

Ancient Merv, Turkmenistan: research, conservation and management at a World Heritage Site

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In the first issue of AI, Georgina Herrmann described the Institute's initial involvement, from 1992, in survey, recording and excavation at the ancient Silk Road site of Merv. Now, a decade later, the Institute has embarked on a further collaborative project at this vast multiperiod site.

"I caught my first glimpse of the old cities of the plain – the ancient capitals of Margiana. A long line of walls and turrets, dominated by some towering domes, broke the line of the horizon . . . I could scarcely express my anxiety to proceed there and then to this mysterious spot, concerning which so much has been written and so little known." Edmund O'Donovan, 1882.¹

It is not only nineteenth-century European travellers who react with excitement and awe to the ruins of the ancient cities of Merv. Today it is one of the world's greatest urban archaeological sites, positioned on one of the main arms of the ancient Silk Roads that connected Europe and Africa to eastern Asia. The broad delta of rich alluvial land created by the Murghab river, which flows northwards from Afghanistan, forms an oasis at the southern edge of the Kara Kum desert. Merv lies at the heart of this oasis, close to where the main channel of the Murghab flowed in antiquity. A succession of cities, together encompassing over 1000 ha, developed there from the fifth century BC to the present day (Fig. 1).²

There is a long history of archaeological exploration at Merv. The site was intermittently explored during the late nineteenth and early twentieth centuries, before a concentrated campaign of fieldwork was undertaken by the South Turkmenistan Multidisciplinary Archaeological Expedition (YUTAKE) in the mid-twentieth century and, most recently, the International Merv Project.³ Despite this, we still know relatively little about the ancient cities of Merv. We have broad dates for their development, although uncertainty remains about some major events, such as when the Islamic city of Sultan Kala was founded. We have some information about specific buildings and monuments, but we lack insight into the broader rhythms and details of urban life, such as the speed and fluctuations of urban development, the range of industries and amenities, sanitation, trade, and the general organization of the urban community. Much work remains to be done to develop more complex interpretations of the dynamic cultures that occupied what were once among the most important cities on Earth.

World Heritage Site

The conservation and management of the cities and their hinterlands also requires urgent attention. In 1987 the Turkmenistan Ministry of Culture made the far-sighted decision to establish an archaeological park to protect the walled cities and the principal outlying monuments within the oasis. This has already done much to

improve the basic condition of the cities, by removing modern agriculture from within the walled areas and generally improving access to the monuments. However, there are daunting conservation issues facing the Turkmens. In 1999, Merv was declared a World Heritage Site and in 2000 it was placed by the international organization World Monuments Watch on the list of the world's 100 most threatened sites, and it remains on that list today.

A new project

In the autumn of 2001, a new five-year Turkmen–British collaboration was started between the Institute of Archaeology and the National Department for the Protection, Study and Restoration of Historical and Cultural Monuments within the Ministry of Culture of Turkmenistan.⁴ The project aims to:

- improve our understanding of the survival and potential of the archaeological resource
- undertake active research into the cities, to aid in both their management and interpretation
- develop local skills in archaeology, conservation and management
- promote the active management of the archaeological resource
- make research data and interpretations available to the widest audience.

Several more specific objectives have also been identified (although what can be achieved will be conditioned partly by the resources that can be raised). They are to:

- develop an integrated site-management plan
- identify and tackle specific management and conservation issues
- create an information platform, establish essential reference collections, and develop a GIS (geographic information system), to aid both management and research
- develop several research projects aimed at improving our understanding and interpretation of the site, its hinterland and its role in wider social, economic and political spheres.

Specific issues for research include: long-term urban dynamics, as seen through the development and infrastructure of the city of Gyaur Kala; the nature of the transition between Gyaur Kala and Sultan Kala, and the establishment of the early Islamic city; the organization and character of the Seljuk city; continuity, re-use and change in Mongol Merv; and the development of strategies to communicate the results of research to the widest possible audiences and, particularly, to facilitate access for the local community.

We have begun to establish a programme for future action by carrying out an initial overview of the most pressing management, conservation and research issues, in collaboration with the staff of the archaeological park and local-interest groups.



Figure 1 The location of Merv in southern Turkmenistan and (below) its ancient cities. The earliest city, Erk Kala, was founded c. 500 BC. Around 280 BC it became the citadel for the much larger Hellenistic city of Antiochia Margiana (known today as Gyaur Kala). In the seventh or eighth century AD a new Islamic city, Sultan Kala, was built to the west, although Gyaur Kala continued in use as an industrial suburb. In the early fifteenth century the Timurid city of Abdullah Khan Kala was constructed to the south, to which was added a suburb, Bairam Ali Khan Kala, probably in the eighteenth century.

