense or carry out other potentially damaging activities at the Site.

Significance of the Site: Statement of Value

While not a designated World Heritage Site, it is the opinion of the MTA and the authors of this plan that the Site is of Outstanding Universal Value (as discussed in **Part 1**). This is demonstrable through the multiple scales and interests through which the Site provides 'value'.

Historic Landscape Value

The Outstanding Universal Value of Amarna is attributed to its unique place in the history of ideas and the history of art, through links to Akhenaten's early form of monotheism and the development of a new artistic style. While Akhenaten and the Site itself are not necessarily well recognised, the connections with Nefertiti and Tutankhamun also have the potential to create a strong [more popular] draw. In addition, the scale and new architectural forms within the city, alongside the level of integrity and completeness of the city as a whole, including both sacred and secular buildings, and burial grounds, is extremely rare among cities from the ancient world. This, and the unusually short life-span of Akhetaten, make it a kind of time-capsule for life in an ancient Egyptian city, during a period of unique religious change. The preservation of the majority of the known elements of the ancient city and their close proximity to each other offers a rare opportunity for visitors to appreciate the formation and landscape setting of this early city. Very few archaeological sites anywhere in the world provide such a complete view of an ancient city, allowing insights into the lives of ancient kings and commoners alike.

The challenge, however, is that core elements of the city's palaces and temples were constructed from small limestone building blocks (*talatat*) which provided a ready source of building materials for Akhenaten's successors. Most of the stone-built areas of the city's temples and palaces were methodically dismantled shortly after Amarna was abandoned and the *talatat* were taken to Hermopolis (modern El-Ashmunein) across the river and other sites. This left only the carefully prepared foundation beds of lime-gypsum concrete and scattered fragments of columns, lintels and other stone elements. Other parts of these monumental buildings, however, as well as the city's domestic architecture, were constructed from sun-dried mud brick. These structures, sometimes with wall-paintings still present, were left standing in the years following Akhenaten's reign. Mud bricks were later quarried from the Site for re-use, over a long period of time and into the 20th century, but many mud-brick structures remain, either as open ruins standing (in places up to 2m high) or buried under archaeological deposits (Figure 36).

Figure 36. Standing mud brick remains of the House of Pawah (Courtesy of the Amarna Project)

Compared with many of Egypt's heritage sites, such as the temples around Luxor, Amarna's monumental buildings are less visually striking and more difficult for a layperson to interpret. While the plans of the mud-brick buildings are relatively intact, they do not hold the allure of stone structures and, the vertical dimension is difficult to understand without assistance in the form of a guide or detailed text. These issues can be overcome with good interpretation and 're-visualisation work' as seen at the Small Aten Temple and elsewhere (see **Part 3** and Figure 37). In some parts of the Site where walls are less well preserved and more ephemeral, or structures are covered with spoil heaps, assisting the visitor to visualise and interpret the Site remains a challenge repeated in a multitude of locations across the Site. However, the limitations and challenges are negated to an extent by the great historical interest of the Amarna period. The Site also offers the visitor an understandable palimpsest of history, with different periods of human activity easily identifiable at the Site – particularly the pharaonic, Early Christian and modern buildings, each also marking significant religious traditions.

Figure 37. Re-visualisation work at the Small Aten Temple (Tully 2018)

The portable artefacts from the Site are also important for developing understanding of world history and are held in museums around the world, some of the most famous being the head of Nefertiti in the Neues Museum in Berlin, considered a masterpiece in the story of art, and the Amarna Letters in the Vorderasiatisches Museum in Berlin, the British Museum, the Metropolitan Museum of Art (Figure 38) and other collections: these are an unparalleled source for the study of the ancient Mediterranean world and its interconnectedness.
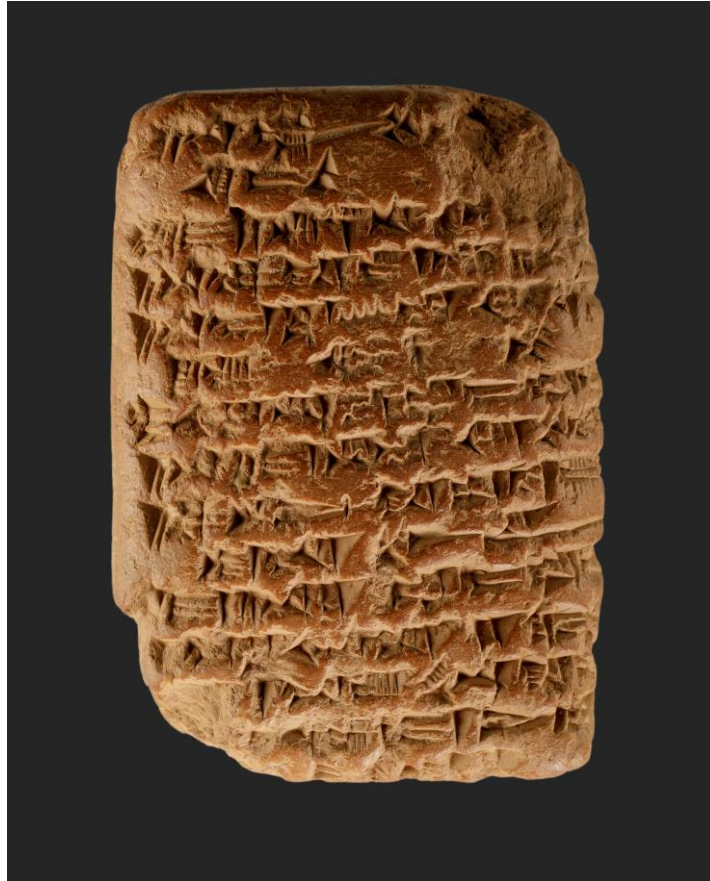
Figure 38. One of the Amarna Letters, MMA 24.2.11.
(Photo: Courtesy of the Metropolitan Museum of Art)

Research, Educational, Social, Artistic and Spiritual Value

The monuments, artefacts and landscape of Amarna continue to inspire Egyptian and International stakeholders including archaeologists, Egyptologists, artists, architects, historians and the public, and offer ongoing potential for research and personal enrichment. The Site has provided a source of creative connection for generations of artists and writers who have reinterpreted their experiences for other audiences. The uniqueness of Akhenaten's religious vision has also positioned the Site as an important pilgrimage location for those drawn to the 'mythic legacy' of ancient Egypt. In addition, the Site is highly valued by Egyptologists and scholars, historians and enthusiasts for its outstanding research value and the significant and ongoing contribution Amarna has made to Egyptian and, indeed, world history. Educational benefits also extend to school children, from local classes visiting the Site and Visitor Centre to children learning remotely about its history in classrooms around the globe.

At the National level, Amarna is valued by many Egyptians due to its connection with the iconic figures of Akhenaten, Nefertiti and Tutankhamun. Within the immediate community living on the Site and its fringes, this narrative contributes to a sense of pride of place alongside the knowledge that the area was once Egypt's capital.

The aesthetic value of the area, sandwiched between the river Nile and the limestone cliffs also plays a role in shaping all of the above values and experiences at the Site. This must be taken into consideration in management decision-making which considers the whole range of 'connections' to the Site to enable a

reasonable level of access whilst ensuring that the conservation requirements of the monuments and their setting are met.

Tourist and Economic Value

Heritage tourism is vital to Egypt's economy and, for many, is part of a once-in-a-lifetime visitor experience. In 2017 tourist revenues increased to 7.77 USD Billion from 3.80 USD Billion in 2016 (Trading Economics, N.D. a, b). The Egyptian Ministry of Tourism's forecast is for visitor levels to approach the 2010 peak of 14.7 million tourists generating 12.50 USD Billion in revenue in the coming years (Egypt Today, 2019). Plans for enhanced visitor facilities, including new museums, hotels and improved infrastructure are therefore in place for key areas (Reda, Egypt Today, 2018). While Amarna is not included in the State plan, a general upturn in visitors will inevitably have knock-on effects at the Site, bringing challenges as well as opportunities for Amarna's heritage and its associated communities. Plans therefore need to be put in place to manage different visitors' needs and to develop robust administrative systems and policies that address contemporary and historic management priorities.

In addition to the tourist value, Amarna is important to the communities who live in the vicinity due to its agricultural, social, educational/historical, and other economic values. While awareness and engagement with the archaeological Site is currently low, these values need to be taken into consideration when management decisions are being made in relation to the Site and its setting, alongside the need to enhance the depth of understanding of the significance of the Site more generally throughout the world.

PART 3. EVALUATION OF THE SITE: PREVIOUS WORK, CURRENT THREATS AND ISSUES, AND FORWARD PLANNING

Historical Excavation

i) The Central City

Flinders Petrie excavated limited parts of the Central City in 1891–2. His method of excavation, of casting the spoil back over recently exposed and recorded areas, had the effect of protecting much of what he had excavated. This extended to areas of wall painting in the Great Palace. In two halls of the Great Palace, however, he arranged for two roofed structures to be raised over areas of painted flooring with scenes of water pools and vegetation, so that visitors might enjoy them. These remained until 1912 when a local quarrel resulted in the floors being broken to pieces. These were subsequently collected, taken to Cairo, and re-assembled in the Egyptian Museum. The walls of Petrie's visitor centre remain, holding back a large spoil heap from later excavations.

In 1931 the Egypt Exploration Society expedition, directed by John Pendlebury, began what developed into an almost total excavation of the Central City, taking five seasons of work and ending in January 1936. In addition to annual reports, in 1951 the EES published a two-volume report of the whole undertaking (Pendlebury 1951). The large scale of the work was possible partly on account of the rapid pace that was maintained, and partly through the use of a large workforce, sometimes using a hand-pushed light railway. Unlike Petrie, Pendlebury followed the more usual practice of piling the spoil in open spaces beside the work, leaving the excavated parts exposed. These spoil heaps are now the determining landscape features across the Central City; they blend into the landscape and are not unsightly (Figure 39). They also act as windbreaks and are probably vital in reducing the effects of wind-erosion. At the Great Palace they also cover large parts of the original foundations for stonework and so help to preserve them. The spoil heaps have a further importance, containing potsherds, worked stone and glazed-ware fragments and other material that was of marginal interest in earlier days of archaeology and so discarded.

ii) Riverside Housing Areas (North City, North Suburb, Main City)

Vast areas of Amarna's residential suburbs were cleared in the early 20th century. An unfortunate legacy of these early excavations is the loss of architecture due to a lack of adequate backfilling at the end of each field season. Today the residential areas of the city are dominated by the large spoil heaps left by the EES and DOG excavators along the streets and in other open spaces. In the years that have followed their work, the city has suffered greatly from exposure, to the extent that many of the smaller houses, have completely eroded away. The Amarna Project has also undertaken targeted excavation among houses (and workshops) in the North City and, mainly, in the Main City. It has backfilled its excavations, although some of the backfill is beginning to subside (e.g. in the House of Ranefer in the Main City Figures 40 and 41).

Figure 39. Spoil heap from early 20th century excavations next to houses along the southern edge of the Central City (Tully 2018)

Figure 40. The ruins of small mudbrick houses excavated in the Main City in the early 20th century. Left uncovered at the end of the excavations, only the lower parts of the walls now survive (Courtesy of the Amarna Project)

Figure 41. The House of Ranefer, excavated in the early 20th century and again from 2002–6. At the end of the excavations in 2006, the floors and lower parts of the walls were covered in sand (Courtesy of the Amarna Project)

iii) Desert Villages

The Workmen's Village was excavated in two phases, in the early 1920s and again from 1979 to 1986. The early excavations were not backfilled but left open so that by the time work resumed at the Site in the late 1970s the previously excavated houses had substantially deteriorated, although accumulations of windblown sand had protected their lower parts. The excavations of the 1970s and 80s focused both on houses within the villages, and extramural areas such as chapels, animal pens and administrative buildings. The policy was to backfill with the spoil from the next season, as far as feasible. In this way, for example, the entire Main Chapel was filled, although in subsequent years some illicit excavation took place in the backfill. All excavated houses other than the last excavated example were backfilled. In the case of Site X1, this was backfilled at the end of its excavation season (1979) but, by the following year, much of the sand had blown away since the Site was in a particularly exposed position. Unfortunately, it was not possible to backfill all of the excavated buildings and many have since deteriorated. At the Stone Village, only limited excavation has taken place, all in modern times, and the excavation trenches were backfilled using excavation spoil (other than two chamber tombs, which should be filled in). This site remains in the same kind of equilibrium as it has since it was subject to widespread looting probably several generations ago.

iv) Cemeteries

The non-elite cemeteries have only recently been excavated (from 2006 onwards). The cemeteries largely lack built architecture. The policy here is to backfill the excavation squares with spoil at the end of each season, completely covering the grave pits.

Evaluation of previous development and protection plans

Previous management and development documents, alongside the diverse conservation and research projects that have taken place at the Site over the last 40 plus years, have played a significant role in shaping the current Site Management Plan and highlighting funding priorities.

Completed projects include the following (chronologically), which were undertaken by the Egypt Exploration Society/Amarna Project unless otherwise stated:

1. **Test excavations connected with the desert reclamation scheme (1960s):** MTA Inspector Osiris Gabriel carried out exploratory excavations at Kom el-Nana and El-Mangara. Small excavations in areas where people wanted to build were also conducted by Inspectors Ali Hasan and Mahmoud Hamza in these years.

2. **Survey of the riverside city (1979–88):** tying together existing site plans produced in the early 20th century with new survey data. The series of eight map sheets and accompanying volume of text are published as B.J. Kemp and S. Garfi, *A survey of the ancient city of El-Amarna* (London, Egypt Exploration Society 1993).

3. **Cleaning and fencing of the North Palace (1983):** by Dr Ali El-Khouly for the Supreme Council of Antiquities. The rear part of the palace was re-cleared, and dirt added to the top of the embankment that existed around the structure. The latter is the remains of the slope of rubble which formed as the building decayed over the millennia. A barbed-wire fence was constructed around the palace. This prevented farmers driving their animals diagonally across the ruins, as had been common.

4. **Excavations at the Workmen's Village (1979–86):** targeting areas both within the village, and its peripheral remains.

5. **Excavation of houses at the North City (1981):** small-scale re-clearance and re-planning.

6. **Start of a sample strip of excavations in the Main City (1987):** excavation at a workshop on the eastern outskirts of the Main City (Q48.4) and a house in the Main City (P47.33). This was intended to be the start of a sample strip of the city from its eastern to western limits. Threats to the Site of Kom el-Nana from local farmers prompted a shift in focus to this site. Terrorist threats that began in 1995 then interrupted work on site for several more years.

7. **Excavations and fencing at Kom el-Nana (1988–2000; 2016–17):** In response to threats from agricultural encroachment, in 1998 the excavation programme was shifted to the Site of Kom el-Nana. It examined areas of both the Amarna Period Sun Temple and the later monastic remains. It ran until 1995, when it was halted by local unrest, although one further season was conducted in 2000. In around 1990, a barbed-wire fence was constructed around part of the Site; namely, the North and South Shrines, which were particularly vulnerable because of local knowledge that decorated stone blocks could be found here. The fence was later removed by local farmers. In late 2013/early 2014, the Site was threatened by further encroachment of fields from the west, prompting another project to fence the Site, backed by a public fundraiser. This saw the erection in 2016/17 of a barbed wire fence along the western side of the Site, and parts of its northern and southern edges (Figure 42).

Figure 42. Google Earth images showing recent agricultural encroachment at Kom el-Nana. The image on the left dates to 5 November 2009. The archaeological site is the square enclosure in the middle of the trapeze-shaped area of desert. North is toward the top. The image on the right was taken on 26 November 2014. It shows long rows of cultivation strips cut into the desert and into the western edge of the site itself. The white arrow is where one such strip has cut through the enclosure wall and associated mud floor. This encroachment occurred towards the end of 2013/beginning of 2014

8. **Re-recording, conservation and fencing of the Small Aten Temple (1987–2007):** Large spoil heaps inside the courtyards were removed to an outside location in order to re-create the succession of open spaces that made up the temple. Steps were taken to stabilise walls by adding newly-made bricks, sometimes to fill cavities in the sides, sometimes to add a capping layer to the top, with advice from UK heritage buildings consultant Richard Hughes. In places, especially towards the rear of the building, the foundations of stone architecture (thresholds and walls) were uncovered. This prompted the practice of covering the original foundation with a thin bed of sand and then of laying one or more courses of new stones cut to the original size. In this way the outline of the stone parts was made visible and at the correct ground level. In 1995, a full-height replica of one of the large papyrus-bud columns was erected in front of the Site of the stone pylon entrance to the stone Sanctuary (Figure 37). This serves to convey the original monumental scale of the buildings. Fencing was also added over the course of work at the Small Aten Temple. This includes a barbed-wire fence separating the front of the Site from the road, creating a safe corridor of access to groups of visitors who normally reach the temple by bus. The fence does not cross habitual village routes and has remained intact, needing only occasional repair.

9. **Visitor Information Panels at the Small Aten Temple (c. 1989):** Three panels were set into concrete foundations at the Small Aten Temple. These were vandalised shortly after installation. Two were destroyed to such an extent that they were completely removed. The third, at the front of the temple, was covered by a padlocked iron door.

10. **Fencing at the Great Palace (c. 1990):** Shortly after the wire fence was erected at the Small Aten Temple, a second fence was erected beside the Great Palace. The aim of the fence was to prevent people from crossing the palace site from side to side, sometimes with lorries. Because it cut across habitual routes, within a few years the fence had been removed.

11. **Iron doors and signage at the South Tombs (early 1990s):** Six tombs were provided with iron doors paid for by a grant from the Amarna Research Foundation. Each tomb was also given a discrete enamel panel (A4 size) providing the tomb number and name and title of its owner. The panels were fixed to the stone beside the doorway (Figures 43 and 44). All have survived. There are plans to replace a small number on account of loss of clarity from wind erosion.

67

Figures 43 and 44. Metal doors and faded signage at the South Tombs (Tully 2018)

12. **Signage at the North Tombs (early 1990s).** Free standing signage was created and installed by the MTA at the North Tombs. The protective metal doors have in place since the 1920s following an initiative by the Egyptian Exploration Society (Figure 45).

Figure 45 - Signage and metal doors at the North Tombs (Tully 2018)

13. **Development of a restoration and conservation strategy (1995):** by David Philips Associates. This has only been partially enacted but includes many of the developments outlined below.

14. **Partial reconstruction of house (Q44.1) (1996–7):** This involved mud-brick and stone reconstruction and consolidation of the existing house, located just south of the Central City, alongside fencing the area and creating a staircase and viewing platform (Figure 46). The work was completed through cooperation between the MTA and the Amarna Project with the aim of providing another key visitor attraction that would help visitors visualise domestic life. Terrorism fears in the late 1990s put a stop to the project, and part of the fence has since been removed.

Figure 46. Viewing platform for Q44.1 (Tully 2018)

15. **Re-recording, conservation and fencing at the North Palace (1990s and 2000s):** To counteract the deterioration of exposed brickwork at the North Palace (possibly accelerated by an increase in humidity brought by an extension of irrigated agriculture on the desert behind the palace), consolidation and repair began at the Site in the 1990s. It continued into the 2000s. The approach was to: replace badly eroded bricks where they formed the face of a wall, especially towards the base where erosion creates a danger of collapse; cap the tops of walls with new bricks where the existing top was soft; and recreate in a few new courses walls which are either entirely missing or were represented by only a low mound of decomposed bricks. In some places, the positions of missing architectural elements were added to clarify the building plan for visitors. The existing barbed-wire fence was also strengthened and repaired on several occasions.

16. **Desert Hinterland Survey (2001–6):** Helen Fenwick (University of Hull) mapped the eastern desert hinterland of the Site, including the ancient road network.

17. **Study of a glass and faience workshop O45.1 (1993–2004):** by Paul Nicholson.

18. **Re-excavation at the southern end of the Great Palace (1996–2000):** focusing on the 'Smenkhkare Hall'.

19. **Visitor Route through the Central City (early 2000s):** a Visitor Route was marked out around the Central City, using a series of low concrete cylinders bearing numbers from 1 to 17. The route takes in the Small Aten Temple, Kings House and bridge, Amarna Letters House and Reconstructed House (Q44.1). The numbers link to an accompanying written guide, which is available for download as pdfs on the Amarna Project website (http://www.amarnaproject.com/images/downloadable_resources/tourist%20route.pdf). The route was intended to improve visitor experience. It seems to have had only moderate impact, probably due to the remote storage of the guide.

20. **Flood defences in the Royal Wadi (2004/5):** the MTA installed basic flood defences in the form of an exterior 'porch' (walls and roof) outside the Royal Tomb to channel flash flood water away from the entrance of the tomb, and a large drainage channel some 11 kilometres long (Figures 47 and 48).

Figures 47 and 48. Drainage channel and porch constructions at the Royal Wadi (Courtesy of G. Dabbs)

21. **Excavations in the Main City (2002–6):** excavations at the house of the official Ranefer and a nearby neighbourhood of small houses in the Main City. In 2014 and 2017 re-clearance was undertaken of a nearby house-workshop.

22. **Aerial photography survey (1990s and 2000s):** a long-term balloon photographic survey by Gwil Owen. The result is near-complete aerial photographic record of the Site, both the riverside city and its desert hinterland (Figures 49 and 50).

23. **Signage in Central City etc (c. 2000s):** the local council erected a small number of signs identifying key monuments (Small Aten Temple, directions to the North Tombs).

Figures 49 and 50. Aerial photograph of the Sanctuary of the Small Aten Temple (left) and the bridge linking the King's House and Great Palace (right) (Courtesy of the Amarna Project)

24. **Stone Village Project (2005–9):** a survey and excavation project at the Stone Village, the first examination of this site.

25. **Investigation of Early Christian remains at the North Tombs (2007–10):** Survey and recording of the stone-built Early Christian structures outside the North Tombs, and of the church built into the Tomb of Panehesy (North Tomb 6).

26. **Construction of two Visitor Rest houses (2005):** new visitor amenities and facilities were added in the form of two rest houses with toilets and retail space (built by a private company under contract to the Egyptian Army with 5EGP Million). The main rest house is located at the north-east extent of El-Till next to the ticket office or *taftish*. The second rest house, on route to the South Tombs, was never finished and suffered vandalism during the 2011 revolution.

27. Connected to the above, **work to improve access** to the Site took place during the same period, this included:
    - construction of asphalt roads linking Amarna to the Desert Highway and connecting the ancient habitation centre with the North Tombs, Royal Tomb and South Tombs (although a dirt track still has to be taken to reach the parking area for the South Tombs)
    - construction of a stone staircase to provide safe access to boundary stela U (Figure 6)
    - construction of steps and access paths at both the North and South tombs (the North tombs also have some areas of seating but there is no provision for litter). T1-2 in the North tombs

have been powered by a generator since 2017[4], whereas T3-6 have had mains power since 2012. At the South tombs only T25 has power (generator) but issues with fuel provision and lack of servicing mean it is often out of use.

- construction of basic flood defences, shelter, wooden walkways and handrails at the Royal Tomb alongside installation of a generator (which is unreliable and was out of action at the time of writing due to problems with the filter[5]) to light the tomb and digging of a drainage channel

28. **Amarna Visitor Centre development and construction (2005–2016):** a collaboration between the MTA, Michael Mallinson Architects and the Amarna Project (University of Cambridge). The displays were designed largely by the Amarna Project and developed with the help of the Replica Department of the MTA, Eastwood Cook and Andy Ingham Ltd. They take the form of Arabic–English information panels and replicas of monuments and objects from the Site held in museums around the world (Figure 51). The centrepiece is a full-scale cut-away reconstruction of a house of an Amarna official (Figure 52). The information panels introduce visitors to the reign of Akhenaten, urban life in ancient Egypt, the archaeological process and other themes. The Visitor Centre is located next to the Nile within the rapidly growing town of El-Till on the archaeological site of Amarna (Figure 53). It is a unique piece of regional heritage infrastructure but is currently underused by local and visiting audiences. Several components of the Centre and its displays are also not yet finished, or in need of repair-work, such as the reconstructed house.

Figure 51. Displays inside the Visitor Centre (Tully 2018)

---

[4] The mains power at the North Tombs is used to floodlight them at night as a security precaution.
[5] As a result of the broken generator, the guards working at the Royal Tombs have brought in a smaller diesel fuelled generator and take it in turns to buy the fuel from their own salaries. The small generator cannot support the full lighting system for the Royal Tomb making the current visitor experience a dim and somewhat dangerous affair as the wall paintings cannot be seen very easily and finding ones footing is precarious.

Figure 52. Cut away of an Amarna house model (Courtesy of the Amarna Project)

Figure 53. Exterior of the Amarna Visitor Centre (Tully 2018)

29. **Re-recording of the Royal Tomb and parts of the Royal Wadi (1970s–80s):** Survey, clearance and recording by Geoffrey Martin and Ali El-Khouli, with some follow-up work by Marc Gabolde from 1999–2006.

Ongoing Work

1. **Conservation work on the rock-cut tombs by the MTA (1990s–present):** ad hoc, but with periodic interventions every 5 or so years, including in 1998/99, 2004, 2012. The main effect of conservation work in the tombs was the coating of all decorated wall surfaces with PVA, in conformity with a national policy to this effect.

