# Survey and Excavation at Utica 2010

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**Introduction**

The Utica project is run jointly by the Tunisian Institut National du Patrimoine and the University of Oxford, in collaboration with the British School at Rome as a participant in the BSR Ports Project, and is co-directed by Nabil Kallala, Elizabeth Fentress, Josephine Quinn and Andrew Wilson. We are investigating the city's urban development and economy through a combination of topographic survey, geophysics, coring, excavation, pottery studies and structural survey.

Utica, which stood in ancient times near the estuary of Tunisia's only perennial river, was traditionally supposed to be the third Phoenician colony in the west (founded in 1101 BC, shortly after Gadir and Lixus). For most of the period for which we have archaeological evidence (from the eighth century BC to the eighth century AD) Utica was second in importance in this region only to Carthage, and flourished as a relatively free city under both Carthaginian and Roman hegemony. Its situation at the head of the Medjerda valley, the corridor to the rich imperial estates and the fertile grain-producing uplands of the Tunisian Tell, made it one of the most important ports of Roman North Africa. The site now lies 10 km from the sea and the most recent geological studies suggest that the port had already begun to silt up by the late antique period, as a result of the river Medjerda changing course from its older bed to the east of Qalaat al-Andalous.[1]

After poorly documented excavations in the nineteenth century, twentieth-century excavation focused on tombs in the Phoenician and Punic cemeteries, and then, in the 1950s, on the urban centre: a few rich houses with elaborate mosaics, courtyard fountains and architectural decoration.

[1] Paskoff and Trousset 1992; Chelbi *et al.* 1995.

These excavations were poorly controlled and incompletely published, with little reporting of finds, and insecure chronological foundations.[2] In response to this situation, the Tunisian Institut National du Patrimoine has instigated an international collaborative project to undertake the investigation and conservation of Utica, involving teams from Britain, Spain and France.

The Tunisian-British Project carried out a two-week pilot season in April 2010, funded with the generous help of Lorne Thyssen, the Society of Antiquaries of London, the John Fell Oxford University Press (OUP) Research Fund, All Souls College, and Oxford University's Institute of Archaeology. The team carried out an extensive program of magnetometry, established a Digital Elevation Model by DGPS, tested the northern margins of the site close to the ancient shoreline with limited sondages, excavated in the area of the basilica and forum in the town centre, and cleaned and carried out limited excavation in the 'House of the Grand Oecus'.

**Topography and the city plan**

Although the basic outlines of some elements of the city plan are clear, the urban topography of Utica as a whole is poorly understood. The silting of the Medjerda river estuary and the consequent progradation of the coastline mean that the former port city now lies 10 km from the nearest point on the coastline, 11 km from the edge of Lac Ichkeul, and 17.3 km from the point at which Lac Ichkeul communicates with the sea.[3] In antiquity the Medjerda reached the sea to the east of the next promontory to the east, Qalaat al-Andalous, and seems only to have broken through to its present course between Utica and Qalaat al-Andalous in late antiquity (Fig. 1).[4]

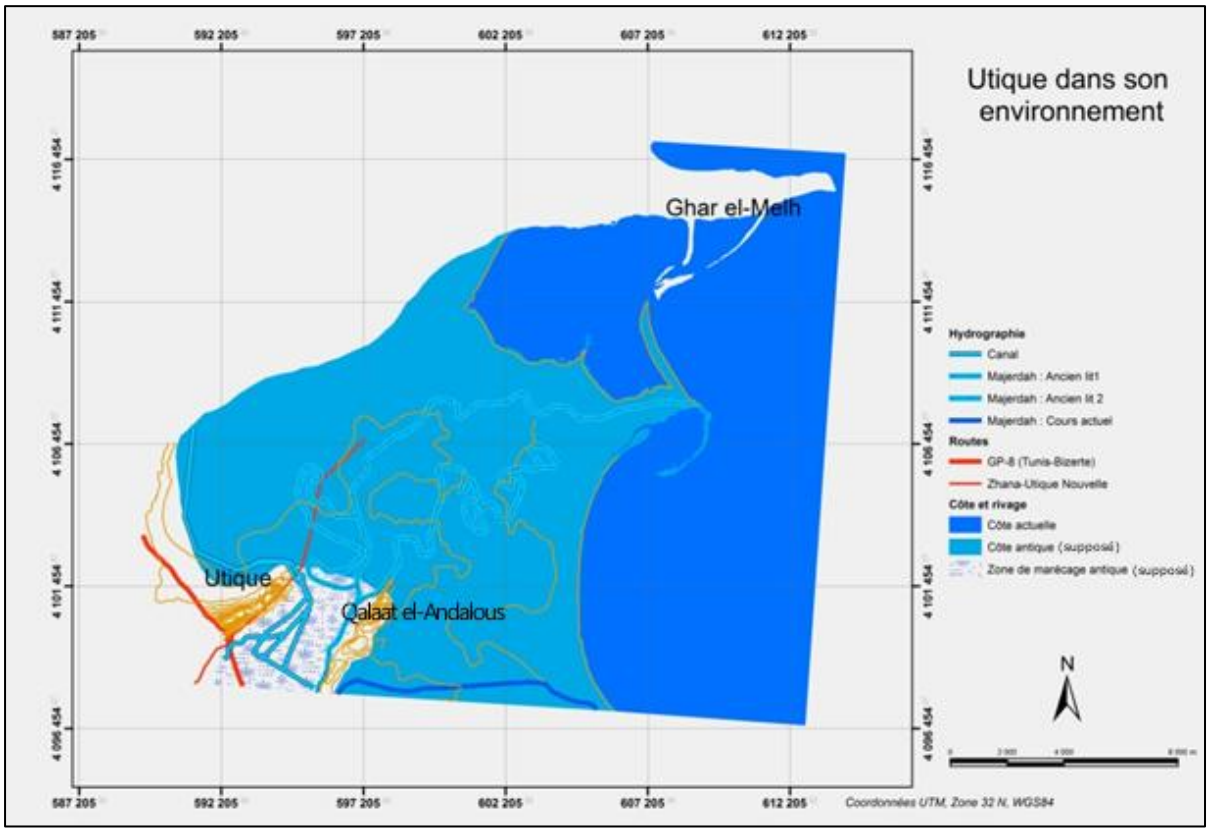

Fig. 1: Location of Utica, showing present and former coastlines and the earlier courses of the river Medjerda.

[2] For summaries of earlier work on the site, see Cintas 1951; Lezine 1970.
[3] Measurements taken from Google Earth.
[4] Paskoff and Trousset 1992; Chelbi *et al.* 1995.

