

Resurrecting Gordion

Preserving Turkey's Phrygian Capital

BY FRANK G. MATERO AND C. BRIAN ROSE

ARCHAEOLOGY AND HERITAGE CONSERVATION have become important partners in the excavation, preservation, and display of archaeological sites around the world. With rare exception, most archaeological sites are created through excavation, and they become “heritage” through a complex process of study, intervention, and visitation that involves a number of disciplines beyond archaeology. It is largely tourism that drives the need to expose and display sites, which shifts the priorities of archaeological research to managing deterioration (as a result of exposure) and interpreting buildings, features, and site histories. Input from the archaeologist, conservator, and design professional at the beginning of a project determines the success or failure of how a site is ultimately preserved, interpreted, and exhibited.

Beyond this, many archaeological sites have special meaning to the local residents, who have claimed these places as part of their cultural and/or ethnic heritage long before the first shovelful of earth has been removed for scientific study. A new conservation program for the Phrygian capital of Gordion, well known in antiquity as well as today for its associations with King Midas and Alexander the Great, will safeguard the extensive yet rapidly deteriorating remains of this great citadel and transform it into a vibrant component of the region's economy and identity.

GORDION—A TURKISH TREASURE

Located in central Turkey, approximately 70 km southwest of Ankara, Gordion was the center of the Phrygian kingdom that ruled much of Asia Minor during the early first millennium BCE. It was also one of the most important cultural and political centers of the ancient world. Located at the intersection of the great empires to the east (Assyrians,

Babylonians, Hittites) and the west (Greeks, Romans), it occupied a strategic position on nearly all trade routes that linked the Mediterranean with the Near East. The city became especially prominent shortly after the Phrygians settled there in the 12th century BCE, and it continued to

be a military and commercial center even after the Persian conquests in the mid-6th century BCE. During the 3rd century BCE, the city was settled by the Celts, whose practice of human sacrifice is documented by new skeletal discoveries.

Excavations at Gordion have been conducted by the University of Pennsylvania Museum of Archaeology and Anthropology since 1950, and have revealed at least ten occupation levels spanning a period of nearly 3,000 years. The Early Phrygian (*ca.* 950–800 BCE) palaces and public buildings were built primarily of timber and mudbrick on stone foundations, and they contain the earliest known examples of geometric pebble mosaics, the patterns of which suggest that the artists were experts in weaving and textile design. The citadel was surrounded by massive stone fortifications whose early gate is one of the most complete to survive from that period in the ancient Near East, along with sections of stone fortification walls. The site's destruction in 800 BCE is one of the few in Asia Minor that can be precisely dated, and Gordion therefore serves as an anchor for the chronology of the eastern Mediterranean during the early first millennium BCE.



Gordion is located in central Turkey.



Famous Rulers at Gordion

As the political and cultural capital of the Phrygians, Gordion was one of the most important sites in the ancient Near East, but it is more commonly remembered as the power center of kings Gordias and Midas (allegedly of the “Golden Touch”), and as the location of an intricate knot that was cut by Alexander the Great.

Our information regarding the former king is limited: an oracle had reportedly informed the inhabitants of Gordion that they should acclaim as king a man who entered the city on an ox-cart, and Gordias or his son Midas was the first to do this, thereby earning the right to rule. The ox-cart—and the knotted bark attached to it—was subsequently enshrined within the citadel as an object of reverence.

So much for the legend; but Midas was actually an historical character whose career (*ca.* 740–700 BCE) is described in contemporary writing. Greek and Roman authors indicate that he married the daughter of the ruler of the Greek city of Kyme and was the first non-Greek to have made a dedication at the Sanctuary of Apollo at Delphi.

The most important references to Midas are in the Assyrian Annals, where he is referred to as Mita of Mushki. During the last quarter of the 8th century BCE, Phrygian control extended over much of central Asia Minor, and Midas’s support against the Assyrians was increasingly sought by cities in the Upper Euphrates region. Tumulus MM, the largest tomb at Gordion, was once regarded as the tomb of Midas himself, but it is more likely to have been built by Midas at the beginning of his reign to honor his predecessor. The mound was nevertheless just as much a monument to Midas himself in that it was the largest burial mound in Asia Minor, and would remain so until the construction of the tomb of the Lydian king Alyattes at Sardis nearly 200 years later.

Meanwhile, the famous ox-cart continued to be venerated within the city long after the Phrygian kingdom had come to an end, and acquired yet another layer of meaning: an oracle prophesied that whoever untied the intricate bark knot attached to the cart would become ruler of Asia. When Alexander the Great arrived at the city in 333 BCE, he sliced through the knot when his attempts to untie it were unsuccessful, thereby, in a sense, fulfilling the prophecy. This forceful action still remains as a common expression in English, wherein “cutting the Gordian knot” refers to decisively solving a seemingly intractable problem.