2. **Excavation and re-building of the Great Aten Temple foundations (2012–present):** One season of work was undertaken at the Site of the platform where a large stela had stood, but most of the work has concentrated on the Long Temple and the temple entrance. The initiative also involves the capping of walls, foundations and features with mud-brick and limestone (Figure 54).

Figure 54. Preservation/revisualisation work at the Great Aten Temple (Courtesy of the Amarna Project)

3. **Excavations of the non-elite cemeteries (2005–present):** a long-term project to excavate the non-elite cemeteries of the Site (with first excavation season in 2006). All four currently known cemeteries have been sampled. A result has been a much-improved understanding of the life of the non-elite at the ancient city, especially as regards health and workload. The collection of skeletons from Amarna is one of the largest and most carefully excavated assemblages of human remains available for study from ancient Egypt. It is stored in the on-site magazine.

4. **Post-excavation analyses (1977–present):** In addition to site-focussed work, the Amarna Project supports various long- and short-term initiatives to record material culture, environmental remains and human remains excavated at the Site, in collaboration with international researchers.

5. **Scanning, databasing & archiving of excavation records produced since 1977:** undertaken in a relatively focussed manner since 2014. Approximately half of the archive, kept in the Amarna Project office in Cairo, has been digitised. The digitised records are stored on 3 hard drives, kept separately.

6. **Visitor Information Panels (2017–present):** Thirty-six Visitor Information Panels have been developed for the Site as part of the current British-Council funded University of Cambridge/MTA site management project. The panels are for key areas of interest in the city and for each of the decorated rock-cut tombs. They are in Arabic and English, with extensive maps and diagrams, and are intended to both provide information for visitors and to help signpost areas of Antiquities Land (Figure 55). It is anticipated that the panels will be installed in 2020/21.

Figure 55. Example of the new Site signage

Elements of these on-going projects and have been incorporated into the current Management Plan. These will be addressed after a review of current site conditions.

Review of Current Site Care and Site Management

At present, there is little formalised site care and site management at Amarna. From the removal of litter to larger tasks, such as dealing with illegal encroachment or urgent conservation, work is largely carried out on an ad hoc basis when time, staff and resources are available. Some permanent management structures exist in the form of the employment of a number MTA Inspectors (some based on site and others at the Visitor Centre). Amarna falls under the jurisdiction of the MTA Chief Inspector of the East Bank for Mallawi, which also includes Deir el-Bersha. The Chief Inspector reports up the chain to the District Director of

Mallawi, the Sub-Regional Director of Minya, the Regional Director of Middle Egypt, the Sector Director of Egyptian Antiquities and finally the Head of the MTA.

Working under the Chief Inspector of the East Bank for Mallawi, the management of the heritage of Amarna itself fall into three groups:

> 1 – The inspectorate at El-Till, which consists of 2 permanent and 6/7 temporary site inspectors

> 2 – The Inspectorate of El-Hagg Qandil, which consists of 1 permanent and 4 temporary inspectors

> 3 – The Amarna Visitor Centre, which consists of 3 permanent and 4/5 temporary inspectors.

Some of these inspectors have to travel up to an hour and a half to reach the Site each day as they are based as far away as Minya.

The MTA also employs a number of site guards at Amarna. Most of the guards are local people from El-Till, El-Hagg Qandil and Deir Mawas (across the river). There are 16 guards in total who rotate between different areas of the Site:

- The Royal Tomb has 3 guards. The guards are based at the *taftish* (ticket office on the main road to the tombs) but pay regular visits to the tomb by bicycle or motorbike and facilitate tourist access.
- The North Tombs have 3 guards who are also based at the *taftish* and follow the same procedure as the Royal Tomb guards in terms of security checks and facilitation.
- The South Tombs have 2 guards who are based in a small shelter at the tombs themselves as they are on a different access road to the *taftish*
- Hatnub quarries, which fall outside the official site boundaries, have 1 guard but he is not based there all the time as it is some distance from the towns
- El-Till has 2 guards based in a small guard hut in the Central City and at the North Palace (the huts were constructed by the Amarna Project in 2012 and in 2015).
- El-Hagg Qandil has 2 guards based in a small guard hut at the desert fringe of the town
- The Visitor Centre has 3 guards who are based in the offices there

The MTA is also responsible for basic visitor provision/management at the Site (including the ticket office, rest houses, parking and interpretation etc.) and work with the local tourist police to provide site security. The tourism police report to the regional Head Quarters in Minya. Locally, they are based at the *taftish* and accompany MTA guards and visitors to different areas of site as needed. The civilian police force generally only come on site if an arrangement has been made between the governor of Minya, the MTA and local council to deal with a specific issue within the antiquities land, e.g. the removal of illegal building. Relationships between the various police, guard and council organisations can be difficult as the hierarchy is often unclear and there are no regular meetings to discuss concerns.

Community Administration is organised by the Ministry of Local Development in Cairo. The Governorate of Minya selects District Directors who in turn select the members of the local council for each town/village conglomeration. The Director of Deir Mawas oversees the selection of Local Council members at Amarna. Each Local Council has a Director, Co-Director and number of other members who are responsible for different Departments, e.g. transport, utilities, education etc. These individuals are all government employees.

Residents are under the supervision of their local council. At the same time, they are under the jurisdiction of the civic police who do not work directly with the local councils. Many towns and villages also still have an Omda (local chief/leader), however people tend to go to the police if there are any local disputes. The local police force passes problems to the local police headquarters, which in turn liaise with regional courts.

The ongoing research and promotion of the Site by The Amarna Project/University of Cambridge and collaborating institutions also builds into existing management structures. However, individual and organisational roles and responsibilities are not clearly defined and current communication between management partners is poor. These factors are significant contributors to the risks outlined below and mean that the creation of a formalised Governance Structure (**Part 6**) and Management Plan, with dedicated responsibilities and communication channels (**Part 6**) is one of the core aims of this work and forms the basis for the first 'issue' to be addressed in relation to the Site.

ISSUE 1: The need to formalise management networks and responsibilities (including regular site monitoring/assessment) and to align with other statutory and non-statutory strategies and plans (e.g. housing, services, tourism) and to work with site stakeholders to enhance funding and monitoring of the Site.

This goes hand in hand with **ISSUE 2: The need to review and better define the boundaries of the Site** (the complexities of which are outlined in the original boundary discussions in **Part 2**), as these 2 elements affect all other risks and will define the effectiveness of management initiatives at the Site as outlined below.

Current Threats

This document is a key reference for the effective protection and management of the Site, the main objective of which is to sustain its Outstanding Universal Value. This section discusses the core issues and threats to the Site focusing on high risk areas and outlining opportunities and approaches to address these challenges. The Aims, Actions and Policies agreed with site management partners as a result of identifying issues and threats are discussed in **Part 5**.

The Operational Guidelines for the Implementation of the World Heritage Convention (clause II.F, 110, 2017: 31), states 'Impact assessments for proposed interventions are essential for all World Heritage properties.' To assess the true situation of the Site, an assessment of existing and potential threats to architectural features, subsurface remains and the integrity and interconnectivity of the Site as a 'whole' is necessary to identify the level of threat and prioritise actions.

Protection of the Site is currently delivered by local MTA staff and supporting agencies following national law connected to activities that can and cannot take place on antiquities land (see **Part 1**). Until the 1995 Conservation and Development Plan was compiled, little or no formalised conservation and preservation work had taken place at the Site[6]. While a great deal has been achieved since then (over the last 23 years), much of the exposed stone and mud-brick buildings remain under threat from erosion and collapse. In 2018, a visual Conditions Survey and Impact Assessment were carried out in order to evaluate the physical

---

[6] Some basic conservation had been carried out at the Small Aten Temple prior to 1995 along with fencing initiatives and other elements outlined in the 'Evaluation of previous development and protection plans' (see **Part 3).**

condition of Amarna and make connections with the socio-economic use of the modern landscape. This involved photographic survey and conditions assessments reviews across the entire site. Previous photographs of the Site provide a vital database of the Site and its conditions and it is the recommendation of this report that full photographic and visual surveys are carried out every 5 years to document the changing conditions of the Site. Further surveys of the conditions of specific materials (e.g. mud-brick, wall plaster etc.) and areas of the Site (e.g. the tombs) are needed before any of the recommend conservation work is carried out.

Following Conditions Reporting and Impact Assessments, various current and potential threats were identified, these are explored in overview before connecting each issue to specific monuments/areas, highlighting risk levels and prioritising actions.

Summary of Risk Factors

High Risk:
• Development pressures/encroachment - agricultural and urban (both illegal and legal, the latter in areas not requiring planning permission or other forms of consent)
• Erosion and collapse of archaeological remains
• Unclear site boundaries
• Inadequate protection of exposed mud-brick and stone structures
• Lack of visibility and protection for ephemeral features such as ancient roads and the Desert Altars
• Incomplete excavation/documentation of areas of the Site resulting in potential loss of information in connection to other threats
• Incomplete conservation of tombs
• Impact of roads/traffic on the Site and its setting
• Inadequate on-site interpretation and visitor management
• Poor communication about the Site, including of both research outputs and perceptions of the Site and its value between stakeholder groups
• Inadequate site management/site maintenance and largely unmanaged public access
• Lack of local engagement in stewardship and promotion of the Site

Medium Risk:
• Flooding/insufficient flood prevention measures
• Micro-organism, animal and other wildlife damage/intrusion
• Structural instability of bedrock into which tombs are built
• Insufficient tourist infrastructure and management (e.g.: shade, seating, information on appropriate behaviour, pathways around the Site, Site Guards etc.)
• Illegal excavation and vandalism
• Extraction of natural resources such as limestone and sand (some legal, some illegal, which may threaten cemeteries and the ancient quarryscape)

Low Risk:
• Seismic activity

Ongoing Threats

Agriculture

ISSUE 3: The need to manage potentially damaging agricultural activities that are taking place illegally or are outside of legal planning control and affect the integrity and Outstanding Universal Value of the Site. To balance the needs of the historic environment with those of farmers.

The impacts of agriculture are some of the greatest threats to the sustainability of the Site through encroachment, detritus, traffic and changes to the water table/humidity. These issues were noted during the 1995 Conservation and Development Plan. Since this time encroachment has intensified. At present, 'arms' of agriculture and their associated buildings[7] are spreading eastward towards the cliffs from the eastern extent of El-Till and El-Hagg Qandil. While problematic in themselves, these developments present a wider danger in terms of the temptation to gradually 'infill' the gaps. This could result in the whole urban area of the Site (and thus the Site's integrity and unique vistas) eventually being lost if action is not taken. To date, various legal challenges have been brought to the courts by the MTA which have led to illegal agricultural land and buildings being removed or demolished. The process, while effective, is timely, costly and needs support from the local police. Recently, the MTA has taken vigorous action to stop the cultivation of land in front of tomb 25 and to the south. However, it is likely that without greater public engagement with the Site and its management, in conjunction with planning for contemporary socio-economic needs, further encroachment will continue.[8]

Groundwater/irrigation

The expansion of agricultural land and its associated irrigation is problematic due to the destruction of archaeological features/data. The threat is not limited by the extent of cultivation but continues for some kilometres (depending on the specificities of the landscape) by causing changes in micro-climate through increasing the relative humidity and level of the water table. These modifications pose some of the greatest threats to the Site and are extremely difficult to address.

The geology of the Nile Valley is naturally saline, as is the ground water itself. Raising the water table increases the salinity of the soil, causing deterioration of base-level soils and thus faster erosion rates of these soils and any associated remains. Water dissolves stone and mud bricks due to its acidic pH (< 7). This is particularly problematic for more porous materials, such as mud brick and limestone, from which much of Amarna (and its more recent restorations) is constructed. The presence of dissolved salts in the water, commonly associated with agricultural chemicals/leeching, remain in the stone and mud brick as the water evaporates and can cause surface cracks/fissures eventually breaking off pieces of stone and brick. Oil and other contaminants also cause damage to both stone and mud-brick as they are absorbed, along with irrigation water/groundwater, into the soil/mud-brick/stone.

---

[7] Another impact of agriculture is the building of large stone sheds, sometimes of two storeys, to house chicken farms. One was built in recent years very close to the ancient house of the vizier Nakht, north of El-Hagg Qandil. In 2018 it was partly demolished via the courts through the intervention of the MTA.

[8] This risk is particularly great during times of government instability as seen following the 2011 revolution.

Changes in the water table can also cause ground movements which can result in cracking and collapse of mud-brick and stone structures. If standing water becomes an issue, or if the water table is very close to the surface, a further problem is the potential colonisation of plants, such as deep-rooting grasses and reeds which can also penetrate stone and mud brick and cause serious structural damage. This is not at present a significant threat to Amarna, but the dire consequences of allowing colonisation to begin (and spread) can been seen at other sites in Egypt, such as Mit Rahina (El-Hadidy and Redding, 2017: 37) and at El-Ashmunein across the river from Amarna.

Before a programme of conservation can be developed, analysis is needed to assess the true condition of the stone and mud brick across the Site, to test the pH and salinity of the water and to assess areas at threat from plant colonisation. An extensive boring survey is needed to determine the full impact of changing groundwater. However, the levels of surface water and a visual assessment of the state of architectural foundations and walls provide a good indication of the current situation at Amarna. In many areas the impact of the 1960s drainage canals and associated agricultural growth is clear. Taken alongside a general increase in humidity, leading to the deterioration of surfaces well above ground, these processes have reached a stage where they are beginning to cause irreversible damage to monuments through the loss of structural unity to architectural remains, both of stone and mud brick.

Traffic/vibrations

The road running north-south through the centre of Amarna is the main thoroughfare on the east bank of the Nile connecting villages with each other and with the desert highway. The road also enables communities to transport agricultural produce and, in recent years, has intensified the use of tractors and heavy farm machinery. In some cases, vehicles, as well as people and animals, are driven directly across the Site causing direct damage by erosion. In addition, vibrations from heavy vehicles using the roads can also cause the ground to shift, damaging/destabilising stone and mud-brick structures and their foundations, which in places are a mere metre or two from the road's edge. This is particularly obvious, for example, where the road passes close beside the ancient mud-brick piers of the Bridge in the Central City (Figure 56).

Pollution is caused by agricultural machines (largely diesel) and other transport vehicles (including tourist buses and other passenger transport) which emit chemicals (e.g. hydrocarbons, carbon monoxide, carbon dioxide, volatile organic compounds (VOC), and mono-nitrogen oxides (NOx). These react with chemicals produced by plants (carbon dioxide), animals (methane) and humans (smoke from burning waste) and can cause smog /nitric acid (when combined with water) which is damaging to mud-brick and stone surfaces.

Rubbish

Animals (and people) regularly cross the Site leaving traces of waste, as well as causing erosion. Standing walls also provide convenient storage locations and shade for processing crops (e.g. corn drying, manure storage) and tethering animals. This leads to the build-up of agricultural detritus and human rubbish which attracts scavenging animals. Dogs, foxes and other creatures attracted by the waste also burrow into the bases of mud-brick walls and stone foundation to find shelter. Colonies of sparrows make nests in holes in mud-brick walls, enlarging them by pecking out pellets of mud, particularly evident in the Bridge (Figure 56). Ants can also undermine walls, causing further damage to the Site.

Figure 56. Dirt road passing less than 2m from the mud-brick remains of the bridge in the Central City (Tully 2018)

General Mitigation Strategies

While the result of any groundwater/materials testing would guide consolidation work, to ensure the longevity of the Site, conservation work needs to go hand in hand with the promotion of: low water crops in areas abutting the archaeological site; drip/spray irrigation and better technologies which produce less waste water; reduction in use of harsh chemicals and improved drainage systems. Greater consultation and cooperation between heritage partners and local agricultural communities/local councils is essential to find joint solutions to these problems, which should be based on Environmental Impact Assessment guidance for irrigation (e.g. Dougherty and Hall 1995).

The effects of traffic/pollution, human/animal erosion and weathering can be countered through burying remains or carrying out work to stabilise structures. Both processes are costly and time-consuming. The impacts of these same elements could be slowed through an effective engagement programme which aims to increase awareness/value of the Site and its history, thus reducing human impacts.

Agricultural and domestic waste incinerators are needed in areas of dense agriculture/population across the Site (in visually unobtrusive but convenient locations). In addition, heritage professionals need to work more closely with communities to raise understanding of the Site as well as local needs, and to negotiate joint solutions.

Areas at High Risk from Agriculture

Kom el-Nana

The cult complex of Kom el-Nana is now surrounded on all sides by agriculture. This intensification of agriculture has developed since the 1960s due to the installation of three nearby water channels, making the area ideal for irrigation. Over 50% of the designated antiquities land to the western extent of the temple area was illegally planted by a local landowner in the wake of the 2011 revolution. The agriculture was later removed by the MTA but the western outer wall and many other archaeological remains from the area have been severely damaged, if not lost completely. In response to this incident, a basic barbed wire fence was erected to the west of the Site on the fringe of the destruction, and continues in sections of the north and south sides of the archaeological area. The fencing, however, does not continue to the east (where the agriculture continues to creep closer each year) and is also too insubstantial to provide permanent protection[9].

Also associated with the proximity of agriculture (and houses) is the removal or displacement of some of the remaining stone from the central Amarna period monument (believed to have contained one of Amarna's Windows of Appearance (Kemp 1995, 436). While much of this removal took place after the end of the Amarna Period, as elsewhere at Amarna[10], there are still episodes of modern illegal activity. The mud-brick architecture of the Amarna period buildings associated with the Sunshade of Ra and the later Early Christian Monastery and Church is also in poor condition due to vibrations from a well-used dirt road running through the centre of the Site. Changes in the water table/humidity, animal damage, domestic and agricultural waste and illegal digging for antiquities all present associated threats to the area.

The Desert Altars

Due to the irrigation developments of the 1960s and 80s (discussed above), agriculture is spreading rapidly to the east of El-Till and the 'suburbs' of El-Hagg Qandil (Ezbit Bardizi [Al-Azayza] and Ezbet Abdul Razak). At the Desert Altars, the cultivated land now stretches almost up to the outer enclosure walls (stopping just 150m to the west) and further areas are in the process of being prepared for cultivation. This involves digging into the desert sand (up to 2m deep) and subsequently destroying any archaeological remains (Figure 57). If this process continues, not only will the Desert Altars be lost but it presents a potential threat to the North Tombs Cemetery – the burial place for a large population of children and young people under 25, making it unique within Egypt (Figure 58).

---

[9] One aspect of the problem at Kom el Nana is that the Site offers the only convenient route of access between the villages to the west and isolated farm houses to the east. The barbed-wire fence has gaps in it to allow people to continue to cross since its purpose is not to exclude people but to mark the boundary of the important archaeological area. If the gap were closed the farmers would remove the fence. An earlier suggestion had been to build a wall but as this was unpopular with local farmers, the fence was an agreed compromise.

[10] The historic removal of stone was shown by a trial excavation beneath a tower belonging to the monastery at Kom el Nana, which had covered and protected an area of Amarna Period stonework.

Figure 57. Recently prepared agricultural land stretching towards the Desert Altars (Tully 2019)

Figure 58. The North Tombs Cemetery, a pit-grave cemetery located in a large wadi between North Tombs 2 and 3. (Courtesy of the Amarna Project)

This agricultural expansion towards the Desert Altars also brings issues related to changes in the water table and greater vehicle disturbance to remains due to the development of new trackways.

To prevent further illegal expansion both towards the Desert Altars and other eastern areas of the Site, funding was granted to the Amarna Project by the Antiquities Endowment Fund of the American Research Centre in Egypt (ARCE) in May 2018 for a walling project along the eastern extent of the agricultural land (Figure 2). The MTA approved the project in October 2019. It is anticipated that work will begin in 2020, in partnership with the MTA. The wall will run along the eastern edge of the non-Antiquities land, bordering the legal field systems. A number of illegal field systems and buildings along the proposed wall line were recently removed by the Egyptian government.

Amarna presents a rapidly changing landscape and social situation, necessitating effective forward planning to prevent other areas being lost. Walls are one potential way forward, but alternatives like stone markers, wire fences and proactive initiatives to tackle new areas of encroachment are needed alongside greater community engagement to mitigate/prevent future encroachment.

Recommendations for Kom el-Nana and the Desert Alters:

High Priority (to be achieved in the next 5 years)
- Complete the walling scheme related to the ARCE grant at the Desert Altars. The project should be prioritised and take place within the next 1-2 years in conjunction with the MTA and needs to involve community consultation. If any further areas of walling take place, to the eastern extent of current habitation/agriculture, community consultation will also be needed to determine access points and thoroughfares
- Protective walling at Kom el-Nana - While erecting protective stone enclosure walls is not favoured in terms of aesthetics or enhancing community relations with a site, in some cases it is the only means to halt encroachment and clearly define a site/antiquities land. Protective enclosures are one of the MTA's preferred forms of site protection as they have been found to be both robust and effective in the Egyptian context. Three separate funding applications for projects that included the construction of a protective wall were submitted to the British Council's Cultural Protection Fund and to the Arts and Humanities Research Council during 2016–17 but none were successful.
- Interpretation at Kom el-Nana - Currently there are no information boards at Kom el-Nana. These will be installed, ideally alongside the wall, to raise awareness of the significance of Kom el-Nana (and to explore its later history) for local and visiting audiences. The signage will take place as part of a wider site-wide signage project within 2020/21 and will ideally involve local communities in the installation and 'inauguration' of the information panels.
- Agricultural consultation - MTA staff/government advisors to work with local farmers to look at potential methods of reducing water usage in the area.

Medium Priority
- Relocation/rerouting of the road running through the centre of the Site at Kom el-Nana.
- Increased monitoring at both Kom el-Nana and the Desert Alters (conditions and security)
- Further fieldwork to recover more information from the wider Site, much of which remains unexcavated.

Low priority
- Kom el-Nana: Redefining the monument's key stone and mud-brick walls to help audiences better visualise the structure (as seen as the Small and Great Aten Temples).

North City, Old Dig House, North Riverside Palace and North Palace

On entering Amarna from the north numerous remains are encountered, including the North Riverside Palace gateway and the old dig house (built on top of and in the form of an Amarna house) used by the Egypt Exploration Society in the interwar period. Much of the northern extent of the Site is already lost under agricultural fields to the west of the modern road. On the other side of the road, the standing

remains of the mud-brick houses and mud-brick entrance to the North Riverside Palace are in a poor condition as the area is used as an extension of the agricultural area (for animal use and crop processing). The proximity of the agricultural fields (which now touch the road on the western, Nile-side), has led to changes in humidity and the water table. While no surface water is visually present, patches of discoloured soil suggests that ground water is close to the surface. The eastern side of the remaining wall of the North Riverside Palace entry gate has become a regular manure and crop storage spot. The acidity of the manure along with increased moisture is causing the lower courses of mud brick to decay more rapidly (Figure 59).

Figure 59. Manure storage to the east of the North Riverside Palace gate (Tully 2018)

Further agricultural expansion to the east of the modern road is a serious threat to these monuments. The spread of El-Till northwards along the western side of the road began around 20 years ago but has accelerated significantly since the revolution, in part due to the 2011 construction of the bridge over the Nile to the north of Amarna. Until this time, the structures in the area were mainly small agricultural huts. These are rapidly being replaced by houses and industrial chicken sheds (a relatively recent development in the area). On the west side of the road, to the south, agricultural land (and houses) is also approaching this zone from El-Till, spreading from previously colonised plots opposite the North Palace which stretch towards the core of the modern town. This growth is more complicated to manage as some areas remain private land and are not under the control of the MTA.

The urban pressures associated with the spread of farmland add a further threat in the form of additional waste water and other habitation risks as outlined below. At present, the road acts as a psychological barrier to further expansion in the form of cultivation (and housing). However, local MTA staff believe it is only a matter of time before the rest of the North City is appropriated. The recent extension of street lighting into the area, which once stopped some metres before the North Riverside Palace Gate, is likely to speed up this process. Illegal cultivation has already been removed in some cases (as at Kom el Nana and to the east of the North Suburb), however, ambiguities over the boundaries of the Site mean that parts of the North City are contestable as antiquities land. In addition, MTA staff are too few and levels of community engagement are not sufficiently high (with the requisite support from local leaders, police and security services) to negotiate competing interests, share information and prevent agricultural expansion in the long term.

The North Palace lies a few hundred metres south of the North City and is separated from it and the North Suburb by agricultural land (including some urban dwellings), which surrounds it to the north, south and west. The road runs c. 10-20 metres to the east. Virtually all of the North Palace, within its boundary wall, survives. There is no sign of structures outside; it seems to have stood as an isolated building. The monument is enclosed by a barbed wire fence that was erected initially in 1984, and has been periodically repaired, particularly during conservation/consolidation work on the external and [part of] the internal walls in the 1990s and 2000s. The monument is also protected to an extent by a raised embankment on all sides, composed of debris from the original collapse and degradation of its outer wall and of excavation spoil. This makes unauthorised access difficult and deters further encroachment.

The main threats to the monument are from rising ground water and changing humidity due to agriculture, as well as vibrations from traffic. Increasing bird nesting within the walls is also an issue. This is largely connected to the presence of food (grain/agricultural remnants) but provides an interesting connection with the ancient area as the palace once contained a large garden or water feature, which is still visible (but lacks interpretation. Forthcoming signage will address this issue).

