THE KERKENES PROJECT

A PRELIMINARY REPORT ON THE 2005 SEASON

Geoffrey and Françoise Summers

Figure 1. Excavation at the Monumental Entrance to the Palace Complex. (05dpca0418)

LOCATION

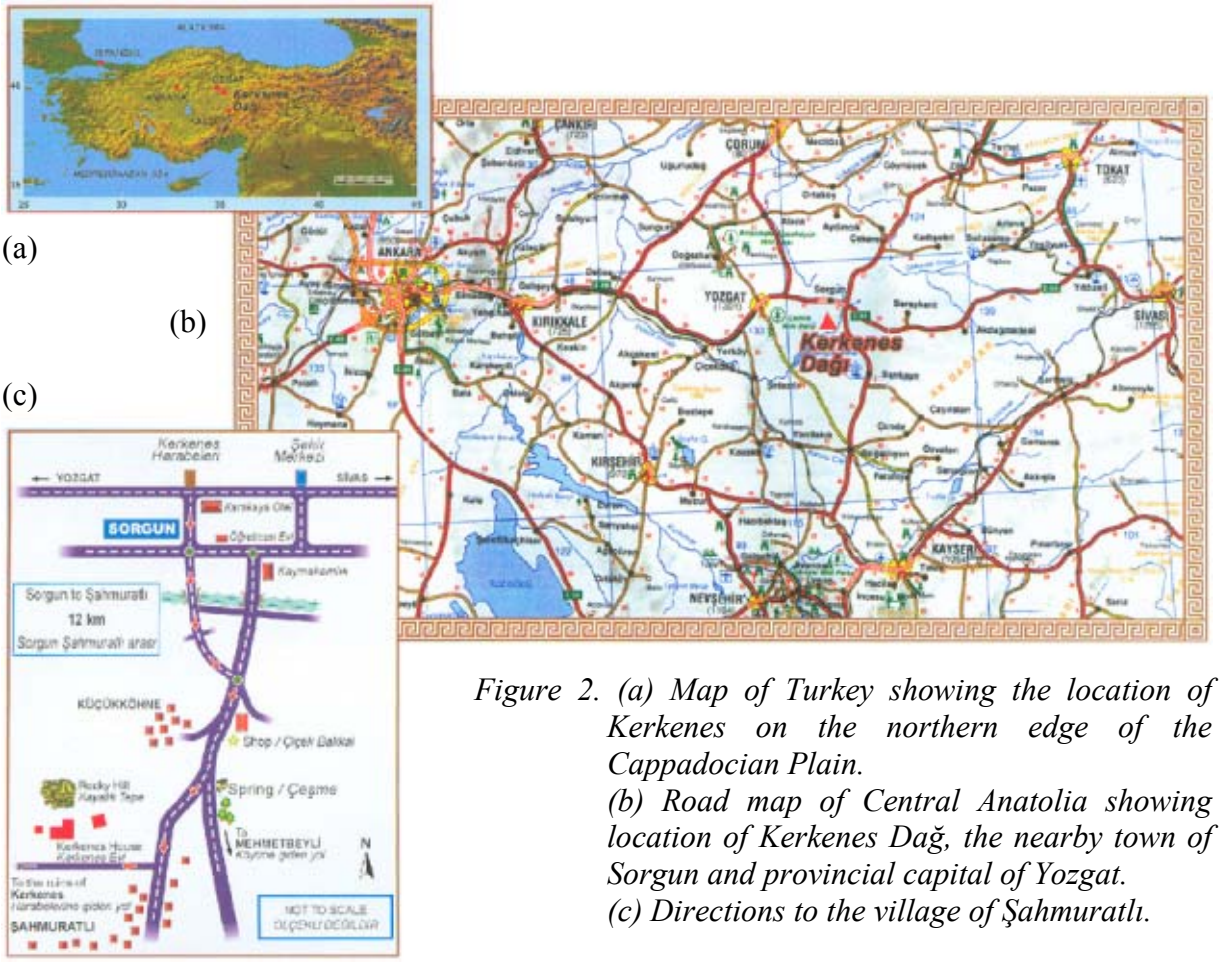

Figure 2. (a) Map of Turkey showing the location of Kerkenes on the northern edge of the Cappadocian Plain.
(b) Road map of Central Anatolia showing location of Kerkenes Dağ, the nearby town of Sorgun and provincial capital of Yozgat.
(c) Directions to the village of Şahmuratlı.

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THE 2005 TEAM

Figure 3. Team and visitors enjoy the sunset from a favourite viewpoint on a rocky outcrop north of the ancient city. In the background, the defences can be seen snaking along ridge tops with the Kale at centre. (05dpnc0523)

At Kerkenes (Fig. 3) an international team has worked together every year since 1993. Workers from Şahmuratlı Village (Fig. 4) help with geophysical survey and excavations.

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Kerkenes Eco-Center

We would like to note the participation of the Kerkenes Eco-Center Project team, Mehmet Ekmekci, Soofia Tahira Elias-Özkan, Güner Mutaf, Otgonbayar Namkhai, Françoise Summers, Neşen Surmeli and Refik Toksöz, who are preparing a UNDP/GEF-SGP application with the Şahmuratlı Village Association for 2006. A report on the 2005 activities for the Kerkenes Eco-Center Project appears separately.

Figure 4. A view of Şahmuratlı village from the Kerkenes Dağ. (05dpnc1068)

ACKNOWLEDGMENTS

We extend our thanks to the General Directorate of Cultural Resources and Museums and to representative Mehmet Sevim from the Museum of Anatolian Civilisations. Thanks are also due to the Acting Director of the Yozgat Museum, Mustafa Erdoğan, and Assistant Hasan Şenyurt. In October, we were pleased to welcome the new Museum Director, Mustafa Akkaya. The Governor of Yozgat, Gökhan Sözer, the Directors of the Department of Rural Services, Muharrem Şengül, TEDAŞ, Bülent Gürel, and Türk Telekom, Metin Ay, the Yozgat Mayor, Yusuf Başer, and their staff continue to support the project in many ways. The Sorgun District Governor, Meftun Dallı, and Sorgun Mayor, Ahmet Şimşek, and staff are particularly thanked for their help and generous donations in kind. We are deeply indebted to the Village of Şahmuratlı and Headman Osman Muratdağı.

Main sponsors in 2005 were Lafarge Sağlık Eğitim ve Kültür Vakfı, the Loeb Classical Library Foundation, the Oriental Institute of the University of Chicago, Melbourne University (International Collaborative Research Grant), the Joukowsky Family Foundation, The (Tyche) Archeocommunity Foundation, the Anatolian Archaeology Research Foundation, John Kelly Consulting Inc., the Charlotte Bonham Carter Trust and anonymous donors. The British Institute of Archaeology at Ankara made a grant towards the cost of the site guard and preparation of publications, the latter also sponsored by the Bernard and Ines Burrows Memorial Award of the Anglo-Turkish Society, ARTI Sistem and ERTEM Printing. Life in the field has benefited from the generosity of AKG, the Ankara Hilton, the British Embassy, the Erdoğan Mustafa Akdağ Foundation, Kavmar, Kamar Supermarket, MNG, New Holland Trakmak, Onduline and Yibitaş Yozgat Çimento / Yibitaş Lafarge. Sokkia-Seza loaned surveying equipment. ESRI, ERDAS, Işlem, Geoscan and John Haigh helped with software and Datasel, Eternal/Hızlı and Cep/Epson with hardware. Research activities, including those related to the Kerkenes Eco-Center, are supported by funds from the Australian Embassy DAP, Canada Fund, Madison Oil Turkey, MESA and Yenigün, channelled through the METU Development Foundation. METU has made office space available, METU Computer Centre provides technical support and METU Press assists with publication.

Collaboration, Team and Support

An agreement with the Oriental Institute of Chicago University was formalised with Scott Branting becoming a Co-Director of the project. Antonio Sagona launched the International Collaborative Research Program with Melbourne University. Claude Brixhe is studying the inscriptions and graffiti while Peter Kuniholm and his team at Cornell University work on the dendrochronology. Collaboration also continues with UC Berkeley, SUNY Buffalo, Laboratoire de Géographie Physique - CNRS, Department of Hydrogeology at Hacettepe University and at METU with the Museum, TAÇDAM, the Departments of Geological Engineering and Metallurgical Engineering and with the Settlement Archaeology and Archaeometry Programs. We would particularly like to mention the participation, during the 2005 season, of Peter Grave, Lisa Kealhofer and Ben Marsh who took thin sections from pottery as part of their 5-year study of Anatolian Iron Age Pottery, and Vicky Ioannidou who is studying the environmental material at METU. Key team members were conservators Noël Siver and Alison Whyte, illustrator Carrie Van Horn, registrar Catherine Draycott and photographer Murat Akar. Geophysical survey was done by Tuna Kalaycı and Nahide Aydın assisted by Deniz Erdem. Elvan Odabaşı, Harun Muratdağı and Pamela Summers shared the responsibility of the administration and domestic arrangements. Aysun Akkaya, Pınar Özgüner and other METU students worked on archives and graphics in Ankara. To them all as well as to the other members of the team, Rémi Berthon, Jessie Birkett-Rees, Ruth Bordoli, Melissa Clissold, David Collard, Megan Cuccia, Tasha Granger, Catherine Longford, Shannon Martino, Kurt Springs, Natalie Summers, Brent Suttie and Bike Yazıcıoğlu, to the house staff and workers from the village of Şahmuratlı, our heartfelt thanks.

The *Erdoğan Mustafa Akdağ Eğitim ve Kültür Vakfi* (EMA Foundation) is constructing a Centre for research and education at Kerkenes (Fig. 5). This fine new building will contain displays and facilities for visitors and tourists. During field seasons it will be the expedition kitchen and dining area. At other times it will be used for cultural activities organised by the Kerkenes Eco-Center Project and Şahmuratlı Village Association. July 16, a memorable day organised by Yozgat Governor Gökhan Sözer and for which generous contributions were forthcoming, was attended by many dignitaries, academics, supporters and guests. As a final highlight to the season we were honoured by a visit from the Minister of Culture and Tourism, Mr. Atilla Koç (Fig. 6).

Figure 5. Construction of the Erdoğan Akdağ Center for Research and Education. AAC blocks, cement, sand and roofing sheets were donated by AKG Gazbeton, YL Yozgat Çimento, the Sorgun Belediye and Onduline respectively. (05kenc0628)

Figure 6. Natalie Summers presenting the Minister of Tourism and Culture, Mr Atilla Koç with a replica of the Kerkenes ivory plaque. Yozgat Governor Gökhan Sözer and Representative Mehmet Sevim look on. (05dpnc1606)