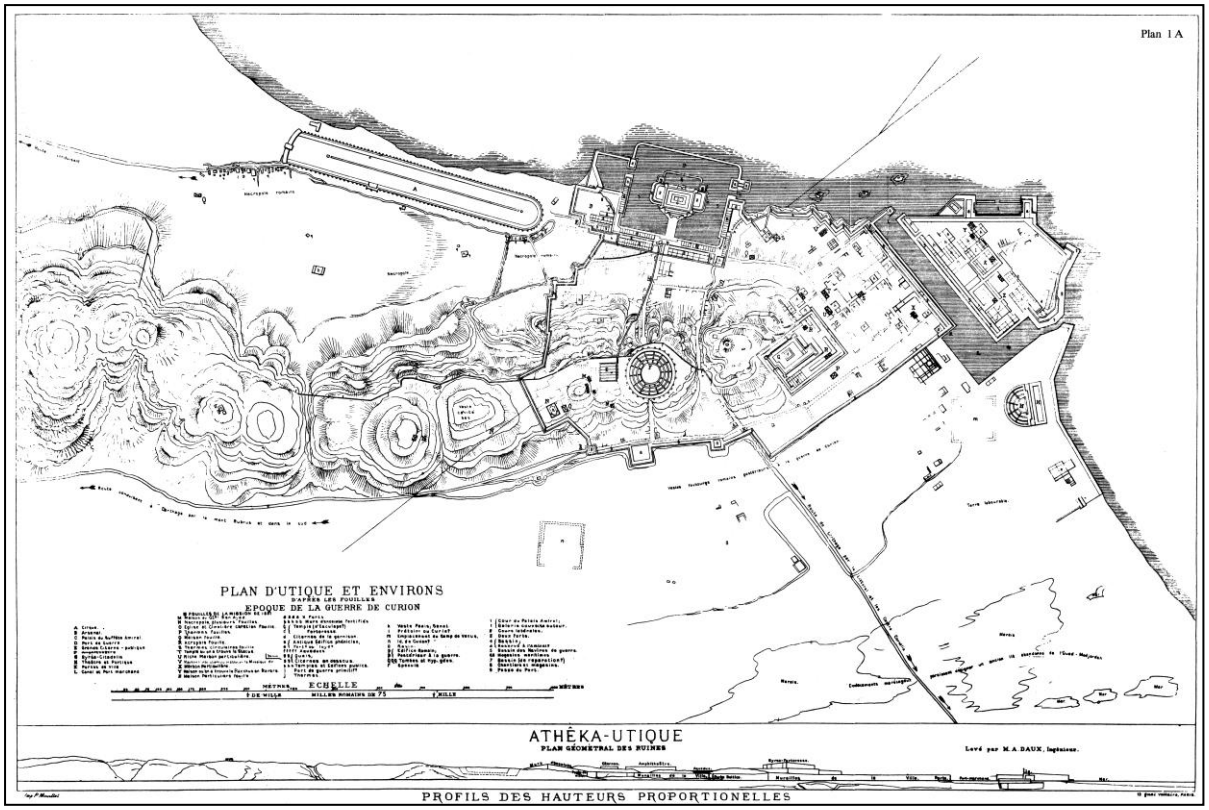


Fig. 2: Plan of Utica by Adolphe Daux (Irisson d'Hérisson 1881); large spoil heaps have obscured the ancient topography of the coastal zone.

The precise line of the Roman coastline and the location of the port remain unclear. Even the limits of the site – the city walls, and the extent of occupation – are not fully certain. Extensive stone-robbing operations and early, poorly documented excavations have turned over large parts of the site, leaving robber trenches, excavation trenches and spoil heaps (e.g. those by Comte Camillo Borgio in 1853, unpublished owing to his death from a fever caught during the excavations; Adolphe Daux in 1860, Nathan Davis in 1860, B. Smith in 1878 and Comte Maurice Irisson d'Hérisson in 1881). Many of these operations were on a considerable scale, at times employing substantial labour forces:[5] Davis used marines from the ship *Harpy*,[6] Irisson d'Hérisson engaged 100 workmen initially, supplemented a month later by a further 30,[7] and the excavations of the large baths by François Reyniers in 1949-1951 used a detachment of *tirailleurs*.[8]

Of the existing plans of the site, that by Daux published in the account of the Irisson d'Hérisson expedition appears remarkably detailed (Fig. 2),[9] and the general topographical outlines are well delineated, but much of it is sheer fantasy. Like a number of others, he misinterpreted the large Roman baths in the north-west part of the site as a Punic port with an admiral's headquarters on an island in the middle of it,[10] and invented other port basins around the headland in the north-east part of the site. Although his plan does also show structures excavated by Irisson d'Hérisson and others, and many of these are at least on the correct alignment of the Roman insulae blocks, it is

[5] Irisson d'Hérisson 1881, 275-9; Lézine 1970, 35-6.
[6] Davis 1861, 409.
[7] Irisson d'Hérisson 1881, 104-5, 153-4.
[8] Picard 1946-49, 623.
[9] Irisson d'Hérisson 1881; also in Reinach 1888, fig. 6. Cf. Daux 1869.
[10] Beulé 1861, 111; Daux 1869, 160-219; Reyniers 1952. First correctly identified as baths by Torr (1894a, 46-7 and 1894b, 306-7); cf. Gsell 1920, 145-6; Cintas 1951; Picard 1953. Martin (1915, xcviii) realised it was Roman, but could not identify its function. The port idea had its supporters until 1953 (Reyniers 1952; refuted by Picard 1953). See Lézine 1970, 66.

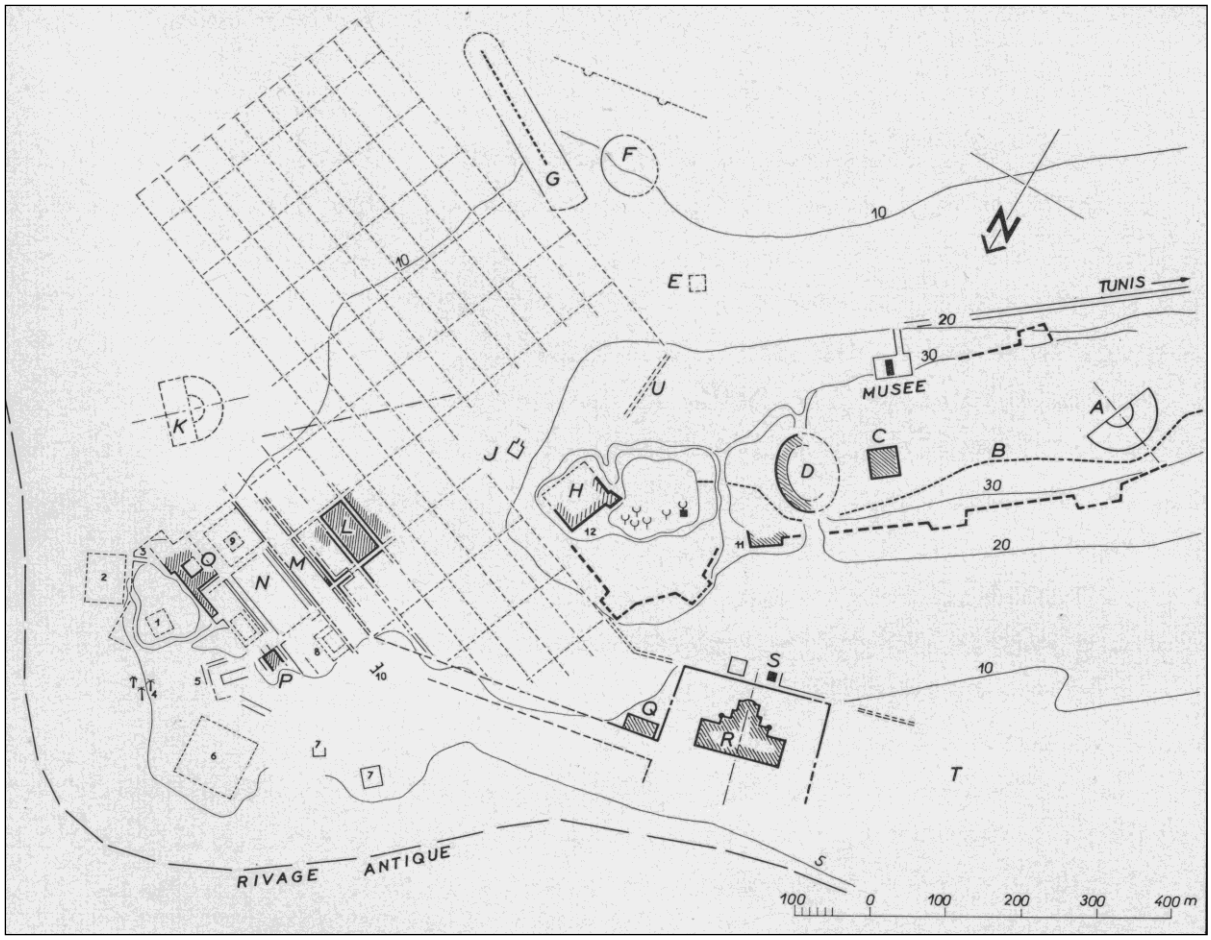

Fig. 3: Plan of Utica by Alexandre Lézine (Lézine 1968, 82 fig. 1).

impossible in most cases to distinguish between elements which he really saw and which are now buried or invisible, and those which were simply made up or interpolated on the basis of analogies. Of the circus to the NW of the site, shown in detail on his plan, almost nothing is visible on the ground today, and its existence was considered uncertain by Lézine.

The plan published by Alexandre Lézine forms the basis for current understanding of the site (Fig. 3).[11] It marks the location of major public buildings, some plotted from aerial photographs, and of the elements of the city grid plan visible from the air. It is to some extent schematic, however, and omits a number of minor individual structures visible on the ground. Some of these structures are included on the more detailed plan published in the *Corpus des Mosaïques de la Tunisie*, but this plan does not cover the entire site.[12]

A key desideratum for understanding the nature and development of the city as a whole is therefore a new, comprehensive plan. Work towards this goal commenced in 2010 with the creation of a Digital Elevation Model (DEM) of the terrain, a magnetometer survey of selected areas of the site, and the digitisation and georeferencing of the plans published by Lézine and the *Corpus des Mosaïques de la Tunisie*, adjusting them in the light of satellite imagery. Re-examination of selected structures on the ground provided a basis for preliminary interpretation.