Recommendations:

High Priority
- Develop community engagement strategies to address agricultural waste solutions, share information about the Site (including the installation of site signage) and contemporary needs, and consider trade-offs in terms of designating other areas for agriculture.
- Rebury or stabilise mud-brick structures in the North City, particularly in the palace gate[11], in order to prevent total loss. If the structures are stabilised and displayed, accessible pathways and a small parking area should be created in the area to channel movement through the Site (to reduce erosion of monuments) and encourage visitor engagement with a largely unvisited area of the Site. As the North City also includes the remains of an early 20th century dig house used by the Egypt Exploration Society, the latter option is favoured as the area would provide context to the excavation history of the area and a good introduction to the Site as visitors enter from the north.
- Consolidation and maintenance of previous restoration work at the North Palace
- Consolidation of the Old Dig house as cracks are worsening in the high walls (standing 2m high in places) and are at risk of collapse

Medium priority
- Develop further tourist infrastructure with local communities, i.e. souvenir and refreshment offers, shade and seating, as increased tourist presence may reduce agricultural encroachment and provide other economic options outside farming. Any additions of this type should be visually sympathetic to the landscape, i.e. unobtrusive.

Main City, Central City and North Suburb

The main road, a broad thoroughfare running north–south, divides these areas into two parts, as in ancient times. Now linking the two villages of El-Till and El-Hagg Qandil, the road carries constant vehicle traffic.

---

[11] Here stabilisation is the only option. The gate could not be reburied due to its size and the surrounding land use.

This traffic is not only associated with local agricultural and personal use but facilitates travel from further away via link roads to the eastern desert highway and to the bridge across the Nile close to Malawi. The road has an asphalt surface for most of its journey through Amarna but remains dirt surfaced where it passes through the Central City in an attempt to reduce speeds/vibrations in an area where the monuments lie within a few metres of the road (Figure 56). For part of its length, most obviously through the Central City, the road follows the same line as the ancient Royal Road. Keeping it as a dirt surface therefore also retains something of its original nature.

Much of the western side of the original extent of the Main City, Central City and Northern suburb (west of the road) has been covered by fields since the first records of Amarna were made in the late 18th century. The principal building on this side was the Great Palace, of which around half is assumed to be lost beneath the fields. The surviving parts of the Great Palace are mainly of mud-brick construction and in poor condition. The area also includes large sections where stone walls once stood, now covered by EES spoil heaps. It is to be expected that areas of ancient gypsum-concrete foundations lie beneath the spoil heaps. The Great Palace is entirely unfenced/unprotected and regularly crossed by people, animals and vehicles on route to the agricultural land next to the Nile. A line of well-established trees and excavation spoil heaps appears to prevent the cultivation spreading further east from the riverbank (as it has elsewhere. e.g. opposite the Great Aten Temple). However, local MTA officials are concerned for the monument and suggest a wall is needed on the western extent to holds back future cultivation as previous wire fencing attempts have been rapidly removed.

The Central City, in particular forms an appropriate target for focussed site management initiatives as the area to the west of the road is highly vulnerable to further agricultural and domestic encroachment (Figures 60 and 61). The monumental buildings in the area are also unique, unlike the houses in the Main City and Northern Suburb, and much of the early excavation and recording was particularly poor. The area also forms the hub of visits to the Site, in conjunction with the North Tombs from which visitors can see detailed pictures of the Central City monuments carved on the walls.

The mud-brick housing of the Main City (Figure 8) is also at risk from agricultural expansion to the north of El-Hagg Qandil and in the areas north and west of the new settlement of Ezbet Bardisi (Al-Azayza). Every year, field systems appear to be creeping further north from the latter on the desert fringe east of the Main City towards the Central City. While the MTA have dealt with similar incidents in the past (particularly in the 1980s and 1990s), as the same processes appear to be happening from El-Till, on the desert fringes moving south, it may be only a matter of time before the entire area of the North Suburb, Central City and Main City are completely enclosed by agriculture. This would affect the integrity of the Site as a whole, severing aesthetic and historic links to the North City, North Palace, North, South and Royal Tombs, Workmen's Village and the Stone Village (as already seen at Kom el-Nana). Agricultural debris and the increased wildlife it attracts (in the form of rodents, wild dogs, birds, snakes etc.), changes in the water table, alongside other climatic and meteorological factors and increased traffic are all accelerating the rate of erosion and collapse in these areas. Damp patches are visible on the desert surface among the houses of the Main City. The creation of a new east–west 'road' from Ezbet Abdul Razak cutting through the Main City along an ancient wadi bed to join the main north–south road between El-Till and Hagg Qandil is a further problem. In the past this route was only used for animals and foot traffic, but as the new village has grown so has use of the track by vehicles, which increases the risks to mud-brick architecture due to vibrations/disturbance from heavy vehicles/vehicles travelling at a fast pace. It also increases the risk of agriculture/occupation

spreading further along this corridor, a risk that would increase if the track (as is likely) becomes a formally recognised route (Figure 62).
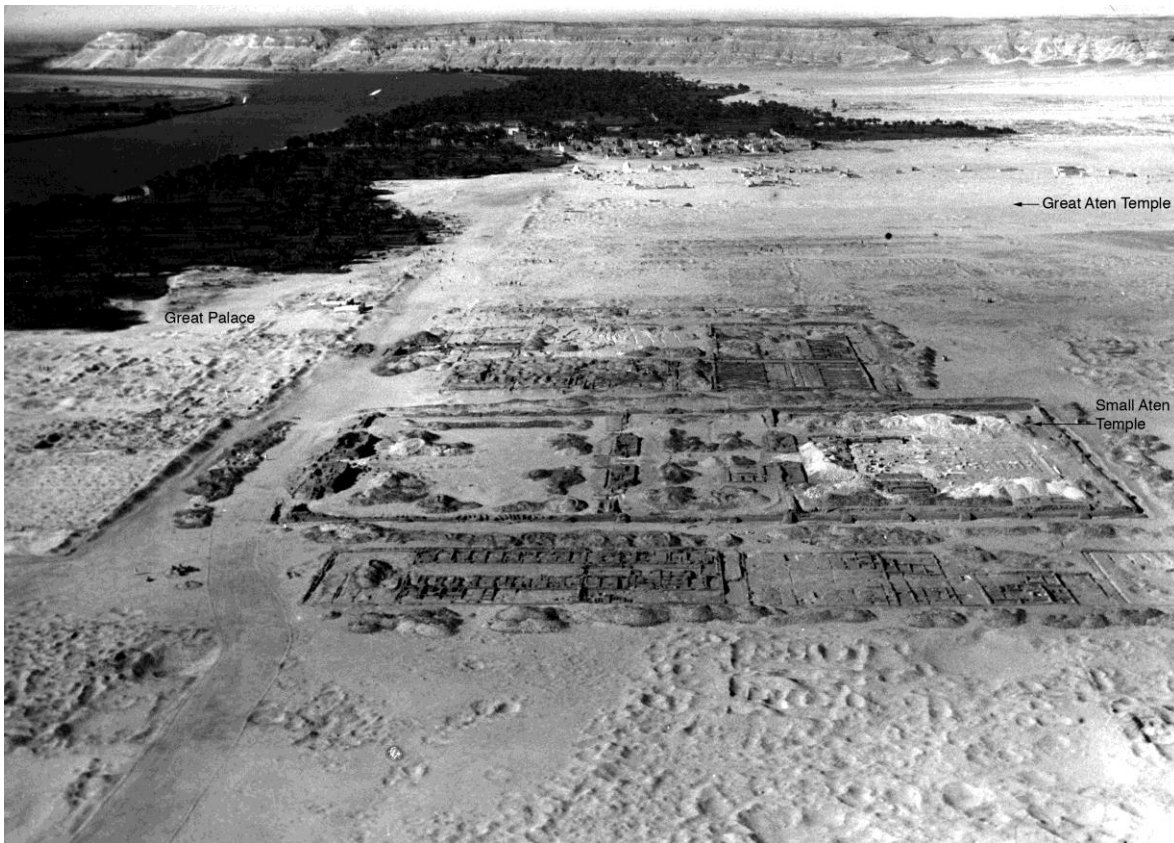
Figure 60. Aerial photo of the Central City 1935 (Courtesy of the EES)

Figure 61. Google Earth photo of the Central City today

Figure 62. Current east–west 'road' from Ezbet Abdul Razak cutting through the Main City along an ancient wadi bed to join the main north–south road between El-Till and Hagg Qandil (Courtesy of the Amarna Project)

Recommendations:

High Priority
- Enhance engagement work between Visitor Centre/MTA staff and local communities, particularly farmers, in the area to share understanding and address mutual needs e.g. consider irrigation processes (as at Kom el-Nana), access routes across the Site and disposal of agricultural waste. This could include work between the local council and MTA staff to install communal incinerators/rubbish disposal facilities away from the historic centre and develop regular site maintenance/cleaning initiatives.
- Install more detailed signage to raise awareness with local and visiting audiences

Medium priority
- Installation of a more robust protective enclosure along the western edge of the Central City in the area of the Great Palace to prevent further expansion of agriculture[12]. This would need to take place alongside appropriate community consultation to determine its line and accesses points, and monitor its effectiveness.
- Collaboration between local councils, Ministries and MTA staff to consider provision of alternative agricultural land (i.e. nearby non-antiquities land) to protect the Site and cater for the growing population.
- Consider methods, such as bollards, to close the ends of the wadi to vehicular traffic to reduce erosion.

---

[12] Recent MTA proposals suggest shifting the modern road to the east.

Urbanism

ISSUE 4: The need to manage urban development pressures (including services and road/rights of way) and associated activities (illegal or outside planning control) that are potentially damaging to the Site, its integrity and Outstanding Universal Value. To balance the needs of urban communities with those of the historic environment.

Historic sites cannot be viewed in isolation from their present surroundings but are part of the continuum of life. Thus, while we must manage historic landscapes, we cannot separate them from their modern use. Unmanaged urban development is one of the consequences of rapid population growth in Egypt. Illegal and unplanned settlements have sprung up on both agricultural and antiquities land in recent years, particularly since the 25th January Revolution 2011. Although amendments to laws have been put in place to remove and fine individuals for illegal construction (Agriculture Law No. 53/1966 and Antiquities law no. 117/1986, amended 2018), the Egyptian authorities have a difficult task as communities have few options. Unplanned construction goes hand-in-hand with illegal agricultural expansion. While the socio-economic needs of communities for housing and farmland must be considered, these developments have an undeniable impact on the authenticity and preservation of archaeological sites across Egypt (see also Kamel and Hassan 2014).

At Amarna, the population in the villages (and cemeteries) of El Hagg Qandil, El-Till, Ezbet Baradisi (Al-Azayza) and Ezbet Abdul Razak continues to grow. Building therefore begins to spread further onto antiquities land and the Site's fringes. Families are understandably reluctant to relocate and MTA staff do not have the authority, time or resources to deal with all illegal construction. This puts additional pressure on the Site due to the loss of archaeological data under new constructions alongside the associated impacts of waste water, household rubbish and increased traffic (footfall and vehicular) across the Site.[13] As with agriculture, these activities have a knock-on effect in terms of effecting humidity, attracting greater numbers of wildlife, causing vibrations, erosion and pollutants, all of which reduce the structural stability and aesthetic integrity of the Site in its setting.

Urbanism and associated agriculture also threaten the visual integrity of the Site which is essential to its Outstanding Universal Value. It is therefore essential to maintain key vistas/a visual landscape from the riverside city, across the low desert plain and to the cliffs and wadis at key points across the Site, such as the Central City.

Low awareness of the Site, its history and importance, alongside poor definition of the Site's boundaries, contributes to the problems outlined above. Greater engagement is needed as a core part of the management process to foster a sense of local ownership. The best way to protect the Site, going forward, is therefore to involve local communities, community leaders and other Ministries within management processes and knowledge exchange to find joint solutions/the best compromise to risks associated with urbanism.

---

[13] The current practice is for the local councils at El-Till and El-Hagg Qandil to collect household/urban rubbish and take it to the adjacent desert where it is burnt. At El-Till this disposal area is along the northern margin of the main southern part of the North Suburb; at El-Hagg Qandil it is at the southern end of the surviving part of the South Suburb, where it passes beneath the modern cemetery.

Infrastructure/services

Sewage water is stored mainly in septic tanks or pits under buildings and is periodically removed. Leaky tanks or ineffective storage leads to further increases in the water table, contributing to the adverse effects to the Site from agricultural processes (as described above). Tractors are used to pump out sewage, and often have to cross fragile areas of the Site (especially to access new areas of housing). In addition to vehicle damage through erosion and vibration, raw sewage can also end up being pumped out on 'unused' areas of the Site. As the digging of sewage pipelines is not desirable, centralised sewage collection and processing is vital to the sustainability of the Site and for the local community.

Household rubbish and refuse collection is an issue across rural Egypt where little official provision exists. As a result, communities and households tend to deposit rubbish in convenient depressions in the landscape in close proximity to their homes where it is sometimes left and sometimes burnt (see footnote 13). Plastics give off terrible fumes from burning, do not degrade easily and often end up blown by the wind miles across the Site, while other rubbish both looks unsightly and gives off an unpleasant smell. Rubbish also presents a fire hazard which could damage the Site and endanger human life. Other official rubbish disposal facilities/collection options are therefore needed.

A line of electricity pylons, at 100-m intervals, accompanies the main road through the Site. The powerline is essential to habitation and tourism but has an impact on the Site setting and aesthetic (most obviously at the Bridge in the Central City).

Traffic/footfall

Pedestrian and vehicular use is inevitably highest around urban areas. This contributes to the erosion and collapse of monuments and can increase incidents of opportunistic vandalism or illegal excavation.

While asphalt is preferable to dirt tracks in terms of access, it also enable vehicles to travel at greater speeds, increasing the intensity of vibrations and affecting sensitive archaeological remains. For this reason, short sections of the main road have been left as dirt tracks, namely in the Central City, a decision that is unpopular with local communities[14]. As the population grows, use of the road is also increasing, accelerating the impact of emissions on the condition of monuments. These threats, alongside increased rubbish and animal activity (particularly dogs and birds who feed on urban waste) also detract from the Site's setting and threaten its continued survival.

General Mitigation Measures

Planning law needs to be more successfully enforced in the area along with the development of facilities for existing housing (sewage water and rubbish disposal). Discussions are ongoing between the MTA and the local council regarding the provision of large incinerator bins (for domestic and agricultural waste) to be

---

[14] It is important to note, however, that because the asphalt road is built on a cushion of limestone hardcore, it also protects the underlying ground and damage to ancient surfaces was arguably much greater in some areas before it was laid down

placed in visually unobtrusive, yet convenient places, to reduce the impact of waste on the archaeological areas and reduce threats to human and animal health from fumes and contamination.

Greater formalisation of the Site's boundaries, buffer zones and 'protected vistas', with accompanying walling, fencing, signage and community engagement activities are needed to address urban encroachment. Collaboration between other Ministries/local authorities and communities is also essential to look for suitable areas for future building/new villages that are close to historic settlements but away from antiquities land (as with agriculture). Ideally, a new group/Ministry of Housing, Utilities and Urban Communities would lead on the development of collective strategies (incorporating diverse stakeholders) for compromise between the historic environment and community needs.

Areas at High Risk from Urbanism

The Central City

In addition to agricultural encroachment, much of the Central City is threatened by expanding urbanism. The largest threats are the cemetery of El-Till to the north and increasing vehicle traffic. While the road remains a dirt track in this area (to prevent excessive speeds), it runs over the original route of the Royal Road and passes but a few metres from the area's monuments and is the main north-south access route on the East bank. There is also no official tourist parking in the area. This means vehicles pull up on the roadside directly next to the monuments. This both detracts from the aesthetic of the area and puts additional pressure on adjacent monuments through exhaust pollution and vehicle weight.

The Great Aten Temple runs almost the full width of the Central City. Almost half the width of its original enclosure now lies beneath the modern cemetery of the nearby village of El-Till (Figures 63 and 64). This threat was recognised in the 1995 Conservation and Development Plan. As a result, in 2012, the Amarna Project began a re-examination of the Great Aten Temple site with a view also to mark the main stone elements with fresh stonework. This project is ongoing and has relied to date on small grants from the Metropolitan Museum of Art, Amarna Research Foundation and public fundraisers alongside local support (i.e. a short-term arrangements with the local council to clear litter at the front of the temple and local guardianship agreements). The original plan to recreate in new stone the entire layout of the main temple building (the 'Long Temple') has been scaled back to focus on the two stone pylons at the front of the temple, fronted on each side by eight large columns. This work is almost complete. The next step is to continue with the north and south walls of the temple for their full length, plus the rear wall and to consider laying out the first court with stone offering-table bases. The reconstructed entrance system, close to the modern asphalt road and accompanied by the stone foundations of a small palace, are intended to announce (for the benefit of visitors and villagers alike) that an important part of the Site, namely the Central City, begins here. The northern stone wall and eastern rear wall of the temple have also been partially reconstructed at a low level to act as a stop to further extension in this direction of the cemetery. The length of this wall is around 200 m. (See Annual reports on the work in the *Journal of Egyptian Archaeology* and online: http://www.amarnaproject.com/pages/recent_projects/excavation/great_aten_temple/). While these areas appear to be protected, the cemetery has now (as of 2018) begun to spread around the sides of the main temple wall to the east. As a result, the temple is visually disconnected from its associated sanctuary which lies 800m further east.
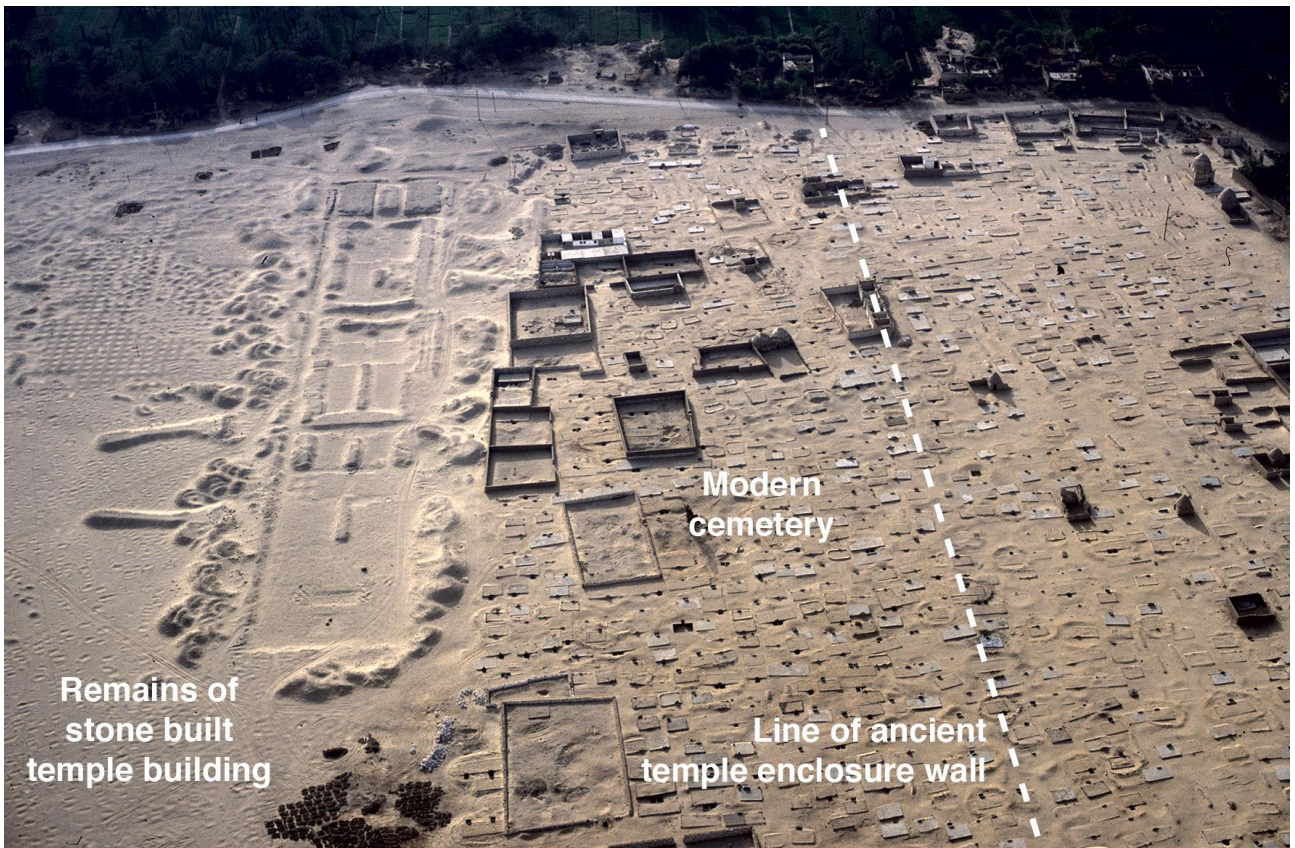
Figure 63. Encroachment at the Great Aten Temple. Photographed in 1993. Courtesy of Gwil Owen.

Figure 64. Cemetery encroachment at the Great Aten Temple (Tully 2018)

South of the temple, in the ground stretching to the King's House, there are various industrial areas, animal housing yards and food production areas. These were excavated in the 1930s and are now open/half covered ruins. There are also a huge number of buried offering tables associated to an earlier phase of the temple. While covering all these areas (as happened with the offering tables) would help conserve them, the exposed nature of the other parts of this complex may enhance the 'readability' and 'integrity' of the Central City as an interconnected unit.

The potential success of the re-walling conservation work in terms of attracting visitors and changing local perceptions/behaviour towards the Site is evident at the Small Aten Temple (described in **Part 2**). The monument is now a key destination on tourist visits and is noticeable cleaner than the rest of the Site. This may also be in part due to the 'protection' of a wire perimeter fence, and the fact that the monument is sheltered from urban encroachment on all sides by other ancient monuments, such as the King's House and Great Palace. There are therefore concerns that the reconstruction work at the Great Aten Temple is not enough to prevent further spread of the cemetery, or indeed to prevent the cemetery 'jumping' to the south of the monument. Nonetheless, MTA staff believe the 'foundation re-walling' technique is effective in demarcating ephemeral archaeology and enhancing both understanding and respect for a monument's boundaries. Such work is not, however, a one-off management solution. 'New' areas of mud-brick and stone within both the Great and Small Aten Temples are already showing signs of wear, largely from footfall and weather, and thus a continual programme of monitoring and reinforcement is needed.

Both the east and west foundations of the bridge that once linked the King's House on the east of the Royal Road with the Great Palace on the west, are in poor condition. This is largely due to vibrations from traffic, alongside associated pollutants, bird nesting/animal burrowing, wind erosion and general changes in humidity/the water table in the area. The bridge is a unique architectural feature and has important connections with the daily routines of the Royal Family but is little known by local people or visitors. The bridge is of mud-brick construction and is in imminent danger of collapse beyond repair unless urgent stabilisation work takes place. The mud-brick structure of the Great Palace is in similarly poor condition for the same reasons and is also in need of stabilisation and information panels to highlight its significance.

As the Central City is one of the main stops on tourists' visits to Amarna, there is a security post at the northern 'entrance' of the area[15]. This constant presence, in addition to the areas of fencing, basic signage and consolidation work, means that the monuments bordering the road are less affected by transient urban risks, such as human rubbish, vandalism and misuse (such as walking over the walls etc.), than other areas of the Site. This also shows the importance of 'tourist value' in enhancing the importance of the area to local residents and demonstrates the potentially positive impact of enhancing the 'readability', 'demarcation' and 'visit-ability' of other threatened areas of the Site through similar management measures.

Key areas in need of attention away from the hub of the Central City are the administrative and housing areas to the east of the King's House (where the Amarna letters were discovered), to the south-east at the reconstructed Amarna House (Q44.1), and moving into the Main City in the possible 'craftsmen's' area around the house of Thutmose where the bust of Nefertiti was discovered.

---

[15] Funds for this guard station were provided by the Amarna Project.

To date, no conservation work has taken place in the area where the Amarna letters were found ('Office of Foreign Correspondence' and 'House of Life'). This is an important aspect of the story of the Site but is little known or visited (even though the spot is marked on the online guide launched in the early 2000s). The mud-brick structures are being undermined by animal burrowing, erosion (due to changing climatic factors, shifting groundwater and human/animal access) and illegal excavation. The partially reconstructed Amarna house (Q44.1), although fenced in, is also in need of stabilisation and repair on its southern wall foundations where one wall abuts another but is not bonded. Shifting groundwater/humidity and animal interference (burrowing/nesting) are also problematic. The height of the walls also makes it an ideal 'trap' for wind-blown litter, especially plastics, from the nearby urban areas. As at Office of Foreign Correspondence, Q44.1 is part of the online guide, thus information is available but little accessed. Further south is the house of Thutmose where the bust of Nefertiti, now displayed in the Neues Museum in Berlin, was discovered in 1912. The fame of the discovery means that tourists regularly enquire about the find spot but few guides are able to locate the house. The workshop is in a poor condition, much like the Amarna Letters' house and lacks any signage, official access or interpretation. While this is good in terms of preventing illegal digging, the new programme of signage does not include this area and the mud-brick is in need of consolidation before the building is lost completely.