Surrounding the citadel is a rolling landscape dominated by almost 100 elite tombs (tumuli), most of which date between 900 and 500 BCE. The largest of these tumuli, 300 m in diameter and 53 m in height, has been identified as the tomb of Gordias (*ca.* 740 BCE), the eponymous founder of the city and the father of the legendary King Midas (*ca.* 740–700 BCE). The tomb chamber, approximately 5 by 6 m, lay 40 m below the surface, and it represents the earliest known intact wooden structure in the world. Inside, the tomb contained intricate inlaid wooden furniture, bronze vessels, and textile bedding with patterns of purple and brown dyes, subsequently analyzed by the Penn Museum’s Applied Science Center for Archaeology.

Since the initial opening of the site in 1950, modest site preservation has protected the extensive architectural remains from destruction. In 2006 a new program of site conservation was launched integrating documentation, analysis, intervention, and interpretation of the citadel and its surrounding landscape. The Turkish Ministry of Culture and Tourism now holds foreign archaeologists responsible for the sites that their institutions have excavated, and the Penn Museum has responded through a new and aggressive program of site conservation, research, and maintenance.

A PLAN FOR CONSERVATION

In 2007, the Architectural Conservation Laboratory of Penn’s School of Design, under Professor Frank Matero, completed a five-year Conservation and Management Plan for the Gordion citadel. The plan and its implementation represent Penn Museum’s renewed commitment to the conservation of the site and vicinity, recognizing the role of Gordion in any program of sustainable development of the region’s cultural heritage in central Turkey. The current project is based on an integrated and



The ancient landscape of Gordion consists of a dominating citadel mound (a) surrounded by a settlement (b), secondary fortifications (c), and a royal cemetery of tumuli including the “Midas Mound” MM (d), as well as the village of Yassihöyük (e), 1950.



phased program of academic research, site conservation, regional survey, and heritage training.

Gordion’s ancient citadel mound is a distinctive presence on the central Anatolian horizon, representing three millennia of human occupation. The mass and contour of its constructed form, together with associated mound features representing the lower town and outer fortifications nearby, define the ancient Phrygian capital. Since 1950 the citadel mound has been transformed through excavation, which also resulted in the creation of large spoil heaps along its outer slopes. Removal of these deposits to both restore the mound profile and stabilize erosion as backfill for eroded excavation scarps and trenches will do much to reinstate Gordion’s largest and most characteristic feature. Also critical to the stabiliza-



Site plan of phased conservation activities over the next five years.



Above, aerial view of Gordion citadel, 2010. Below, visitor circuit with new stone steps, railings, and wayside pavilion design, 2009.



tion of the mound as well as the surrounding tumuli will be the implementation of a re-vegetation and land-use plan under development by the Museum's Dr. Naomi Miller and partners from Middle East Technical University.

The perception of any settlement depends on the relationship of its parts; however, it is in the architectural details that the buildings, fortification walls, enclosed and open spaces, and paved areas of Gordion are readily discernible and understood. Gordion possessed all these features in a brilliant composition of urban design which is currently illegible due to deterioration and a variety of past presentation approaches. In order to re-establish the architectural form and structural stability of the buildings, a range of techniques—including selective reburial, stabilization, restoration, and partial reconstruction—have been implemented simultaneously. Architectural form and building fabric are currently being interpreted according to a set of guidelines that carefully mediate between the reestablishment of the overall plan and the preservation of architectural fabric. “Authenticity” here becomes a relative term that must find a balance in protecting future archaeological value while exposing and displaying ancient structures for viewing. Examination of the excavation photographs from the 1950s and 60s reveals a site very different from the current landscape. Many buildings and enclosure walls were readily discernible; constructed of stone and mudbrick with evidence of heavy timber framing, they stood in some cases over 1 m in height. Pavements of stone, cobble, mosaic, and plaster clearly differentiated interior and exterior spaces. Although years of prolonged exposure degraded these materials (mudbrick) and construction techniques (rubble-core masonry walls), some features such as the stone pavements and megaron walls (see below) were subsequently reburied for protection. Currently, various presentation techniques are under

development to reveal and display walls and pavements by excavation, capping, encapsulation, and replication. Each of these techniques will be tested, and their application to a particular building or area will depend on the archaeological significance of the feature, its condition, and its contribution to the plan.