[11] Lézine 1966, 1245, fig. 2; 1968, 80 fig. 1; 1970, 19 fig. 5.
[12] Dulière 1974, plan 18.

**A Digital Elevation Model of the site**

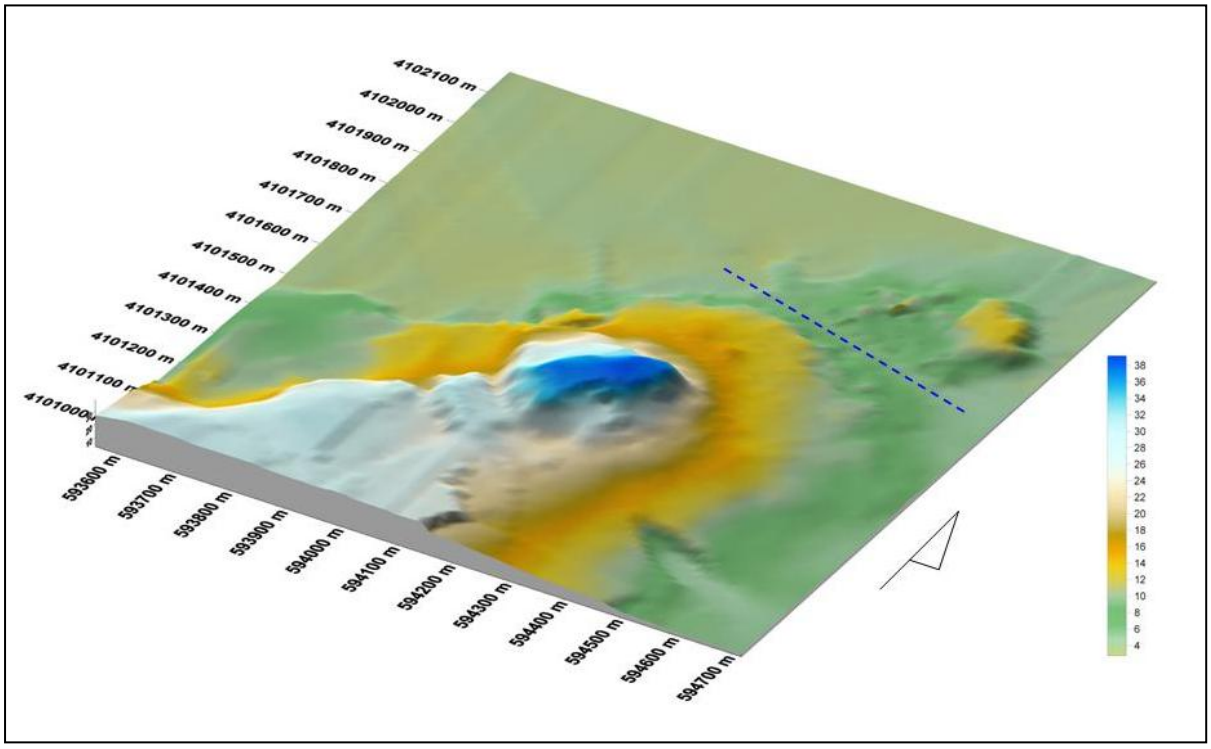


Fig. 4: Shaded Digital Elevation Model of the site of Utica.

DGPS Remote sensing survey has become an essential tool in preliminary studies of archaeological sites.[13] Its accuracy and rapidity in acquiring continuous measurements has made it increasingly popular as an adjunct to classical techniques of investigation. The DGPS survey used a Trimble 5700 instrument to create a Digital Terrain Model (DTM), survey visible structures, and to enable the correct positioning of excavation and geophysical survey grids. The interpretation of these data, together with geophysical and surface survey, offers an important means for the reconstruction of the urban plan and the definition of the settlement itself.

Initially the instrument was set up over a base point and allowed to take readings over a 24-hour period to obtain a precise location in UTM coordinates (zone 32 North, real geographical coordinates based on WGS 84). This also serves as the reference point for the project's topographic survey using a Total Station. The DGPS topographical survey covered almost the whole site, including the 'citadel' and the landscape on the north, east and south sides, with a total surface of 70 ha and 44,000 topographical points recorded. Measurements were taken at a mean distance of 1-2 m along straight lines so far as was possible, otherwise following the natural morphology of the terrain. The horizontal accuracy of the instrument is 2 cm and the vertical accuracy 5 cm. The interpolation of data points from the survey generates a 3-dimensional model in which the surface is represented homogeneously (Fig. 4), and onto which one can superimpose the results of other research, from geophysics to excavation data. From the model can be derived contour maps (Fig. 5), and shaded views showing the terrain morphology, which can be used or modified to assist in the preliminary interpretation of the archaeological terrain.

The topography of the site of Utica is very largely the result of human occupation and archaeological activities, but overlaid on a natural ridge and its lower slopes. We can divide the site into four main zones for ease of description (Fig. 6). Zone 1: The NE part of the site, *c.* 7.5 ha in area, includes the monumental centre, and is separated from the rest of the city by a linear depression,

[13] Forte and Williams 2003; Beex 2004; Cina 2004; Bitelli *et al.* 2006; Campana and Francovich 2006; Summers and Summers 2006; Mariotti 2008.

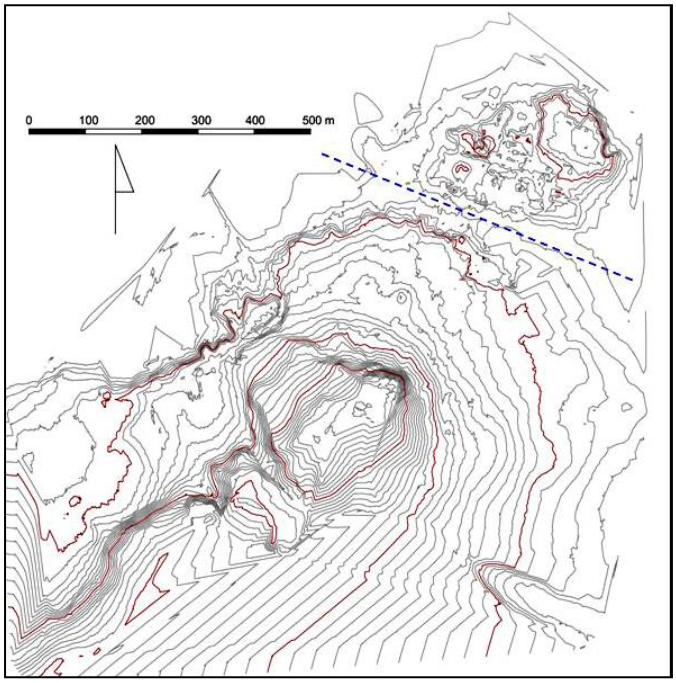


Fig. 5: Utica, contours at 1 m intervals (10 m contours in red). The line of the colonnaded street is marked in blue.

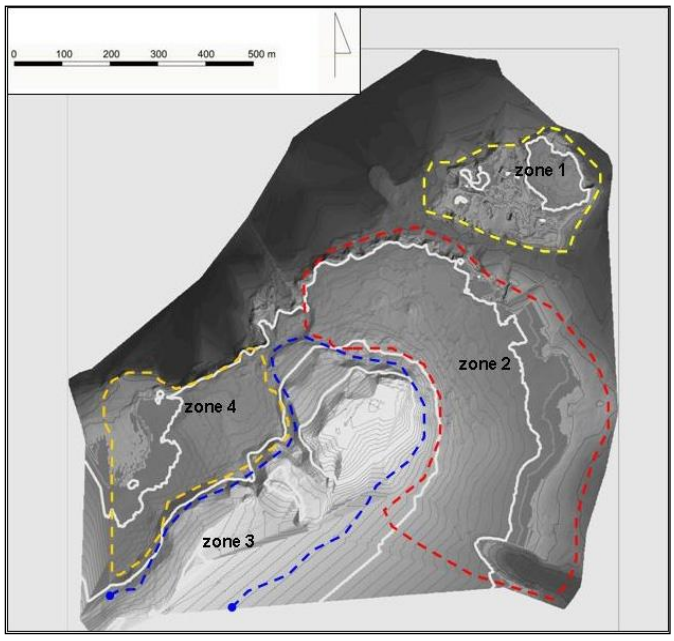


Fig. 6: The four main zones of the site. 10 m contours in white.

interpreted by Lézine as a wide colonnaded street (Fig. 7). It can be divided in turn into two sectors. The first represents the NE limit of the city, with a terraced area that is higher (11-13 m asl) than the surrounding structures; the second, lower area, 8-10 m asl, includes the supposed forum and basilica, Lézine's 'Temple A', and streets immediately to the west and SW of the first zone. The NE edge exhibits a steep slope with retaining walls and substructures, forming a terrace between the high area and the ground around 4-5 asl. The other areas immediately around (4-5 m asl). The other areas slope down in a more regular fashion towards the NW.