Recommendations

High Priority:
- Continue partial consolidation of the Great Aten Temple (focusing on the western extent flanking the road) in combination with constructing a high (approx. 2m) solid stone wall at the most northerly remaining extent of the Great Aten Temple, running the full length of the temple and sanctuary enclosure and along part of its eastern extent outlining the MTA boundaries (without fully obscuring important views to the limestone cliffs and sanctuary beyond). These measures should be combined with ongoing discussion between the Egyptian government and local council for 25 fedan of land, located between the North Suburb and the current cemetery at El-Till, to be designated as a new cemetery to stop further expansion into the central city (Note: the main northern expanse of the existing cemetery behind the Long Temple is built on ground that was transferred from the MTA to the village for cemetery use over two decades ago and cannot realistically be relocated). This combination of measures is an important means of ensuring the modern cemetery does not spread further south and are favoured by MTA staff. Local labour and materials/companies should be used in any archaeological construction projects where possible to keep investment in the Site within the community.
- Extend the recording and consolidation measures seen elsewhere at the Site to the Great Palace (focusing on the threatened 'harem quarter'), King's House and Bridge. This is needed to collect information, protect the monuments and transform the heart of the city into a piece of 'readable' heritage.
- Stabilisation and signage of the 'Office of Foreign Correspondence' and reconstructed Amarna house (Q44.1), in conjunction with the formalisation of walking routes (including wooden steps over the lowest part of the east wall of the Small Aten Temple) to channel visitors and connect these monuments, the Small Aten Temple and the road to discourage locals and visitors walking over other mud-brick structures.
- Stabilisation and consolidation of the house of the sculptor Thutmose.

- Work with MTA staff and local councils to agree 'preserved vistas' which would maintain links across the ancient landscape at key areas of the Site. This would take place in areas where there should (ideally) never be any settlement (or agriculture), such as behind (east of) the Central City where the vista through the Small Aten Temple to the Royal Wadi is so significant.
- Increased local engagement/outreach work promoting the importance of the Royal Road, Great Aten Temple and wider Central City by staff at the Visitor Centre.
- Installation of site signage and enhanced interpretation in the form of a new guidebook.
- Establish a basic maintenance programme for the Central City to ensure paths are maintained between the monuments and to collect urban litter.

Main City

Large parts of the Main City are unexcavated. The southern sector of this area is under threat from urban (and agricultural) encroachment from El Hagg Qandil, Ezbet Bardisi (El-Azayza), bringing all the associated risks outlined above. At present, the main road is providing a tenuous boundary between Ezbet Bardisi (El-Azayza) and the core of the main city east of the road, but there are already activities taking place here: football, fields, plant storage etc. and rubbish is accumulating.

Recommendations

High Priority:
- Targeted excavation and recording of ancient urban areas, particularly through the southern/south-western zones of the Main City, before all mud-brick remains are lost under new housing and the growth of cemeteries.
- Increased engagement/outreach work in the area by MTA/ Visitor Centre staff to share understanding of the Site and its importance, and better understand local needs.
- Improved site signage

North Suburb

While the North Suburb was almost completely excavated in the early 20[th]century, there has been no modern study of these houses or the archaeological deposits contained in or around them. Renewed study would undoubtedly yield valuable environmental, artefactual and architectural data enabling this area of the Site to be better understood, and compared with other domestic areas. This area of the Site is perhaps at the greatest risk from domestic waste and sewerage as the village of El-Till bisects the suburb, running east–west, and is creeping ever closer from the west and south–west. Here the visual and olfactory impacts of rubbish, modern housing, waste water and feeding stations for animals have the greatest impact on the historic landscape and sever the ancient vista.

Recommendations

High Priority:
- Removal of rubbish. MTA staff have had some success working with local councils in the area to get rubbish removed. However, a regular refuse system is needed to offer a sustainable solution.
- Review of waste water facilities and service provision to houses.
- Better demarcation of archaeological areas to prevent further urban expansion through signage and enhanced outreach/engagement programmes from the Amarna Visitor Centre to raise understanding and promote sympathetic site behaviour. Areas of wire fencing could also be considered alongside discussions with local communities to maintain key access routes. State, district and regional engagement is also needed within other Ministries to consider the provision of alternative land for building outside the archaeological zone.
- Targeted excavation and recording of urban areas before all mud-brick remains are lost under new housing and the growth of cemeteries.

Medium Priority:
- Creation of official pathways and parking to facilitate visits to this area of the Site in order to raise local 'value' of the area
- Encourage economic opportunities through local tourist provision (souvenirs/refreshments) to accompany the above.

Looting and vandalism

ISSUE 5: The need to mitigate damage to the Site through illegal excavation and misuse

Theft and deliberate destruction has featured at Amarna, at varying scales, since antiquity. These actions result in a loss of potential information and affect the overall site aesthetic. The increased proximity of houses to the archaeological area at Amarna can enhance the risk of opportunistic vandalism but, in all likelihood, results in a reduction in illegal excavation and damage as the site is under the scrutiny of others. This was evident during the 2018 conditions survey and impact assessment, where the majority of recent 'robber pits' were in more remote areas of the Site such as the ancient cemeteries, Kom el-Nana and the mud-brick houses on the desert fringes of the Main City, Central City, Northern Suburb and North City. Areas known for 'prize' finds, such as Thutmose's house where the Nefertiti bust was discovered are also directly targeted. However, blatant opportunistic antiquities hunting was observed during daylight hours across the entire site after a period of rainfall in 2018, a practice that has apparently been occurring for years and is generally overlooked by local police.

Misunderstanding and 'myth' surrounding the Site also plays a role in illegal excavation and vandalism. In 2004, Boundary Stela S was destroyed with dynamite in the belief that the Stelae have treasure inside[16]. It

---

[16] Davies noted in his 1908 publication (p. 25): 'Stela P was blown to pieces by gunpowder a few years ago by Copts, who expected, as all Egyptians do, to find that the stela was a door to a hidden treasure-chamber'. The best preserved in his day was Stela S, on which he remarked (p. 26): 'The sculptors chanced on a vein of limestone as hard as alabaster, so that the greater part of the monument is marvellously preserved, though spiteful attacks have been made upon it lately'. Most subsequent attacks on the stelae involved cutting deep and wide grooves across them to

is also common to see column bases from Amarna houses rolled out of place, again due to the belief 'treasure' will be found below (especially in the North City and other remote areas). In a recent worrying development, 'sheikhs' from other areas of Egypt have been known to charge communities huge sums of money in return for 'locating hidden gold' on the condition that certain 'rituals' are performed by the community, some of them violent[17].

Tourists are also culpable of deliberate damage to the Site. There is evidence of graffiti from foreign travellers dating back to Greek visitors, it is likely artefacts were removed over the generations, and it is common to see visitors touching and climbing over monuments.

General Mitigation Measures

Greater security is needed around the Site, paired with raising awareness of the Site's value (both locally and internationally) alongside promotion of best practice Site visit guidance (see Appendix 1).

Areas at High Risk from the Environment

- The remaining Boundary Stelae
- Thutmose's House, the 'Office of Foreign Correspondence' where the Amarna Letters were found, and remote houses in the North City and on the eastern desert fringe of the Site (away from modern settlements/guards);
- Ancient cemeteries as recent excavations in these areas (from 2006 onwards) have raised awareness of their location
- Kom el-Nana

Recommendations

High Priority:
- Enhance local understanding of the Site, promote sympathetic site behaviour and dispel myths through new outreach and engagement programmes hosted by the Amarna Visitor Centre.
- New site signage and a site guidebook will contribute to the above and include guidance on site behaviour, while taking care not to aid looters. Local stakeholders will ideally be involved in the installation of new signage and have contributed content of the guidebook, including modern perspectives on the Site and community life (forthcoming).
- Increase the number of site guards so that one can be positioned in key areas at all time (and allow for days off/breaks). Key areas include: 1 – North City/North Palace; 2 - North Tombs/Desert Altars; 3 - North Suburb; 4 – Main City and Central City; 5 – Royal Wadi; 6 – South Tombs; 7 - Kom el-Nana. These are still large areas, therefore specific site patrol routes/rounds and the redefinition of site duties is needed. This would include giving site guards basic training in order to communicate simple information, site history and visitor behaviour to both tourists accompanied by Arabic-

---

assist in the removal of irregular slabs which could then be sold to collectors and museums. Thus pieces of Stela R were bought in the 1940s by the Louvre in Paris.

[17] Sources suggest this practice in fact goes back to the Middle Ages and is described by the Muslim historian Ibn Khaldun.

speaking guides and locals. Enhanced cooperation with the tourist police, civic police and security forces is also essential to enhance the effectiveness of site guards in terms of conserving the Site and spreading awareness of its importance (in discussion with local MTA staff).

- In 2014, a proposal was submitted to the Antiquities Endowment Fund of the American Research Centre in Egypt to carry out 3D laser scans and photographic recording of the remaining stelae to enhance documentation in the face of ongoing risks from human action and weathering. The application was unsuccessful but an initiative of this kind remains a high priority as the remoteness of the Stelae (many of which are outside the official boundaries of the antiquities land) means securing their long-term protection is an on-going challenge. Any documentation work should take place alongside awareness raising and community engagement through site visits (where practicable) and events at the Amarna Visitor Centre (connected to the first point above).

Medium Priority:
- Creation of clear visitor pathways (close to parking areas – some new, some already in place) to discourage individuals from wandering freely across monuments.

Geology, Hydrology and Meteorology

ISSUE 6: The need to plan for the long-term consequences of the natural environment, including geology, climate change and disaster preparedness.

Wadi Deposits and Marine beds from the movement of the Nile comprise the local soils in the Amarna area (ESDAC 1981). The geology changes from undifferentiated Quaternary and Pliocene rock immediately bordering the Nile to Tertiary Eocene rock in the cliffs and higher plateaux (Ibid.). The basement rocks in the Eastern Desert have low seismic activity, providing a more secure foundation against earthquakes for Amarna's tombs than the thick alluvial sequences of the Nile Valley upon which most of the urban area is sited (Kamel 1996). The 1992 earthquake, which had a devastating effect on Cairo, was only felt as a minor tremor in Amarna. Small tremors have also been felt in Deir el-Barsha in recent years.

The limestone cliffs, while stronger in terms of seismic stability, are still affected by cracking (connected to veins of soft *tafla* – desert clay). This process allows water to enter Amarna's tombs through fissures. The quality of the limestone also varies greatly due to the underlying (shale) geology, which is susceptible to expansion with moisture.

The hot, dry weather conditions in Amarna are generally conducive to long-term site conservation. The occasional flash flood, however, brings debris and silt which can damage monuments as well as weaken bedrock and affect humidity (a particularly grave concern for the survival of tomb decoration and the stability of mud-brick). The route of the modern road now running east–west through the southern part of the Main City, linking the main north–south road (Royal Road) with the South Tombs, marks an area where a natural flash flood divided the city in Akhenaten's time. More recent hydrological, geological and GIS surveys have rated Amarna as medium to high risk in terms of future flash flooding and shown the Royal Tomb and nearby areas of the Site as particularly threatened by the Wadi Abu-Hasha drainage system (Zaid et al. 2013). Ditches and flood prevention are therefore important considerations. The frequency of occurrences of storms, and methods for monitoring weather to facilitate damage prevention are being

developed for other key sites in Egypt (see Weeks and Hetherington 2014, part 2: 5-10), and the need for a hydrological structure (diverted canal) has been proposed at Amarna to collect and divert surface runoff away from the threatened area and to decrease the water velocity. The need for a Wadi embankment around the Royal Tomb has also been proposed to minimize the seepage of water into the monument through fractures in the porous limestone (Zaid et al. 2013: 865) as the paved drainage channel constructed after a bad flood in the 1990s, along with the roofing of the entrance to the tomb, does not fully mitigate the issue.

Flash floods can also have further consequences for site preservation. In 1964, flooding destroyed a number of modern houses at El-Till. A diversionary canal with associated embankments was constructed beside and behind El-Till after the flood. It was to protect the village rather than the archaeological site. Discussions with local residents reveal that bricks from the archaeological site were used to rebuild some of the houses.

General Mitigation Measures

A full disaster plan is yet to be developed for Amarna. Consultation of the UNESCO 2010, Managing Disaster Risks for World Heritage: World Heritage Resource Manual https://whc.unesco.org/en/activities/630/ will be used in the development of this plan. The plan will include an on-going, site-wide stabilisation programme of the tombs, mud-brick and stone structures as this is the only effective measure to defend the Site from future seismic activity. Installation of flood defences/drainage ditches (as outlined above) in areas susceptible to flash flooding is also essential.

Areas at High Risk from the Natural Environment

The Tombs

The South Tombs are the most affected by the geological issues in the Amarna area, with cracking and fracturing affecting large sections of the walls and ceilings (particularly in T11, T16, T18). Some ad hoc restoration work has taken place in an attempt to deal with the cracking in T11 (plus other issues in T7, T8, T14 and T25), but further work is needed both here and in numerous other tombs.[18]

The Royal Tomb, which is situated on the side of Wadi Abu-Hasah, has been badly affected by previous flood events, the most recent being in 1992. In 2004/5, basic flood defences were installed in the form of a large drainage ditch to the east of the tomb entrance, alongside an exterior 'porch' (walls and roof) to channel flash flood water away from the entrance of the tomb. Nonetheless much of the limestone is stained and ongoing damage from increased humidity and the absorption of the flood water is evident. Salt crusts have developed on the lower sections of most of the walls resulting in significant spalling, fracturing and exfoliation of many of the surfaces and disfiguring the wall paintings (particularly in the side chamber thought to have served as Princess Meketaten's tomb).

The poor conditions of the wall reliefs are not only the result of water, but also human and animal damage and affect all of the rock-cut tombs at Amarna (North, South, Royal). A more thorough conditions survey of the tombs is needed, however visual surveys have revealed the conservation issues outlined below:

---

[18] The entrances to the South Tombs (but not the North Tombs) regularly become choked with sand. At present, the Amarna Project pays for a group of workmen to clear the sand, more or less on an annual basis.

- The loss of surface plaster layers exposing background plaster layers and, in some cases, bedrock.
- Abrasion, loss, flaking and detachment of paint layers (particularly in Royal Tombs, connected to humidity).
- Fading of colours.
- Powdering and decay of plaster.
- Cracks of various sizes in plasters layers or the bedrock, connected to likely detachment of plaster layers from background surfaces.
- Human damage from scratches and graffiti (dating from across the centuries – painted or carved), areas of hacking where tomb segments have been removed (again dating from ancient times to more recent looting), smoke/soot damage from historic and later use (e.g. in the Early Christian period), purposeful redesign/re-use (Early Christian modifications), discolouration and erosion due to touching.
- Animal and insect damage from wasps/bees' nests, bat and bird guano/nesting, salamanders (especially T15)
- Weather/conditions damage from dust/sand accumulation which can cause paint to detach in instances of high humidity (e.g. in Royal Tomb).
- Salt efflorescence.
- Some previous conservation attempts have also caused damage by staining/use of old/poor chemicals leaving areas looking shiny/wet/discoloured and use of modern/unsuitable plaster to repair gaps in wall paintings.

Recommendations:

High Priority

- Full conditions survey and implementation of a conservation, flash flood prevention and maintenance plan, starting with areas at greatest risk, e.g. the Royal Tombs

Medium Priority

- Environmental Monitoring of tombs to assess conditions over time and implement long term management strategies

Flora and Fauna

ISSUE 7: The need to plan for and mitigate potential damage from plants and animals (short to long term)

The Site has two distinct zones in terms of wildlife. The limestone cliffs, wadi areas and desert plateau are largely devoid of vegetation or fauna, other than drought tolerant plants such as *Zygophyllum* species (Rotreit), *Fagonia arabica* (Waraqa), *Farsetia aegyptia* (Goreibi), and *Zilla spinosa* (Silla). These woody short-lived perennials are usually found in the wadis where the infrequent rain runs down to the river. These plants tend to flower only after it has rained and then briefly turn the desert into a colourful sight. Woody shrubs such as tamarisk (*Tamarix aphylla*) can be found scattered in the wadis alongside the

presence of a few mice, geckos, snakes, small birds, beetles and insects. Some of the tombs, due to poorly fitting protective doors, have also been affected by bats to different levels of severity.

Closer to the areas of human habitation and farming, there is a greater range of vegetation and wildlife. The main crops grown are bread wheat, barley, lentils, safflower, *ful* beans and now maize. The fodder crops *berseem* (*Trifolium alexandrinum*) and alfalfa (*Berseem Hegazi*) (*Medicago sativa*) are also cultivated. Fruit trees and shrubs such as dates, pomegranates, mulberry, figs and grapes are grown; the dates provide protection for the crops from the strong sun as well as from the wind. Weeds growing with the crops include bindweed and wild oats, and trees such as *nabq* (*Ziziphus spina-christi*) and *sunt* (*Acacia nilotica*). The trees also provide shade (for both humans and animals) and fodder for the livestock. By the river, willows and reeds can be seen. In abandoned areas the halfa grasses (*Imperata cylindrica* and *Desmostachya bipinnata*) dominate the area. Wildlife is also more numerous and diverse in the river valley due to the availability of food sources and water. Wild (feral) dogs, small birds (nests and guano), burrowing animals, snakes, insects and beetles are present and affect the monuments in various ways – notably erosion and architectural/aesthetic damage (degradation, open joints, discolouration, staining and disaggregation). Taken together with the associated human waste (water and litter), as well changes in the water table due to irrigation, this presents significant risks across the Site.

General Mitigation Measures

Removal and cleaning of affected monuments, followed by an ongoing programme of prevention of animal use and/or plant colonisation is essential to the sustainability of the Site. This needs to take place alongside waste management and other site monitoring initiatives to reduce the impact of water and litter which make the Site an appealing environment for wildlife.

Areas at High Risk from Plants and Animals

Attention is needed from conservators starting with the high priority areas outlined below:

- Tombs: focusing on the Royal Tomb (bats, particularly in the first unfinished chamber to the right on entrance), T1 (bats), T5 (salamanders), T6 (bats), T8 (bats), T12 and 14 (bats), T15 (salamanders), T16 (bees), T22 (bats)
- Stabilisation of North City mud-brick walls (dog and bird damage)
- Stabilisation and cleaning of North Palace mud-brick and stone walls (particularly bird damage)
- Stabilisation and cleaning of Central City walls, particularly mud-brick (dog, bird, snake, bee damage. Note: dog burrowing is particularly problematic in the Amarna Letter's house and bees nesting in the entrance to the Small Aten Temple make for an uncomfortable visiting experience)
- Stabilisation and cleaning of Reconstructed Amarna House (Q44.1) (bird and dog damage)
- Cleaning and deterrent in the Visitor Centre (birds inside the building)

Recommendations

High Priority:

- Conserve tombs and repair tomb doors to prevent further animal use
- Work with Local Councils and communities to reduce the deposition of domestic and agricultural waste on the Site through installation of incinerators and site cleaning/ maintenance programmes

- Consolidate mud-brick and stone remains (listed above) and develop a regular conservation monitoring/maintenance programme
- Clean the interior of the Visitor Centre to remove bird excrement, remove current bird population and prevent birds from entering by installing netting, blocking holes and adding deterrents (e.g. sonic devices, scarers etc.)

Archaeological and conservation impacts

ISSUE 8: The need to address the impact of previous archaeological work and implement strategies for future conservation (including production of conservation statements) and research that considers sustainable aesthetic, interpretive and protective methodologies towards the Site, its setting and contemporary community (including storage of site archive and finds). To increase the public benefit of archaeology to help audiences (local and visiting) visualise the Site, and to raise awareness of the Site and its setting (including contemporary life) formally (education initiatives) and informally (life-long learning) through sharing ongoing, high-quality research. To expand understanding and contribute to the Site's Outstanding Universal Value, thus informing management.

Archaeological fieldwork and conservation[19] has had a very significant impact on the Site, particularly the large-scale clearances of the early 20th century. In terms of preservation, the most serious consequence of the latter has been the loss of structural remains due to a near-complete lack of backfilling. At the end of the work, excavated structures – nearly always of mud brick – were usually left exposed. Over the decades that have followed, even the most robust structures have suffered heavily from weathering and related processes. Smaller structures such as modest houses, which usually had walls built to just a single-brick width, have often completely eroded way. The result is that, although the housing areas of Amarna form a kind of open-air 'atlas' of ancient domestic architecture, the buildings that survive are damaged, are not representative of the range of houses that was once present, and are difficult for non-specialists to comprehend. Most of the main suburban areas of Amarna have been affected in this way, including the Main City, North Suburb and North City. Although initiatives have been undertaken in recent decades to re-record (and then protect) certain monumental structures excavated early last century (Small Aten Temple, North Palace, Great Aten Temple), which has also resulted in improved visitor experience, these projects have generally not been extended to housing areas.

The large-scale excavations of the early 20th century also generated large mounds of excavation spoil, which still stand several metres high. The excavators usually positioned these along ancient streets and open spaces, to allow them to access the ancient buildings. They are the now among the most dominant visual features at the Site, particularly in housing areas like the Main City. They lend the Site a somewhat inverted appearance, forming high features in areas that would originally have been left un-built. They bring some benefit, however, serving to a degree as windbreaks for the exposed buildings. Through the Central City, they help demarcate the edge of the ancient monuments from the field systems along the riverbank. Because the spoil mounds are full of ancient artefacts and environmental finds, and have their own kind of stratigraphy, they are not easy to deal with. If they were ever to be moved (for example, to re-cover and

---

[19] It is important to note that since the 1980s attitudes have changed towards the conservation and preservation responsibilities of foreign teams (by their funders) to be much more strongly engaged and actively in favour of investing time and resources in such practices.

protect the exposed ancient houses), this would ideally not be done *en masse* and mechanically, but rather excavated by hand using archaeological techniques.

Another impact of the early work was the removal of materials from the Site to museums and other institutions worldwide. These were portable objects (sculpture etc.), but also pieces of buildings such as architectural stonework and wall and floor paintings from monuments including the Great Palace, North Palace and Maru Aten. The motivations for removing these were varied. Petrie initially sought to protect the famous painted pavement he excavated at the Great Palace by building a mud-brick shelter to allow visitors to see it *in situ*, but subsequent damage to the pavement forced its removal to the Egyptian Museum. In most cases, materials were removed from Amarna as part of the system of 'partage' in place until 1980, often as a form of payment to excavation sponsors (for British work, see: http://egyptartefacts.griffith.ox.ac.uk/). The removal of these materials has in some cases helped preserve materials (e.g. from the now-destroyed site of Maru Aten), although early conservation techniques have often caused their own damage. Pieces in museum collections have also helped promote the story of Amarna internationally. The distribution of materials outside Egypt, however, has certainly impacted the ability to curate these excavated assemblages as pieces of local and national heritage, identity and scientific value, including potentially at Amarna itself.

General Mitigation Measures

Today, excavations at Amarna are undertaken on a much-reduced scale. Excavation is targeted and follows modern fieldwork techniques. Improved recording methods – and a publication programme that seeks to produce highly detailed excavation monographs (e.g. Kemp and Stevens 2010) – mean that archaeology, although a destructive process, now makes substantial contributions to both our understanding of the ancient city and to creating a permanent written and visual record of the Site. In terms of preserving excavated structures, excavation spoil is generally used to cover these once they have been fully recorded. In the case of excavations undertaken from 2002–6 in the Main City (House of Ranefer/Grid 12), clean desert sand was used to back-fill the structures (perhaps not ideal, as it introduces a material with a potentially different pH level). Backfill, however, tends to subside over time; this can be seen especially at the Ranefer/Grid 12 houses. Topping-up of backfill is rarely undertaken.

Conservation-related initiatives have been a part of fieldwork since the 1980s. They have generally taken the form of rebuilding parts of monumental buildings excavated in the early 20th century, as part of the initiatives to produce more accurate records of these structures (the Small Aten Temple, North Palace, and Great Aten Temple). Work of this kind requires a set of recording of its own, which has been undertaken to varying standards over the years. Once rebuilding has been undertaken, it brings a further set of challenges connected to the maintenance of rebuilt parts of the monument. Funding for ongoing maintenance projects can be difficult to source. There are also challenges for visitors as, in places, it can be difficult for the untrained eye to distinguish between original and rebuilt parts of monuments.

Previous work at the tombs has been small scale and piece-meal, focusing on the tombs most desperately in need of attention. The work has been dependent on irregular funding as well as the availability of conservation staff and materials.

Three main phases of restoration have been carried out to date, with intermittent monitoring visits in between times. The first included work on multiple North and South tombs in 1998/1999 by a Ministry team from Cairo, with experience at Saqqara, and also included members of the French Institute. In 2004, a Ministry team returned and carried out further work on areas of the North and South tombs. Since 2012, after the access road was constructed, various small-scale conservation initiatives have taken place by

Ministry staff from both Cairo and El-Ashmunein that have focused on the Royal Tomb. Larger scale conservation work across all the tombs, following detailed conservation assessments and co-operation between Egyptian and foreign teams, is needed to secure the long-term future of all the tombs and will need to draw on funding from ARCE, the Luxor Restoration fund or similar.