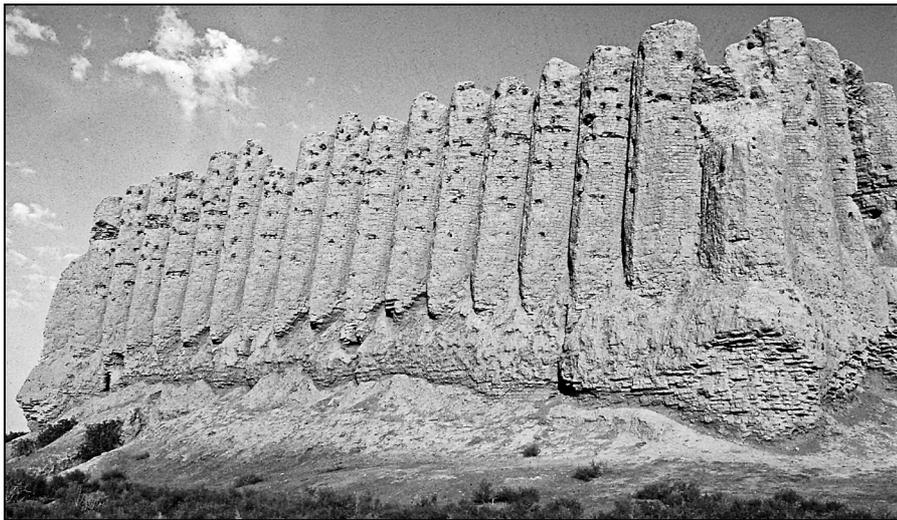


Figure 2 A view of the medieval Great Kyz Kala at Merv. This is the most impressive of the surviving *köshks* (defended houses) at the site, the massive corrugated mudbrick walls of which stand 12 m high upon 4 m-high platforms, making them the most striking and unusual buildings to have survived at ancient Merv. Note the eroding foundations of the walls.

Building conservation

During 2001–2002 we evaluated all the standing historical structures within the core area of the archaeological park and assessed their current condition, research and display potential, and conservation priorities. This has been instrumental in shaping our emergency conservation programme.

There are several ancient mudbrick buildings still standing at Merv, many of which are examples of a unique architectural tradition (Fig. 2),⁵ but they are threatened by wind, rain and, particularly, rising groundwater. The fortifications of Sultan Kala and Abdullah Khan Kala (Fig. 1) face the same problems. For example, the exterior faces of the walls of Abdullah Khan Kala have been eroded in the north of the city, and in the south the interior faces

have suffered the same fate (Fig. 3). As a result, there are features of the fortifications that now survive in only very limited locations. One of the unique aspects of Merv is the ability of visitors to appreciate the scale of the urban development over many centuries: a mainly uninterrupted landscape is laid out before them, enabling them to visualize the impressive scale of the successive cities. This is greatly enhanced by the continuous circuit of the defensive walls, which provides a focus for the eyes when gazing across the expanse of these once-great cities. The loss of large stretches of the circuit – all too possible at the moment – would severely detract from this experience. There are also several mudbrick monuments at risk, such as the Seljuk mausoleum of Mohammed Ibn Zayd and the Timurid icehouses (Fig. 4).⁶



Figure 3 A corner tower of the Timurid city of Abdullah Khan Kala, built early in the fifteenth century AD, showing the erosion at the base of the walls caused by rising water and by the wind.

Remedial work has begun. The staff of the archaeological park have started to tackle the situation with a programme of repair, together with temporary works such as buttresses to support the most vulnerable structures. But, with a very small annual operating budget, there are limits to what can be achieved, especially given the scale of the problems. However, the ability of the park to tackle these issues is being steadily increased. A team from CRATEREAG⁴ has built a laboratory for the park to facilitate research into the chemical properties of the soils and the best methods for developing sustainable new mudbrick and earth materials with which to repair and consolidate the structures. Experimental work and emergency remedial conservation is now under way, in which both traditional and modern techniques are being developed (Fig. 5). Training of members of the park staff in these methods is an important element of this programme.⁷

A further important part of building conservation is the careful recording by members of the archaeological team of the areas to be conserved before the work starts. In most cases this means photographic recording, but sometimes excavation is required. What is perhaps most heartening is the way that the archaeologists, the conservators and the park managers are working closely together to provide an integrated approach to these complex problems.