Zone 2: The central part of the site lies around the lower slopes at the end of the ridge, to its N, E and SE. The terrain slopes down gradually over an area of *c*. 25 ha, from an elevation of 15-16 m asl down to 6 m asl along the eastern and south-eastern limits. Here too the ground becomes flat around the 5 m contour, and uniform with the surrounding areas. The DGPS survey in this area also included the large depression interpreted as a circus, and the results support this hypothesis. The lowest part of the supposed arena again lies at 5 m asl, confirmation that this elevation is to be considered the limit on which are found the structures at the edges of the city or just outside it. The central part of the city, with the core of regular city blocks reconstructed by Lézine and confirmed by the results of the geophysical survey, lies between 8 and 15 m asl. This situation is repeated also on the western side of the lower slopes below the ridge. The French excavations of the 1950s and the present geophysical survey have reconstructed the urban plan in the lower-lying area of Zone 2 with insulae.

Zone 3: The highest part of the site (*c.* 20 ha) consists of a series of hills forming a ridge, with a maximum elevation of *c*. 39 m asl, extending from south-west to north-east. This ridge culminates in the so-called 'citadel', which has been artificially terraced along its northern side and the north-eastern end, where it has a regular slope and well-defined limits. The presence of modern buildings and vegetation renders interpretation of the terrain difficult here, and prevented a complete survey in the time available. The survey concentrated, therefore, on the N and NW slopes, showing steep

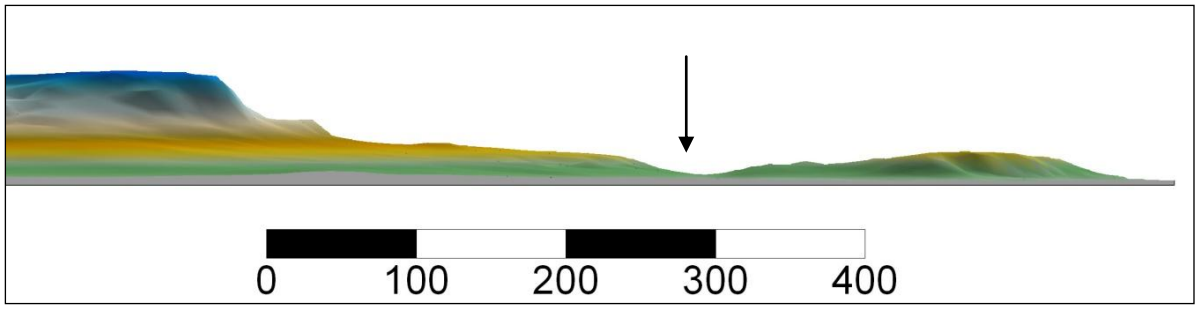

Fig. 7: Section from West to East across the site, with the location of the colonnaded street indicated.

but regular slopes and mapping the terracing around the 'citadel', where the morphology of the relief is heavily determined by the presence of large structures, in part traceable as features of the surface morphology, and in part clearly visible as standing structures, like the amphitheatre a little to the south. It is probable that the early settlement of the city utilised the low chain of hills which stretched towards the ancient coastline, being the highest places close to it; the SW part of the site (facing the hinterland) appears even today characterised by natural relief and less shaped by human intervention. The zone ends beyond a large concave hollow at the SW limit of the site. Lézine interpreted this as a theatre, but no walls relating to a putative theatre exist (the wall bounding the N edge of the depression is the substructure of the aqueduct); the problems with Lézine's hypothesis are discussed further below.

Zone 4: The fourth topographic zone comprises the W and SW areas of the site. The W slopes of the 'citadel' show two main terraces with a less pronounced slope than on the other sides of the ridge; the lower one slopes down towards the present marsh, separating the central part of the city (Zone 2) from the remaining area (Zone 4, to the W). From this point the buildings stop along a regular line running E-W, possibly a fortification or retaining wall. The large baths of Utica lie in front of this limit on the same orientation and are the monumental element which characterises this part of the city. Within the rectilinear wall lies a large, almost level, area of *c.* 10 ha, with a light but even slope down towards the W. The elevations are between 10 and 13 m asl, with a gentle but evident break of slope of about 1 m in height running N-S, which divides the area into two parts. To the W of the 10 m contour the ground becomes almost flat, with little archaeological evidence (no structures, and few ceramic finds). Such evidence is however present to the south, as one climbs up along the line of the central ridge (Zone 3).

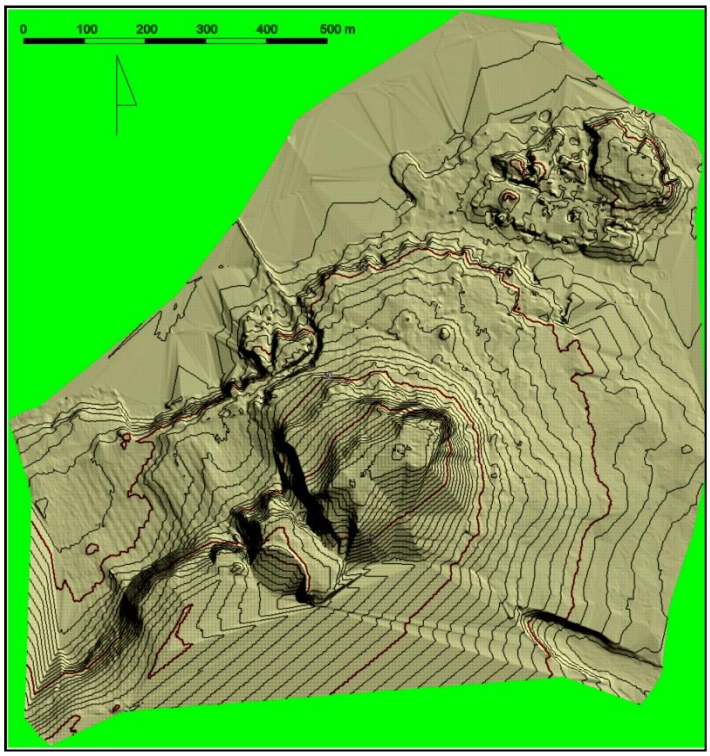

Fig. 8: Shaded DEM view with contours: facing SW.

The digital model (Fig. 8) reveals the topographic elements which largely characterise the site of Utica. The north slope of the 'citadel' with its artificial shaping and terracing, not present or not visible on the other sides, separates Zone 2 from 3, while the colonnaded street marks the limit of Zone 1, separating it from the rest of the city. The central part of the city, Zone 2, in its turn, has its own

homogeneous characteristics, such as gentle slopes, regular terrain and elevations between 7 and 14 m asl. The north side (Zones 2-3) drops sharply down from the 10 m contour; in the part further to the E this line is irregular and then becomes more rectilinear in front of the baths and the modern olive grove to their west (Zone 4). The same situation can be recognised at the NE extremity of Zone 1, where large structures determine the present steep slope below 10 m asl. These topographic elements give some indications of the limits of the buildings in different areas and of the probable presence of fortifications (on the north side of the ridge) and of terracing.

The four zones into which the site is divided have their own characteristics and represent distinct parts of the city, although it is not possible to say whether the different areas relate to different phases. The hypothesis that they may have different functional characters (craft production areas, residential or commercial districts, public space, etc.) appears probable for Zones 1 (predominantly public and residential areas), 2 (residential areas), and 3 (citadel with other public buildings, e.g. amphitheatre, public reservoir cisterns). The circus, as is often the case (e.g. Carthage, Lepcis Magna, Thysdrus), lies on the margins of the urban area. The objective of the next season will be to complete the topographic survey, as far as possible, in the southern part of the site, and to commence a structural survey.

**Geophysics**

The overall aim of the initial season of archaeological geophysical survey at Utica (Fig. 9) was to test the potential of magnetometry and four distinct areas, spread across the site, were targeted.[14] The preliminary results of the magnetometer survey have already begun to reveal a clear depiction of the layout of the ancient city plan, allowing us to update and improve the plan of the city published by Lézine.