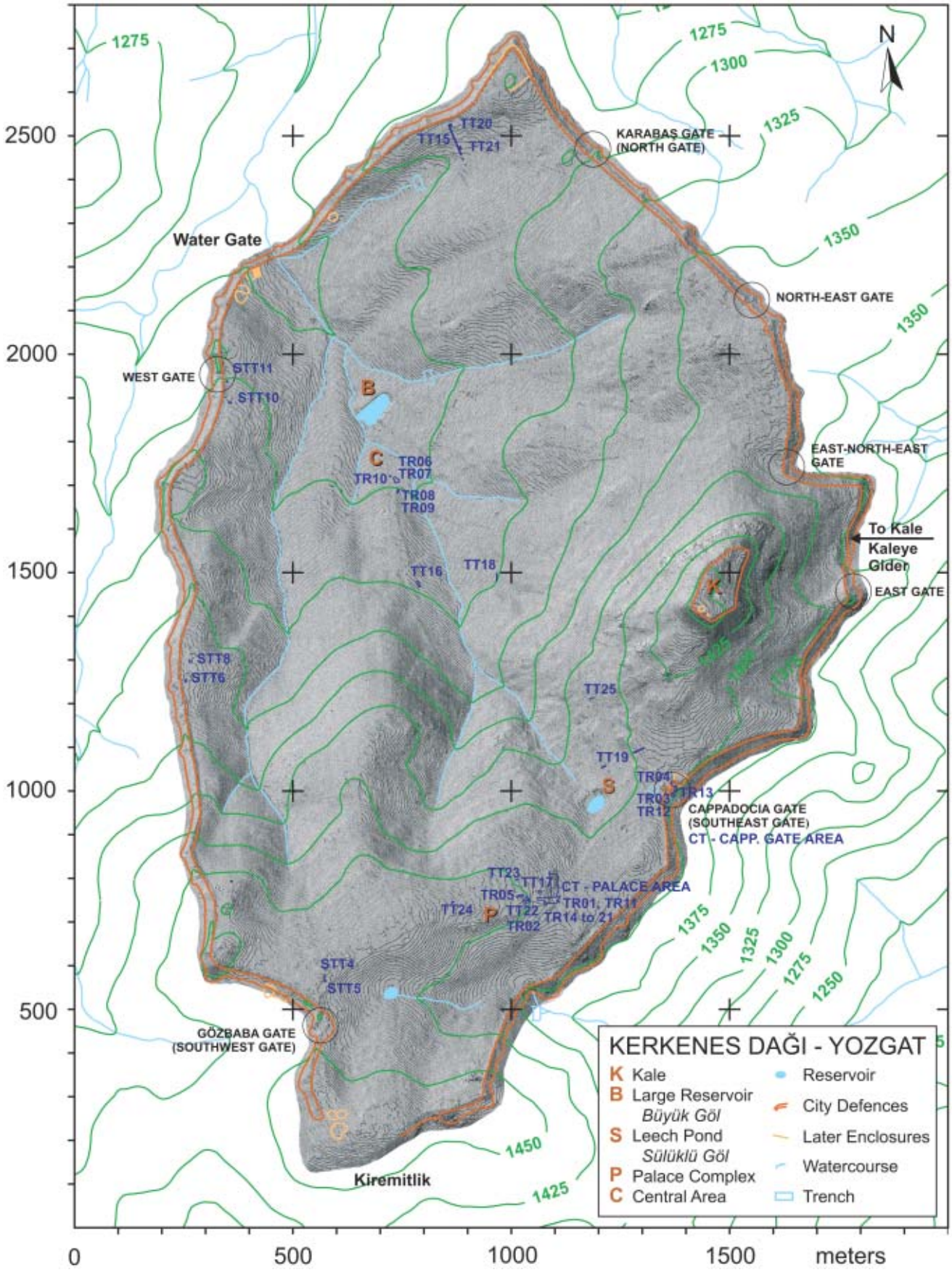

Figure 7. Digital Terrain Model (DTM) made by Işlem GIS, using ERDAS Imagine, from the GPS survey of Kerkenes.

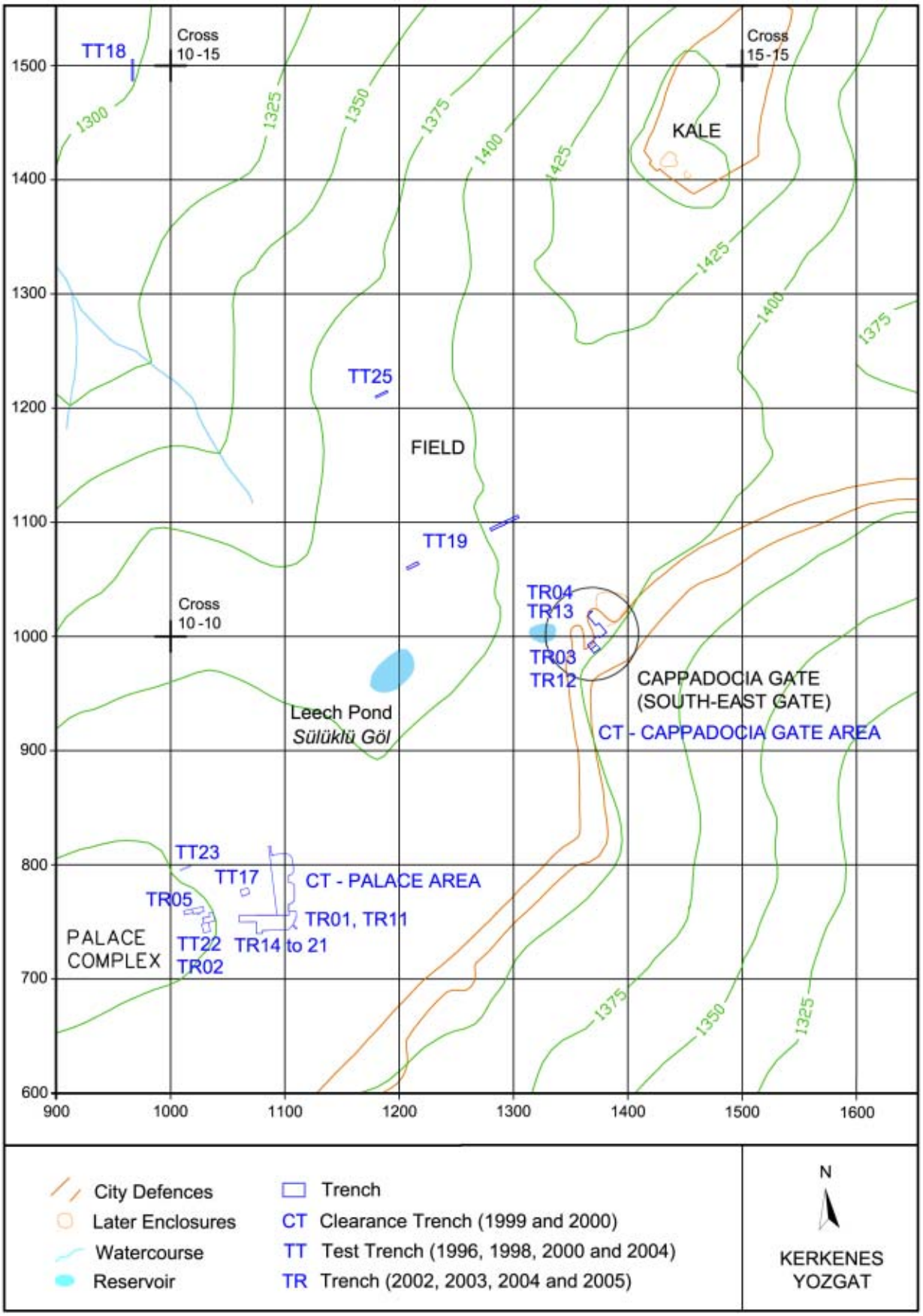

Figure 8. Map showing the Palace Complex and the Cappadocia Gate areas where excavations, clearance and conservation work took place in 2005.

INTRODUCTION

In 2005, archaeological research at Kerkenes (Figs 7 and 8) was again divided into a spring season devoted to geophysical survey and a main summer season given over to excavation together with work in the depot and conservation laboratory on the finds from this and previous seasons.

The focus of the summer season was excavation at the Palace Complex, which has now revealed the entire length of the Monumental Entrance (Fig. 9). The stone pavement between the front half of the two massive towers was completely exposed and the inner passageway, with evidence of both front and rear wooden façade, partly excavated. This brought to a successful conclusion the current programme of excavation, leaving the 2006 season free for final publication work and the study of finds.

Limited work at the Cappadocia Gate made this visually impressive monument both safer and more attractive while also preventing erosion from undermining the passage walls. Plans for a three year program of conservation and restoration are being prepared.

Figure 9. Excavation of the Monumental Entrance to the Palace Complex, looking east down the passageway between the two towers. Temporary wooden shoring supported the structurally unstable walls at the front end of these massive towers. Workmen are brushing the western stretch of stone pavement extending beyond the rear façade of the monument towards the Audience Hall. (05dpnc0155)

THE RESISTIVITY SURVEY

Methods

The entire spring season was devoted to electrical resistivity survey (Fig. 10) with a Geoscan RM15 machine. Data was processed using Geoplot while image enhancement was done with Surfer software (Fig. 11). The memory in the RM15 permits the survey of up to a maximum of nine 20m by 20m grids per day with a sample density of readings every 0.50m at 0.50m traverse intervals. A combination of inclement weather, areas of difficult terrain and hardware problems reduced the average rate of coverage to slightly more than seven grids per day. A total of 175 grids, totalling 70,000m^2 or seven hectares, were surveyed in the course of 24 working days.

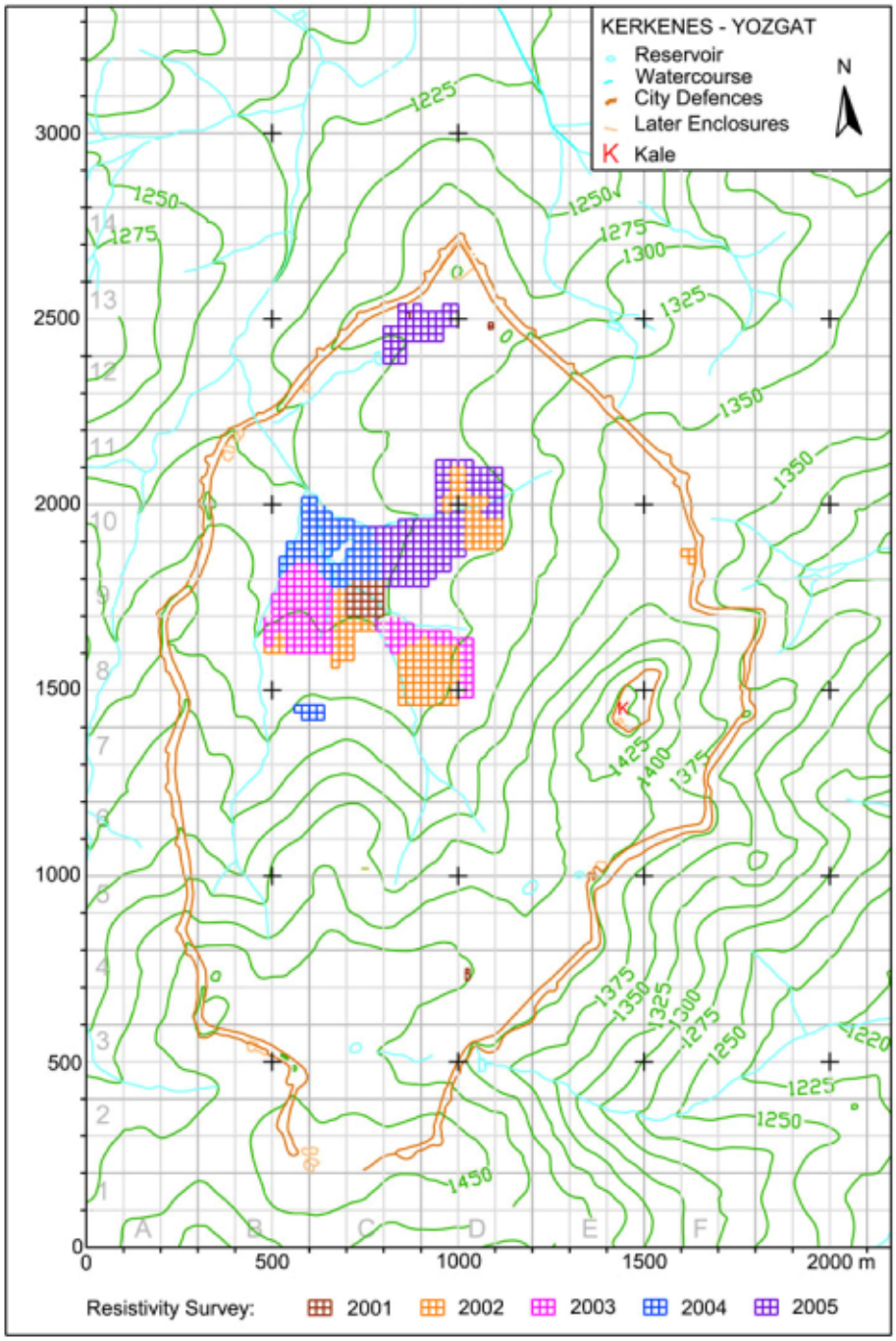

Figure 10. Progress map of the resistivity survey.