Excavation deep within the citadel mound has revealed the ancient Phrygian capital prior to destruction (*ca.* 800 BCE), and has created a unique situation for viewing. Visitors ascend the mound at the entrance gate, and from the top have an extraordinary view into the city and out across the landscape. This remains one of the site's most compelling aspects and is currently threatened by the instability of both the eroding scarps and the poorly delineated trail and barriers. A circuit atop the perimeter of the mound allows visitors a 360 degree view of the citadel and surrounding landscape, which is now being augmented by 12 covered pavilions designed by PennDesign professor Lindsay Falck, with corresponding signage describing relevant buildings, features, and history.

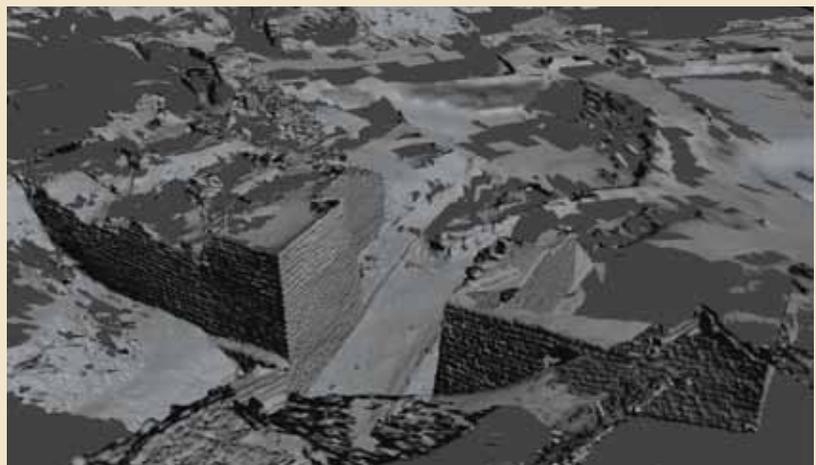
The recent building and site condition survey has identified the potential for serious deterioration and structural collapse of a number of important structures, including the Early Phrygian gate, the Middle Phrygian walls, the Terrace Building, and numerous megarons. These and other buildings and architectural features are currently the focus of the Gordion conservation program, which includes research into the construction techniques of the Phrygians, informed by 3D laser imaging, and material analyses.

The Gate (ca. 900 BCE)

The citadel gate, a massive and nearly complete stone structure of enormous architectural and historical importance, is of the highest priority. Recent engineering assessments have identified the gate displacement and open wall tops to be



Above, comparative post-excavation site weathering, view looking east: a) 1957 and b) 2009. Below, laser image of the citadel gate and surrounding area, 2009.





Gate entrance showing Early and Middle Phrygian masonry and trenched later Phrygian fill, view looking west (a) and east (b), 2010.

a serious safety issue to the excavators and the visiting public as well as a risk to the integrity of the structure. Centuries of seismic activity and crushing from the superimposed later Middle Phrygian gate have caused instability in the masonry that now must be temporarily shored and structurally monitored for movement while test stabilization methods are modeled. Vegetative “soft” caps have been installed as a creative, low-impact method to protect the gate tops based on green roof technology and last year’s field experiments.

The Walls

The Early and Middle Phrygian stone walls are a critical component of the citadel’s delineation and evolution over time, and are among the largest architectural remains still standing. The polychromatic effect of the multi-colored stone blocks reveals the Phrygians’ love of color; however, the many different types of stone display a range of deterioration, and their superimposition over earlier walls has led to instability and collapse. Temporary shoring, structural reintegration, and consolidation are all needed to restore large sections of the standing walls.

The Terrace Building

The linear eight-room Terrace Building was a complex of workshops and storage rooms for weaving, food processing, and other activities. The surviving stone walls, nearly com-

plete in plan, require extensive stabilization using an innovative interior “corset” of stainless steel cables and pins. Once features such as storage bins and hearths have been reinstated, the visitor will be afforded a glimpse into the famed production sector of the Early Phrygian citadel.

The Megarons

The principal megarons flanking the Terrace Building platform were civic elite buildings, most likely richly ornamented on both the exterior and interior. At the time of excavation significant wall remains of stone, mudbrick, and timber clearly attested to their construction methods. Of unparalleled significance was the discovery in Megaron 2 of the earliest known complete pebble mosaic, which features both exquisite design and execution. Reburied for temporary protection, these buildings now need to be re-excavated, their walls stabilized, and floor features conserved and reinstated. Of particular interest and importance is the conservation and restoration of the pebble mosaic, currently in the Gordion Museum, that is now funded by the J. M. Kaplan Fund.