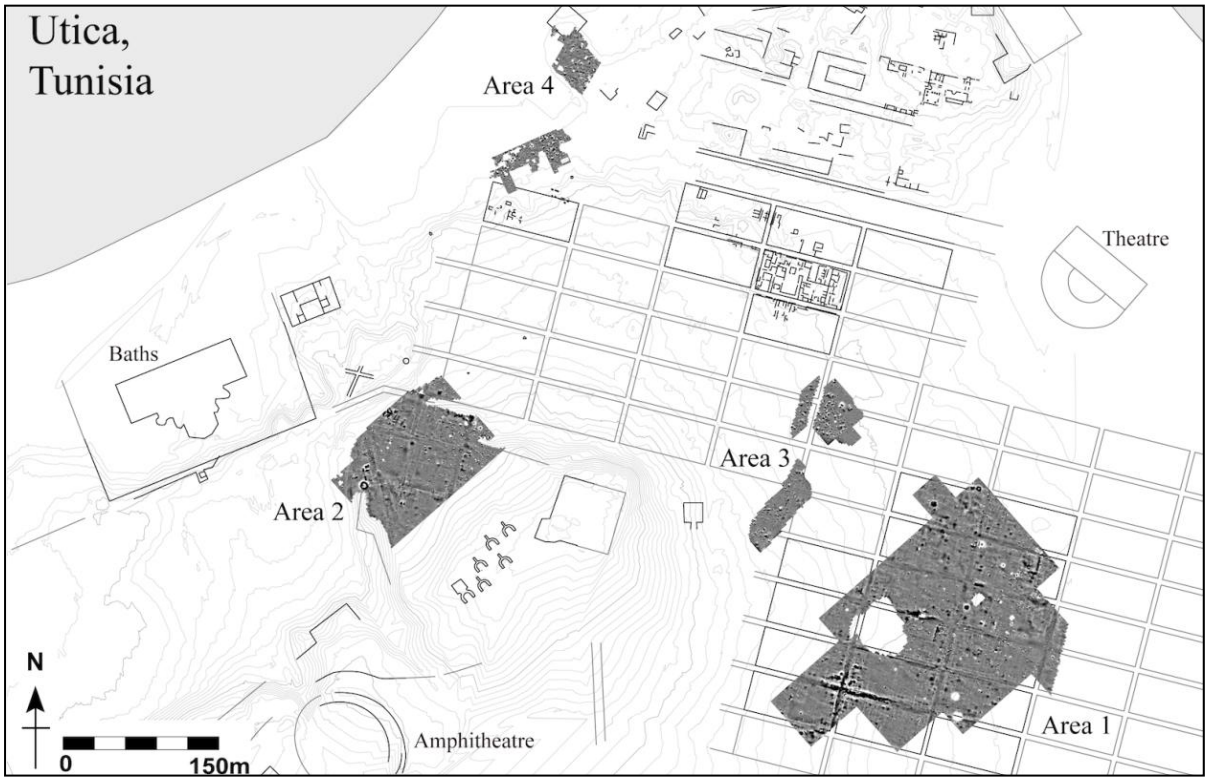


Fig. 9: Results of magnetometry survey at Utica, located on the contour survey and with elements of the town plan.

[14] The geophysical survey was conducted by Sophie Hay, Gregory Tucker, Meya Kallala, Sabra Ghouila, Radhia Bourannen, and Mouna Abdaoui.

Area 1, located in the southeast of the city, covers about four hectares and the *insulae* blocks delimited by an orthogonal road system are instantly recognisable in the results. The NNE-SSW alignment of the city layout seen here clearly corroborates both Lézine's proposed orientation and his grid pattern of the urban topography in this area, even if it differs slightly in its positioning. The streets are occasionally represented by strong positive (black) anomalies, in particular the crossroads in the far west of the survey. A possible interpretation for this is that the street paving survives in these areas. The individual *insula* blocks appear to measure about 80 m by 40 m and in some instances, predominantly in the extreme south and north of the survey area, internal divisions are represented by faint linear negative (white) anomalies. In some areas, those rooms that flank the street frontage could represent individual shop units. It is evident from the results in this area that the magnetometer survey should be expanded in order to detect the possible limits of the city and the relationship of the street grid plan to the theatre and circus in the vicinity.

Area 2 was located in the northern part of the city on a promontory of land overlooking the large bath complex. Although Lézine's plan clearly shows the course of the ramparts crossing this area, the magnetometer survey results do not confirm this hypothesis. However, the results reveal a series of rectilinear structures with internal divisions, characterised by linear negative anomalies, with a possible street to the east, conforming to the NNE-SSW alignment observed in Area 1. If indeed it is a street, then it does comfortably agree with the layout of the plot divisions outlined by Lézine in this area. One notable feature is the circular dipolar (very strongly magnetic) anomaly located on the western edge of the survey that most likely signifies the presence of a kiln or large oven, *c*. 120 m SSW of where several Punic kilns were found in 1925.[15]

Area 3 was targeted because it is the proposed location for a new site museum. The results from this area were severely disrupted by modern ferrous debris and the presence of a small garden plot in the east. Although some of the anomalies in the western sector correspond to the overall alignment and orientation of the observed city plan in other areas, the results are not conducive to a fuller interpretation.

Two small, localised survey areas compose Area 4 along the northern limit of the site and the work conducted here was principally carried out to aid the present archaeological excavations. The northernmost area covered a small headland adjacent to standing structures. The highly disturbed nature of the results from this area conclusively proved that this area was a spoil dump, most probably from excavations in the 1950s, and the only feature was a shallow gully running east to west across the survey area. Similarly, the area to the east was also heavily disturbed by modern material and although some linear alignments can be seen they do not align with the general orientation of the ancient city and have been identified as modern dwellings.

Overall, the magnetometer survey allows us to understand the broader context of the urban topography, linking the known standing structures together, identifying areas covered by spoil from large-scale early excavations, and broadly confirming Lézine's general reconstruction of the street grid but adjusting its positioning and revealing further internal detail.

**Test excavations in Area I**

Along the northern side of the site, between Zone 1 and the large baths to the west, the site dips down to a marshy area with standing water at 3.35 m asl. A projecting tongue of land extending out to the marsh is clearly an artificial platform, with its surface around 5 m asl, and clear breaks of slope to the west between it and the area of the large Roman baths also suggest artificial terracing. A brief programme of sondages in this area was aimed at clarifying understanding of the topography here, and how it might relate to the ancient coastline and possible candidates for the area of the port.[16]

[15] Moulard 1926, 231-4.

[16] Work in Area I was undertaken by Andrew Wilson and Candace Rice.

Fig. 10: Excavation in Area I, showing spoil dump over the area of the former marsh surface. Facing S.

Geophysical survey on the projecting spit of land, together with a 2 x 2 m sondage towards its northern end, which was taken down 0.75 m before abandoning it, confirmed suspicions that this was a relatively recent spoil dump, apparently from the French excavations of the 1950s. The sondage yielded a large amount of material: pottery of varied dates (black glaze through to late Roman and early Islamic), fragments of marble veneer, pieces of mosaic, several coins, and building material (vaulting tubes, fragments of *opus figlinum* floor). Of particular interest was the fact that all except one piece of the brick and tile recovered was in a fabric that was clearly not North African, with dark volcanic inclusions; it is almost certainly Italian, probably from either the Tiber Valley or Campania. The significance of this phenomenon is explored further below (*Utica's trading connections and economic links*).

A second sondage was opened shortly to the west of the spoil heap projecting into the marsh, across a clear break of slope between 5 m and 3.9 m asl (Fig. 10). In the surrounding area were still visible the footings of several huts, occupied until the 1980s when the local inhabitants were moved off the site. Immediately to the south a fragment of Roman mosaic, still in situ at 5.71 m asl, indicated that overlying stratigraphy had been removed, although standing buildings a few metres further south showed that the occupation levels here must have been terraced down towards the lower ground. The sondage, 10 x 2 m, revealed, below the few centimetres of modern topsoil, a thick deposit of yellowish brown clay containing pottery, marble veneer, and occasional animal bone. This deposit overlay a former ground surface of sterile sticky wet clay at 3.77-3.79 m asl. Below this was a layer of waterlogged peaty clay, and the water table was encountered at 3.62 m asl. Evidently this had been marshland for a considerable time, and the dump over it was post-Roman, and relatively recent. Although the stratigraphic relationship between the dump and the footings of the twentieth-century hut was not established, it appears visually that the hut may overlie the dump. It seems likely that the dump relates to large excavations in the nineteenth or early twentieth century. The excavations by J. Martin in 1914 and J. Moulard and Byron de Prorok in 1925 of a set of private baths shortly to the SW may have provided some of the material dumped here.[17] The understanding gained from these two sondages has allowed the recognition and identification of dumps that are evidently earlier spoil heaps in other parts of the northern area of the site, and these are marked on Figure 11. Any reconstruction of the Roman topography of the zone needs to imagine the area without them. The implication is that the northern edge of the town in Roman times had a sharper break of slope between about 5.7 m and 3 m (or less) above present sea level – effectively a 2-3 m high terrace shortly to the north of where the ground currently drops steeply from 10 m to about 6 m asl between the NW Baths and Zone 1, and along the northern face of the high ground of Zone 1. To the north of this ancient terrace must have been a flat expanse of ground lying between *c.* 3 m above present sea level and the sea, occupied by some Roman buildings, including the two cisterns still visible in the marshy ground (Figure 11, nos 5 and 6). The modern topography thus gives no good clue to the location of the ancient port.