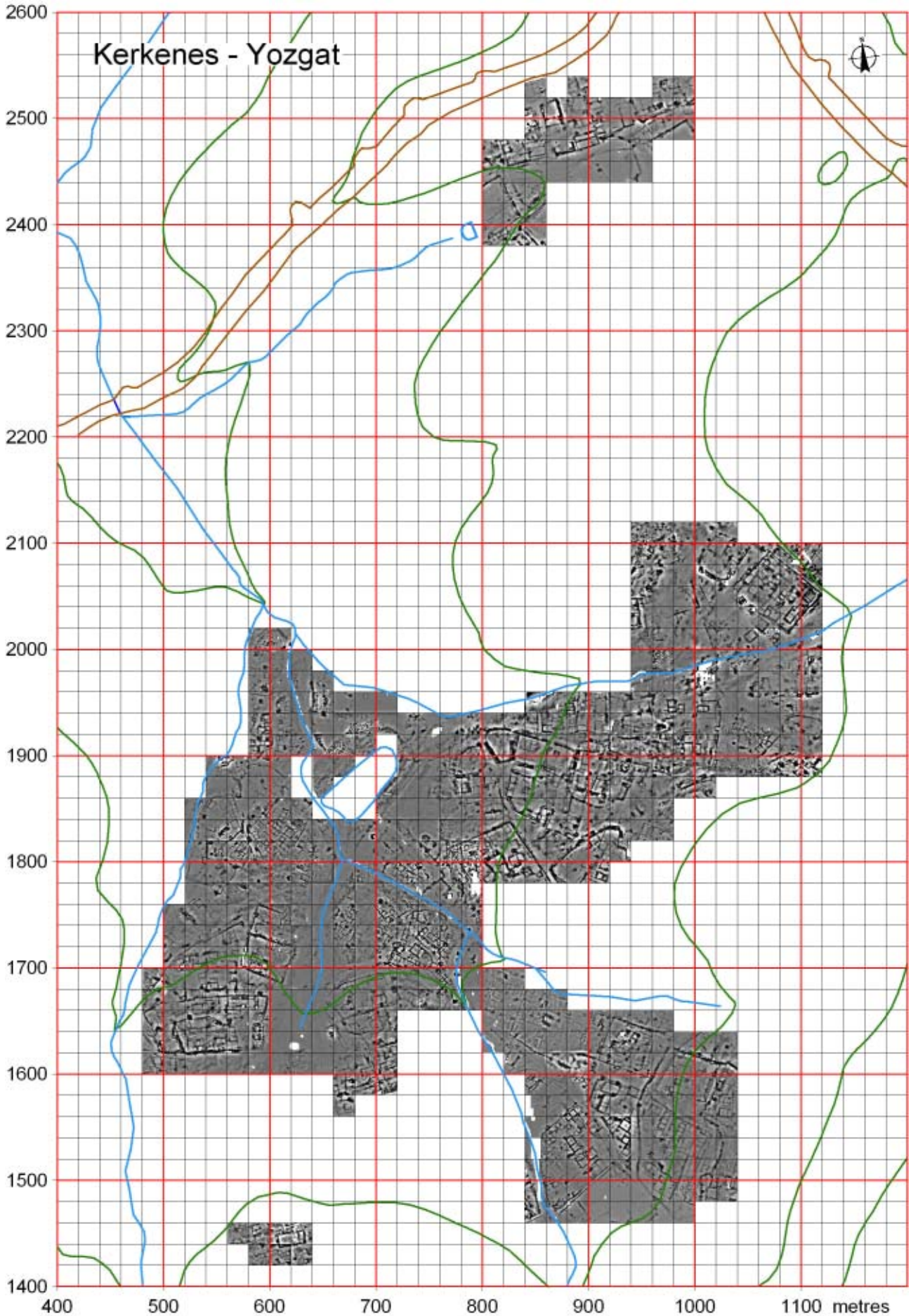

Figure 11. Area of resistivity conducted during the survey seasons of 2001 to 2005.

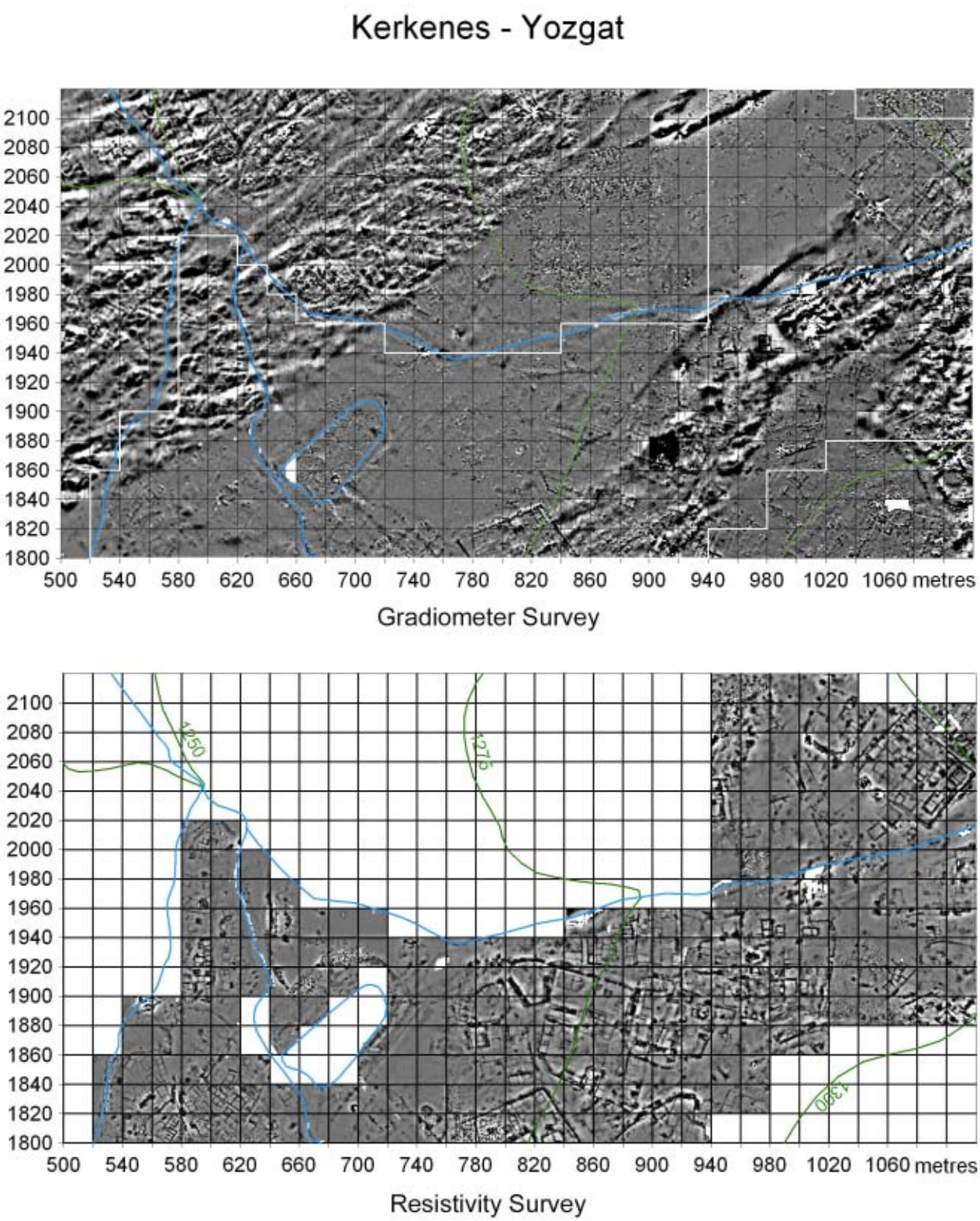

Figure 12. Samples of geophysical maps of the Central Area, including the Büyük Göl or Large Reservoir, show that survey with a Geoscan FM36 fluxgate gradiometer (above) does not reveal structures in as much detail as with a Geoscan RM15 resistivity meter (below). Resistivity survey is slower, however, allowing an average of nine grids a day compared to 30 grids for the gradiometer survey.

Aims

In spring, when the ground is still wet, conditions are ideal for resistivity survey. There were three aims for 2005 (Figs 10 and 11):

1. To link the two main areas of resistivity survey done in previous seasons;
2. To survey one particularly large rectangular compound where the boundaries were visible on balloon photographs as well as on the ground, but where magnetometer survey does not produce clear images of internal structures (Fig. 12, NE corner);
3. To survey the urban block and its environs in the northern sector of the city where test trenches TT15, TT20 and TT21 were dug in 1996 and 1998.

In the descriptions and interpretations that follow, use has been made of all methods of survey carried out at Kerkenes, i.e. balloon photography, resistivity and gradiometer survey, and verification on the ground. Where relevant, results from test excavations in 1996 and 1998 have also been taken into account in this report. Coordinates, where given, always refer to the south-western corner of a grid, structure or feature.

Test excavations confirmed that visible differences in results between both methods of geophysical survey are indications of different buried surfaces, notably burnt clay floors of roofed structures and external stone pavements. Further, comparison of the two sets of data make apparent some of the ways in which burning has had an effect on the magnetism.

Central Area

The Central Area (Fig. 13) has been the main target of the resistivity survey since 2001 when Harry von der Osten obtained images of outstanding quality. During the 2005 survey, the area east of the *Büyük Göl*, surveyed in 2002, was expanded on either side of the seasonal stream flowing westwards towards the main watercourse and linked to the main survey.

Figure 13. Central Area with the Büyük Göl at centre right. The wooden peg marks the corner of a 20 x 20m grid. Although wooden pegs are burnt by shepherds to make tea, the white lime spot survives several years, allowing re-establishment of the grid used for the gradiometer survey. (05slvf0230)

The Urban Fabric

The maps of the Central Area obtained from the resistivity data have revealed the urban fabric of the Iron Age city with remarkable clarity (Figs 14 and 15). The size and shape of structures, even when not visible on the ground, can be determined from the images and digitised for analysis with GIS software. Studies related to building typology, transportation and water management are ongoing at METU and the CAMEL Laboratory in Chicago.

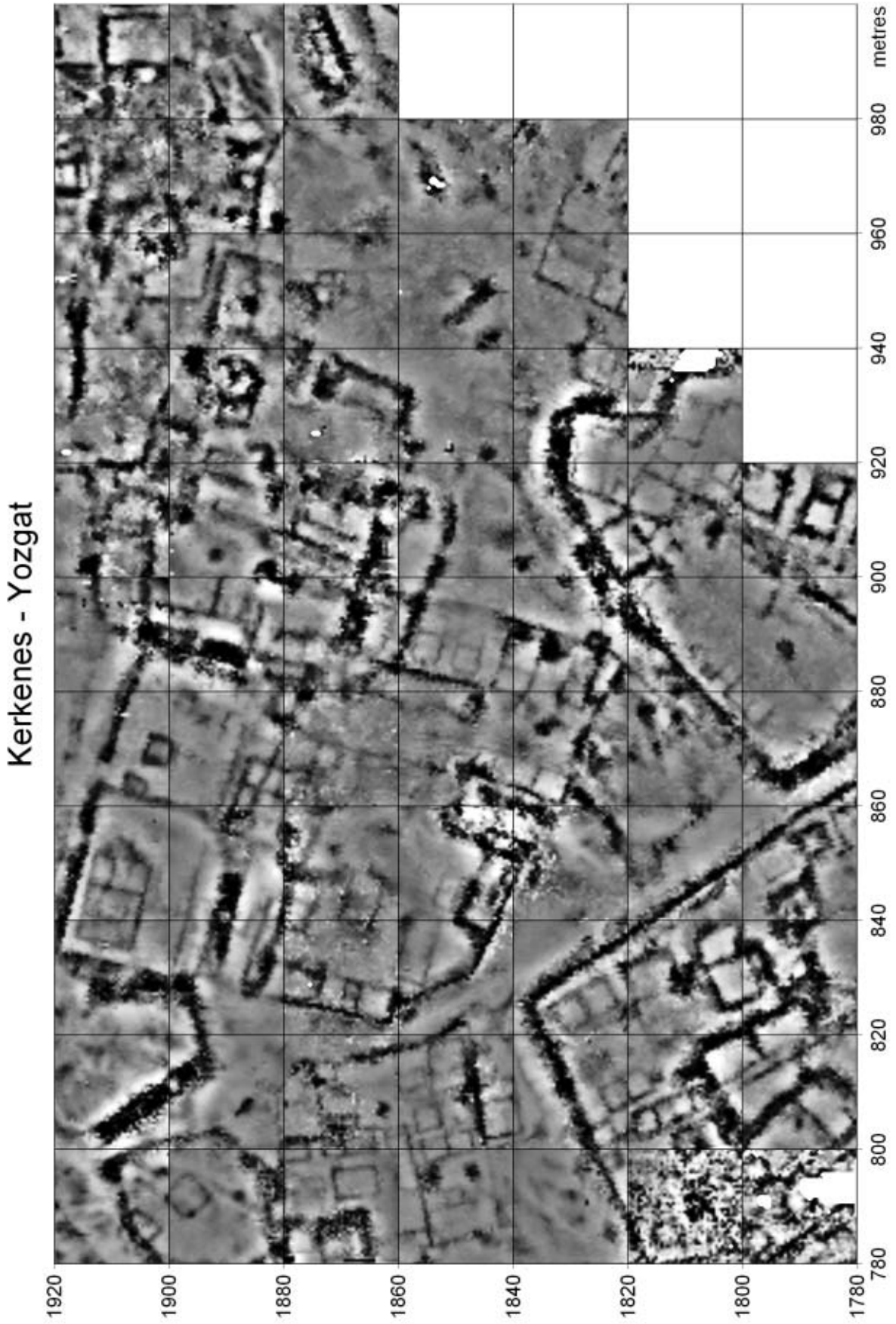

Figure 14. Resistivity survey of the Central Area has revealed in great detail the urban fabric. Structures, walls and spaces can be digitised from these images for analysis with GIS software.