Research at the Site is generally targeted towards an academic audience, although important shifts have taken place over the past decade or so to improve the public-facing aspect of the work. This began with a series of online initiatives, particularly a website (www.amarnaproject.com) and Facebook page (https://www.facebook.com/amarnaproject/; over 11,000 members). Each of these then became a forum for sharing research results and other information about the Site to the general public, including potential visitors to the Site. This content is usually in English. Since 2017, this aspect of the research has been significantly expanded through a British Council Newton-Mosharafa funded site-management project (of which the current Plan is also an output). The project includes initiatives to develop: Visitor Information Panels, a children's book and a guidebook. All are in Arabic and English. Public engagement initiatives are also crucial to the future of site management, both in terms of on-site care but also for the indirect benefits activities like fundraising bring to the Site, i.e. through public donations to the Amarna Trust.

NOTE: Physical modifications to site infrastructure (roads, tourist facilities etc.) are outlined below.

Areas at Risk from previous/lacking Archaeological and Conservation Initiatives

Recommendations (connected to past and current archaeological work/conservation):

High Priority:
- Restoration of the Royal Tomb and consolidation of past work that is substandard
- Annual conservation and monitoring of all tombs to assess conditions, including tourist and animal damage
- Consolidation of previous conservation work on mud-brick houses e.g. Thutmose's house and assessment of loss of other mud-brick houses, e.g. the house of Nakht, one of the largest in Amarna, which has almost disappeared in the last 5-6 years
- Consolidation of other restoration work where needed, e.g. Small Aten Temple, North Palace, Great Palace etc.
- Targeted backfilling of exposed ancient features (e.g. peripheral features at the Workmen's Village, tombs at the Stone Village) and topping-up of backfill where needed (e.g. Grid 12 and the House of Ranefer in the Main City).

Medium Priority:
- Ensure that there is a clear and accessible record, with the Amarna Project Archive, of conservation work that has been undertaken.

Structural modifications to the Site

ISSUE 9: The need to assess the impact of previous structural modifications to the Site and plan for future infrastructure that is sympathetic to the aesthetic, safety, access, interpretive and protective needs of the Site as well as the needs of the Site's setting and contemporary community. To consider the limits of acceptable change.

The physical and natural environment of Amarna has changed dramatically over the last half century as discussed throughout this plan. Changes reflect rising populations (urban and agricultural expansion), technological development as well as enhanced visitor infrastructure. The main modifications to the Site include:

• The construction and/or widening of roads and pathways (including the laying of asphalt in many areas)
• The expansion of urbanism (houses, cemeteries and associated infrastructure – electricity pylons, septic tanks, water pipes), including the development of new villages (Ezbet Bardisi (El Azayza), Ezbet Abdul Razak)
• The expansion of agriculture (including the construction of new irrigation channels)
• The construction of parking areas, rest houses, toilets, security points and site offices for visitors
• The erection of [basic] signage and development of the Central City online trail
• The erection of wire fences around [some] monuments
• The construction of a Visitor Centre
• The reconstruction of an Amarna House and conservation/re-visualisation of [some] monuments
• The provision of supporting access infrastructure, including stairways and viewing platforms at [some] monument
• The construction of basic flood defences and access infrastructure at the Royal Tombs

In planning for both population and tourism growth in the area, all of the above must be considered in terms of the future carrying capacity, aesthetics (e.g. preservation of ancient vistas) and sustainability of the Site.

Tourism

Issue 10: The need to apply the principles of sustainable tourism, through partnership in decision-making, to ensure the long-term protection and presentation of the Site and its Outstanding Universal Value. To manage visitors and the visitor experience, and to collect and utilise visitor data in management planning. To improve interpretation of the Site (particularly regarding the Site's interconnectivity) for all site users (visitors and locals), enhance visitor amenities and spread the economic benefits to the community.

Tourism accounts for the largest domestic and international movement of people in the world and is vital to global economies. It is a complex process in which balancing the needs of visiting and local communities presents challenges and opportunities. When managed successfully, it can be a vehicle for economic development, conservation, education and cultural exchange, providing positive experiences with which to inform audiences about contemporary and past societies. However, tourism can also be a major risk factor to heritage sites and their environment. This threat is increased if tourism does not bring benefits to host

communities. Thus, co-operation between community representatives, government ministries, heritage professionals, tourism operators, property owners and site managers is essential to facilitate a sustainable tourism model which will enhance and protect heritage resources and their surroundings for future generations.

The United Nations World Tourism Organisation's definition of sustainable tourism is: 'tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities'. Successful management of public access and tourism at Amarna must be based upon an integrated monitoring programme that can identify where visitor pressure may be damaging archaeological remains, the wider landscape and its local stakeholders. A Sustainable Tourism Strategy therefore needs to be developed with key partners such as the MTA, local council, and tour providers to ensure any economic benefits gained from the Site are redistributed to local communities and contribute to conservation work while creating a tourist experience that links site access with the Visitor Centre and other local attractions/activities. 'Wise growth' therefore needs to be promoted, which balances economic benefits with tourism impacts on the Site in order to:

● Protect and enhance the quality of the historic environment
● Enhance the quality of the visitor experience
● Manage the number and timing of visits
● Monitor the impact on the community
● Provide a net benefit to the local community and economy
● Explore ways that the profits of tourism could benefit conservation and interpretation
● Ensure the sustainability of archaeological collections from the Site
● Collaborate with and complement, rather than compete with, other attractions in the region
● Ensure adequate transport infrastructure to assist the tourist trade and tour operators in accessing the Site and the wider area
● Encourage private tour companies and guides to provide sustainable tourism experiences
● Encourage appropriate and sustainable regeneration opportunities
● Enable skills development and apprenticeship opportunities across the wide range of sectors involved in the management of the Site from tourism to heritage conservation
● Secure appropriate low impact accommodation
● Develop a managed events and engagement programme throughout the year at the Visitor Centre and within the wider Site

Although penned in 1999, the ICOMOS International Cultural Tourism Charter (ICOMOS 2001/2) still offers important guidance for managing the risks tourism places on heritage sites, their setting and associated communities (https://www.icomos.org/risk/2001/tourism.htm). The Charter's aim is 'to improve the relationship between conservation practitioners and the tourism industry… and recommends that one of the primary reasons for undertaking any conservation works is to make the significance of the place more accessible to visitors and members of the host community, in a well-managed way.' This approach ties in with the Sustainable Tourism Model and will work alongside ongoing site management measures at Amarna to ensure visitor provision harmonises with other essential conservation and interpretation measures.

The last report by the global heritage fund (2010) listed six Egyptian sites in the world's top 50 highest grossing domestic and international tourist destinations. Egyptian and international tourist visits to Amarna (and Middle Egypt in general) do not reflect this pattern or the demand seen elsewhere in the country. To an extent this protects the Site through reduced footfall. However, tourism also has 'protective capability' in that associated revenue and increased international interest tends to result in greater funding opportunities and enhanced local interest in the preservation of sites.

There are a host of reasons why Amarna does not attract the attention it deserves:

- Ongoing security issues in Middle Egypt (or perceived security issues) making it difficult for international tourists to travel to the Site
- Its considerable distance from either Cairo or Luxor, the main departure points for tourists, which makes day-trips difficult
- Lack of tourist infrastructure (accommodation, restaurants etc.) limiting trips to a single/half day
- Low public knowledge (nationally and international) about Amarna and its importance within Egyptian and World history
- Insufficient interpretation of the Site (on site or in available guidebooks)
- Poor site access and on-site facilities (including parking, seating, shade, designated pathways, souvenirs, refreshments etc.)
- Low 'readability' of the Site for non-experts as stone remains are often at foundation level or are of mud brick (thus not meeting visitors' expectations of 'monumental' or 'important' archaeology)
- Lack of site maintenance/management affecting the quality of the visitor experience
- Insufficient connectivity between the different areas of the Site, between the Site and the Visitor Centre and between the heritage features and the modern community.

The Amarna Site Management Plan needs to manage current [low] visitor numbers, prepare for an upturn in visits as the result of increased forecasted visits to Egypt overall, and to accommodate future increases should Amarna become a World Heritage Site (see Part 2).

Current threats from tourism include:

- Visual pollution in the form of unattractive/unsympathetic tourist facilities
- Disturbance of/disharmony with local communities/activities
- Insufficient sewerage and rubbish provision
- Insufficient parking
- Vibration damage from large tourist vehicles passing through the Site
- Air pollution from idling vehicles
- Deterioration of stone/mud brick/wall paintings due to handling
- Erosion from walking across walls and key areas of the Site
- Lack of organised conservation and maintenance programmes (past and present)
- Graffiti and behaviour deemed inappropriate by local authorities (e.g. performance of 'rituals') and 'relic hunting'

General mitigation measures

Mitigation initiatives include:
- Enhanced waste disposal facilities
- More designated parking areas
- Managed pathways and other 'visitor management' measures (e.g. fencing, signage)
- Conservation and site maintenance programmes
- Site rules/guidance on behaviour
- Improved site interpretation
- Consultation and inclusion of local communities in tourist provision

Visitors and their 'appropriate behaviour' are central to sustainable tourism and site management. At other 'landscape-scale sites', such as Hadrian's Wall and Stonehenge and Avebury, the production of 'codes of respect' for visitors has proved to be an effective tool for encouraging behaviour that minimises negative impacts on the sites and local communities. Such a code is desirable for Amarna and effective dissemination/use would be beneficial to the Site as well as local and visiting audiences.

The carrying capacity of Amarna is also an important consideration in order to determine the optimum visitor level the Site could accommodate before adversely affecting its material and experiential qualities. At the moment this is not a regular issue[20], but the figure should be estimated as a management tool for future visitor monitoring so that appropriate access restrictions or increased resource capacity can be implemented if needed. Physical (number limitations connected to site space, parking, catering, toilets) and social (experiential, i.e. crowding) carrying capacity need to be considered and control measures planned for through ticketing, site flow and access restrictions. Supporting visitor management structures such as site signage, pathways, physical barriers and effective ticketing processes can all increase carrying capacity and are therefore vital to the Site Management Plan and its associated policies.

Funding is a major hurdle in carrying out site conservation, interpretation and modification as outlined above. The Site Management Plan will aid applications for additional funding and advice from supporting bodies such as ICCROM, ICOMOS, EES, ARCE etc. to ensure conservation work is of a high standard and that appropriate materials are used. Working with communities to find joint solutions, including providing training and employment connected to site maintenance and tourism, can also enhance the success of such measures through providing shared interest in preserving the Site and attracting further visitors to the area.

Areas at High Risk from Current Visitor Provision

Access to the Site is generally quite difficult due to a lack of demarcated paths in the urban areas, steep inclines and stairs at the tombs and Boundary Stela U and various trip hazards from uneven steps, loose stones and urban refuse.

---

[20] There are occasions where large tour groups, often of school children, result in over-crowding in the tombs and multiple coaches putting pressure on archaeological remains through high traffic/weight and insufficient parking space.

The standard visitor route currently consists of entering the Site from the north. Some groups stop briefly at the North Palace where a steep dirt bank provides a good view over the remains which were conserved and fenced in the 1990s and 2000s. Barbed wire surrounds the monument and it cannot be entered except by an access gateway on the south side, which is little used and discouraged as the Palace's brickwork is particularly sensitive. There is no information, shade, seating or designated parking in the area and the 'viewing platform' is not accessible to those in wheelchairs or who are unsteady on their feet. Tourist buses usually pull on to the verge and leave their engines running. The buses pose a long-term threat to the North Palace (and other areas of the Site) as vibrations act on internal weakness and threaten structural stability.

Visitors continue south on the main road. Some groups stop at the Visitor Centre, which lies next to the river in El-Till although 'legally' the first stop should be the ticket office on the road to the North Tombs where tickets are bought to enter the Site, including the Visitor Centre. Signage and awareness of the Visitor Centre is poor and the facility is under-used as many visitors only spend 2-4 hours in the area and prioritise the Site. The Visitor Centre is an excellent resource containing high-quality information, models and replicas. It is the ideal venue to promote both site information and site behaviour, which would enhance site conditions and the visitor experience for local and visiting audiences. The Visitor Centre, however, needs a maintenance plan, staff training and clear job descriptions to clarify staff tasks and enhance long-term planning (sustainability). Independent funding is also greatly needed in order to manage basic issues such as cleaning, air-conditioning and promotion, as well as to enable the team to run activities and enhance what they offer locally. The Visitor Centre has ample parking but the grounds lack shade (trees/landscaping) and functioning café facilities and shops (space is provided for both activities but low visitor numbers would make it difficult for proprietors to earn a living). These combined issues mean the resource is not fulfilling its potential economic, social and informational roles.

The North Tombs are one of the two focal points of most visits to Amarna. The taftish (ticket office) is located on the asphalt road at the eastern extent of El-Till on route to the North Tombs. Opposite the taftish is the only functioning rest house with refreshments, toilets and some basic souvenir provision. At the tombs themselves, there is a small parking area (without shade or seating). A stone and cement staircase (in need of some repair) is the only route to the tombs. Less able-bodied visitors therefore cannot enter but are able to view the introductory signage at the base of the stairs. Tombs 3, 4 and 6 are prioritised by guides during visits as these are perceived to have the 'best wall paintings' and to be of the most interest as they contain Early Christian period modifications (particularly T6, which was transformed into an Early Christian Church). These tombs have lighting and some areas of seating (unshaded) outside. T1 and T2 are less regularly visited (and only received generator-powered electric light in 2017) and are more difficult to access. The guard needs to be present to let visitors into the tombs. Some of the doors/locks are temperamental (especially in the less visited tombs across the whole site) and are in need of maintenance. There is no rubbish provision or current maintenance programme for the area (as evident by the accumulation of plastic water bottles here and across the Site), and signage at individual tombs is generally limited to the tomb number and owner name (where known), although some tombs have larger free-standing signs. Many of these signs are unreadable due to age/weather damage and need to be replaced using similarly-sized signage so that original fixing and fittings can be reused (rather than drilling new sign emplacements).

The Royal Tombs and Boundary Steal U are also accessible via the road going east from the taftish. Only Tomb 26 (the main Royal Tomb) is open to the public in the Royal Wadi[21]. There is a small parking area but no seating, shade or rubbish provision. Light to the tomb is provided by a generator which is not reliable. A new English information panel was added in 2015/16. The tomb is unsuitable for those less physically able: access is by a steep wooden ramp and areas of stairs; only the central ramp and stairs have handrails; steps between tomb chambers have no support structures.

Boundary Stela U is high up in the cliff and accessible only by a steep stone staircase without handrails. There is no signage, seating, shade or litter provision in the area.

The Central City is typically the next and final stop for most visitors. Again, there is no designated parking area leading buses to pull up alongside the monuments, spoiling the area's aesthetic and causing issues with vibrations and pollution. Tours generally focus on the Great Aten temple, which can only be viewed from the roadside, the Small Aten Temple, which can be entered through a gate in the wire fence, and on occasion the Great Palace, which is unfenced and can be seen from the west of the road[22]. There is little signage beyond the names of the temples and no seating shade or rubbish provision. Markers provide a route to accompany a downloadable online guide for the area (http://www.amarnaproject.com/images/downloadable_resources/tourist%20route.pdf). The guide focuses on the Small Aten Temple and includes additional sections on the King's House, Amarna Letters' House and partially reconstructed Amarna House (Q44.1). The information content of the guide is excellent but it is little used as it is a pdf file designed to be printed out, rather than read on a small screen, and so needs to be downloaded in advance.

Partially as a result of the lack of information, alongside generally low understanding/interest in non-stone remains, the mud-brick features of the area, such as the bridge and King's House, are generally overlooked, as are the mud-brick houses and workshops set back from the road. Some groups progress from the eastern extent of the Small Aten Temple (climbing over the remains of the low mud-brick wall) to the reconstructed Amarna house but the path, through an ancient gateway in the south enclosure wall, is not clearly marked and access is not possible for the less physically able[23]. The viewing platform at the reconstructed house is only accessible via steep stairs (in need of some repair). The current safety barrier on the platform (some 6+m above ground level) is beginning to corrode and is set too high to protect small children from the drop. Better interpretation of the house is also needed to explain the building and its relevance to the wider site.

---

[21] Tomb 26 is the only tomb in a minor wadi branching from the northern side of the Royal wadi. There are three other tombs on the southern side of the Royal wadi. These have no doors and need some care and exertion to enter; they are thus little know and visited.

[22] The chaotic nature of the Great Palace remains and the time pressures on tour groups/visitors means it is often left out/overlooked.

[23] This route is in the downloadable guide
http://www.amarnaproject.com/images/downloadable_resources/tourist%20route.pdf).

Areas with little/no visitor provision

North City and North Riverside Palace

The North City is the main entry point for visitors to Amarna. Visitors rarely stop here, however, as there is no signage indicating that it is the 'beginning' of the city. It would be possible to create a small parking area to the very north and walking routes through the North City, which could introduce visitors to the Site and its excavation history as the old dig house, dating from the early 20th Century, is an interesting and well-preserved feature in the area. An official ticket office could be built in the area to encourage this practice. 'Open areas' are not currently seen as 'ticketed monuments', however this could change if tourism increases and facilities are enhanced. The remains of the mud-brick gateway of the North Riverside Palace also lies close to the road in this area and, although in need of consolidation, still stands to a height of over 2 metres. It is visually striking (yet currently difficult to understand) and could be used to familiarise visitors with mud-brick remains and their importance enabling them to better appreciate much of the rest of the Site. The addition of this 'stopping point' could also create small opportunities for families living and farming on the west of the road to provide refreshments or souvenirs. Shade, seating and litter provision, sympathetic to the aesthetics of the area would also be needed.

The Desert Altars, to the north of the road leading to the North Tombs, are ephemeral and difficult to understand. The success of a recent grant to install protective walling/restoration, alongside plans for new signage, will better alert visitors to the presence of archaeological remains which could be easily reached by a small path from the road.

Much of the North Suburb intermingles with the farmland and modern village of El-Till. Tourists do not tend to stop here as other housing areas are better preserved and more safely accessible (away from the road). The area is also badly affected by litter and has no signage alerting visitors to the significance of the mud-brick remains.

Any exposure to Amarna's vernacular buildings is likely to take place at the reconstructed house to the south-east of the Central City (or in the Visitor Centre). This means the other large housing area of the Main City, which contains the workshop of Thutmose where the bust of Nefertiti was discovered, is also overlooked.

There is potential at the South Tombs to create an interesting story/visitor experience as they demonstrate various styles of design, different personal tastes and stages of construction/completion. At present, access is an issue as there is only a dirt track leading the last few hundred meters from the main road and the walking route is steep. There are no seats, shade or other facilities in the area as the South Rest House was never properly finished and was vandalised during the revolution in 2011. Basic pathways have been created linking the tombs (unsuitable for wheelchairs). However, the initial access is steep and the paths themselves are narrow and somewhat precarious as loose stones now litter the route. As many of these tombs are rarely opened, they are affected by wind-blown sand (even though the Amarna Project pays for them to be cleaned once a year), build-up of rubbish within their external courtyards and problems with doors/lock mechanism (e.g. at the time of visiting T12-15 could not be accessed due to rusted locks). In addition, many of the external signs with tombs nos. and names are no longer visible. As with the North

Tombs, these need to be replaced with new signage of the same dimensions to allow for the reuse of original fixtures.

T10 contains a very famous scene of the Royal family which guides say tourists often ask about as it appears in various Egypt tourist guides. T25 is the only South Tomb that has light as it is the largest and most impressive. The tomb is in excellent structural condition, unlike many of the other South Tombs, and contains well preserved decoration as well as over 12 columns in various stages of completion, plus a carved staircase.

Other remote areas of the Site include Kom el-Nana, the Stone Village and the Workmen's village. The latter two are very remote and present significant access problems as they would in fact suffer from increased tourism. Kom el-Nana is in the centre of the agricultural land of el-Hagg Qandil (as described above) and only accessible by small dirt tracks (not suitable for tour buses). Nonetheless, the monuments at Kom el-Nana are important as they represent the last remaining Sunshade of Re (Williamson 2016) and show the continued significance of the area in the Early Christian period (Kemp 1993). A walling project is desirable for this area to protect the monument from further agricultural encroachment but at present no funding is available and there are concerns surrounding further subdivisions of the landscape (as discussed above).

Recommendations

High Priority:
- Installation of new site signage, including in previously little visited areas, to draw visitor attention and improve information provision (in English and Arabic) for visitors, guides and local people and highlight the historic value of the wider site.
- Continue and extend the programme of stabilisation and 're-visualisation' work on key monuments as outlined in earlier sections
- Publication of the first dedicated guidebook for the Site (in English and Arabic), linking ancient and modern life and dispelling myths/misinformation (including by guides) about the Site. The guidebook contains some basic recommendations on behaviour, including requests not to walk on the ruins and not to leave litter on the Site. Official MTA guidelines for site behaviour can be found in Appendix 1.
- Work with the MTA (including Visitor Centre Staff) and Ministry of Tourism to better promote the Site and the Visitor Centre to domestic and international tourists
- Create designated parking areas in the North City and Central City away from monuments (as far as possible) to discourage tour buses and large vehicles parking on the verges directly next to these areas' core monuments.
- Develop a site maintenance rota, with particular focus on key areas such as the Central City and North Tombs to ensure litter is regularly removed and pathways and fences are maintained.
- Creation of new dirt pathways between monuments to channel visitor flows and reduce erosion (e.g. in the North City and Central City). Where possible, these paths should be wide and on ground that enables disabled access
- Provide mains lighting to the Royal Tomb (T26)

- Employ a greater number of site guards and provide them with training in order to communicate basic information on visitor behaviour and the history of the Site to visitors and local communities.
- Develop an independent ticketing system (or other budget measure) for the Visitor Centre to provide a basic income for maintenance and events
- Formalising access to Kom el-Nana

Medium Priority:
- Install mains lighting to all accessible tombs
- Install further seating (with shade) and rubbish bins around the Site in places that will not impede the overall site aesthetic.
- Develop partnerships between local businesses, local government and national Ministries to extend local accommodation and catering infrastructure.
- Develop collaborations between local stakeholders to diversify the tourist offer (e.g. ecotourism and locally made souvenirs etc.)
- Assess and repair tourist infrastructure put in place by the Army in 2005 (e.g. staircases, hand rails etc.).

All of the above need to take into consideration the aesthetic character of the area and the needs of the local community. Safety and traffic management also need to be considered should Amarna become a World Heritage Site in the future and see rapid increases in visitor numbers.

Conservation/Management Projects in Progress

Work to address some of the threats outlined above is already underway as detailed below:

- Consolidation of the Great Aten Temple
- Development of facilities, engagement activities and resources at the Amarna Visitor Centre through a training programme (2018-2019) led by the MTA in Cairo and the authors of this Site Management Plan
- **Development of new site signage:** Thirty-six new information panels have been designed for the Site. Twenty-four are for key areas and monuments in the city itself, and the remainder are for the best preserved of the rock-cut tombs. The panels provide: a statement of welcome, including a request to protect the Site and respects its local communities; details of each monument; and a series of maps and images. They are in Arabic and English and replace a set of older panels at some monuments. They are designed primarily to improve visitor information and experience, and to encourage local engagement with the history and past communities of Amarna. They are also intended to signpost areas of antiquities land, and so help define the boundaries of the Site. The project is ongoing. The panels will be printed in October/November 2019. It is anticipated that they will be installed on site in 2020/21. Funding for the installation is held with the MTA, through the British-Council Newton-Mosharafa funded site-management project of which this Plan is also an output.
- **Development of site guidebook:** In late 2020, the first dedicated guidebook for Amarna will be published (AUC Press). The guidebook has again been developed through the British-Council Newton-Mosharafa funded site-management scheme. The book explains the ancient city, and the

events of the Amarna period, and offers practical advice for visiting the Site, including guidance on responsible tourism. Separate Arabic and English versions will be printed. Arabic copies will be distributed free-of-charge to local schools, clubs, households etc. The book is written by researchers who work at the Site, in conjunction with local heritage professionals and community members. It is intended to provide high-quality public information about the Site for both visitors and the community, to encourage more visitors to the Site, and to prompt greater understanding of and connection to Amarna.