[17] Martin 1915; Moulard 1926, 234.

**The urban monuments and city plan**

In a first attempt to generate a more accurate plan of the ancient city, Lézine's plan and the plan published by Alexander and Ennaïfer in the *Corpus des Mosaïques de la Tunisie* were digitised and overlaid on each other, and on satellite imagery and the contour maps derived from the new topographic survey conducted by E. Mariotti and discussed above. Both plans were geo-rectified using the *insula* excavated in the 1950s as the reference point, chosen because it was an excavated area whose limits appear carefully surveyed in both plans, and it shows very clearly on the Google Earth satellite imagery. While there may be some distortions due to scanning these were minimized as much as possible.

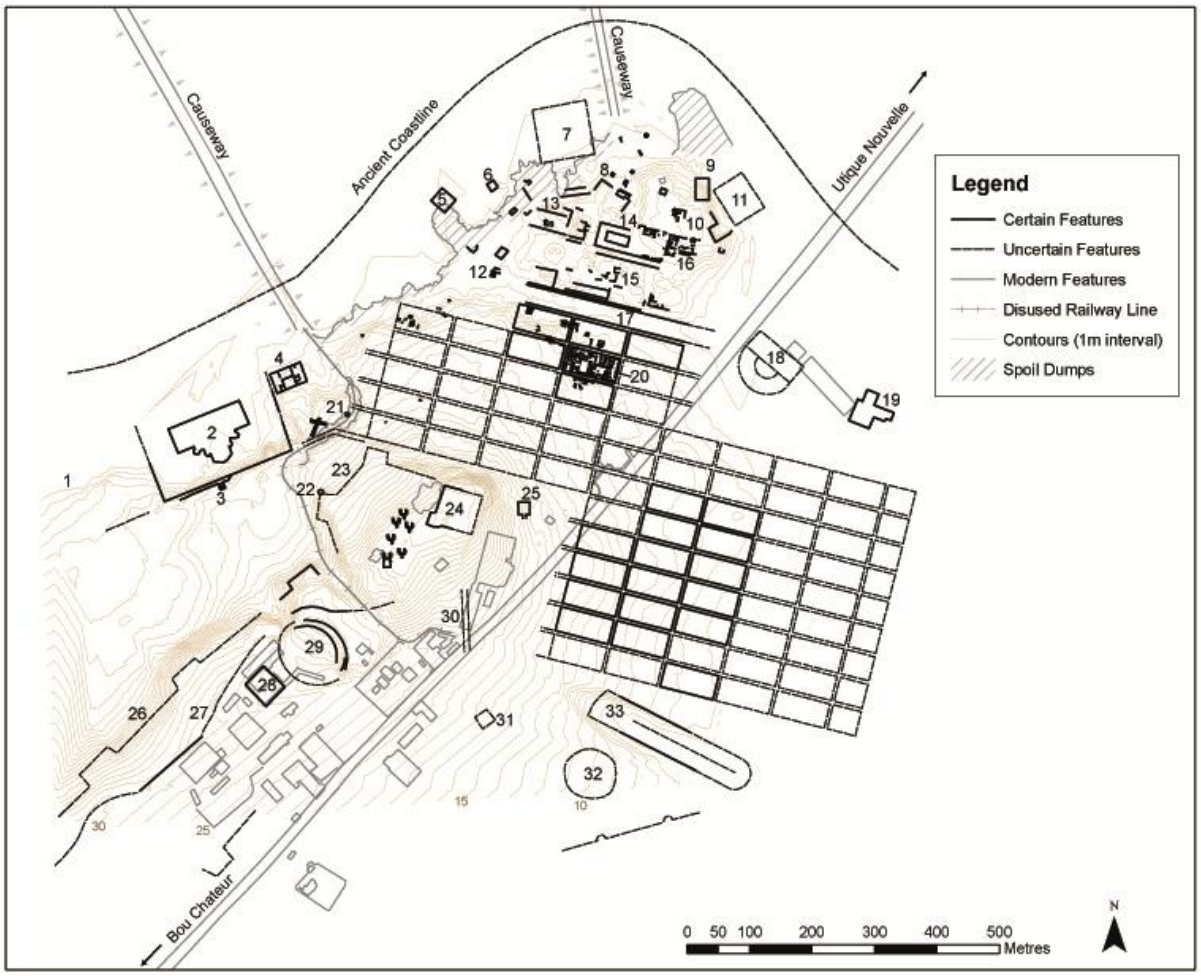


Fig. 11: Plan of Utica, using information from the plans published by Lézine and Alexander and Ennaïfer, adjusted with reference to satellite imagery and with the results of the new geophysics and topographical surveys conducted in 2010.

Lézine's plan proved difficult to orient and scale; the scale bar marked as 500 m was in fact found to represent 527 m on the satellite imagery. The North arrow does not match true North, and may represent magnetic north at the time of the survey on which it was based. Both rotation and scale thus had to be estimated to best fit, by superimposing the plan on the satellite image and anchoring it to the edges of the excavated *insula*. The southern, western and eastern areas of the plan deviate from the known topography, with the circus on the southern edge of the site, the amphitheatre and other buildings on the ridge becoming displaced. For example, the SW corner of the central block of the large baths on the plan is 15 m N of where it is on the satellite image, the


Fig. 12: New plan of Utica (as Fig. 11) superimposed on Google Earth satellite imagery of 10th July 2009.

cisterns on the ridge are 18 m W of where they should be, the SE entrance of the amphitheatre is 25 m NW of its true position, and the NW corner of the (southern) circus on the southern edge of the site is displaced 30 m to the S. The projected *insula* blocks Lézine indicated on his map are very close to the correct place across the northern part of the plan, but further south they become less accurate, as can be seen by comparison with the magnetometry results and with crop marks delineating two *insulae* in the southern edge which is clearly visible on the Google Earth image from 2006. The discrepancies in the placement of major public buildings may be explained by the derivation of much of Lézine's plan from aerial photographs, which may not have been as accurately orthorectified as is now possible with modern software. The discrepancies in the positioning of the street grid are caused by Lézine's schematic grid projection being based on the size of the *insulae* but not accounting for the width of the streets between them, so that the projection accumulates error the further one moves from the excavated *insula* block on which it is based. Lézine's plan is best regarded as schematic, although he did identify many elements which are present in the landscape even if they were placed incorrectly.

The plan published in the *Corpus des Mosaïques de la Tunisie* was created for the Corpus's primary purpose of locating mosaics and therefore focused on the excavations and areas near the 'forum'. This plan was much easier to georectify because of the detailed plan of the excavated *insula*, whose walls could be recognised on the Google Earth image and matched those on the plan. There are however two degrees of accuracy represented: the structures on the southern and western edges of the site are distorted, the baths for example are placed 27 m too far south and the amphitheatre is 33 m too far south. Lesser distortion occurs in the northern part of the site; the sizes of structures are correct but placed *c.* 3 m too far east. If the plan is moved to match the House of

the Grand Oecus rather than the *insula* then the plan of the NE sector of the site conforms closely to the Google Earth satellite image, but the excavated *insula* is displaced by 4 m.

Figures 11 and 12 should be regarded as an adaptation of the plans of Lézine and the *Corpus*, fitted to the satellite imagery and the geophysics results, with new information added from both, especially on the location and extent of insulae in the street grid. This new plan takes advantage of three different satellite images available on Google Earth.[18] In advance of a new structural survey, planned for future seasons, we have retained most of Lézine's depictions of the major public buildings, with the exception of the so-called theatre on the ridge, discussed below, and the possible lower amphitheatre, of which no trace is visible on the ground. We have adjusted them individually to fit accurately over the satellite imagery on which they are visible.