The Large Urban Compound

Advantage was taken of very damp conditions at the start of May to investigate one particularly large urban block on the rising eastern margins of the Central Area, located by its southern corner at E1088, N2015 (Figs 11, 12 and 15). The boundaries could be seen on the surface and it was evident that it was bounded by a broad street on the NE side and, most probably, by streets at either end. At the outset it was not certain if the level walled area adjacent to the NW edge of the block was an extension of the block itself or a street. The main objective was to establish whether or not this block contained a large two-roomed hall. The excellent results (Fig. 15) showed that at Kerkenes considerable potential for resistivity survey exists, even over stony areas, when there is sufficient ground moisture.

The entire block measures about 63m NW-SE by approximately 50m NE-SW, making an area of *c.* 3,150m^2. The extent to which the terrain has been artificially levelled is uncertain. There is no visible entrance into the block on the NW, NE or SE sides. Thus the most probable location for an entrance is towards the NW end of the SW boundary wall where there are two circular piles of stone. These stone features, together with a number of smaller but similar features in the vicinity, postdate the destruction of the Iron Age city. Some of these stone piles would appear to mark tumuli, and in this they resemble the tumuli on the high southern ridge, some of which contain stone cists and almost all of which have been robbed. Other piles of stone seem to be associated with the activities of shepherds. Within the block there is no single building which stands out as having been of some special importance. Rather, the block appears to be subdivided into several subunits which, while discrete, seem to have shared a common entrance into the block.

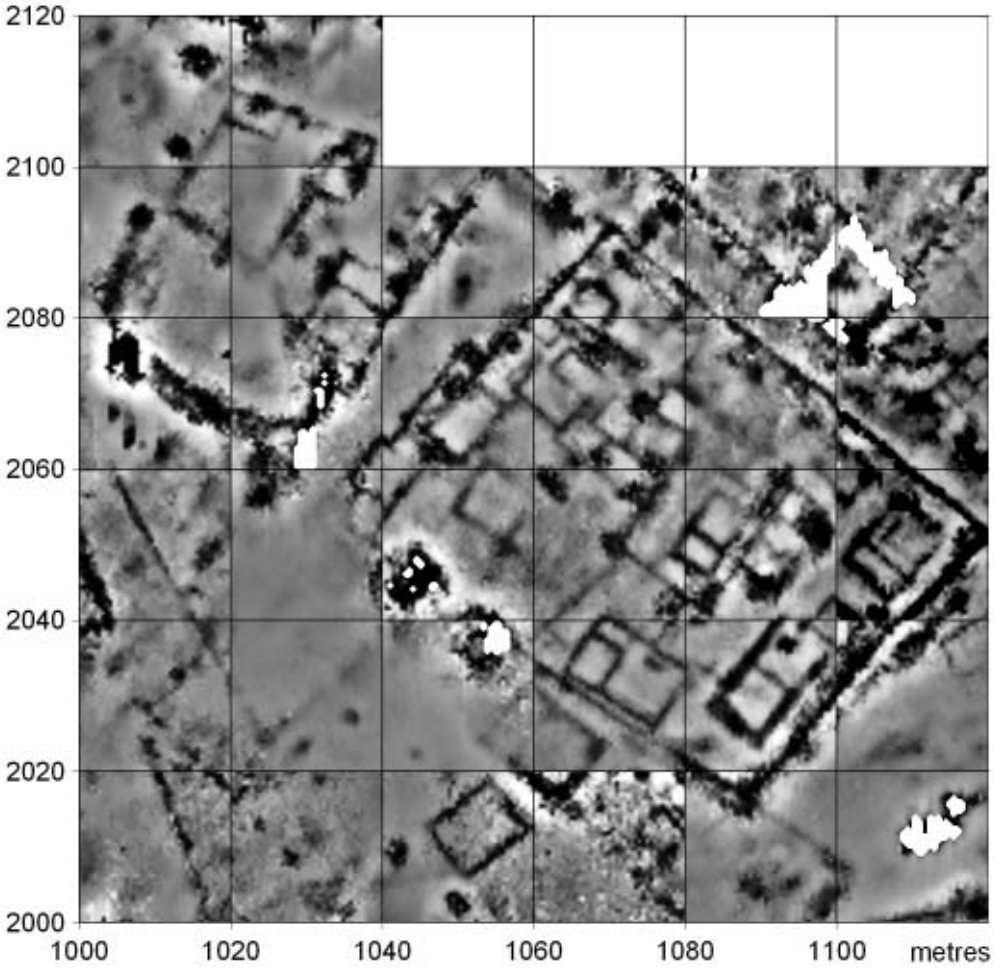

Figure 15. Resistivity map of the distinct urban compound on the rising eastern margins of the Central Area.

The North End

There were three objectives to the resistivity survey at the north end (Fig. 16). Of these, the first was to obtain resistivity imagery (Fig. 17 bottom) of the large two-roomed hall and associated structures that had been investigated by excavation in 1996 (trench TT15) and 1998 (trenches TT20 and TT21). This was in order to provide the maximum amount of information concerning subsurface remains with respect to the possibility of conducting further excavation in this area in the future. In addition, it was of particular interest to see if resistivity survey would locate the twin rows of (uncut) granite bases for large wooden columns, the existence of which was demonstrated by excavation but did not show on the gradiometer shade plot (Fig.17 top). Unfortunately, neither this recent survey nor previous geophysical survey of similar large halls at other locations within the city has yielded such evidence and, therefore, the reconstruction of rows of columns has been necessarily conjectural.

Figure 16. Inside the north western stretch of defences where resistivity survey was carried out during the spring season. Trench TT15, dug across a large two-roomed hall in 1996, stretches down the slope from the two small bushes at upper right. (05slvf0216)

A second objective was to see if there were similar large halls in what appeared, on the basis of gradiometer survey and balloon photography, to be urban blocks divided by streets. It will take several additional seasons to cover the entire area of interest since at this well-drained north end the ground dries faster than in lower central parts of the city, thereby restricting the length of the survey season.

The third objective was to examine the shallow grass-covered valley where previous work had suggested the existence of sophisticated water management systems followed by the encroachment of relatively slight structures onto previously wet and marshy areas.

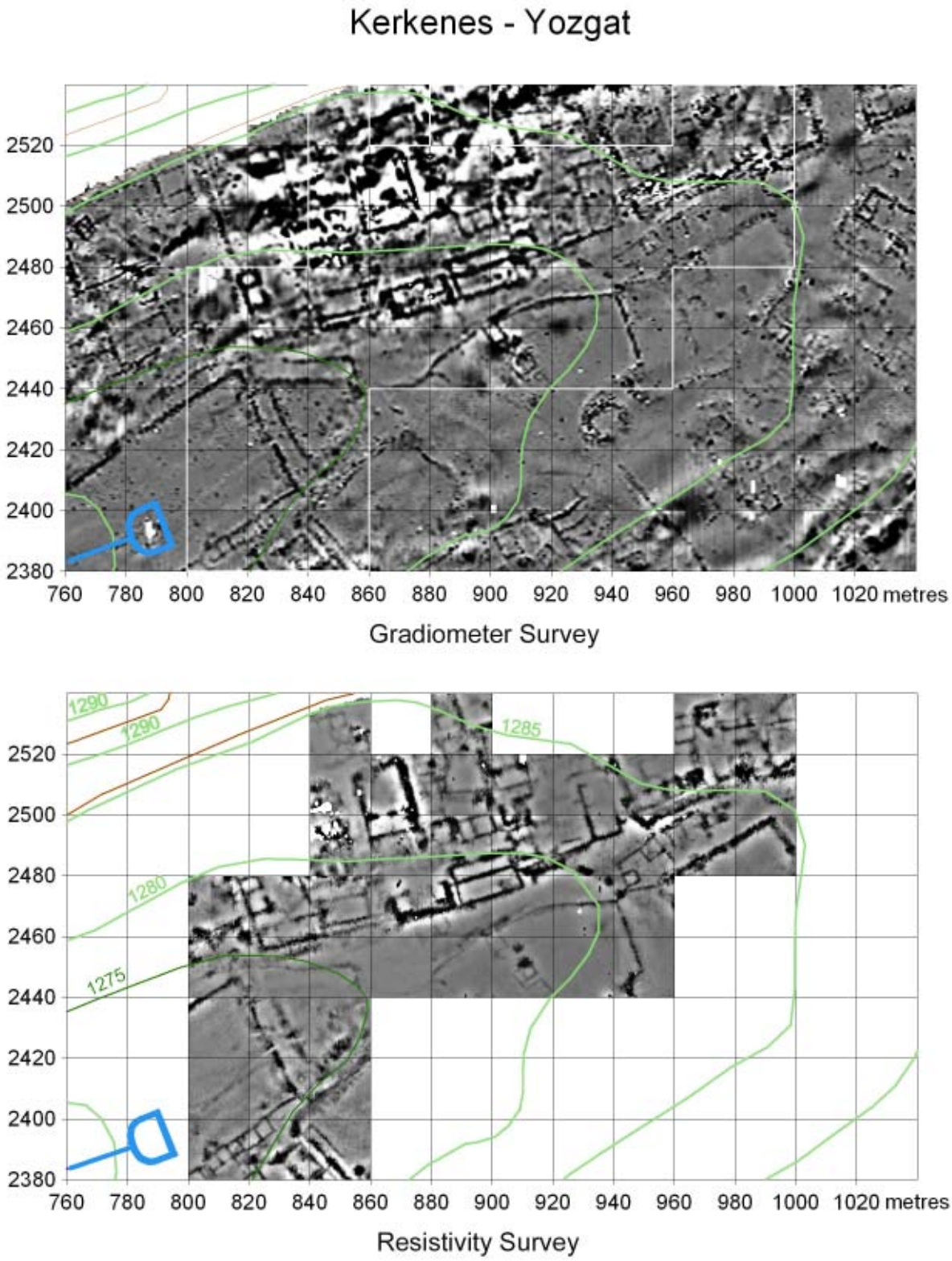

Figure 17. Geophysical survey of the north end of the Iron Age city. Data collected in earlier seasons with the gradiometer (above) lacks the clarity of that collected with the resistivity meter (below).

The Hall

The hall and anteroom (Figs 16 and 17) were shown to be 24 metres in width, needing beams or trusses to span 8 metres between two rows of columns. The building was rectangular and the hall, unusually, seems to have been square. These proportions might partly reflect the restrictions imposed by the sloping terrain and outcropping bedrock. It was also revealed that there was a wide central doorway, presumably for wooden double doors, in the wall between the anteroom and the main hall. However, in the front wall of the building no doorway can be discerned on either the magnetic or the resistivity map.