Previous excavations

Over the course of the past century, many archaeological interventions have been made at the site of Merv. We have managed to locate some 230 separate trenches, ranging from small-scale exploratory holes to substantial excavations, the results of only some of which have been published. These old excavations present several problems: few have ever been backfilled, and plants are growing in the relatively well watered hollows, destroying the underlying deposits; exposed mudbrick walls are eroding; exposed walls of fired brick are being robbed for modern uses; and the sides of the excavations are collapsing, destroying yet more of the archaeological resource.⁸ So we have started a campaign to consolidate and backfill most of them. When doing so, however, we record the exposed archaeological remains and, where appropriate, resample them. This is providing invaluable insights into the development and character of the ancient cities. In some cases, excavated structures are potentially useful as a means of presenting the site to visitors, and we hope to secure resources sufficient to enable them to be properly understood, conserved and displayed (Fig. 6). In the short term, however, some excavated structures will be reburied to avoid further damage and erosion.

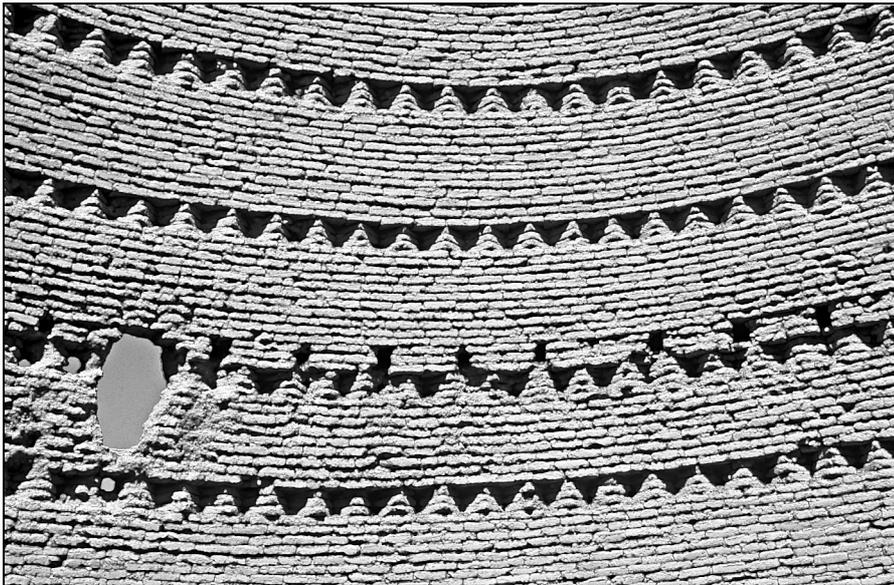


Figure 4 Part of the interior of a Timurid icehouse at Merv, showing the high quality of its mudbrick construction.

Displays and reference collections

The project team has undertaken a review of existing material from Merv, held in museum collections in Turkmenistan, which is enabling us to explore the potential for new displays. The British Embassy in Turkmenistan has kindly made a grant to help the park establish a small interpretation centre at its entrance. This will enable local people and international visitors to appreciate the scale and complexity of the site and the conservation problems that it now faces.

The material already excavated is also being studied to provide the basis of new reference collections that will be valuable not just for future research at Merv but also to colleagues working in Iran, Afghanistan and the rest of Central Asia. It will also help us to develop plans for the long-term conservation and curation of material arising from the Merv project.

The fortifications of Abdullah Khan Kala

According to historical sources, the city of Abdullah Khan Kala was constructed in the early fifteenth century, some three centuries after the walls of Sultan Kala were built. The later defences, at Abdullah Khan Kala, provide an interesting complement to the work we have already undertaken on the defences of Sultan Kala,⁹ and, if an early fifteenth-century date for the construction of the walls of Abdullah Khan Kala is correct, this interval of about 300 years encompasses the transition from pre-artillery military architecture to an architecture fully adapted to the cannon. In 2002 we completed a survey of the defences of Abdullah Khan Kala which has provided an initial interpretive sequence, and we are now developing a programme for their future research and conservation.

New excavations

Continuing research is vital for the successful management and conservation of the archaeological resource, and for enhancing its display and educational value. We are keen to advance research at Merv, but we are also conscious of the need to avoid compromising unique aspects of the archaeological record.