- Development of Arabic/English children's book on daily life in Amarna with learning resources

Forward Planning

Priority future projects for high risk area/of high importance include:

Management Organisations:

- Implementation of regular management meetings between key stakeholders/steering groups (once formalised) to facilitate communication between organisations/individuals and ensure that management responsibilities and actions (as set out in the Site Management Plan) are being met (see **Part 4** for details)
- Use of the Visitor Centre as the hub for management engagement between local stakeholders

Improvements to monuments/standing remains:

- Consolidation of the remains of the mud-brick bridge between the King's House and the Great Palace
- Construction of a protective wall from the Desert Altars to the North City. The wall would run along the eastern edge of the parcel of privately-owned agricultural land between the Desert Altars and the North City, along the east side of the modern road. It is intended to prevent the illegal spread of these field systems eastwards, where they will eventually over-run the Desert Altars and may impact the large and unique pit-grave cemetery near the North Tombs (the North Tombs Cemetery). Funding has been secured through a grant from the Antiquities Endowment Fund of the American Research Center in Egypt. An application for permission to construct the wall was submitted to the MTA in October 2019. If permission is granted, work on the project will begin in 2020, after the line of the wall is surveyed in by the MTA. The wall has been budgeted to be constructed of limestone blocks, c. 1.7km long, 2.5m high and 2-blocks wide.
- Installation of boundary wall north of the Great Aten Temple
- Full conditions assessment and conservation of Tombs
- Ongoing conservation assessments and remedial action

Archaeological Research:

- Continued excavation of the non-elite cemeteries
- Continued excavation (and consolidation) at the Great Aten Temple

- Targeted excavation of 'non-elite' mud-brick houses in the Main City, North Suburb and North City
- Continued work scanning and organising the archive of excavation records stored in the Amarna Project office in Cairo
- Development of an online platform to share and facilitate research on the Amarna Archive
- Scanning or photogrammetry of the Boundary Stelae

Tourism and Access:

- Promotion of Amarna as a domestic and international tourist destination by the Ministry of Tourism and MTA
- Continued development of the Visitor Centre offer, building on 2018-2019 programme
- Improvement of tourist facilities (working with local entrepreneurs to expand what is offered to tourists, e.g. souvenirs, accommodation, hospitality)
- Improvement to tourist parking and walking access (working with MTA and local council)

Environment and Aesthetics:

- Improvement of rubbish and waste disposal and collection services (working with local councils and regional government)
- Promotion of low water irrigation methods
- Development of 'protected vistas' to preserve areas/views of the ancient landscape in key locations such as the Central City

Education and Learning:

- Build relationships between local schools, community groups and the Visitor Centre through regular events and activity programmes

World Heritage Status:

- Collaboration between MTA, University of Cambridge and the Amarna Project to add Amarna onto Egypt's 'tentative' World Heritage List

All parties recognise the importance of developing good relationships between individuals and organisations for the success of the Site Management Plan and the longer- term sustainability of the Site. As such, the MTA is committed to providing staff to maintain the current system of Site protection and tourist facilitation. There are, however, no resources or plans to expand the role of the MTA at Amarna in the immediate future. The security situation in the region, and cooperation between the MTA and local police/military, is therefore essential to provide accessibility and stability at the Site.

PART 4. POLICY AND MANAGEMENT

Current Policy Context

The Site Management Plan combines statutory and non-statutory planning requirements and legal protection with stakeholder values. Decisions on the Aims, Policies and Actions of the Management Plan have been shaped by international policy and guidance as set out by UNESCO alongside consideration of Egyptian law and the values of Amarna's other key stakeholders. This has involved representatives of the local community as well as members of the Amarna Trust, and those who are likely to comprise local and international Steering Committees (once formalised). The final plan will be submitted to the Egyptian MTA for approval with the aim of putting in place clear management processes at the Site and demonstrating the Site's Outstanding Universal Value in order to have it added to Egypt's 'tentative' World Heritage List.

Current Management Context

The present management structure involves various levels of responsibility for the Site (see Figure 64). Over the course of the 42 years University of Cambridge researchers have been working at Amarna (with a permit held by the Egypt Exploration Society from 1977–2005), they have established a good understanding of the multiple stakeholders connected to the area's heritage and their interrelationships. However, communication on changes to the Site, forthcoming management actions, legal issues or local needs do not always reach all interest groups. Therefore, a commitment from all management partners to working together more closely is an essential feature of this management plan.

Key Stakeholder Groups, Responsibilities and Concerns (see also **Part 2** above)

Government Organisations

Government organisations from the supra-local to national level are essential to effective site management and the implementation of the Site Management Plan.

The State

A number of government departments and national agencies have an important role to play in the management of the Site. Their responsibilities range from statutory regulations to funding commitments and land ownership. As such, these departments and agencies should provide support (specialist services and funding) for management as outlined in the Plan and ensure this is reflected in relevant local and national policy. Ongoing active support of Steering Committees (once formalised) and advisory groups is also vital to the success of the Plan.

The Egyptian State owns c. 70 square kilometres, which is designated as antiquities land. As such, the State, under the auspices of the MTA, has a responsibility to protect and promote the Site. The MTA would take the lead on any recommendations to put Amarna forward for World Heritage Status. Any such bid would be based on the content of this Site Management Plan.

Local authority

The local authority, centred on Minya, administers the towns and villages through Local Council (see **Part 2**). The Minya Governate should ensure that the Management Plan is given the highest possible status in its local policies and reflect recommendations from the Plan in its management decisions. Allocation of resources for site management (including for site maintenance and data monitoring), active contribution to Site Steering Committees (once formalised) and the incorporation of key recommendations into local development programmes (education, health etc.) are also essential to the management process.

MTA Inspectors

The MTA manages sites at a local level through regional offices and site teams (as outlined in **Part 2**). Local Inspectors have to deal with illegal activity on the Site, including illegal excavation, building and agricultural use (with assistance/information from MTA Site Guards), as well as providing ad hoc tourist services, such as guiding visitors, and liaising with local communities/councils. As such, they are also in contact with representatives from the local Ministry of Tourism, Tourism Police and other Ministries.

MTA Inspectors, including MTA staff at the Amarna Visitor Centre, are undeniably the hub through which current communications, concerns and initiatives flow between other stakeholder groups. As such, MTA staff from the Visitor Centre are developing a more detailed cultural engagement and outreach plan to enhance knowledge exchange and help mitigate existing socio-cultural problems surrounding the Site connected to different management priorities and risks (see recommendations in **Part 3**). The new approach is being facilitated with training from outreach experts from Cairo Museums and the Cairo MTA, along with input from the University of Cambridge. The resulting work will not only include information exchange but will also link in with collaboration with the local council to develop site 'care' services e.g. rubbish, maintenance (see **Part 3**). However, funding for the Visitor Centre is centralised meaning they have no independent budget. This causes problems with both the maintenance and engagement capabilities of the Visitor Centre. As the Visitor Centre should be the conduit through which local site management discussions take place, bringing together multiple local partners from government to communities, establishing an annual budget is a priority action of this Management Plan as outlined in **Parts 3 and 5**.

MTA staff at the Visitor Centre currently disseminate news and events about the site via an independent Facebook page which has over 1000 followers. Facebook is one of the most actively used social medial platforms in the world, with over 1,366,000,000 users (We Are Social 2015), and offers much wider potential audience reach locally, nationally and internationally.

Site Guards

Site guards play a vital role in site security providing 24-hour protection of the archaeological remains from illegal activities (i.e. looting, vandalism, agricultural and urban sprawl). They also have direct interaction with visitors and are members of the community, residing in the nearby villages and towns. This range of duties and connections means they are in a key position to mediate relationships between government, visiting and local stakeholders. Due to their knowledge of the Site, its users and the types of issues that arise, site guards are important to the decision-making process and future management of Amarna.

In order for guards to maximise their potential role, the first step is greater training. As visitor numbers increase, guards will have greater interaction with visitors and need to provide ad hoc information/ unofficial tours and monitor/direct visitor behaviour (not walking in sensitive areas, touching fragile surfaces etc.). It is therefore essential they understand the basic archaeology of the Site and its key visitor and conservation and management needs. Tours by MTA staff to improve guards' understanding of the Site, alongside provision of free copies of guidebooks and site management 'crib sheets' are therefore essential to the long-term management of the Site.

Guards' community links are also essential to the Site. Regular meetings between guards and other site management personnel, channelled through the Visitor Centre, is therefore vital to identify and solve potential problems related to maintenance, visitor experience and local understanding/use of the Site.

Security Services

Local and Regional Security Services assist (when instructed by the Governor of Minya – usually following calls for assistance from the MTA) with the management tasks of local MTA staff and Site Guards connected to misuse of antiquities land. Various security services exist at Amarna but do not necessarily work collaboratively: police, tourist police and the military. Security staff also provide guards and escorts for archaeological work and tourist visits. As such, these groups need to be involved in regular meetings between local stakeholders and other management groups at the Site.

Research Organisations/Individuals

Universities and Researchers/Research Institutes

Engagement by researchers/research institutes is vital for the long-term protection of a site as researchers, like visitors, enhance the economic and academic value of a site and necessitate investment, e.g. in the physical infrastructure of management – personnel and resources (Sadarangani and Perry 2017: 30). Since 1977, the University of Cambridge (originally under the auspices of the Egypt Exploration Society)[24], has conducted regular research (including excavation) and conservation work at the Site (in collaboration with the Egypt Exploration Society from 1977–2006; for information on previous research project see **Part 2**). This research involves regular collaboration with other international researchers and universities (e.g. the cemetery excavations, first with the University of Arkansas and now Southern Illinois University).

Permission to work at Amarna is granted annually by the National Security Services in Cairo and the Cairo office of the MTA. The research and conservation priorities of the University of Cambridge and Amarna Project teams are decided by the researchers with elements of consultation with the Amarna Trust's Trustees and, in future, will involve Site Management Plan Steering Committees (once formalised).

---

[24] The current expedition began in 1977 under the auspices of the Egypt Exploration Society; since 2006 the permit has been issued in the name of the University of Cambridge (McDonald Institute for Archaeological Research).

The international archaeological team employs local people from the nearby villages of El Hagg Qandil and El- Till to assist with excavation, post-excavation and conservation work during field seasons and works with the MTA to assist in the development of the local outreach and engagement offer at the Visitor Centre. To disseminate news and the results of its campaigns, the Amarna Project has a dedicated website, http://www.amarnaproject.com/, which receives around 3,000 hits per month. In addition, the Amarna Project has a Facebook page with over 11,000 followers. The website and social media outlet are used to raise funds for research as well as to assemble information such as articles, tourist information, maps, plans, photographs and so on.

Local Community Groups

If local ownership of the Plan and stewardship of the Site is to be built and sustained it is important that local communities see their interests addressed alongside the protection and enhancement of the Site. However, this is complex to negotiate as some areas of antiquities land are illegally used for urban and agricultural purposes (as discussed in **Part 3**). Other areas that were once officially within the boundaries of Akhetaten are also now legally under the control of multiple land owners for farming, housing and other communal facilities, such as cemeteries and public buildings. Legally, private landowners can 'use the land as they see fit'. More information is therefore needed which links the significance of the Site and the challenges of management with local interests. The local council is well placed to represent communities (as outlined above) and provides a conduit for involving local groups in day-to-day site management actions, which can provide social, cultural and economic benefits to the communities. However, as this Plan has highlighted, greater co-operation and communication between local landowners, councils and the antiquities services (including foreign excavation teams) is needed to enhance these relations and build understanding of the different values and priorities connected to the area.

Children and Youth

There are approximately 10,000 young people (under 18) living on and around the Site, many of whom attend the local primary schools and secondary school (see **Part 2** for details). Until recently (see details on stakeholder consultation below), there was very little engagement between local schools/teachers, pupils and the Site/MTA staff. This is interesting as anecdotal data suggests pupils from elsewhere in Minya are quite regular visitors to the Site. In addition, there are few opportunities for local young people to engage with the Site outside of school hours. A lack of learning resources for teachers is part of the problem and is being addressed through the development of a new children's book about Amarna. This is being supported by greater engagement between the Visitor Centre and local schools in order to facilitate visits to the Site and Visitor Centre for local groups. The Visitor Centre is also building community events into its future programming to engage local audiences from a young age with the Site and its significance (as outlined in **Parts 3 and 5**).

Local Community Councils/Community Leaders

Community leaders and local councils are supposed to work with the MTA on issues such as rubbish disposal, access and looting. In reality, conflicts of interest mean the necessary 'trade-offs' between modern and heritage needs are rarely met. Better forums are therefore essential to discuss problems and

find joint solutions to community and heritage needs. Stronger engagement and greater use of the Visitor Centre as a hub, alongside the provision of comprehensive site information to local leaders (e.g. the forthcoming guidebook), is essential to the future management of the Site.

Local Businesses/employment

At present, there is very little businesses engagement with the heritage of Amarna. There is one small shop and visitor cafe at the North Rest house. Local labour and materials are used in site conservation work where possible, and the excavation team are supported by local workmen, drivers and so on. The tourism, site maintenance and conservation needs of the Site (outlined in **Part 3**) and subsequent actions (outlined in **Part 5**) could be largely met through local contracts/local businesses/labour with the Visitor Centre acting as a hub for negotiations and regular meetings.

Other community members

Others living and farming on the Site and its fringes regularly engage with local MTA staff, site Guards and Security Services, as well as with the international research team (when present). More work is needed to more fully integrate this group and local needs into site management planning. More formalised communication channels and enhanced knowledge sharing through the development of new community resources focused on the archaeological site, led by the Visitor Centre, are central to this process.

Charitable organisations

International, national and local charities, voluntary organisations and other interest groups have an important role to play in Site Management. The Amarna Trust is the main charity connected to the Site and plays a significant role in raising awareness and funding for the Site. The Trust is a fund-raising body, started in 2005; it provides grants to support work at Amarna and funds some of the Amarna Project's work, in response to written applications.

The Amarna Research Foundation (a not-for-profit organisation: http://theamarnaresearchfoundation.org/aboutUs.html) also contributes to site management. The Foundation is dedicated exclusively to the advancement of interest and research in the Amarna Period. Funds contributed through memberships and grants are used to promote archaeological excavations, conservation, research and publication about this period of Egyptian history.

Groups like the Amara Trust and Amarna Foundation are fundamental to the successful implementation of many of the Plan's objectives and need to be encouraged within the Site Management Plan's dissemination and monitoring processes.

Museums and Magazines

Museums (local, national and international) also have a role to play in Site Management as they are responsible for communicating the story of Amarna and caring for its portable artefacts. In the past, significant finds went largely to museums (and private collections) in the countries of the foreign

excavation teams (e.g. the bust of Nefertiti, discovered by Ludwig Borchardt, eventually went to the Neues Museum in Berlin), or to the Egyptian Museum in Cairo. Today, discoveries go initially to the site magazine attached to the Amarna dig house. Before the 2011 Revolution, the most valuable/important finds were kept inside an additional locked cage inside the magazine. However, since the revolution the procedure has changed. The MTA now assesses the finds following each season and takes those considered the most valuable/important to the central, regional magazine in El-Ashmunein (near Tuna el-Gebel). This magazine is, however, in quite a remote location and raises concerns as it has been prone to break-ins in the past. In 2018 the MTA began to undertake a full survey/object registration of the site magazine and began removing further important artefacts to the central magazine. Little consultation or knowledge exchange took place during this process. In future, these issues need to be addressed to ensure productive working relationships between foreign teams and the MTA and to guarantee the security of artefacts. Theoretically, Egyptian museum committees can ask for items from the Amarna[25] and El-Ashmunein magazines to go to national and regional museums, but this has not happened in recent years. The construction of a large Akhenaten museum in El-Minya has been underway for some years but is currently stalled. If completed, it would offer huge facilities for storage, conservation, outreach, etc. The focus on Amarna would be likely to change the configuration of archaeology and tourism in the area. However, the museum faces the problem of having very large exhibition spaces and a shortage of large Amarna objects to display.

The presence of artefacts from Amarna in international museums provides the Site with exposure to millions of visitors each year. There is, however, a lack of accessible supporting information and resources about Amarna, both for teachers and others interested in the Site. The forthcoming children's book and guidebook will begin to address this issue, but more work is needed to promote the story of Amarna and attract domestic and foreign visitors to the Site.

Tourism Sector

Due to issues with permissions, we were not able to carry out onsite visitor surveys to discover more about Egyptian and international visitors' experiences at Amarna. However, following training sessions at the Visitor Centre in April 2018, the Inspectors from the Centre began their own survey to gather visitor feedback. Visitor numbers are tracked through ticket sales at the *taftish*, and differentiate between national and international visitors. Since October 2018, the Visitor Centre has also begun monitoring its own visitor numbers to assess how many of the Site's total visitors use the resource and to see the impact of new outreach initiatives with local schools.

Additional promotion from the Ministry of Tourism, alongside work with tourism agencies, both domestic and international, would benefit promotion of the Site. This needs to sit alongside increased online presence of the Site as tourists increasingly use the Internet to research and plan trips. While the Amarna Project website offers excellent historical information, the detail on visiting the Site (what to expect, logistics etc.) needs updating and expanding. This issue is repeated on other websites which provide information about Amarna such as Wikipedia and Tour Egypt.

---

[25] The Amarna magazine needs to be upgraded in terms of storage conditions and capacity.

National Tourists

In general, domestic tourist numbers are lower than international visitors – a pattern reflected across Egypt. For example, in 2018, 1096 domestic tourists visited the Site compared to 4594 foreign tourists (MTA 2018). Domestic tourists also tend to come for a few hours in family groups/personal cars as opposed to on coach trips, although study tours from Egyptian Universities (largely Egyptology courses) and schools do bring larger groups to the area. Small group visits are generally self-guided and focus on the Central City and North Tombs.

Egyptian Internet and Social Media usage is high (see Sadarangani and Perry 2017) and the Ministry of Tourism has already begun to create short films and online campaigns aimed at attracting greater numbers of Egyptian visitors to Amarna. The development of further tourist facilities by local communities/businesses would both benefit and draw domestic audiences.

The forthcoming publication of an English-Arabic guidebook and children's book, alongside enhanced site signage, are also important to facilitate the dissemination of information about the Site and improve the visitor experience for Egyptian audiences.

International Tourists

The majority of foreign tourists visit Amarna for half a day as part of a wider tour and are accompanied by a guide who is normally part of the Egyptian Tour Guide Syndicate (www.egtgs.org.eg), with c. 18,000 registered tour guides. MTA staff are often called upon to do ad hoc tours for smaller groups and have observed that some professional guides provide incorrect information about the Site. Forthcoming signage and the new guidebook should help counter some of this misinformation and expand visitor interest in areas of the Site beyond the 'standard' tour as outlined in **Part 3**.

The current 'short format'[26] of most international visits to the Site means that economic benefits to the local community are small. Provision of better tourist infrastructure (hotels, restaurants), accompanied by the necessary improvement of site interpretation, access, facilities and maintenance (as outlined in **Parts 3 and 5**), is essential for increasing tourist revenue.

---

[26] It is important to note that local police insist on foreigners leaving site by 4.00 pm. As it is difficult for groups coming to Amarna from Minya to arrive before 9.00 am, this also has an impact on the duration of visits to the Site.
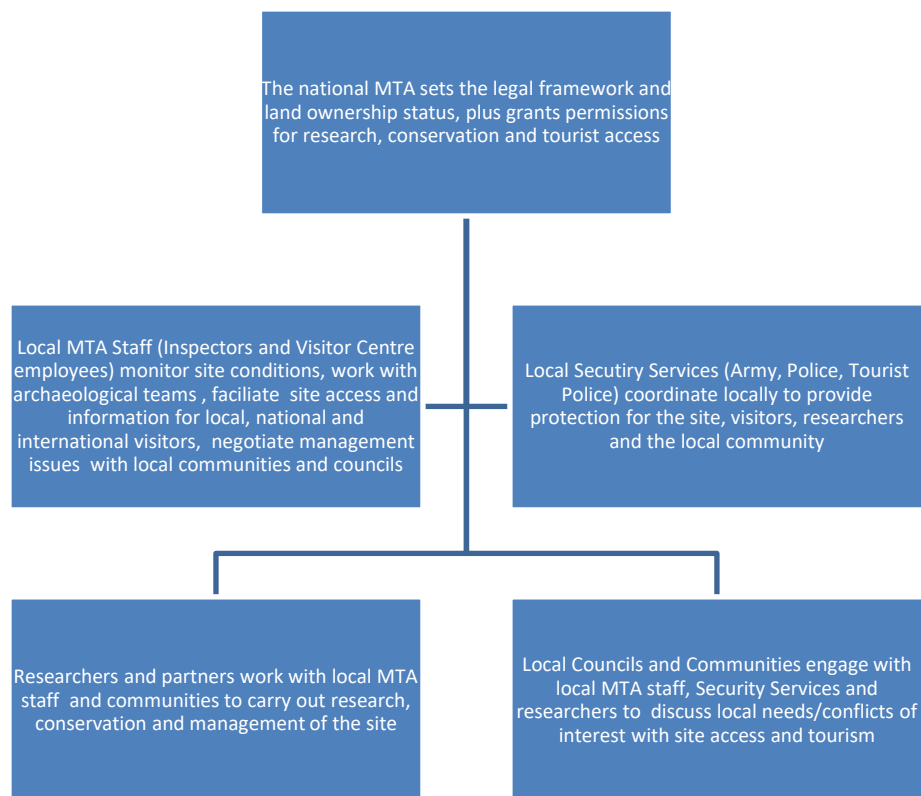
Figure 65. Simplified current site management structure for Amarna

Stakeholder Consultation

An essential part of the SMP involves consulting and engaging the above stakeholders in future management planning and decision making. Due to current restrictions on public engagement placed on international researchers, all local consultation at Amarna is being carried out by MTA staff, predominantly the team from the Amarna Visitor Centre, who have secured grants to independently develop new outreach programmes. Consultation to date has taken the form of visits to local schools, businesses and other community groups to discuss relationships with the Site, its current and future management, as well as to explore new ways of engaging local stakeholders at the Amarna Visitor Centre. Events are also being held at the Amarna Visitor Centre for local school-aged children to bring them into the facility and explore the importance of the Amarna area, past and present, and discuss hopes for the future.

The Amarna Visitor Centre also provided the location of site management planning focus groups and training sessions (over the course of 2018-19) between local MTA staff, Cairo MTA staff and the Cambridge team. Local MTA staff plan to lead further discussions with the Amarna Site Guards, Police and Security Services. In addition, researchers and supporters of the Amarna Project have bene consulted informally during fieldwork and at events held in Cambridge. Going forward, museums holding significant collections from Amarna will also be emailed and asked to raise any management concerns or suggestions connected to the care of their collections and the management of the Site.

A further outcome of the training was a campaign by the Visitor Centre to visit all the schools in the area to encourage free visits as part of their annual trip programmes starting 1 November. As a result, local school

visits have increased significantly. Data collection has already shown the number of local children (from the schools in Amarna and the Mallawi/Minya area) coming to the Visitor Centre increasing from around 100 per month to up to 600 per month (averaging c.400 per month in 2019, excluding summer holidays). In addition to approaching schools directly, the Visitor Centre has also made small adverts and launched several Facebook campaigns to promote the Visitor Centre locally and to other Egyptian visitors.

An Arabic language public survey was also compiled and disseminated to Egyptian visitors and local school groups to gather feedback on the Visitor Centre experience (see Appendix 2).

The detailed report is pending, but preliminary data suggests the Visitor Centre provides a good experience for visitors, many of whom make return visits to learn more about the Site. Key suggestions for development include:

- Demand for screenings of both documentary and other films in the Centre about Amarna and other local topics
- The need for a shop with affordably priced souvenirs
- The need for more social media to develop the Centre's profile

It is also hoped that tourists (Egyptian and International) and other interest groups, as well as many of those mentioned above, will provide future feedback through an online survey which will be created and hosted by the Amarna Visitor Centre on their Facebook Group and promoted to multiple tourist platforms via Social Media and targeted email campaigns.

The below Aims, Policy and Action suggestions are the outcome of current stakeholder consultation within all levels of site management and engagement and will be updated as necessary when further consultation data is available. These Aims, Policies and Actions have been designed alongside the Site and visitor management needs as identified in the conditions surveys and impact assessments discussed in **Part 3**.

PART 5. AIMS, POLICIES AND ACTIONS

Key management issues and opportunities

The key purpose of the Management Plan is to set out a framework for the management of the Site to ensure sustainable use, protection of remains and the maintenance of associated values (including Outstanding Universal Value). To achieve this, the Management Plan needs to address sustainability issues relating to habitation and agricultural economy, visitor access, experience and use of the Site, and the long-term social, economic and amenity needs of the local community. The Plan does this by identification and consideration of key issues, threats and opportunities (**Part 3**) and by the development of policies and actions to deal with them (**Part 5**). Changes to the Management context of the Site (**Parts 4 and 6**) are also essential in addressing many of the issues affecting Amarna and should make it easier to deal with some of the challenges facing site management in the past.

The Aims, Policies and Actions have been grouped into eight themes which draw together the key issues outlined in **Part 3.**

THEME 1: Planning and Policy

AIM: Stakeholder organisations and individuals responsible for the long-term planning, decision making and management of the Site will endorse the Management Plan and work to protect and enhance the Site and its unique attributes. Recommendations from the Management Plan will be incorporated into associated policy and guidance documents (e.g. any future World Heritage proposals, development planning, tourist expansion etc.).

POLICY: Government departments, agencies, statutory bodies and other relevant stakeholders responsible for making and implementing national and local policies, and for undertaking activities that may impact on the Site and its environs, should implement or develop policies/guidance that recognise the importance of the Site and maintain its physical integrity and associated values.

ACTIONS:
1 – Submit the Site Management Plan draft to the MTA, January 2020
2 – All parties/organisations involved in site management at Amarna, including future Site Management Steering Committees (once formalised), to endorse/adopt the Management Plan. Ongoing from January 2020
3 – University of Cambridge/the Amarna Project to help advocate and facilitate development of new policies and guidance/review of previous policy and guidance documents (nationally and locally) to facilitate the implementation of the SMP (including public consultation as relevant). Ongoing from January 2020

THEME 2: Site Boundaries and Encroachment

AIM: The Site boundary will be more clearly defined for all stakeholders to address encroachment (urban and agricultural) and maintain the integrity of the Site and its setting, including site vistas and the interrelationships between archaeological features and between the archaeology and the landscape.