Figure 18. Resistivity survey in progress over the large hall at the north end. The scar of trench TT15 runs diagonally across the bottom with representative Mehmet Sevim standing on it. Part of the western defences can be seen in the background. (05cnvf0217)

Water Management and Encroachment

The 2005 resistivity survey has provided a little additional clarity while confirming the general picture of features that are very probably to be associated with water management. The new image makes certain that there was not a reservoir directly in front of the block just described, and perhaps provides further evidence in support of the idea that stone channels were used to drain water and direct it into pools and a large reservoir to the WSW. Located at E820, N2440 one pool, if such it is, has parallel sides and rounded ends. Orientated east-west it is 35m long and 8m wide. Verification on the ground confirms that this was not a standing structure. On the other hand, a sinuous feature showed by test excavation to be made of stone, appears to run into it and makes a sharp turn to the SSE at its E end. Features stretching NW-SE across the centre of this enclosure are surely buildings of Iron Age date.

EXCAVATIONS AT THE PALACE COMPLEX

The Monumental Entrance to the Palace Complex

So as to distinguish it clearly from the seven city gates in the 7km of defences, the large and visually impressive public monument, with its two massive towers and a passageway leading towards the Audience Hall, has been labelled the 'Monumental Entrance' to the Palace Complex (Figs 19 and 20). The monumentality is obvious enough. It is undoubtedly an entrance, and thus a type of gate, so that by definition it demarcated space and controlled passage between the outside and the inside.

The report that follows represents a culmination of several seasons of survey, clearance and excavation (Fig. 19). Work on final detailed plans and architectural elevations is not yet complete. Many architectural details need to be resolved by further work on the smashed blocks now in the excavation depot. Nevertheless, the general scheme and the plan are already clear (Fig. 20). The entrance passageway, overlooked by two massive towers, is orientated east-west and the symmetry of the architecture, both in plan and in elevation, is striking. The large expanses of stone paving, leading to and beyond the entrance as well as in the passageway itself, surely indicate that it also served a variety of public functions, formal and informal.

The size, intended to impress and doubtless intimidate, might also reflect the need, on this high southern ridge at Kerkenes, for cover and shelter from the natural elements during much of the year. Large and impressive though it was, it does not seem to have been designed with defence (against hostile enemies) as the foremost concern. Indeed it can hardly have been defensible at all whilst the combustible materials from which it was constructed almost invited burning.

Figure 19. Excavations at the Monumental Entrance to the Palace Complex have revealed a stone pavement leading up to the Audience Hall through a passageway between two massive towers. Scott Branting who is conducting a transportation study at Kerkenes, is seen here walking up the paved way towards the Audience Hall just discernable on the horizon at centre. (05dpnc1006)

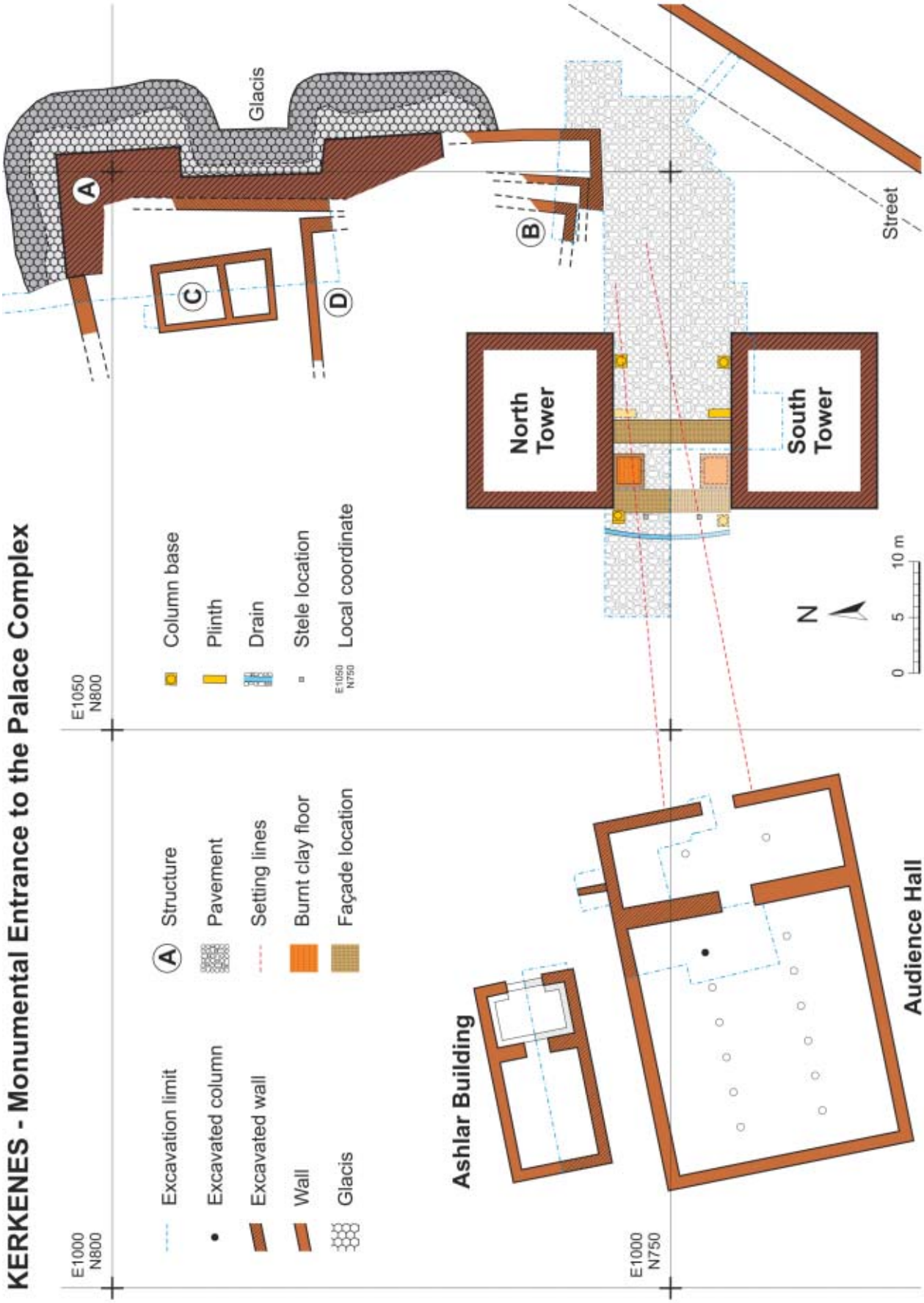

Figure 20. Plan of the Monumental Entrance to the Palace Complex and adjacent areas.

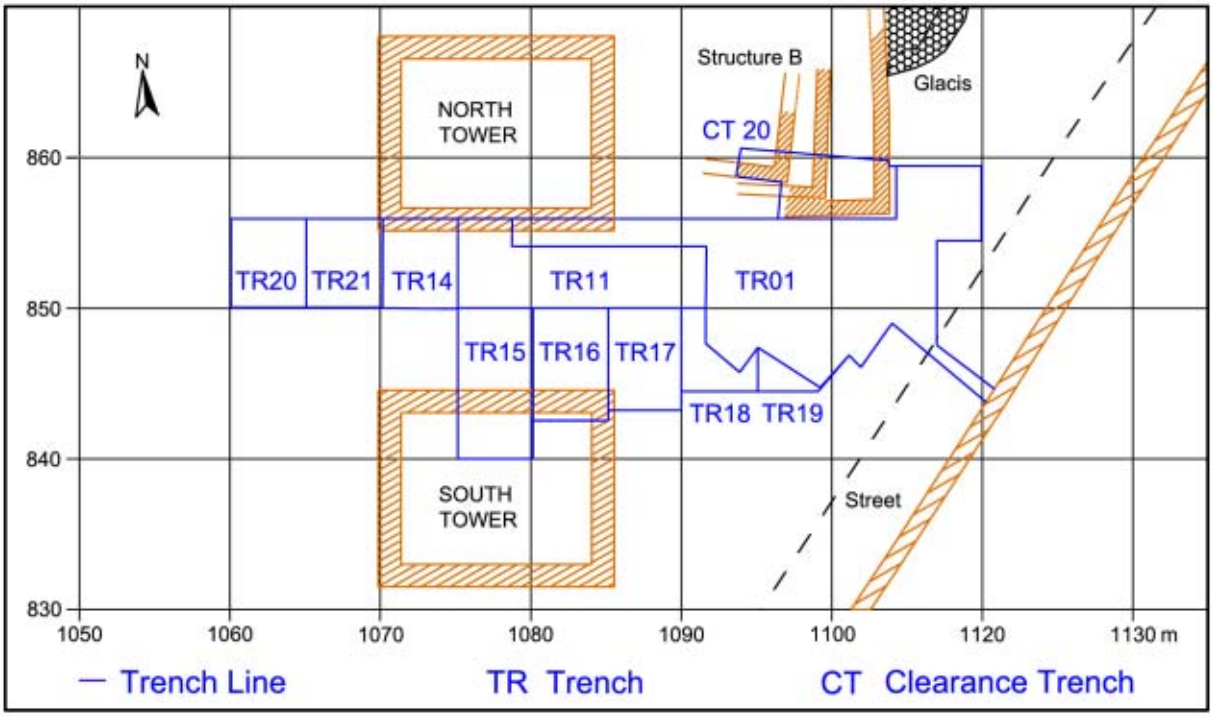

Figure 21. Palace Entrance plan showing trenches dug from 2001 to 2005.

Aims of the 2005 Excavation at the Palace Complex

Excavation in 2005 was aimed at revealing the entire entrance passage from the front of the Towers to the central partition (Fig. 21 trenches TR15 to TR19) as well as uncovering part of the inner passageway, from the front (eastern) façade to the rear (western) façade and, if time allowed, beyond towards the Audience Hall (Fig. 21 trenches TR14, TR20 and TR21). There were three purposes; firstly to recover any further fragments of sculpture and inscription that might be in the disturbed fill of the passage leading to the front façade, secondly to gain better understanding of the architectural scheme and, thirdly to enhance the visual appearance of the monument while at the same time making it less hazardous to visitors. All three of these aims were achieved and thus the present program of excavation in this Monumental Entrance has been completed.

Progress and Methods of Work

The loose fill of the entrance comprised, for the most part, very loose stone rubble and debris with, immediately on the pavement, ash and patches of charred reed thatch (Fig. 22). Extensive and irregular robbing, down to and occasionally through the stone paving, was the cause of the random scattering of carved, sculpted and inscribed fragments throughout the pit fills. The fill was carefully sorted and removed by hand. Granite rubble, which made up most of the fill, was examined and discarded. Burnt and vitrified debris and large, broken and shattered sandstone blocks were stacked on the site. All other sandstone was taken to the Excavation Laboratory where it was washed and sorted. Where necessary sieves were used to extract the sandstone, but it was not possible to shake a sieve without further breaking the friable stone, so that material was sorted on perforated plastic screens. Broken and shattered architectural blocks (Fig. 23), some with bolsters or bolster-like reliefs, were recorded *in situ* before being taken to the laboratory for cleaning and reassembly. These processes made excavation slow and tedious. The extent of damage caused by large blocks tumbling from the tower wall onto the pavement combined with the loss of many architectural fragments as a result of vitrification during the fire as well as dispersal in later robber pits, hampered recognition, excavation and conservation.

Figure 22. Loose fill and debris were carefully examined and sorted as excavation progressed. (05dpca0224)

Figure 23. Architectural blocks from the collapse of the South Tower were recorded in situ before being removed and sent to the excavation conservation laboratory. (05dphp1122)

While it may be said with confidence that nothing of importance was missed, it is sad to report that the intensity of the fire had so broken the masonry of the passage walls that very little remains *in situ*. The horizontal gap left between courses after the horizontal beam completely burnt down caused the wall of the Towers to become structurally unstable. Many of the large stones shattered as the result of the intensity of the fire had to be removed for safety. As a temporary measure wood was used to prop up what remains of wall facing, but this has been done for safety pending implementation of a conservation and restoration program.