In 2002 we excavated a sample trial trench across the Madjan canal, the central waterway through the medieval Islamic city of Sultan Kala. The canal appears to have been an integral element in the



Figure 5 Repairing the roof of the mausoleum of Mohammed Ibn Zayd, a Shiite cleric. The concrete roof that had been added early in the twentieth century was too heavy for the structure and stopped it drying out when damp penetrated. It was therefore removed and replaced with a traditional earthen roof, which requires low maintenance and provides an effective weatherproof surface that allows the structure to breathe.

planning of the city, and its excavation can potentially inform us about several aspects of the city's history: the date of its construction, an important indicator of the early plans for the city; its maintenance over time, for evidence of the city's infrastructure; and its later use and ultimate abandonment, for an insight into the Mongol occupation of the city.

Preliminary results of the excavation

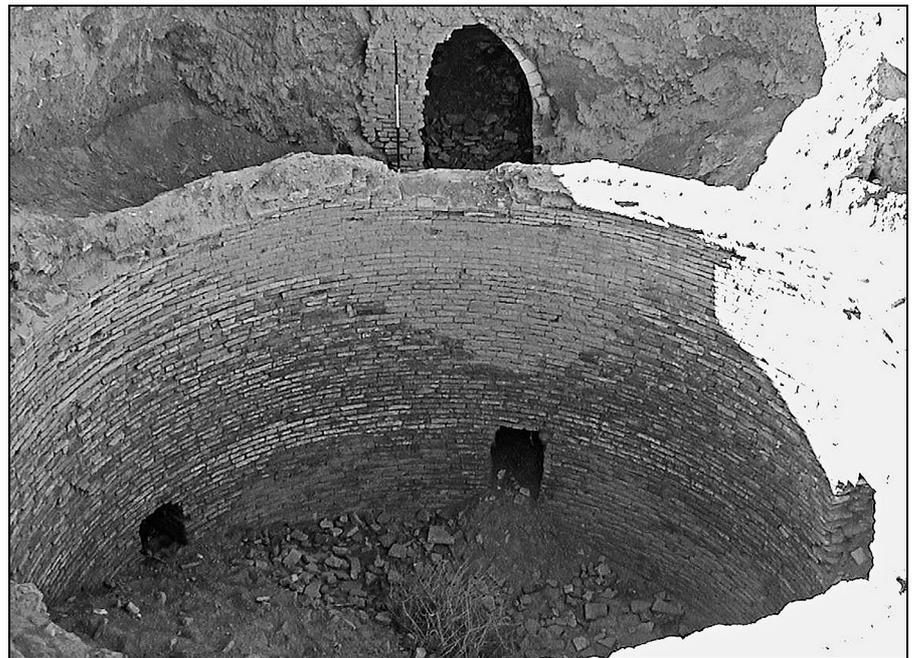


Figure 6 Part of the interior of a water cistern in the Beni Makhan mosque, Gaur Kala, built in the eleventh or twelfth century AD. This impressive structure has gradually been collapsing since it was excavated in the 1980s. Resources are now being sought to conserve it and re-excavate the surrounding area in order to be able to interpret the site to visitors.

suggest that the canal gradually ceased to be maintained to the standard achieved during the heyday of the Seljuk city in the eleventh and twelfth centuries. The substantial well built walls that originally retained the canal were later replaced with roughly built walls, retaining a narrower channel. After these had collapsed or been removed, the channel became little more than an open stream, and a small oven was built into the bank. There is also evidence of industrial activity in the area, suggesting that the urban landscape had changed considerably by the fourteenth century. This trial excavation of part of the canal has revealed both great complexity and great potential, and we hope to undertake a large excavation in the area in 2003, to explore the canal sequence and to integrate this with an understanding of the surrounding properties.

Managing the information

A vast amount of information exists on modern land use and irrigation systems, areas of flooding, the below-ground archaeological resource, standing buildings and landscape change. We have begun to develop a GIS to manage this information and to integrate it with historical maps, aerial photography and satellite imagery.¹⁰

Outside the walled cities, the archaeological resource is not confined to individual standing monuments, which are nothing without an appreciation of the landscape in which they functioned. Aerial photographs and fieldwork show the intervening buildings, gardens, orchards and cemeteries, but, at present, protection of these is limited. A caravanserai (a building to accommodate travelling merchants) and potters' quarter, both west of Sultan Kala, are being destroyed by agriculture, the robbing of pottery for the antiquities trade, and modern trackways. Analysis of aerial photographs taken over the past 25 years shows the scale of the loss, but it is also enabling us to plan, with the park, for the future management of the areas most at risk.