PLANNING AND HERITAGE TRAINING

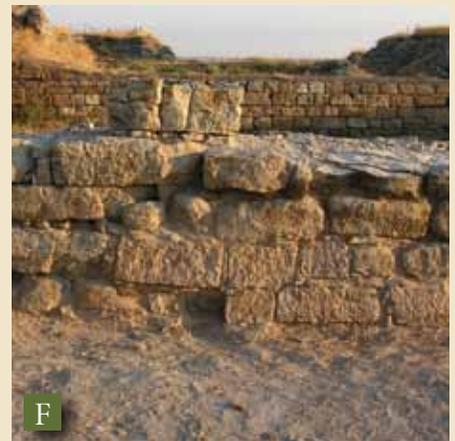
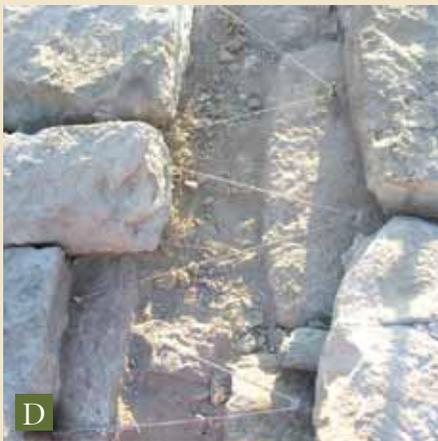
For many years, archaeological fieldwork at Gordion has benefited from the involvement of numerous academic institutions. More recently, site conservation has benefited from the



Installation of vegetative “soft” caps on north gate complex: (a) existing concrete cap prior to intervention, (b) “soft” cap protection layer, (c) capillary break layer, (d) filter layer, (e) completed “soft” caps, (f) view looking east of completed north gate “soft” wall caps, 2010.

Work Continues at Gordion

A joint project under the auspices of the Penn Museum and the Architectural Conservation Laboratory of the School of Design at the University of Pennsylvania is currently underway to implement a conservation program for Gordion. This project addresses the long-overdue need to put into effect an integrated program of emergency stabilization, building conservation, and interpretation, including a visitor circuit and wayside stations for the Gordion citadel. This proposed work is the direct result of a preliminary conservation planning study by the University of Pennsylvania and Middle East Technical University on the great citadel and within the surrounding landscape. The project is unique in its integrated approach, which involves the simultaneous collaboration of archaeology, ethnography, conservation, and design. Previous funding for this work supported the current conservation plan. Sponsorship is now urgently needed to begin implementation of the more critical needs related to the collapse of the great Phrygian gate and defensive walls. Overseeing the project are Frank Matero (Penn School of Design) and Brian Rose (Penn School of Arts and Sciences.) Current funding for the Gordion Citadel Conservation Project comes from the 1984 Foundation, Global Heritage Fund Preservation Foundation, the J. M. Kaplan Fund, the Storer Foundation, and the Selz Foundation.



Terrace Building (TB2), demonstration of various wall masonry conservation techniques: (a) before treatment, (b) stone replacement, (c) drilling for adhesive repair, (d) structural retrofitting, (e) wall capping, (f) after treatment, 2009. Below, documentation of the current display of lifted Megaron 2 mosaic at the Gordion Museum, 2010.

participation of students from the University of Pennsylvania and Middle East Technical University (METU) in Ankara. The number of visitors is likely to increase as the site conservation program accelerates, and in time, Gordion will constitute a substantial income-generating tourist and educational market as required by national and regional authorities. The new Gordion project has also begun to assess the economic and social values of developing the site for tourism through collateral research underway by the Faculty of Architecture at Middle East Technical University and the Penn Museum. Both programs will provide opportunities for training local and American conservators and heritage specialists.

As recommended by the Turkish Ministry of Culture and Tourism, a Conservation Management Plan for Gordion and its environs is being developed by an interdisciplinary





Megaron 2 during excavation and discovery of pebble mosaic pavement, 1956.

team from METU under Professor Evin Erder and Dr. Ayşe Gürsan-Salzman. In 2007, a GIS database was generated for Gordion and its near environs. Using the cumulative ethnographic information as a guideline, the project is surveying and documenting all values—archaeological, architectural, historical, economic, socio-cultural, and ecological—within a 40 km² area of Gordion in order to create a vision and policies for sustainable development and conservation of the area. In 2008–2009 the focus of the fieldwork was to survey Yassıhöyük, a nearby village with strong ties to Gordion, and the first step was taken toward the systematic recording and analysis of rural communities within the 1st and 3rd degree protected zones at Gordion.

Three thousand years after its founding and only 60 years after its excavation by archaeologists from the University of Pennsylvania, ancient Gordion will slowly reveal itself, as a multi-disciplinary team of academics and professionals together with local authorities and residents contemplate the past and future of King Midas’s legendary city. 🏠

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Penn Museum Gordion Archive (top), Penn Museum (bottom)