Figure 24. The horizontal gap left between courses after the horizontal beam completely burnt down caused the wall of the South Tower to become structurally unstable. Facing blocks and burnt debris are naturally coated with white carbonates. Many of the large stones, shattered by the intensity of the fire, had to be removed for safety. (05dphp1104)

Excavation Records

Excavations were documented as in previous seasons with plans, sections and photographs. An east-west longitudinal section through the centre of the Monumental Entrance was completed and recorded by making mosaics of rectified digital photographs at a scale of 1:20, printing the images and annotating in the field. The faces of the passage walls were dealt with by the same method whilst other sections, less likely to collapse, were drawn in the traditional way. Rectified digital photographs were also used to record the stone pavement and associated features. Digitising these photographs so as to produce detailed plans and sections is in progress. The careful recording of features by digital photography will contribute to the creation of a virtual environment and monument.

The Architecture of the Monumental Entrance

An architectural scheme of remarkable symmetry boasts a monumental entrance between two massive towers (Fig. 25 and 26). Nothing can be seen of the internal arrangement and floors of the towers, the core of each having been extensively dug into by robbers. A large column base, adjacent to the front end of the tower walls, stands proud of the sloping pavement on either side of the passage.

Figure 25. Remains of the South Tower before removal of the collapse which had buried the column base. Part of the city defences can be seen in the distance at right. (05dpca0214)

Figure 26. The North Tower where leaning upper courses of large but shattered granite blocks did not survive. The column base seen here was uncovered in 2003. (05dpnc0964)

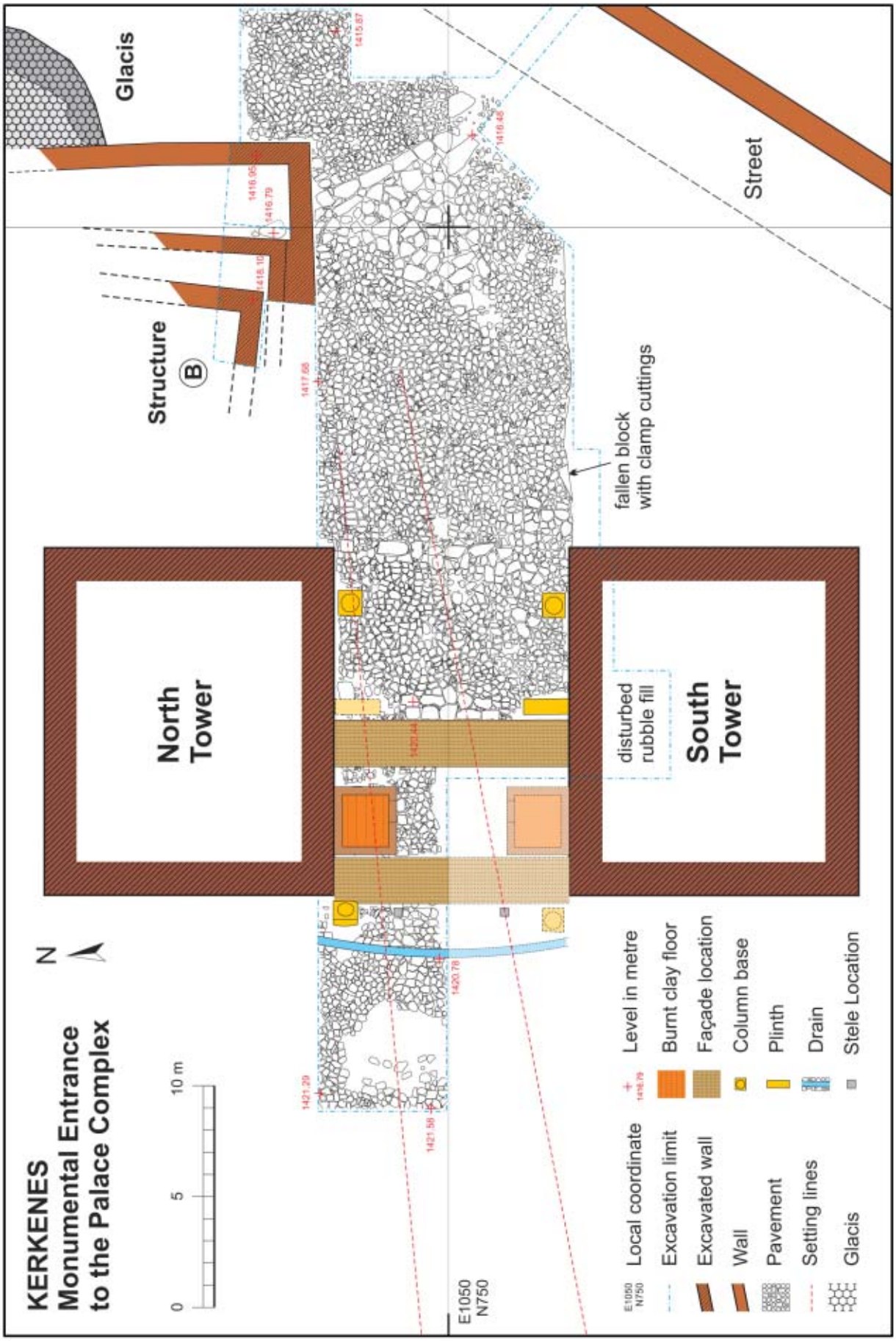

Figure 27. Plan of the Monumental Entrance to the Palace Complex

The towers are separated by a 10.50m wide stretch of stone pavement leading to a façade that crosses the passage close to the centre (Figs 27 and 28). The passageway enters the front façade through a large double doorway and exits, most probably through a similar doorway, in the rear facade. The inner passageway was reduced in width by a small room which is presumed to have been mirrored on the other side. Beyond the rear façade the entrance opened up onto another stone paved area where a third column base sat, before it was disturbed by robbers, just outside the backline of the tower against the end of the rear façade. A small drain set in the paving runs parallel to the façade preventing water from running down through the doors into the passageway. A plinth on one side of the front façade and an anaconic stele standing at the door of the rear façade have, in anticipation, both been mirrored in the plan (Fig. 27).

Figure 28. The Monumental Entrance looking east with, in the foreground, the foundation trench for the front façade. Five large pavers demarcate the doorway, with robbed sockets on either side. At bottom right, the surviving conglomerate plinth. The front corners of the massive towers, 10.50m apart, project beyond the column bases. (05dpnc0957)

Figure 29. Excavations at the Monumental Entrance looking south and showing collapse from the South Tower, the conglomerate plinth and the foundation trench for the front façade. (05dpca0152)

F*igure 30. The stretch of stone pavement between the front half of the two towers is 10.50m wide and the two column bases stand 9.20m apart from centre to centre. Beams between the courses of huge cut blocks burnt out completely, causing the wall to fracture and collapse. (05dpnc0862)*

The Approach to the Monumental Entrance

The front half of the broad passage, which is inclined at a gradient of approximately 1 in 5, is paved with granite worn to a polish (Fig. 30). Setting lines in the portion of pavement in front of the towers are not parallel to the orientation of the entrance but lead to the doorway of the Audience Hall (Figs 20 and 27), demonstrating that the original pavement and the Audience Hall pre-date the construction of the Monumental Entrance. At the inner front corner of each tower the top of a foundation stone can be seen slightly above the level of the top of the pavement and projecting in both directions for a few centimetres beyond the line of the upper walling. This slightly wider footing appears, however, to be restricted to the corner stones and is not observed along the tower walls rising up the passage slope (Fig. 31). The square sandstone column bases on either side, set back *c.*2.05m from the front of the towers, have shallow circular recesses *c.*0.85m in diameter. In all probability these were for tall, freestanding wooden columns provided with sandstone capitals (although an alternative possibility is discussed below). These bases were shaped in position, as was the rectangular conglomerate plinth preserved at the southwest corner of this front portion of the entrance. The plinth, measures 2.10m by 0.70m and was presumably mirrored by another one on the opposite side of the door. From the front of the towers inwards the paving was re-laid up to the walling, column bases and the, presumably two, plinths. This may be demonstrated by the row of particularly large stones along the line of the tower fronts.

It is now thought that this front section of the Monumental Entrance was unroofed for several reasons. Firstly the span, while not impossible, seems very wide, particularly as there was only a single pair of columns. Secondly, the steep slope of the pavement would have made roof construction difficult. Thirdly, if it is correct to reconstruct a large timber façade founded in the wide slot at the top of the slope any roof would have obscured it from view. Lastly, it would seem that the distribution of burnt debris, in as far as it could be ascertained between the robbing pits, is perhaps more consistent with burning of the façade and double doors than that of a passage roof. The fragments of burnt roofing, including pieces of clay with reed and wood impressions as well as deposits of charred reeds most probably fell into the entrance passage from the towers on either side.

F*igure 31. The northeast corner of the South Tower with Geoffrey Summers pointing at the projecting corner stone of the wall footings. The sandstone column base has a circular recess of* c. *0.85m in diameter. (05dpnc0869)*

The Position of Sculpted Monuments

Pieces of sculpture and inscribed monument, described later in this report, were recovered from the debris from the front portion of the entrance. These include a statue of a human figure and an inscribed block bearing small-scale relief sculpture. Other elements, perhaps associated with one or both of these pieces, are still being reassembled from the fragments that escaped both fire and later looting. A horn of sheet gold formed around a wooden core points to the presence of embellished wooden pieces.

It can be noted that there is no indication as to what stood on the stone plinth (and its presumed twin) in front of the partition. Measurements and proportions make it rather unlikely that any of the small scale fragments recovered stood on them. It has however been suggested that the sandstone column bases did not support tall freestanding (votive) columns of wood with stone capitals, but that they carried short, columnar, wooden statue bases.

In any event, there are no reasons to doubt that everything set up within the entrance was torn down and smashed before the fire

The Front Façade between the Towers

Approximately half way along the side of the towers, a 2.20m wide slot appears to be a foundation trench to a structure which has been described as the front façade (Fig.32). The burnt and vitrified debris and perhaps some traces of vertical posts indicate a timber frame structure with infill rubble and mudbrick.

Along the edge of the pavement, in the centre, five large stone pavers indicated the position of large double doors. Traces of the door posts could be discerned on either side. It would seem that these doors were set in a large wooden frame partition. The total width of the five pavers is *c*. 4.20m whilst the width of the slot for a façade between the different elements of the entrance is *c.* 2.20m, i.e. wide enough to take the width of each of the inward opening doors. The preserved southern wall of the passage changes abruptly from impressively large cut blocks to rubble construction with timber elements, clear evidence that it was hidden from view by the partition.

F*igure 32. The foundation slot for the front façade with the large pavers indicating the position of the double door. The large blocks of the tower wall give way to small uncut masonry where it was hidden by the partition. The 1m scale lies on rubble left after the burnt and vitrified debris were removed. (05dpnc0910)*

An absence of ash and charcoal in the wide foundation slot, which was filled with masses of fused stone rubble and mud that most probably came from the upper walling of the towers as well as the core of the façade itself, suggest that the doors and possibly much of the partition itself may have been pulled down before the fire. Additional evidence that the doors were pulled out prior to the burning came in the form of fragments from a small sandstone bolster recovered from the hole for the southern doorpost.

In 2004 it was plausibly suggested that this partition took the form of a monumental, decorated, wooden façade, and that such a façade might have resembled rock-cut architectural façades in the Phrygian Highlands. The number and range of sandstone bolsters recovered in 2005 raise the possibility that similar elements in wood formed part of the decorative scheme and that valuable embellishments, perhaps hinted at by the discovery of bronze cut-outs of ibex in 2002, might have been affixed to the doors and the screen as well as the pediment. It may also be suggested that the door sockets were valuable, inciting robbers to tear them out.

One question which remains unresolved for the moment is how to reconstruct the 2.20m wide façade. It seems possible that the structure carried a walkway between the two towers, presumably behind a wooden pediment. It is further possible that there were wooden stairs or ladders on either side of the doorway which would have been concealed when the doors were open.

The Inner Portion of the Entrance between the Towers

Passing through the double doors of the front façade led to a second paved and levelled area where the paving stones are smaller and exhibit less signs of wear (Fig. 33). A burnt clay floor indicated the location of a small room in front of which was a bin like feature. As suggested on the plan (Fig. 27), it is reasonable to assume that there was a symmetrical arrangement and a room on the unexcavated southern side mirrored that on the north. No alterations were made to either this portion or to the rear section of the entrance before the destruction.