The main public buildings identifiable on the site include the aqueduct, reservoir cisterns, one or possibly two amphitheatres, a theatre, a circus, stadium or hippodrome on the southern edge of the site, and possibly a second to the north-west, and a large set of baths in the NW of the site (interpreted at times in the nineteenth and twentieth centuries as a Punic or Phoenician port). We are not persuaded of the existence of a second theatre, on the ridge near the W limits of the site; there is a large depression here which Cintas and Lézine interpreted, from its shape, as a theatre; since no structural remains whatever survive, it was thought to have been cut into the hillside, with seating originally in timber which has now disappeared.[19] Cintas believed this was a late theatre, while Lézine argued it was of Republican date, relating it to accounts of the siege of Utica in the civil wars, in which Attilius Varus' camp is described as being protected on one side by the walls of the city and on the other by the massive substructures of the theatre (Caesar, *De Bello Civile* II.25).[20] There are, however, problems with this idea; a theatre built into the hillside would be expected to have more permanent structural features, and more importantly, would be terraced into the sloping side of a hill, not into an artificial excavation entirely *within* the hill. There is no evidence of either seating or a stage building, or external retaining structures (a sondage by Cintas encountered no structures or traces of them[21]); and the shape of the depression is not in fact semicircular, but rather more than a semicircle. Moreover, the situation of such a theatre, which takes advantage of the natural topography to support the seating, means that it would lack precisely the massive substructures for the seating which are an important feature of the account in the *De Bello Civile*. In short, there is no positive evidence or this having been a theatre, and it is preferable to regard it as either a natural feature, or perhaps a quarry.[22]

The aqueduct (supposed by some to be Hadrianic, on no solid evidence[23]), runs for some 11.5 km from a spring at El Kêschbaâta near El Alia on the range of hills to the west of the site, following the contours and crossing two ravines on arcaded bridges of three storeys to approach Utica along the ridge from the southwest.[24] It passes the large depression thought by Lézine to be a Republican theatre, snaking to avoid it, and heads towards the large reservoir cisterns on the ridge. Earlier writers say that it bifurcated before the cisterns, one branch feeding the cisterns and another continuing on past them.[25] This seems entirely reasonable, as the cisterns must have been fed by the aqueduct, and the aqueduct does indeed continue past them; but the point of bifurcation is no longer visible. The aqueduct passes to the N of the amphitheatre, a large oval excavation (whose

[18] The first, taken on 4th October 2004, best shows the depressions from previous excavations. The photograph of 28th April 2008 shows clear crop marks of some of the city blocks in the south-east part of the site. The most recent and the highest resolution image (10th July 2009) was used in geo-rectifying and aligning the other plans.
[19] Cintas 1951, 13, 16; Lézine 1956b, 133.
[20] Lézine 1956b.
[21] Cintas 1951, 16.
[22] Daux (1869, 155-6) thought it was an excavation to remove height commanding the upper part of the city after Utica's capture by Agathocles, but this is fantasy, rejected by Irisson d'Hérisson (1881, 76-77).
[23] Daux 1869, 156; Lézine 1956b, 134.
[24] Daux 1869, 250; Ben Baaziz 1990, 209-11.
[25] Daux 1869, 250.

dimensions are given by Daux as 118 x 98 m overall; arena 38 x 30 m[26]) with traces of the ring walls and concrete substructures for seating (Fig. 13), and several piers of the aqueduct arcade are visible beyond. Further east it crossed a ravine on a low substructure (Fig. 14)**,** and Daux says that it fed large vaulted cisterns below the southern corner of the so-called citadel.[27]

The large reservoir cisterns on the ridge originally comprised six parallel barrel-vaulted chambers, of which the three southern ones survive more or less complete and the others have been partly destroyed except for their western ends and the northern and eastern external walls (Fig. 15). The total capacity of these cisterns was *c.* 6,000 $m^3$ if filled to the springing of their vaults. These cisterns probably served to regulate supply to the large baths below them to the north, and early authors record a subterranean conduit leading from the cisterns to these baths (although they misidentified the baths as a Phoenician port).

The north-eastern end of the ridge has been artificially shaped, by cutting back the natural rock to create a sharp slope and by the construction of walls or ramparts atop the high ground. Early excavations investigated walls and structures here and robber trenches or excavations still visible here show deep stratification and walls. This may indeed have been a focus of early settlement (although no positive evidence is available);[28] if the fortified aspect of this 'citadel' really does result from built defences, we have no secure evidence for their date, but it is very probably the *akra*

Fig. 13: Amphitheatre, an overgrown oval excavation in the centre of the ridge of high ground.

Fig. 14: Masonry substructure of the aqueduct crossing the ravine between the amphitheatre and the 'citadel'.

Fig. 15: Large cisterns, interior of the northernmost chamber.

[26] Daux 1869, 232.
[27] Daux 1869, 222, 250.
[28] Cf. Daux 1869, 219-224.

mentioned by Polybius (*Cato*, 64.1). But the artificial profile of the 'citadel' results also in part from the construction of several vaulted chambers of reservoir cisterns at its southern corner,[29] which were probably fed by the aqueduct and would have served to distribute water to the southern parts of the town.

Along the northern edge of the ridge a marked terrace with bastion-like projections seems to represent a line of fortifications.[30] Geophysical survey in Area 2 included part of these putative ramparts but no difference in magnetic signal is evident on the results, even where the topography shows a clear drop. It is therefore unclear whether these are simply earthern ramparts or a built masonry circuit that is now entirely buried; Moulard described excavating a stretch of wall 6 m thick, with large blocks facing a masonry core, but did not specify its location.[31] Reyniers found two ballista shot embedded in what he describes as an earthen *talus* above the 'port' (i.e. baths),[32] and he may be referring to the line of the defences near our Area 2.

Fig. 16 : Punic kiln in old railway cutting, facing NE. The vitrified lining of the kiln is visible to the left; in the centre of the picture, the kiln has been cut by a Roman cistern on the extrados of whose vault rests the 0.5 m scale.

Fig. 17: Ruins of the large bath complex, facing NW.

Between the amphitheatre and the 'citadel' the narrow ravine previously mentioned was developed in the early twentieth century for the passage of a Decauville light railway for the transport of agricultural produce for the large domain centred on ancient Utica, but the massive substructures of the aqueduct which crosses it at its northern end show that it formed a ravine or valley in antiquity. The Decauville railway curved around to the north-east (skirting Area 2 of our geophysics survey), and a cutting allowed it to descend with an even gradient towards the low-lying reclaimed land to the north (above Fig. 14). The cutting of this trench for the railway first exposed tombs in this area which led to the excavations here of 1924-5, which uncovered part of a Western Phoenician/Punic cemetery, at least five Punic kilns, and an area of bone-working.[33] Although the excavation reports focus on the Punic finds, it is clear from the railway cut that many cisterns and foundations of Roman houses have also been exposed, all aligned on the street grid. One of the Punic kilns is still visible in the old railway cutting, cut by a Roman barrel-vaulted cistern (Fig. 16).

[29] Daux 1869, 222-3.
[30] Lézine 1970, 67-8.
[31] Moulard 1926, 235.
[32] Reyniers 1955-1956.
[33] Moulard 1924; 1926.

The probable kiln identified in the geophysics results in Area 2 lies about 100 m SW of this.

To the NW of here, and immediately to the E of the possible circus lie the massive tumbled ruins of a large set of public baths, set within a sunken esplanade revetted to the W, S and E by massive concrete retaining structures (Fig. 17). This structure was for a long time (and by some, until 1953) erroneously identified as a Phoenician or Punic port with an admiral's island in the middle, by analogy with Carthage.[34] Little remains beyond the concrete core of the building, the ashlar blocks, marble facing, and other decoration having long since been robbed. It seems to have been here that Delattre was shown a stamped brick from the Rome/Tiber Valley region,[35] and here also that a marble slab with the Utica ship graffito was found. This was described in 1911 as having come from the steps of a quay of the port.[36] This must mean the large baths which were still thought of by most at this date as the port, and the steps in question may have led down to the esplanade around the baths.