Conclusion

Merv is a unique and exhilarating archaeological landscape. It differs from cities such as Bukhara and Samarkand in that it has fewer standing buildings (although those it has are spectacular and unique), but the scale and complexity of entire urban landscapes are laid out before the visitor. It takes imagination, but Merv is a place to capture the imagination of anyone who sees it. Until you have visited it, it is hard to appreciate the scale of what was achieved in this oasis. Helping to research and conserve this extraordinary site, and to develop sustainable tourism – enabling the visitor to explore the scale of the urban achievement and the histories of these once vibrant cities that lay on one of the most important cultural crossroads the world has seen – will be a challenge. It is a

great challenge, but one that the Turkmenistan Ministry of Culture, the staff of the archaeological park, and all of us associated with the project, are keen to take up.

In addition to its archaeology, the park area contains habitats of rare plants and animals, which reinforces the need to develop a sustainable management plan for the World Heritage Site. The park staff have started educational programmes with local schools, although more resources are needed to develop better access. At present, foreign tourism is not a major factor, although what there is makes a valuable contribution to the local and regional economy. The scale of tourism is, however, likely to change over the next decade, and meanwhile we have an opportunity to plan for this on a sustainable basis, before increased numbers of tourists overwhelm the infrastructure and facilities.

Merv faces many challenges in terms of both management and research. What is so encouraging is the willingness of so many participants – the archaeological park, the Ministry of Culture, academic and scholarly institutions in Turkmenistan, the international community (not least UNESCO, the World Monuments Fund, and the Institute of Archaeology) – to take up the challenge of developing a sustainable future for this unique site.¹¹

Notes

1. Quotation on p. 202 of E. O'Donovan, *The Merv oasis: travels and adventures east of the Caspian during the years 1879–80–81* (London: Smith, Elder, 1882).
2. See G. Herrmann in *Archaeology International 1997/98*, 32–6, for a résumé of the setting and development of the cities.
3. The International Merv Project (IMP), directed by Dr Georgina Herrmann (Institute of Archaeology) and Dr St John Simpson (British Museum), in collaboration with Dr Kakamurad Kurbansakhatov (then of the National Institute for the History of Turkmenistan of the Cabinet of Ministers). See the interim reports published annually in the journal *Iran* from 1992 to 2001, and G. Herrmann, *Monuments of Merv: traditional buildings of the Karakum* (London: Society of Antiquaries of London, 1999).
4. The project is co-directed by Dr Kakamurad Kurbansakhatov (State Institute of Cultural History of the Peoples of Turkmenistan, Central Asia and the East), and myself (Institute of Archaeology), with the valuable help of Assistant Director Dr Gabriele Puschnigg (Institute of Archaeology). In addition, the project is a collaboration with the Turkmenistan Ministry of Culture (Mukhammed Mamedov and Ruslan Muradov), the Ancient Merv State Park for Historical and Cultural Monuments (Rejeb Dzaparov) and CRATEREAG (the International Centre for Earth Construction of the School of Architecture in Grenoble) (Sébastien Moriset and Mahmoud Bendikir).
5. See footnote 3 in Herrmann 1999 (n. 3 above).
6. The Seljuks and Timurids were dynasties of Islamic rulers who occupied Merv

between the eleventh and the fifteenth centuries AD.

7. UNESCO has provided support for the initial development of the conservation project, and the World Monuments Fund has generously provided resources to enable the UCL–CRATEREAG–Turkmen team to start a programme of mudbrick consolidation.
8. L. Cook, *Mitigating the impact of excavations: documentation and conservation strategies for the extant intervention trenches, archaeological park of ancient Merv, Turkmenistan* (MA thesis, Institute of Archaeology, University College London, 2002).
9. P. Brun & A. Annaev, "The fortifications of Sultan Kala", *Iran* 39, 33–41, 2001.
10. The satellite imagery has provided a geo-referenced base map, creating a platform for integrating the other spatial data. This has been achieved through the hard work of Marek Zeibert and Cordelia Hall (UCL), and of Peter Dare (University of New Brunswick, Canada).
11. We are particularly grateful to our sponsors, including a grant from American Express, through World Monuments Watch (a programme of the World Monuments Fund), which is enabling us to develop a French–Anglo–Turkmen collaboration; the Max van Berchem Foundation, Geneva; the Metropolitan Museum of Art, New York; the UK Arts and Humanities Research Board; and the British Institute of Persian Studies. Thanks also go to the Turkmen Ambassador to Britain, His Excellency C. M. Babayev, who has done much to facilitate our work, and to the Landscape Research Centre, Yedingham, North Yorkshire, for the loan of surveying, computing and photographic equipment, and, through them, the loan of hand-held computers, kindly donated by the Handspring Foundation of Mountain View, California, which considerably enhanced our ability to record information in the field.