Figure 33. The excavated half of the inner portion of the entrance, between the front and rear façade. A burnt clay floor indicated the location of a small room in front of which was a bin like feature. The 1m scale is on the western stretch of pavement leading to the Audience Hall that can be seen in the background. (05dpnc0209)

A slightly raised step was found in front of the doorway of the room on the north side (Fig. 34). This featureless room was provided with an earthen floor. The awkwardly narrow space between the east end of the room and the partition was lined with a single course of stone above the pavement forming a shallow bin-like feature.

The room itself measures approximately 2.10 by 2.50m with a single entrance, indicated by raised stones in front of the doorway, towards the eastern end of the south wall. The walls stood on stone footings which stood a single course above the level of the paving. The upper walling was of square mud-bricks each *c.* 32 by 32cm. The room was badly disturbed by robbers and no trace of the north and east walls survived. It is not known whether the walls were laced with timber.

The room and, and its presumed twin, were obviously roofed. Since no roof debris was recovered from the extant floor of the room it can be assumed that the roof comprised reed thatch which had been reduced to ash. In keeping with common practice at Kerkenes it is probable that the central paved area was open, a suggestion reinforced by the raised stones in front of the door and the absence of burnt roofing remains on the pavement.

F*igure 34. In 2004, excavation revealed a small room with a clay floor and an open stone paved inner portion of the entrance. These elements of the Monumental Entrance were only fully understood in 2005 when excavation extended westwards to reveal evidence for a rear façade. (05dpnc0941)*

The Rear Façade of the Entrance

The rectangular inner passage was enclosed at the rear by another façade (Fig. 35) similar in many respects to the front façade described above. It can be supposed, although not certainly demonstrated, that double doors stood in the centre of the rear façade. The presence of a fallen granite stele of truly aniconic form (Fig. 36) set up behind a sunken square granite stone with a finely worked upper surface supports this suggestion. It is assumed that the west wall of the inner room stood close to the back of the façade structure. Robbing had, however, removed all evidence.

Figure 35. Looking south along the excavated half of the rear façade. At left the clay floor of the small room shows signs of intense burning. At right, a robber's pit disturbed the drain carefully set into the stone pavement and the column base which now leans into the foundation slot for the western façade. (05dpnc0917)

Figure 36. A fallen granite stele of truly aniconic form set up behind a sunken square granite stone with a finely worked upper surface. The scale is 25cm. (05dpnc0219)

The Western Paved Area

An area of stone pavement (Fig. 37), partly robbed, extended towards the Audience Hall. A drain set into the pavement along the rear façade took surface runoff away from the entrance in a northerly direction. The portion of this drain that runs across the front of the entrance was more neatly and regularly built than its northern end (Fig. 38).

On the excavated north side, set into the paving beyond the second partition, was another square column base with a circular recess for a wooden column (Fig. 39). The diameter of the recess was, at *c*. 0.80m, slightly less than in the bases at the front of the entrance. Looters had, at some time in antiquity, dug around this base and then beneath it, with the result that it was discovered pitched into a robber pit. It is highly probable that before the commencement of the extensive robbing in the entrance the top of this base stood proud of the surface and was thus visible.

It is likely that the two columns at the rear of the entrance were set a little beyond (i.e. to the west) of the back of the towers. Such an arrangement would have formed a roofed porch that reflected the open porch at the front of the entrance. The rear walls of both towers are very ruinous and partially disturbed by robbing, with the result that their precise position cannot be determined without considerable excavation.

Figure 37. Excavations at the Monumental Entrance to the Palace Complex looking northeast, showing the pavement with drain, the displaced sandstone column base at the back of the entrance and the fallen aniconic stele which would have stood erect by the side of the door. (05dpnc0943)

Figure 38. A drain set into the pavement along the rear façade took surface runoff away from the entrance in a northerly direction. (05dpnc0218)

Figure 39. A square column base with a circular recess for a wooden column was found tilted into a robber pit. (05dphp2116)

The Towers

In plan, the towers are rectangular and each measure approximately 15.60m by 13.00m. The position of the rear face has not been exactly ascertained, precluding precise determination of their length. The corner of the South Tower was exposed after the collapse (Fig. 40) was carefully recorded and removed. Little was done by the North Tower apart from cutting back further the dangerously loose edge of the excavated area (Fig. 41).

The preserved lower parts of the towers were solid and provided a platform where the sloping ground rises a vertical distance of more than three metres over the front half of the entrance. Doubtless they surround and conceal outcrops of bedrock and the lower, preserved, walls are retaining walls for the stone rubble fill. Of the internal arrangements and floors nothing has been seen because of very extensive robber pits dug into the core of both towers. From what is known of similar terracing in Structure A (behind the glacis to the north and east of the entrance) and from test trenches excavated at the north end of the city in 1996 and 98, it might be expected that the foundations of internal walls were constructed within the rubble fill of the terrace, but most if not all, will have been destroyed.

Turning now to the walling of the towers, although a better understanding has been gained through revelation of the south tower there are outstanding problems that restoration of architectural blocks may partially resolve in 2006. What follows is, therefore, both preliminary and somewhat tentative.

It is reasonable to assume that all of the four exposed outer faces of each tower were faced with cut granite to the same level. This level was in fact one course, about 0.80m, above the top of the stone pavement at the higher western end of the entrance. As the height of the top course of cut granite facing stones increased down the sides, the number of courses increased to four courses on the eastern wall of each tower.

In the passage, above these cut and tightly fitted granite blocks (described in detail below) was a course of yellow sandstone above which was a course of soft white (chalky) limestone. It is now thought that the sandstone and limestone courses continued along the tower fronts. The courses were interspersed with large horizontal timber beams at least 0.30m high. It can be expected that these beams were squared to ensure structural stability. The top of the sandstone course does appear to have been tied by swallow-tailed wooden clamps which most probably fixed the floor joists. If this is correct the course of white chalky limestone would have stood higher than the internal floor. Some confirmation of this idea may be the evidence that vertical timbers of wooden framing for the upper walling, infilled with stones and some clay, began at the level of the sandstone. It must be admitted however that the evidence for these ideas might also be interpreted differently.

From the centre of the front façade across the passage back to, presumably, the rear of the tower, the wall faces were composed of angular fieldstones. In other words, cut facing stones were not used for those portions of the passage wall that were hidden by the inner portion of the passageway and parts of the wooden façades. This, incidentally, is further indication that the small rooms within the inner portion of the passageway were part of the original construction.

Additional questions that currently evade satisfactory answers relate to the original height of the towers and the treatment of their corners. Here the difficulties are compounded by the existence of numerous fallen blocks of sandstone with engaged bolsters and bolster elements, and other forms of architectural embellishment. The majority of these smashed blocks are awaiting further study and restoration in 2006 after which, it is anticipated, their number and architectural arrangement will become clearer.

Figure 40. Collapse from walls of the South Tower of the Monumental Entrance was removed in the course of the 2005 excavations. (05dpca0206)

Figure 41. Only the lower course of the walls of the North Tower was stable enough to remain in situ*. The scale on the column base is 1m long. (05dpnc0967)*

At a more detailed level, it was observed that the granite blocks were snugly fitted with seating for inserts to level courses between beams. Behind each of the two column bases at the front, the granite stone making up the first course running up the slope of the side walls were made of very much smaller, but nevertheless neatly squared and tightly fitted blocks (Fig. 42). Jointing between adjacent granite blocks was by no means always vertical, with triangular or even curved granite plugs being shaped to fit where necessary. Such deviance from vertical jointing has not been seen in the softer sandstone masonry, although large blocks could be L-shaped and plugs were often used.

Figure 42. The inner corner of the South Tower with the column base set in the sloping pavement. (05dpnc0516)

As to the upper walling, burnt debris filling the passage points to the use of angular granite rubble and some mud as filling between timber elements. Height is difficult to estimate. Because of the extent of the robber pits in the passageway estimation of the height of the upper walling of the towers is not straight forward. However, the fallen mass of infill from the south tower would not be inconsistent with the concept that at the front the height of the upper timber frame portion of the towers was equal to the lower stone facing. There is no clear evidence as to the width of the upper walling which, to judge from shapeless fused and vitrified blocks, may have been no more than 0.80m. In the absence of other indications it can be assumed that the towers were roofed (otherwise they might have been solid to the top). It now seems highly probable that the fragments of burnt clay with reed and timber impressions came from roofing of the towers rather than as had been thought at one time, a passage roof.

Clamps

An important detail, not least for the chronology, is the use of wooden swallow-tail clamps, the charred remains of one having been recovered in the cutting itself. Small neatly carved clamp cuttings were recorded on the two large, faced, granite blocks, that stood on the northeastern corner of the South Tower and the adjacent block to the west. These smoothed clamp cuttings were for mending granite blocks that had broken during construction. In the sandstone, by contrast, there were numerous swallow-tailed clamp cuttings. There were deeper, not particularly regular and rather rough clamp cuttings, exhibiting considerable variation in size, in the sandstone (but not apparently in the soft limestone). They appear to have been cut with the same tools as were used for shaping and finishing the sandstone and limestone blocks (but not the much harder granite), and essentially these appear to be woodworking adzes and chisels. Clamps were used to join adjacent blocks in wall faces and, at 45º angles, to brace blocks on tower corners (Fig. 43). In addition there were, as reported last year, clamp cuttings that perhaps secured facing blocks to floor joists. It can be argued that the beams were floor joists rather than timber lacing within the core of the tower since in the latter case some evidence of charred timbers would have been recovered.

Figure 43. Clamp cuttings on a block fallen from the South Tower. (05dphp2111)

Proposed Architectural Reconstruction

It behoves us to make some attempt at reconstructing this monumental entrance. As he approached the entrance, the visitor would have seen a broad stone paved entrance between two massive towers. At the top of a steep incline, between the towers, stood a decorated wooden front façade containing broad double doors at its centre. When both these doors and the similar double doors through the rear façade were thrown open, the entrance to the Audience Hall would have been visible. Walking up the worn and slippery granite pavement towards the doors, the visitor would have passed a pair of wooden columns on stone bases, carrying stone capitals or perhaps statuary, and seen sculpture on large stone plinths either side of the doors. Reaching the top of the incline would reveal the pavement continuing through the entire passageway up to the Audience Hall. The front of the towers on either side rose perhaps as much as a total of eight metres. While the bottom half of their front wall was constructed of silver-grey granite, yellow sandstone and white limestone, the top half probably comprised a mud plastered timber framed structure. Somewhere, perhaps in rows along the front, were sandstone bolsters with additional embellishments on the corners. The façade, following rock-cut examples from the highlands, would have had a triangular pediment crowned by an akreterion which might have hidden from view a raised walkway between the towers. The rear façade would have looked similar but here the freestanding columns (or columnar bases) stood forward of the tower walls and the doors were flanked by a pair aniconic stele with rectangular sunken offering places in front of each.

THE CAPPADOCIA GATE

Clearing, Conservation and enhancement at the Cappadocia Gate

Collapse of the section cut across the passage of the Cappadocia gate in 2002 as well as erosion that was continuing to undermine the northwest wall of the passage made it desirable to ramp down the passage fill (Fig. 44). This course of action not only made the entire gate visually more attractive but it also enabled measures to be taken that route human and animal traffic through the original passage rather than by the modern track that traversed the southwest tower. Visual enhancement was further improved by revealing the topmost surviving part of the glacis in front of the southwest tower which had been covered by the track. The original passage surface, which still retains fragile traces of the fire which brought the life of the city to a close, has now been preserved beneath a layer of rubble which has also covered the base of the passage walls. At the same time the uppermost intact courses of the passage walling have been, for the first time, exposed over their entire length.

Figure 44. 2005 work at the Cappadocia Gate concentrated on visual enhancement and safety. (05dpcn0404)

One important result of this work has been to establish that the passage was not restricted by buttresses or architraves. Thus there is no indication as to precisely where the wooden doors were hung, although it hard to imagine that the six metre wide passage was not closed by one, if not two, sets of double doors. The inner gate passage, between the inner towers is wider than the outer passage, making it a less plausible option for either the position of the doors or for an elevated walkway (to take defenders from one side to the other) which would have been best positioned immediately behind the doors or between the two pairs of doors if such there were.