POLICY: Put in place appropriate guidance and planning policy to ensure that new development (if allowed) within the boundaries and buffer zones of the Site is sympathetic to the Site, its historic integrity and unique attributes (including 'protected vistas').

RECOMMENDED ACTIONS (Please note, these actions and all those that follow in subsequent themes are 'recommended' as enhanced funding/staffing is required to bring them to fruition):
4 – Re-map site boundaries and liaise with MTA and other government agencies to define land ownership for planning management purposes. Timeframe to be decided by MTA
5 – Carry out a 'Setting Study' to identify and map key views/vistas and route ways between areas of the Site which contribute to the Site's setting and Outstanding Universal Value and integrate recommendations into planning guidance. Timeframe to be decided by MTA
6 – Undertake a full review of the impacts of urbanism (including visual) on the condition of the Site and its setting (including ground water testing) and work with the local council to find joint solutions (e.g. incinerators, sewage removal). Timeframe to be decided by MTA
7 – Undertake a full review of the impacts of agriculture (including visual) on the condition of the Site and its setting (including ground water testing) and work with the local council and farmers to find joint solutions (e.g. low water irrigation, areas to dispose and store agricultural waste/products). Timeframe to be decided by MTA
8 – Enhance awareness of official site boundaries for visitors and local communities through onsite markers/signage and interpretation (events, online, in print). Site signage, events, online and print resources to be contructed/disseminated from 2020
 9 – Regular liaison, information exchange and training for/between local MTA, planning, agricultural and security staff. Ongoing from January 2020
10 – Share concerns, raise and maintain awareness of the Site through regular meetings/events between local MTA staff and landowners and householders. Ongoing from January 2020

THEME 3: Conservation and Communication

AIM: To sustain and enhance the unique attributes of the Site, its interrelationships and setting through conservation and risk management of archaeological remains that also engages stakeholders in conservation processes/awareness of the need for conservation.

POLICY: Manage the Site to protect and improve the physical remains which contribute to its unique values.

RECOMMENDED ACTIONS:

11 – Complete conservation statements for each area/key monument to promote significance and address conservation issues (including through local engagement initiatives led by the Visitor Centre). Timeframe to be decided by MTA

12 – Use the above to prioritise targeted conservation work to mitigate negative impacts from exposure/weathering, urbanism, cultivation/animal stock, burrowing animals/wildlife intrusion, and vehicle and visitor erosion (building on **Part 3**). Timeframe to be decided by MTA

13 – Carry out regular Conditions Surveys reviews, linked to monitoring and reporting procedures as agreed with management partners (linked to policy 1), in order to prioritise conservation works on an annual basis. Timeframe to be decided by MTA

14 – Complete funded boundary walling (North City/Desert Altars) and 're-visualisation' work at the Great Aten Temple and make recommendations for other areas that would benefit from walling/fencing or boundary-marking with bollards[27] (e.g. Kom el-Nana, for which there is currently no funding (as outlined in **Part 3**). Approach and timeframe to be decided by MTA

15 – Review other fencing to reduce visual intrusion while still providing an effective deterrent to damaging use. Timeframe to be decided by MTA

16 – Identify and maintain key views/vistas and route ways between areas of the Site to protect the Site's integrity and landscape setting. Timeframe to be decided by MTA

17 – Review previous conservation work and visitor access infrastructure to improve the condition and integrity of monuments including the tombs, House Q44.1, Boundary Stela U, North Palace and Small Aten Temple. Timeframe to be decided by MTA

18 – Conserve and/or make more visible buried, degraded or obscured archaeological features through new 're-visualisation' work in priority areas (i.e. Central City) including appropriate management of burrowing/nesting animals taking into consideration local biodiversity. Timeframe to be decided by MTA

19 – Continue to develop and improve relationships with farmers and landowners to encourage land management activities and measures to maximise the protection of the archaeological Site and its setting, including working with government ministries and local councils to explore alternative land provision, irrigation methods and domestic services (e.g. sewage and litter disposal/collection). Timeframe to be decided by MTA

20 – Identify and monitor potential risks (including disaster planning) to the Site, respond to potential gaps in risk management planning and review risk assessments and disaster plans at 5-year intervals. Timeframe to be decided by MTA

THEME 4: Visitor Management and Sustainable Tourism

AIM: To enhance physical and intellectual access to the Site for a wide range of visitors and other stakeholders through improved site services/facilities (considering social and economic impacts/benefits) while protecting the Site aesthetic, historical integrity and unique values through sustainable tourism.

---

[27] Boundary-marking with bollards creates permanent markers but is more affordable than walling/fencing and does not disrupt access. This option needs further consideration at Amarna and can also serve as an interim method for demarcating the Site.

POLICY: Manage visitors following best practice in sustainable tourism to enhance access to the wider Site and its environs, share economic benefit with local communities and increase public understanding and enjoyment.

RECOMMENDED ACTIONS:

21 – Review existing visitor facilities to assess gaps (e.g. rubbish bins, parking, pathways, interpretation) and prioritise improvements**.** <u>Timeframe to be decided by MTA</u>

22 – Improve understanding of visitor numbers, movements and impacts by reviewing existing data and implementing new data gathering methods to manage existing visitors and plan for the future. <u>In progress and ongoing</u>

23 – Carry out a review of visitor understanding and awareness of the Site from which to measure changing knowledge and attitudes over time. <u>In progress and ongoing</u>

24 – Produce a Sustainable Tourism Strategy with site partners, considering the Limits of Acceptable Change, which distributes economic benefit to local communities and site conservation. <u>Timeframe to be decided by MTA</u>

25 – Disseminate MTA 'code of conduct' (Appendix 1) for visitors and communities to reduce potential negative impacts of visitors to the Site/local area (in print and online). <u>Timeframe to be decided by MTA</u>

26 – Carry out a review of existing provision for people with disabilities. Identify opportunities for increasing access for disabled visitors where required without harming the integrity of the Site, including through virtual access (which will also benefit others who cannot visit the Site). <u>Timeframe to be decided by MTA</u>

27 – Enhance the provision of online, visit and pre-visit information in key languages. <u>Timeframe to be decided by MTA</u>

28 – Work with the Ministry of Tourism and local groups to identify and support other tourist activities/opportunities in the area and encourage accommodation provision that will allow for longer stays and promote them accordingly (online, through tour agencies, in local museums etc.) <u>Timeframe to be decided by MTA</u>

29 – Work with partners to identify appropriate and sustainable regeneration opportunities that enhance the Site and maintain its Outstanding Universal Value. This could include apprenticeships and other skills development opportunities such as volunteering and school projects/placements. <u>Timeframe to be decided by MTA</u>

30 – Strengthen partnerships between the Site and Visitor Centre and between these local attractions and other museums and heritage attractions in the area (e.g. Malawi Museum, Beni Hassan etc.) to increase income and provide benefits to the local economy. <u>Timeframe to be decided by MTA</u>

THEME 5: Interpretation, Learning and Community Engagement

AIM: To enhance understanding of the Site (in person, online and in print) for education and enjoyment through improved interpretation and wider engagement of stakeholders (especially the local community) in site management/stewardship and knowledge exchange.

POLICY: Improve interpretation and learning opportunities (on and off site) and promote community ownership/stewardship to enhance awareness, enjoyment and protection of the Site.

RECOMMENDED ACTIONS:

31 – Review onsite interpretation (including signage and way-markers) and ensure there is a consistent message across the Site and Visitor Centre. Completed April 2019 through development of new signage (installation pending 2020/2021)

32 – Review opportunities to expand digital interpretation of the Site and its setting. Timeframe to be decided by MTA

33 – Develop a programme of training/familiarisation for all site staff (guards, security services, MTA staff etc.) Timeframe to be decided by MTA

34 – Develop a Site Interpretation and Learning Framework and resources to be used and promoted by Visitor Centre/MTA staff. The Framework should consider provisions for improving resident and visitor understanding of the Site as a whole and improving 'visibility' of ephemeral archaeology. Timeframe to be decided by MTA

35 – Connected with 34, develop interpretation, outreach and community engagement opportunities at the Visitor Centre (including enhancing digital access). Ongoing since October 2018

36 – Connected to 34 and 35, conduct a survey of the various local and visiting groups using the Site to understand their different needs and educational levels to inform learning strategies. Ongoing since October 2018

37 – Coordinate existing links and establish new ones with primary and secondary schools, and with universities. Ongoing since October 2018

38 – Offer presentations and publications at the Visitor Centre, focusing on the Site, its values and management for a local, national and international audience. Timeframe to be decided by MTA

39 – Work with the local community (through MTA staff at the Visitor Centre) to understand how they would most like to be involved with the management/stewardship of the Site. Ongoing since October 2018

40 – Develop opportunities for community events to celebrate the Site. Ongoing since October 2018

41 – Develop a local oral history project (based at the Visitor Centre) to encourage community engagement with the Site. Timeframe to be decided by MTA

42 – Develop community-led resources and inclusion in Site promotion in the children's book and guidebook. Ongoing since October 2018

43 – Enable free entry to the Amarna Visitor Centre and Site for local residents. Timeframe to be decided by MTA

44 – Explore the ways in which the community can use the Visitor Centre as a community resource. Ongoing since October 2018

45 – Produce a Site Communications Strategy defining the message, audiences and means of communication. Timeframe to be decided by MTA

46 – Develop a branding and signage strategy for the whole Site (including planned maintenance). In progress (signage will be installed during 2020/2021)

47 – Develop an Amarna website (hosted by the Visitor Centre) dedicated to visitor information and engagement. Timeframe to be decided by MTA

THEME 6: Roads, Trackways and Traffic

AIM: Reduce the impact of roads, trackways and traffic on the Site and its setting and enhance sustainable access.

POLICY: Identify measures to reduce the impact of traffic on the Site and implement relevant actions to promote safe and sustainable site access (motorised and non-motorised).

RECOMMENDED ACTIONS:
48 – Work with local partners to seek conservation solutions to the negative impact of roads and routes (the 'main' north–south access road, and other access routes, e.g. Kom el-Nana and the track from Ezbet Abdul Razak) on the Site and its unique attributes, to protect structural remains and enhance the Site's integrity (considering future traffic/population predictions). Timeframe to be decided by MTA
49 – Review current access to and within the Site for non-motorised users with the aim of improving accessibility to monuments through designated paths, thus minimising damage from erosion (especially connected to animal movements). Timeframe to be decided by MTA
50 – Where possible, provide safe crossing points between key monuments in the Site (particularly in the Central City). Timeframe to be decided by MTA
51 – Increase designated parking provision in wider areas of the Site to reduce use of verges and prevent congestion in core areas (e.g. Central City, North Tombs). Timeframe to be decided by MTA
52 – Work with local partners to agree appropriate protocols for surface maintenance and repair on public rights of way within the Site. Timeframe to be decided by MTA
53 – Promote 'best practice' transport behaviour to tour companies prior to visit (i.e. sharing of 'code of conduct' though online and in print information). Timeframe to be decided by MTA

THEME 7: Research

AIM: Improve understanding of the archaeological site and its landscape setting, ancient and modern, and promote sustainable research to facilitate appropriate management and enhance the public benefits of research.

POLICY: Promote sustainable, high quality academic research, data and finds management and enhance public access and engagement with research outputs.

RECOMMENDED ACTIONS:
54 – Encourage sustainable research which aligns the Amarna Project (and other research partners') Research Framework with the aims of the MTA to enhance the role of site management in future research projects. Timeframe to be decided by MTA
55 – Monitor, review and update the Site Research Framework with partners every year with a periodic review after ten years. As stated
56 – Enhance links with national and international Sites, universities and researchers with similar research interests. Ongoing
57 – Excavate and disseminate outputs from ongoing and targeted areas of the Site at which there has been limited or no modern recording (e.g. North Suburb, areas of the Main City and elsewhere). Ongoing

58 – Encourage completion and dissemination of unpublished past research. <u>Ongoing</u>

59 – Explore options, including security arrangements, for return/loan of some original Amarna artefacts to the Visitor Centre for special exhibitions/events (or on longer term loan). <u>Timeframe to be decided by MTA</u>

60 – Further review of storage requirements and security at the onsite and El-Ashmunein magazines. <u>Timeframe to be decided by MTA</u>

61 – Review storage and security of digital and paper archive. <u>Timeframe to be decided by MTA</u>

62 – Continue review of past excavations, research and collections (including identification of mapping and recording inaccuracies). Facilitate future access to finds and data. Exploit digital opportunities. <u>Ongoing</u>

63 – Encourage data sharing between government agencies and all Site partners. <u>Ongoing</u>

64 – Provide opportunities for local communities to be engaged in research projects where appropriate. <u>Timeframe to be decided by MTA</u>

65 – Present recent research in the Visitor Centre and though online media**.** <u>Ongoing</u>

66 – Set up monitoring systems connected to the Visitor Centre and online media to record public use/benefit of research at the Site. <u>Ongoing since October 2018</u>

67 – Encourage innovative research at the Site connected to archaeological, social history, public engagement and the creative arts. <u>Timeframe to be decided by MTA</u>

THEME 8: Management, Liaison and Monitoring

AIM: To provide effective management processes and resources for the monitoring and conservation of the Site by management partners (including local communities, local agencies, national agencies, government, charities, academic institutions etc.) to enhance funding, resource provision, monitoring, review and governance structures at the Site

POLICY: Implement the Management Plan and liaise with partners to ensure regular monitoring of the Site supported by long-term funding for site management Actions.

RECOMMENDED ACTIONS:
68 – Review and update the Management Plan every five to six years. <u>As stated</u>
69 – Produce an annual action plan with the MTA to be reviewed and signed off by current and future Steering Committees (once formalised) and partners. <u>As stated</u>
70 – Establish long-term independent funding arrangements for the Visitor Centre to coordinate engagement and management activities/resources. <u>Timeframe and action plan to be decided by MTA</u>
71 – Seek to increase private and philanthropic funding, including support to pursue World Heritage Status, and to achieve Management Plan actions. <u>Ongoing</u>
72 – Consider appropriate volunteer assistance to support implementation of the Management Plan actions. <u>Timeframe to be decided by MTA</u>
73 – Establish Site monitoring indicators addressing potential impacts on the Site and its associated values and work with Site partners to implement regular monitoring procedures/reviews. <u>Timeframe to be decided by MTA</u>
74 – Regularly review the effectiveness of the Site Management and governance arrangements. <u>Timeframe to be decided by MTA</u>

PART 6. IMPLEMENTATION AND MONITORING THE SITE MANAGEMENT PLAN

Multiple agencies and individuals are responsible for the management of Amarna. Improvements are therefore needed in the communication and co-management channels connected to the Site. Stakeholders need to understand, endorse and implement the Site Management Plan and contribute (to their best ability) to realise the actions within the plan. Partnership working between key stakeholders is vital to cost-effective and efficient practices which integrate individual/organisational planning with the wider aims of the Site Management Plan and ensure the necessary level of commitment to protect both the Site fabric and the diverse values connected to the Site. Regular review of management processes and monitoring procedures is therefore essential to the sustainability of the Site Management Plan (and therefore the Site itself) for future generations.

Local stakeholders, particularly landowning and resident communities, are vital to the success of the Management Plan and need to have their interests taken into account. The Amarna Steering Committees (under discussion/formalisation) and new engagement processes being set up by the Amarna Visitor Centre are key ways in which these groups are (and will continue to be) involved in the Management Plan. National agencies, local authorities, archaeologists, academics, conservationists, enthusiasts and visitors to the Site will also be involved in this process through advisory networks led by the Visitor Centre and Amarna Project (or other research teams). To ensure all those involved in the implementation of the Plan remain committed and up to date, the Management Plan will be reviewed every five/six years and an annual action plan will be prepared by the MTA, with assistance from the Amarna Project (or other research teams), for approval by the forthcoming Steering Committees and local partners.

Action Plan and Governance

In order to achieve the above, common elements of an effective management system as outlined by UNESCO in their **Operational Guidelines for Implementation the World Heritage convention (2017: – II.F, 31-32)** provide a useful framework for Amarna. This includes the need for:

1 – a thorough shared understanding of the property by all stakeholders, including the use of participatory planning and stakeholder consultation processes

2 – an ongoing cycle of planning, implementation, monitoring, evaluation and feedback

3 – regular assessments of the vulnerabilities of the property to social, economic, and other pressures and changes, as well as the monitoring of the impacts of trends and proposed interventions

4 – the development of mechanisms for the involvement and coordination of the various activities between different partners and stakeholders

5 – the allocation of necessary resources

6 – capacity-building

7 – an accountable, transparent description of how the management system functions

These management initiatives are part of cycles of short, medium and long-term actions which act together to sustain the Site and guide the evolution of the Site, its setting and associated values over time. Reactive Monitoring and Periodic Reporting are needed to ensure co-ordinated management of the separate components of the Site, including decision making on corrective measures/action reporting.

Governance Structure

To facilitate the above, a new governance structure has been established (in principle) by those likely to form the forthcoming Steering Committees but needs to be authorised by the Prime Minister (pending access to the Management Plan and consultation with local leaders). The structure is built on the following elements and is based on local needs:

At present, enforcing restrictions on antiquities land is extremely difficult. This is because each of the local authorities (MTA, local Council, Police, Tourism Police, local court representatives etc.) work independently. As such, the police might arrest Inspectors for removing illegal cultivation if called to do so by communities. There is no forum for the different authorities to come together and no Ministerial decree to enable them to make joint decisions that are legally upheld. As such the Prime Minister needs to select one member of each of the following groups - MTA, Civic Police, Local Council, Tourism Police, Preceptory, - to form a committee with the power to make decisions, sign the necessary paperwork and inform others under their jurisdiction to make sure actions are carried out and that progress is made without one group hindering another.

In addition, it would be beneficial to keep research organisations informed so that they can provide relevant information and experience as needed.

The governance structure needs to be formalised and reviewed regularly to ensure that it is effective.

Funding

The need for effective coordination and appropriate funding for the Site is essential over the lifetime of this Management Plan. For the plan to be implemented successfully, over the next five years key partners must find resources for the following:

1 – Programmes of work (including periodic reporting and conservation reviews)
2 – One off projects/reactive action
3 – Core staff
4 – Facilitating regular meetings between core stakeholders to discuss progress/new issues within the management process and to ensure targets are met

In addition, management partners need to build in longer term site management budgets to continue management actions after the next full review of the Site Management Plan in 2025/6. The MTA in conjunction with research partners should play a key role in establishing a sustainable funding framework to implement actions in the Management Plan. This should include enhanced tourist revenue and diversification of payments systems (e.g. an independent budget for the Visitor Centre and a specific

conservation fund), plus encouraging gifts and donations for Site Management work (expanding on the work of the Amarna Trust).

Monitoring

Management planning is a dynamic process that does not end with the production of the Management Plan. Changes in Site staff, unexpected events, new information, changing visitor numbers or perceptions of the Site and Site priorities can affect the implementation of the Plan and the availability of resources. Regular monitoring is therefore essential to assess whether the physical and values-based attributes of a site are being maintained and to evaluate if Site Management Aims are being achieved. Progress should be measured to evaluate the effectiveness of the Plan, to review new threats and re-assess priorities.

Monitoring indicators are a core mechanism through which to measure both progress in and threats to the protection, interpretation and management of a site. The UK WHS and ICOMOS UK tool kit for developing site monitoring indicators (2006) will be used to establish the key monitoring indicators for Amarna during the first 'active' year of the plan. Indicators will be drawn largely from the Recommendations outlined in **Part 3** and Actions outlined in **Part 5**. Performance against these indicators should be reviewed annually in order to inform annual action plans, keep track of the conditions of the Site and inform periodic reporting. All reports should be made available to stakeholders and other interested parties through in print and online platforms.

Funding allowing, the formal process for site monitoring reviews at Amarna will be as follows:

● Presentation of progress reports by key delivery partners at each meeting of the local and international Steering Committees once formalised (ideally two to three times a year, with the local meeting to be held at the Amarna Visitor Centre and the International meeting to be held at the University of Cambridge or other affiliated research institution)
● Annual progress report, including priorities for the following year, produced in writing by key delivery partners for incorporation into the Site's annual action plan
● Production by Amarna MTA staff and the international research team of an annual report of performance against the monitoring indicators and site 'Actions' based on data provided by Site partners
● Production by Amarna MTA staff and the international research team of regular updates highlighting achievements and forthcoming projects, with input from all partners, to be shared to stakeholders and other interest groups
● MTA and the international research team coordinators to produce an annual action plan for agreement by the local and international Steering Committees and partners (once formalised)
● Overall review of progress with the implementation of the Management Plan to be produced by the local Amarna MTA and the international research team coordinators every three years
● Production of a full updated Management Plan every five to six years.

These processes should ensure the sustainable management of Amarna and enhance its conditions and interpretation for future generations.

References

Benali Aoudia, L., and Y. Chennaoui. 2017. The Archaeological Site of Tipasa, Algeria: What Kind of Management Plan? *Conservation and Management of Archaeological Sites* 19 (3): 173–196. Available at: http://www.tandfonline.com/doi/full/10.1080/13505033.2017.1348853?scroll=top&needAccess=true

Borchardt, L., and Ricke, H. 1980. *Die Wohnhäuser in Tell el-Amarna*. Berlin: Deutsches Archäologisches Institut, Abteilung Kairo and Deutsche Orient-Gesellschaft.

Cameron, C., and M. Rössler. 2018. Introduction of Management Planning for Cultural World Heritage Sites. In *Aspects of Management Planning for Cultural World Heritage Sites*, edited by S. Makuvaza, 3–13. Cham: Springer

Chubb, M. 1954. *Nefertiti Lived Here*, London: Geoffrey Bles.

Clackson, S. J. 1999. Ostraca and graffiti excavated at el-'Amarna. In *Ägypten und Nubian in spätantiker und christlicher Zeit. Akten des 6. Internationalen Koptologenkongresses, Münster, 20.-26. Juli 1996*, edited by S. Emmel, M. Krause, S. G. Richter and S. Schaten, 268-78. Band 2. Schriftum, Sprache und Gedankenwelt. Wiesbaden.

Clackson, S. J. 2005. Coptic and Greek ostraca from Kom el-Nana. In *Late Roman pottery at Amarna and related studies*, J. Faiers with contributions by S. Clackson, B. Kemp, G. Pyke and R. Reece, 245-48. Egypt Exploration Society Memoir 72. London.

David Philips Associates. 1995. *Tell el-Amarna: A strategy for conservation and Development.* Prepared for the Supreme Council of Antiquities by the Partnership for Environmental and Cultural Heritage. Wenlock, DPA.

Davies, N. de G. 1903–1908. *The Rock Tombs of el-Amarna, Parts 1–6*. London: Egypt Exploration Society.

Davies, N. de G. 1905. *The rock tombs of el Amarna* III: *The tombs of Huya and Ahmes*. Memoirs of the Archaeological Survey of Egypt 15. London.

De Laet, V., G. Van Loon, G., Van der Perre A., Deliever, I. and Willems, H. 2015. Integrated remote sensing investigations of ancient quarries and road systems in the greater Dayr al-Barsha region, Middle Egypt: a study of logistics. *Journal of Archaeological Science* 55, 286–300.

Demas, M. and Agnew, N. (eds). 2012–2016. *Valley of the Queens Assessment Report: Volumes 1 and 2*. Washington: Getty. Available at: http://getty.edu/conservation/publications_resources/pdf_publications/valley_queens.html

Dougherty, T.C. and Hall HR Wallingford, A.W. 1995, *Environmental Impact Assessment of Irrigation and Drainage Projects*. Available at: http://www.fao.org/docrep/V8350E/v8350e00.htm#Contents

Egypt Today, 2 July, 2019. *Plan to Increase Tourism Sector.* Available at: https://www.egypttoday.com/Article/2/72358/Plan-to-increase-tourism-sector-production-to-LE279B-in-2020

Egypt Today, 29 December, 2018, *Tourism Ministry Revives Industry.* Available at:
https://www.egypttoday.com/Article/9/62742/2018-Accomplishment-Egypt%E2%80%99s-Tourism-Ministry-revives-industry

European Soils Data Centre (ESDAC). 1981. *Ecological Map of the Western Desert of Egypt*. Germany: Soil Association Map.

Faiers, J. 2005. A corpus of Late Roman pottery from Kom el-Nana. In *Late Roman pottery at Amarna and related studies*, J. Faiers with contributions by S. Clackson, B. Kemp, G. Pyke and R. Reece, 57-180. London: Egypt Exploration Society Memoir 72.

Faiers, J. 2013. A second corpus of Late Roman pottery from Kom el-Nana. In *Late Roman glassware and pottery from Amarna and related studies*, J. Faiers with contributions by G. Pyke and W. Smith, 39-180. London: Egypt Exploration Society Memoir 102.

Faiers, J and B. Kemp. 2005. Dating the sites in the Amarna area. In *Late Roman pottery at Amarna and related studies*, J. Faiers with contributions by S. Clackson, B. Kemp, G. Pyke and R. Reece, 267-73. London: Egypt Exploration Society Memoir 72.