Restoration

For most visitors, the Cappadocia Gate is one of the highlights of their visit (Figs 45 and 46). It has however been decided that no further work can be undertaken at the Cappadocia Gate until and unless there is a comprehensive program that would involve the insertion of scaffolding and props followed by a dismantling and rebuilding of the wall faces of the passageway and the internal chamber. Such a plan of action would not only require engineering expertise and very considerable financial resources, but would also require agreement concerning the ethics and principles of restoration.

Figure 45. Visitors can now walk through the 6m wide passageway. (05dpnc0408)

Figure 46. The Cappadocia Gate remains a focus of interest for visitors. (05dpnc1057)

CONSERVATION, RESTORATION AND CATALOGUING OF FINDS

Architectural Sandstone Elements from Tower Corners

A number of large carved sandstone elements were recovered amongst the collapse that most probably fell from the northeast corner of the South Tower. It can now be understood that the southeast corner of the North Tower must have been provided with matching elements of which few fragments survived. While it is clear that the general scheme included bolsters and bolster like elements, more work is needed to reassemble broken fragments before a convincing reconstruction of the architectural scheme can be finalised. Some of these blocks bear "masons marks" that resemble (single) Old Phrygian letters. A large block (ID 05TR17U12arc11) has a raised edge band and a circular feature at the end of a diagonal band (Fig. 47) which is thought to indicate the angle at which a roof or pediment was pitched.

Figure 47. Large carved block with raised margin, roundel and diagonal band which might indicate the angle of roof pitch. (05dpnc0176)

Possible Sandstone Capitals

Large sandstone bolsters (e.g. Fig. 48 for bolster ID 05TR17U12arc07), all fragmentary, very probably broke off from the edges of sandstone capitals to the freestanding wooden columns at either end of the entrance. The estimated number of these bolsters is not inconsistent with a total of four such capitals each having a pair of bolsters or, just possibly, four bolsters on each. Joining of the many fragments is still in progress and it is hoped that it will prove possible to restore completely the precise form and size of these capitals, if such they are, at least on paper.

Figure 48. Large sandstone architectural bolster, ID 05TR17U12arc07, *perhaps broken from a capital to wooden columns. The scale is 10cm. (05dpnc2025)*

Sandstone Bolsters

Sandstone bolsters (e.g. Fig. 49 for bolster ID 05TR16U14arc04), in addition to those mentioned above, were found in a variety of sizes. It would seem that some of these and very possibly all except the small examples that belong to a square element from a freestanding monument illustrated in previous reports, appear to have come from the walls of the towers.

Figure 49. Side view (above) and end view (below) of a medium-sized sandstone architectural bolster, ID 05TR16U14arc04, recovered from the collapse of the South Tower. The scale is 10cm. (05dpnc2019-20)

One bolster (not illustrated), found in a much abraded condition on the pavement west of the entranceway, came possibly from another building, perhaps the Audience Hall from whence it would have rolled down.

The Statue

More joining fragments of the draped figure in human form (K04.182 with ID 04TR16U02stn01 and several joining fragments) were found and it can be reported that the context is better understood. Additional fragments of the ribbed skirt were recovered from a robber's pit, but of the feet, presumably carved on a base block, no trace has been found.

More positively, the left eye (Fig. 50), together with other poorly preserved fragments from the head (ID 05TR17U14stn01), were found laying directly on the stone pavement below the remains of burnt thatch probably fallen from the tower roof. This context makes it certain that statue was smashed in the entrance passage before the fire, increasing the likelihood that it originally stood no great distance from where it was found. More negatively, neither the left arm, which seems to have been somehow extended away from the body, nor the top of whatever was held over the right shoulder have been found. Thus neither the gender nor the identification have been ascertained. In another development, it is now thought that the small steeply inclined hole in the side was probably intended to affix the figure to the large squared wooden dowel that was inserted into the lower quarter of the statue. One suggestion is that lead was used for this purpose, pieces of molten lead having been found in the destruction debris; but if so not a trace now remains. It is possible that further joins will be made, but unlikely that they will add to our understanding of this enigmatic and forceful portrayal.

Figure 50. Head of statue, K04.182 with ID 04TR16U02stn01 and several joining fragments. The missing left eye, ID 05TR17U14stn01, was recovered in 2005 from beneath the burnt debris by the South Tower of the Monumental Entrance. (05dpcs0421)

Sculpted and Inscribed Stone

Study of the freestanding block bearing panels of small-scale relief sculpture with Old Phrygian inscriptions on some of the raised borders (Fig. 51) continued during the summer. New joins between previously excavated fragments have permitted a much better understanding of the original scheme. It is now known that the block (K03.168 with ID 03TR11U08stn02 and several joining fragments) was rectangular in profile and probably square in plan.

The main panel on the front seems to have depicted two clothed figures facing one another beneath a winged sun-disc. It is probably that these figures were griffin-headed genii. The inscription runs around the four raised borders of the front. A shorter inscription on the left side of the block (when viewed from the front) names the dedicant, Tata. Lions seem to have adorned the side panels and somewhere there was vegetation. It is not clear if the back side of the block was also sculpted. We look forward to Professor Claude Brixhe's study of the text with bated breath. The sandstone block from which these fragments of inscription and relief had sheered off has not been found and, to compound matters, there are some fragments so distorted and vitrified by the fire that, although they appear as though they may have been part of the piece, no form or inscription can be discerned. Further, a small number of sculpted relief fragments have been recovered that may or may not belong; but these are insufficient in number and size to permit even the most tentative reconstruction.

One fragment of equally small-scale sandstone sculpture, this time in the round, probably depicts the feet of a bird of prey gripping a bone. Similar votive statuettes of birds perched on bones, made of alabaster, are known from sixth century contexts at Gordion.

Figure 51. Part of the inscribed and sculpted sandstone monument, K03.168 with ID 03TR11U08stn02 and several joining fragments, showing new joins made in 2005. (05dpcs0921)

Decorative Metal

A Decorative Bronze Band

An incomplete length of sheet bronze (K05.204 with ID 05TR17U14met01), has embossed and stamped decoration in the form of two square panels, one above the other. The top panel contains a bull while that below has a griffin, both facing left (Fig. 52). Added domes border the panels. There are small sewing holes along the top and right edges.

Figure 52. The bronze sheet, K05.204 with ID 05TR17U14met01, depicting a bull and a griffin is incomplete. It is divided into panels surrounded by attached bosses and sewing holes on top and right edge. (05dpnc1926)

A Bronze Fitting

A cast bronze fitting (K05.203 with ID 05TR17U12met01), perhaps from a bowl, is remarkably well preserved (Fig. 53).

Figure 53. A bronze fitting, K05.203 with ID 05TR17U12met01. (05dpnc1548)

Gold Sculptural Embellishment

A thick piece of gold sheet (K05.215 with ID 05TR16U16met05) was discovered on the pavement immediately in front of the southern column base at the front of the entrance. It was formed round a wooden core to which it was once attached by a single nail, perhaps in the shape of a horn with a knobbed end (Fig. 54). The presence of this precious object might indicate why the later robbing of the entrance was so extensive.

Figure 54. Horn, gold sheet, K05.215 with ID 05TR16U16met05, hollow with traces of wood surviving. (05dpnc1819)

Iron and Stone Architectural Elements

Iron Bands

Two large iron bands *(*K05.191 with ID 05TR16U18met05, K05.192 with ID 05TR16U18met06), almost identical to those discovered in 2002, were found against the tower wall on the south side of the passage. Fragments of similar bands were also recovered from the inner end of the entrance, although these were less well preserved than the complete bands from the front which are still tensile to this day. Some of the holes punched through these bands still contained large dome-headed nails (Figs 55 and 56) while fugitive nails were found in the burnt debris nearby. It is thought that these derived from the doors, their being two horizontal bands on each. The dimensions are not inconsistent with this interpretation and the find spots lend further support the conclusion that the doors had been taken down before the fire, perhaps to remove metal embellishment and to loot out metal door sockets.

Figure 55. Two iron bands, K05.191 with ID 05TR16U18met05, K05.192 with ID 05TR16U18met06, pierced with some nails still in place, probably from wooden doors. The scale is 30cm. (05dpnc1369)

Figure 56. Close up of hole and nail. (05dpnc1375)

Iron Braces

A second large iron brace (K05.207 with ID 05TR17U14met07) found in 2005 near the South Tower is very similar to the one found in 2002 by the North Tower and amplifies the architectural symmetry of the entrance. The brace (Fig. 57) has squared ends and large dome-headed nails.

Figure 57. Iron brace, K05.207 with ID 05TR17U14met07. (05dpnc1541)

In addition, a number of smaller braces with splayed ends and smaller nails paralleled those found in the two previous seasons. Like the bands described above, these iron braces are witness to the structural importance of iron in strengthening timber construction.

Ivory Inlay Fragments

Many small semicircular ivory inlays were recovered from the vicinity of the central screen. There are no indications as to what they were originally set into, but they seem rather small to have come from the screen itself.

Photographic Recording of Finds from the 2005 and Previous Seasons

High resolution digital photographs were taken of most of the objects from previous seasons as well as from those found during the early part of the 2005 season. All other finds were recorded by means of digital photography, most images being of publication standard. In addition there are many digital photographs of conservation in progress, particularly the architectural blocks. Traditional black and white negatives have been abandoned because of the difficulty of processing and printing, as well as cost. Colour slides continue to be used for some of the larger objects, as well as for site photography, but a combination cost and practical considerations has mean increasing reliance on digital imaging.

ENVIRONMENTAL STUDIES, MATERIAL ANALYSIS AND DATING

Environmental Studies

One of the test trenches excavated across a street in 2004, TT 24, was partially reopened and extended in order to experiment with ways of recovering environmental evidence. In 2004 it was found that considerable amounts of (domestic) rubbish, containing animal bones and charred plant remains had been dumped on the street surface.

The animal bone is generally in poor condition which, combined with the hardness of the soil when dry, made recovery of easily measurable fragments both difficult and time-consuming. It was concluded that wetting the soil before excavation makes bone extraction easier with very significantly less breakage. Experiments with simple floatation, using a series of buckets, produced seeds and charcoal whilst wet sieving the residue permitted the extraction of small bones and bone fragments.

The material recovered is now being studied at METU by Dr. Vicky Ioannidou. Excavation across streets in future seasons will have the recovery of similar environmental material built into the research design.

Figure 58. Rémi Berthon and Vicky Ioannidou experiment with flotation. (05dphp1606)

Anatolian Iron Age Pottery Project

Professors Lisa Kealhofer and Peter Grave took more than 100 samples from Iron Age pottery sherds for destructive analysis in Australia. This was done as part of a five-year study of Iron Age Pottery from Central and Western Turkey.

Figure 59. Prof. Peter Grave explaining the methods of sampling and recording of Iron Age pottery samples to the Project Director and representative Mehmet Sevim. (05dpnc0102)

Dendrochronology

Many samples of charred wood from the Monumental Entrance were wrapped for export to Cornell University where they will be studied by Prof. Peter Kuniholm and his team. Most of the pieces are, however, quite small and it may well turn out that few if any have a sufficient number of preserved rings to be of use.

FUTURE PERSPECTIVES

2005 saw completion of the current program of excavations at the Cappadocia Gate and the Palace Complex. The next few seasons will be devoted to study of the finds and publication of the excavations in these two areas in monograph form.

In another initiative Dr. Scott Branting will expand his research into transportation and GIS at Kerkenes through a continuation of geophysical survey each spring, test excavations across streets and interpretation of remote sensing data sets.

At the same time there will inevitably be need to undertake maintenance and small-scale conservation of excavated monuments, particularly the stone glacis' at the Cappadocia gate and the eastern end of the Palace Complex.

The Kerkenes Project would not exist without the enthusiastic support received from local authorities, colleagues, sponsors, friends and visitors. The success of the gathering that took place on the 16th of July, and to which many contributed, has convinced us all that the future of Kerkenes is a promising one.

Figure 60. Visitors, including the Vali of Yozgat, diplomats from several Embassies, academics and journalists, were shown the conservation facilities where finds from the excavation at Kerkenes were exhibited. (05dpnc1070)

KERKENES DAĞ PROJECT PUBLICATIONS

BY YEAR

Kerkenes Dağ Home Page: http://www.kerkenes.metu.edu.tr
This site represents a major experiment in the electronic publication of an international archaeological project.

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