French, C. A. I. 1984. Geomorphology and Prehistory at el-Amarna. In *Amarna Reports I*, edited by B. J. Kemp, pp. 202–211. London: Egypt Exploration Society.

French, P. 1986. Late Dynastic Pottery from the Vicinity of the South Tombs. In Amarna Reports III, edited by B. J. Kemp, pp. 147–188. London: Egypt Exploration Society.

Fenwick, H. 2004. Ancient Roads and GPS Survey: Modeling the Amarna Plain. *Antiquity* 78: 880–885.

Frankfort, H., and Pendlebury, J. D. S. 1933. *The City of Akhenaten II: The North Suburb and the Desert Altars: The Excavations at Tell el Amarna During the Seasons 1926–1932*. London: Egypt Exploration Society.

Fushiya, T. 2012. Memphis WHS Heritage Information Report. UNESCO Cairo Office, December.

Gabolde, M., and Dunsmore, A. 2004. The Royal Necropolis at Tell el-Amarna. *Egyptian Archaeology* 25: 30–33.

Gerisch, R., 2004. Holzkohleuntersuchungen an pharaonischem und byzantinischem Material aus Amarna und Umgebung. *Münchner Ägyptologische Studien* 53. Mainz: von Zabern.

Global Heritage Fund (GHF). *2010: Economic Impact, Global Heritage Tourism Revenues in Developing and Emerging Countries and Regions*. Available at:
http://globalheritagefund.org/images/uploads/docs/GHFVanishingValueofHeritageDatabase102010.pdf

Griffith Institute, N.D. *Partage*. Available at: http://egyptartefacts.griffith.ox.ac.uk/

El-Hadidy, L. and Redding, R. W. 2017. *Conservation Assessment of the Area and Sites Included in the Memphis Walking Circuit As part of the project: Memphis, Egypt's Ancient Capital: A Plan for Site and Community Development.* USAID.

Hamza, M. and B. Kemp. 2000. Report on a large house at Amarna, discovered near the village of el-Hagg Qandil. *Journal of Egyptian Archaeology* 86, 161–5.

Harrell, J.A., 2001. Ancient quarries near Amarna. *Journal of Egyptian Archaeology* 19, 36–8.

Hawass, Z. 2002. Site Management at the Giza Plateau: Master Plan for the Conservation of the Site. *International Journal of Cultural Property*, 9 (11): 1–22.

ICOMOS. 2001/2. *International Cultural Tourism Charter*. Paris: ICOMOS. Available at: https://www.icomos.org/risk/2001/tourism.htm

ICOMOS. 2010. *Management Plans and World Heritage Sites*. Paris: ICOMOS. Available at: https://www.icomos.org/centre_documentation/bib/Management_plans_bibliography.pdf

Jones, M. 1983 Appendix 1: The North City. *Journal of Egyptian Archaeology* 69, pp. 15-21. (A contribution within Barry Kemp "Preliminary report on the el-'Amarna expedition, 1981-2," pp. 5-24 of the same volume.)

Kamal, M. B. and Hassan, M. A. S. 2014. *Ancient Memphis. Mit Rahina. human-induced Impact Assessment.* Cottbus report, prepared for the Joint Master in Heritage Studies and Site Management for Brandenburg University of Technology and Helwan University.

Kamel A.F. 1996. Some Geological Hazards in Egypt, Their Nature and Extent. In: El-Sabh M.I., Venkatesh S., Denis H., Murty T.S. (eds), *Land-Based and Marine Hazards. Advances in Natural and Technological Hazards Research*, vol 7.

Kamel, D. and Kassem, M. April 22, 2018. *Egypt forecasts more than 8 million visitors in 2018.* NBusiness. Available at: https://www.thenational.ae/business/travel-and-tourism/egypt-forecasts-more-than-8-million-visitors-in-2018-1.723730

Karaspan, O. and Shar, S. 2018. Egypt's population: Boom then bust*? Future Development Blog*, May 22, 2018. Available at: https://www.brookings.edu/blog/future-development/2018/05/22/egypts-population-boom-then-bust/

Kemp, B.J., (ed.). 1995. Amarna Reports VI. *Occasional Papers 10*. London: Egypt Exploration Society.

Kemp, B.J. 1978. Preliminary report on the el-'Amarna survey, 1977. *Journal of Egyptian Archaeology* 64, 22–34.

Kemp, B. J. 1987. The Amarna Workmen's Village in Retrospect. *Journal of Egyptian Archaeology* 73, 21–50.

Kemp, B.J. 1993. Amarna's other period. *Egyptian Archaeology* 3, 13–14.

Kemp, B.J. 1995. Outlying temples at Amarna. In B.J. Kemp (ed.), *Amarna Reports 6*, London: Egypt Exploration Society, 411–50.

Kemp, B.J. 2005. Settlement and landscape in the Amarna area in the Late Roman period. In J. Faiers with contributions by S. Clackson, B. Kemp, G. Pyke and R. Reece, *Late Roman pottery at Amarna and related studies*, 11–56. London: Egypt Exploration Society Memoir 72.

Kemp, B.J. 2008. Amarna's Ancient Roads. *Horizon: The Amarna Project and Amarna Trust Newsletter* 3, 8–9.

Kemp, B.J. 2012. *The City of Akhenaten and Nefertiti: Amarna and its People*. London: Thames and Hudson

Kemp, B.J. and S. Garfi, 1993. A survey of the ancient city of El-'Amarna. *Occasional Publications* 9. London: Egypt Exploration Society.

Kemp, B.J. and A. Stevens, 2010a. Busy Lives at Amarna: Excavations in the Main City (Grid 12 and the House of Ranefer, N49.18). Volume I: The Excavations, Architecture and Environmental Remains. *EES Excavation Memoir* 90, London: Egypt Exploration Society and Amarna Trust. With contributions by P. Buckland, A. Clapham, R. Gerisch, A. Legge, E. Panagiotakopulu and C. Stevens.

Kemp, B.J. and A. Stevens, 2010b. Busy Lives at Amarna: Excavations in the Main City (Grid 12 and the House of Ranefer, N49.18). Volume II: The Objects. *EES Excavation Memoir* 91, London: Egypt Exploration Society and Amarna Trust. With contributions by M. Eccleston, M. Gabolde and A. Veldmeijer.

el-Khouly, A. and Martin, G. T. 1987. Excavations in The Royal Necropolis at El-'Amarna 1984. Cairo: Institut Français d'Archéologie Orientale.

Koufopoulos, P.M and Myriantheos, M. 2013 Monitoring Conservation Management: The Master Plan for Wadi El Deir, Sinai Egypt: Research and Interventions, *Built Heritage 2013*, 1-8.
http://www.bh2013.polimi.it/papers/bh2013_paper_22.pdf

Landorf, C. 2009. Managing for Sustainable Tourism: A Review of Six Cultural World Heritage Sites. *Journal of Sustainable Tourism* 17 (1), 53–70.

Leask, A. and A. Fyall, (eds). 2006. *Managing World Heritage Sites*. Burlington: Elsevier

Lynda Baird-Naysmith 2018. Archaeological Heritage Management at the Memphis and its Necropolis World Heritage Site. *Conservation and Management of Archaeological Sites*, 20:1, 35-51, DOI: 10.1080/13505033.2018.1434378

Mallinson, M., 1999. The sacred landscape. In R. E. Freed, Y. J. Markowitz and S. H. D'Auria, (eds), *Pharaohs of the sun: Akhenaten, Nefertiti, Tutankhamun.* Boston: Museum of Fine Arts, 72–9.

Martin, G. T. 1974. *The Royal Tomb at el-'Amarna, I. The Objects*. London: Egypt Exploration Society.

Martin, G. T. 1989. *The Royal Tomb at El-'Amarna, II. The Reliefs, Inscriptions, and Architecture*. London: Egypt Exploration Society.

Murnane, W. J., and van Siclen, C. C. III. 1993. *The Boundary Stelae of Akhenaten*. London: Kegan Paul International.

Newton, F.G. 1924. Excavations at el-'Amarnah, 1923-24. *Journal of Egyptian Archaeology* 10, pp. 289–298.

Nicholson, P.T., 2007. Brilliant Things for Akhenaten: The Production of Glass, Vitreous Materials and Pottery at Amarna Site O45.1. *EES Excavation Memoir 80*. London: Egypt Exploration Society.

Oxford Business Group. 2017. *Egypt sees growth in visitor numbers and tourism revenue*. Available at: https://oxfordbusinessgroup.com/overview/road-recovery-improving-visitor-numbers-and-sector-revenues-lead-renewed-optimism

Pendlebury, J. D. S. 1931a. Report on the clearance of the royal tomb at el'Amârna. *Annales du Service des Antiquités de l'Égypte* 31, 123–125.

Pendlebury, J.D.S. 1931b Preliminary report on excavations at Tell el-'Amarnah 1930-1*. Journal of Egyptian Archaeology* 17, pp. 233–243.

Pendlebury, J.D.S. 1932. Preliminary report on excavations at Tell el-'Amarnah 1931-2. *Journal of Egyptian Archaeology* 18, pp. 143–149.

Pendlebury, J.D.S. 1935. *Tell el-Amarna*. London: Lovat Dickson & Thompson Limited.

Pendlebury, J.D.S. 1951*. The City of Akhenaten, III: The Central City and the Official Quarters, 2 vols*. London: Egypt Exploration Society.

Petrie, W.M. Flinders. 1894. *Tel el Amarna*. London: Methuen.

Pyke, G. 2007. Survey of the Christian Church and Later Remains in the Tomb of Panehsy (No. 6). In B. J. Kemp, (ed.), *Tell el-Amarna, 2006–7. Journal of Egyptian Archaeology* 93: 35–49.

Pyke, G., 2008. A Christian Conversion: The Tomb of Panehsy at Amarna. *Egyptian Archaeology* 32, 8–10.

Pyke, G. 2009. Panehsy Church Project 2009: Settlement Survey. In B. J. Kemp Ed.), *Tell el-Amarna, 2008–9. Journal of Egyptian Archaeology* 95, 27–30.

Pyke, G. 2010. The Christian settlement at the Amarna North Tombs, *Egyptian Archaeology,* 32, 13-15.

Pyke, G. 2014. The Christianisation of the Amarna landscape: Conquest, convenience or combat? In E. R. O'Connell (ed.), *Egypt in the First Millennium AD, Perspectives from New Fieldwork, British Museum Publications on Egypt and Sudan* 2, 139-55. Leuven: British Museum Publications on Egypt and Sudan 2.

Rose, P.J. 2007. The Eighteenth Dynasty Pottery Corpus from Amarna. *EES Excavation Memoir* 83. London: Egypt Exploration Society.

Sadarangani, F. 2017a. *Ancient Memphis: Integrated Media Plan.* USAID, AERA, University of York.

Sadarangani, F. 2017b. *Ancient Memphis: Guard Buy-In Plan*. USAID, AERA, University of York.

Sadarangani, F. and Jones, D. 2017. *Memphis Waling Circuit Management Plan*. USAID, AERA, University of York.

Sadarangani, F. and Perry. S. 2017. *Ancient Memphis: Cultural Outreach Plan*. USAID, AERA, University of York.

El-Sharief, A.S. 2015. *Formulating a Disaster Risk Management plan for Historic Cairo (WHS), Egypt*. Self-published. Available at:

http://www.academia.edu/29094527/Formulating_a_Disaster_Risk_Management_plan_for_Historic_Cairo_WHS_Egypt._Abdelhamid_Salah_el-Sharief

Shaw, I. 1995. The Simulation of Artifact Diversity at el-Amarna, Egypt. *Journal of Field Archaeology* 22, 223–238.

Sigala, M. and D. Leslie (eds). 2005. International Cultural Tourism: Management, Implications and Cases. Oxford: Elsevier.

Simmonds, S. and Thomas, B. 2015. *Stonehenge, Avebury and Associated Sites, World Heritage Site Management Plan 2015*. Stonehenge and Avebury WHS Steering Committee.

Smith, W. 2003. Archaeobotanical investigations of agriculture at Late Antique Kom el-Nana (Tell el-Amarna). *Seventieth Excavation Memoir*. London: Egypt Exploration Society.

Spence, K., 1999. The North Palace at Amarna. *Egyptian Archaeology* 15, 14–16.

Stevens, A. 2012a. *Akhenaten's Workers. The Amarna Stone Village Survey, 2005–2009. Volume I: The Survey, Excavations and Architecture*. London: Egypt Exploration Society and Amarna Trust. With contributions by W. Dolling.

Stevens, A. 2012b. *Akhenaten's Workers. The Amarna Stone Village Survey, 2005–2009. Volume II: The Faunal and Botanical Remains, and Objects*. London: Egypt Exploration Society and Amarna Trust. With contributions by A. Clapham, M. Gabolde, R. Gerisch, A. Legge and C. Stevens.

Timme, P. 1917. *Tell El Amarna vor der Deutschen Ausgrabung in Jahre 1911*. Berlin

Timothy, D. J. and S. W. Boyd. 2006. Heritage Tourism in the 21st Century: Valued Traditions and New Perspectives. *Journal of Heritage Tourism* 1 (1), 1–16.

UNESCO. 1972 (ratified 1974). *Convention Concerning the Protection of the World Cultural and Natural Heritage*. Paris: UNESCO.

UNESCO. 1994 [enhanced 2017]. *The Nara Document on Authenticity.* Nara, Japan: UNESCO, ICCROM and ICOMOS.

UNESCO. 1996. *Report of the Experts Meeting on Evaluation of General Principles and Criteria for Nominations of Natural World Heritage Sites*. Parc de la Vanoise, France, March 22–24. Available at: http://whc.unesco.org/fr/documents/838/

UNESCO. 2002. *Monitoring World Heritage. World Heritage Papers 10*. Paris: UNESCO

UNESCO. 2007. Climate Change and World Heritage. World Heritage Occasional Paper 22. Paris: UNESCO

UNESCO. 2010. *Managing Disaster Risks for World Heritage: World Heritage Resource Manual*. Available at: https://whc.unesco.org/en/activities/630/

UNESCO. 2012. *Urban Regeneration Project for Historic Cairo. First Report of Activities, 2010-2012*. Paris: UNESCO. Available at: https://whc.unesco.org/document/120189

UNESCO. 2013. *Managing Cultural World Heritage*: Resource manual. Paris: UNESCO. Available at: http://whc.unesco.org/en/news/1078

UNESCO, 2017. *Operational Guidelines for the Implementation of the World Heritage Convention, WHC.17/01, Paris: World Heritage Centre.* Paris: UNESCO. Available at: https://whc.unesco.org/en/guidelines/

Weatherhead, F.J. and B.J. Kemp, 2007. The Main Chapel at the Amarna Workmen's Village and its wall paintings. *Eighty-fifth Excavation Memoir*. London: Egypt Exploration Society.

Weatherhead, F.J. 2007. Amarna Palace Paintings. *Seventy-eighth Excavation Memoir*. London: Egypt Exploration Society.

Weeks, K. R. and N. J. Hetherington. 2014. *The Valley of the Kings: A Site Management Handbook*. Cairo: The American University in Cairo Press.

Whittemore, T. 1926. The excavations at el-'Amarnah, season 1924-5. *Journal of Egyptian Archaeology* 12, 3–12.

Williamson, J. 2008. The Sunshade of Nefertiti. *Egyptian Archaeology* 33, 5–7.

Williamson, J. 2013. Two names, one compound: The rwd ankhw Itn and the Sunshade of Re at Kom el-Nana. *Journal of the American Research Center in Egypt* 49, 143-52.

Williamson, J. 2016. *Nefertiti's Sun Temple: A New Cult Complex at Tell el-Amarna.* Two volumes. Leiden: Brill.

Willems, H. and R. Demarée. 2009. *A Visitor's Graffito in Dayr Abū Hinnis: Remarks on the Source of Limestone Used in the Construction of al-Amarna, RdE 60*, 222–6.

World Population Review, 2018. *Egypt.* Available at: http://worldpopulationreview.com/countries/egypt-population/

Zaid, S.M., Zaghloul, S.A. and Ghanem, F.K. 2013. Flashflood impact analysis of Wadi Abu- Hasah on Tell El-Amarna archaeological area using GIS and Remote Sensing**.** *Australian Journal of Basic and Applied Sciences*, 7(2), 865–881.

Web References

Amarna Trust, N.D. *Objectives*: http://www.amarnatrust.com/objectives-of-the-trust/

Amarna Foundation, N.D. *About Us*: http://theamarnaresearchfoundation.org/aboutUs.html

Amarna Site bibliography, N.D.: http://amarnaproject.com/pages/publications/index.shtml

ICOMOS Site Management Bibliography, N.D.: https://www.icomos.org/centre_documentation/bib/Management_plans_bibliography.pdf

سياسات وإرشادات الزائرين للمواقع الأثرية
Visitors Tips and Policies for Archaeological Sites

نأمل دائما فى توفير زيارة ممتعه وأمنه لك. تعد المواقع الأثرية أماكن هامة جدًا وتحتاج إلى مزيد من العناية للحفاظ عليها. بمجرد أن يتعرض الموقع الأثري للأذى، لا يمكن إصـــــلاحـه، ســـوف نفقد جزء تاريخى هام لايمكن تعويضه.

We want you to have an enjoyable and safe time. Archaeological Sites are very special places and require that we take extra care to preserve them. Once an Archaeological Site is harmed, it cannot be repaired, and we lose an important part of history.

Items that Are Not Allowed in the archeological sites :

In order to protect the archaeological sites and monuments, and to maintain a safe environment where the visitor can appreciate the monuments comfortably, please conduct yourself respectfully by doing the following:

- Large bags, large backpacks, Luggage or parcels larger than 40x40cm are not permitted into the site, but you will be allowed to store them in the cloakroom.

- Bags and backpacks may be subject to search at any time.

- Do not bring any sharp items or dangerous materials into the site, these items must be stored in the cloakroom.

- Do not bring folding seats or any other type of transportable seating inside the closed areas before you obtain permission from the museum security.

- Animals or pets are not allowed to enter the site.

○ أشياء غير مسموح بإحضارها داخل الموقع الأثري وأماكن العرض:

الموقع ، ولضــــمان بيئة آمنة لحماية يســتمتع فيها الزائر بتأمل الأثار وتقديرها، الرجاء التكرم بالالتزام بالتوصيات التالية:

- غير مسموح بحمل حقائب كبيرة، حقائب الظهر الكبيرة، حقائب السفر أو الشنط المحمولة التي تزيد أبعادها عن 40 X 40 داخل الموقع، ويرجى إيداعها في الأمانات الشخصية.

- يسمح للقائمين على الموقع بالتحقق من محتويات الحقائب وحقائب الظهر.

- غير مســموح بإحضــار أيه أشــياء حــادة، أو ثــاقبــة، أو مواد خطرة داخل الموقع) والتي يجب إيداعها في الأمانات الشخصية.

- عدم إحضار المقاعد القابلة للطي، أو أي نوع من المقاعد داخل أماكن الموقع المغلقة إلا بعد الحصول على إذن من أمن الموقع.

- Musical instruments are not allowed inside the site.

- Do not bring any advertising banners or carry placards or signs inside the site unless you obtain approval from the concerned authorities.

- غير مسموح باصطحاب الحيوانات الأليفة داخل الموقع.

- غير مسموح بإحضار الآلات الموسيقية داخل الموقع.

- غير مسموح بإحضار لوحات دعائية أو لافتات أو شعارات داخل الموقع إلا بعد الحصول على الموافقات اللازمة من الجهات المعنية.

General Policies in the site

إرشادات عامة للزيارة داخل الموقع

- Please do not touch any reliefs or walls.

- الرجاء عدم لمس أيًا من النقوش أو الجدران.

- Food and drinks are not allowed within the site, except for small water bottles.

- غير مسموح بتناول أية مأكولات ومشروبات داخل الموقع (مسموح بزجاجات المياه الصغيرة).

- Smoking is prohibited throughout the closed areas in the site.

- يمنع التدخين في جميع أرجاء الموقع المغلقة.

- Please refrain from disorderly, disruptive, and offensive language or actions.

- الرجاء عدم القيام بأي فعل مخالف للقانون، أو أعمال تخريب، أو

Arabic	English
السب، أو ممارسة أي سلوك غير مقبول.	
▪ يمنع اداء أى من الشعائر داخل الموقع.	▪ Please don't perform any of the rituals inside the site.
▪ الرجـاء مراعـاة بقيـة الزائرين والتزام الهـدوء أثنـاء اسـتخدام الهـاتف المحمول.	▪ Please be mindful of others, and be quiet when using your cell phone.
● الرجاء عدم تسلق الصخور أو الجلوس على جدران المباني الأثرية.	● No rock climbing. Do not climb or sit on the walls of ancient buildings, and do not climb the natural canyon walls.
▪ غير مسموح باستخدام كشافات يدوية أو مؤشرات الليزر داخل المواقع حرصًا على سلامة الأثر.	▪ For the safety of the monument, please do not use flashlights or laser pointers inside the site.
▪ غير مسموح باستخدام أيه مكبرات للصوت إلا بتصريح.	▪ Audio players are not permitted without permission.
▪ الرجاء إتباع العلامات الإرشادية وتعليمات الزيارة.	▪ Please follow all posted signs and visitor instructions.

Arabic	English
○ **الأسر المرافقة للأطفال**	○ **Families with Children**
▪ يجب مرافقة الأطفال من قبل ذويهم داخل الموقع في جميع الأوقات.	▪ Children must be accompanied by an adult inside the site at all times.

- For the safety of your children and the monuments, please ensure that children do not run, play, or bump into monuments or visitors.

- حرصًا على سلامة أطفالكم والآثار الموقع، الرجاء منع الأطفال من الركض أو اللعب أو الاصطدام بالآثار أو الزائرين مما قد يتسبب في حدوث إصابات أو أضرار.

○ **Photography**

○ **التصـــــوير**

- Private photography is permitted inside the site after paying ticket fees.

- مصـرح بالتصـوير الفوتوغرافي الخاص داخل الموقع بعد شـراء التذكرة الخاصة بالتصوير.

- Please refrain from taking photographs of other visitors or staff as it may violate their personal rights.

- يمنع تصـــوير الزائرين الآخرين وموظفي الموقع لكونـه يعتبر انتهاك لحقوقهم الشخصية.

- Please refrain from taking video recordings (cell phone, cameras) in the monuments unless you have paid the appropriate ticket fees.

- يمنع تصـوير الفيديو سـواء من الهاتف أو الكاميرا داخل الآثار إلا بعد شـــراء التذكرة الخاصـــة بالتصوير.

- Taking photographs and video recordings for commercial use (TV, cinema, programmes, advertising, documentary clips, etc.) are permitted only after obtaining permission from the concerned authority and paying the daily rate.

- Please refrain from using flash photography.

- Please refrain from using tripods or monopods except for permitted commercial use

- يصـرح بالتصـوير الفوتوغرافي والفيـديو لأغراض تجاريـة (تليفزيون، ســينمـا، برامـج، إعلانات، أفلام وثائقية، الخ) بعد الحصـول علي إذن مسـبق من الجهات المختصة وتسديد القيمة المقررة.

- يمنع اسـتخـدام الفلاش عنـد التصوير.

- يمنع اسـتخدام الحامل ثلاثي القوائم أو الحـامـل ذو القـائم الواحد إلا في حالات التصـوير التجاري.

| ○ **In the case of an emergency** | ○ **في حالة الطوارئ** |

- In times of emergency such as an earthquake or fire, please follow the instructions of museum staff.

- In the event of an earthquake, please move away from large objects, and other monuments that may fall down.

- الرجاء إتبـاع تعليمات موظفي الموقع في أوقات الطوارئ (الزلازل، الحرائق).

- يرجى الابتعاد عن القطع الضـــخمة، وأية أثار قابلة للسقوط نتيجة أي هزة أرضية.

APPENDIX 2 – Visitor Centre Survey

Please answer with 'yes' or 'no' and explain your answers where relevant:

1. Is this your first visit to the Amarna Visitor Centre?   Yes / No

2. Have you enjoyed your visit?   Yes / No

3. Will you advise your friends to visit the Centre? Yes / No

4. Was your visit to the Centre as you had expected?   Yes / No

5. Have you found the Visitor Centre staff to be helpful and welcoming?   Yes / No

6. Are you a follower of the Visitor Centre's page on Facebook?   Yes / No

Please answer the following questions in your own words:

7. What have you enjoyed most about your visit to the Centre?

8. What activities would you like to see take place at the Visitor Centre led by the Visitor Centre team?

9. What additional scientific and/or cultural opportunities would you like to see the Visitor Centre providing?

10. In your opinion, what are the reasons for the low visits by local people to the Visitor Centre?

11. What are the disadvantages/areas in need of improvement related to the Visitor Centre?

12. Do you have any suggestions for ways in which the Visitor Centre can develop in the future?

Demographic data (optional)

Age:
Gender:
Occupation:
Level of education:
Email or contact number if you'd like us to keep in touch:

Please follow us on Facebook: Amarna Visitor Centre - مركز-الزوار-العالمى-بتل-العمارنة-مدينة-اخناتون