To the W of the baths, at the NW corner of the site, is the emplacement of a possible circus. Daux marked this confidently on his 1881 plan in great detail, which Lézine notes is essentially a transposition of the arrangements of the Circus of Maxentius to the site of Utica.[37] On Daux's map the circus is nearly 300 m long and over 70 m wide, running parallel to the coast. He says that the spina started 44 m from the vaults of the SW end and finished 36 m before the curved end nearer the town. Apparently he saw much marble of different kinds lying around on the ground, with which the steps and seating were probably covered, and the remains of a grey granite column, 62 cm in diameter, lying near the spina at the SW end.[38] Lézine accepted the possible existence of a circus or hippodrome here, although clearly by the time he worked at the site in the 1950s too few remains were visible for certainty. Our topographical survey confirmed the existence of an elongated flat area, and trial geophysics suggested the line of a wall which might fit the hypothesis of a circus here, but the area surveyed in the pilot season was insufficient to be certain on this issue (and is omitted from Fig. 9).

Along the southern side of the baths and of the possible circus was a Roman necropolis, probably lining a road leading out of town to the west.[39] A columbarium mausoleum is visible to the south of the sunken esplanade of the large baths. Further Roman tombs are known from the summit of the ridge, to the west of the large reservoir cisterns, and in the south-eastern part of the site.[40]

The NE extremity of the site (Zone 1) forms a low mound, whose composition as revealed by earlier and still open sondages is largely artificial, and is thus principally a tell mound below which some of the early occupation of the site may be expected. This region evidently formed the monumental centre of Roman Utica, and the bulk of the marble statuary and inscribed bases from the site come from here. It is separated from the higher ground to the south (the area of the Punic cemetery and overlying Roman houses excavated by Cintas in the 1950s) by a linear depression which Lézine demonstrated was cut into the natural ground by Roman engineers who created a colonnaded street, parts of the porticoes and shops fronting which Lézine found in his sondages.[41] Immediately to the north of this, a large rectangular area devoid of obvious buildings may have been the forum, as Lézine argues. Along the north side of this area survives a stretch of concrete basis for paving, with the imprint of robbed paving slabs visible in its upper surface, and north of this the probable basilica (see *Area II excavation report* below).

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[34] See n. 7 above.

[35] Delattre 1911 325-6.

[36] Moore 1911; Kingsley 1997. Although Kingsley does not question the alleged provenance from the quay of the port, his case for a date of *c.* AD 150-250 is actually strengthened by the re-identification of its provenance as the baths, which are probably mid-second-century AD.

[37] Lézine 1970, 66 n. 31.

[38] Daux 1869, 237-9.

[39] Daux 1869, 239-240.

[40] Irisson d'Hérisson 1881, 105-6, 154; Lézine 1970, 19 fig. 6.

[41] Lézine 1966.

To the NW are the remains of a probable early Roman temple, which appears to have gone out of use and been subsumed into other buildings (Lézine's Temple A), a T-shaped cistern, and a battery of six tanks usually interpreted as a cistern complex but which may instead be fish-salting vats (Fig. 18). Immediately N of the basilica is a rectangular exedra and terrace wall in a mixture of *opus reticulatum* and *opus africanum* with numerous holes for affixing clamps to hold marble veneer onto it (Fig. 19). This was clearly part of some monumental structure, and the construction technique is significant: *opus reticulatum* is a characteristically Italian technique, found outside Italy in only a limited number of examples (*c.* 100), which in most cases can be shown to have had a direct connection with Italian workmanship – either through the army, or employment on an imperial building project, or a connection with Italian colonists. In other cases, a similar kind of connection with Italy may be assumed. The purpose of this monumental building remains unclear, but its rear wall also served as a retaining wall for the terraced higher ground to the N, where parts of large houses have been excavated (the Maison à l'Ouest and the Maison à l'Intarsia); the House of the Grand Oecus also lies at this upper level, to the E of the monumental zone. On the northern side of the city, this high terraced area is supported by a large concrete retaining wall.

Lézine argued that the colonnaded street whose existence he had established by means of five sondages in the linear depression between our topographic Zones 1 and 2 probably changed direction by the W end of the depression to run SW towards the large baths and possible circus. He believed that these large monuments would have required a suitably monumental approach, and a route for processions.[42] Comparison of his plan with that in the *Corpus des Mosaïques* and with the DEM, and examination of the hypothetical route on the ground, however, rule this out as a possibility. The proposed route for the colonnaded street would take it over a series of steep undulations in the terrain (between 6 and 10 m asl), and numerous Roman domestic structures lie in its path, as an overlay of Lézine's plan on the *Corpus* plan and the contour topography demonstrates (Fig. 20). Lézine developed this hypothesis after the end of French fieldwork at the site, and may have been unable to check his proposed route on the ground (he himself was only able to work at the site in 1957).[43] Our city plan therefore omits this hypothetical tract of the colonnaded street.

Fig.18: Complex of six vats, possibly for fish-salting, facing SW.

Fig.19: Structure in a mixture of *opus reticulatum* and *opus africanum*, with clamp holes for marble veneer panels.

[42] Lézine 1968, 85.
[43] Lézine 1968, 81.

Instead, it is possible that, as Lézine originally suggested, the colonnaded street monumentalised a connection between two low-lying areas of the city, to the W and E of the headland (Zone 1), including the probable port area to the W.[44]

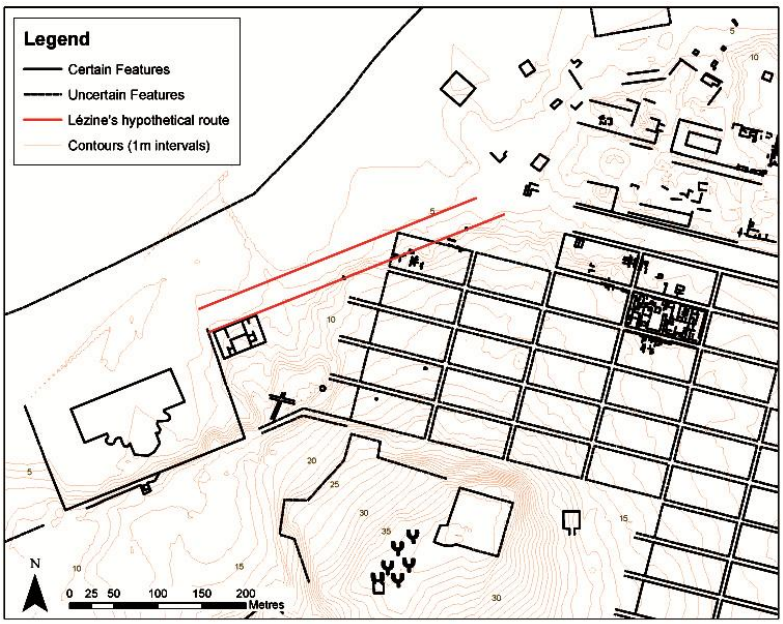


Fig. 20: Lézine's plan showing his proposed route for a colonnaded street to the NW baths, overlaid on the 2010 contour survey and structures on the plan in the *Corpus des Mosaïques.*

To the E, this street would have led to the theatre on the level ground to the east of the modern road where it passes the northern end of the site. Daux in 1869 described it as a high horseshoe-shaped mound, with curved sustaining walls visible in places, fragments of collapsed vaulting, and broken columns. He gives the diameter from N-S in front of the orchestra as 95 m, and observed 15 or 16 column fragments from 6-8 columns at the point where the stage building would have been. He describes these as being of red porphyry, 0.84 m diameter, implying a height of 7 m for the monolithic column shaft and 8.40 m for the whole order if Corinthian or Composite.[45] Daux identified this theatre with the one mentioned by Caesar as being near the walls outside town (*De Bello Civile* II.25), and reasoned that the residential district around it could not therefore have existed at the time of the civil wars.[46] Subsequent authors add little to Daux's description,[47] and the structure has become less legible since the mid-19th century, as a result of stone-robbing and perhaps of agricultural activities. Parts of the substructures of the cavea still exist under thick vegetation, and one or two fragments of column shafts are visible in the area of the stage, but they are of granite and not red porphyry.

To the east of this theatre, Daux and Irisson d'Hérisson described another bath building (under the impression it was a Phoenician fort with a signalling tower); it was later marked on a sketch plan by Moulard.[48] No upstanding remains of this survive but its emplacement is recognisable in darker vegetation on the satellite imagery (see Fig. 12).[49]

The French excavations of the 1950s revealed the entirety of one Roman city block to the south of the colonnaded street, and established some of the limits of the adjacent blocks. On the basis of this block size, and, crucially, aerial photographic coverage, Lézine plotted the location of much of the urban grid. The geophysical survey confirms the existence of many of these city blocks, thirteen of which are visible on the magnetometry results, on the same alignment as the excavated *insula* block (four of these are also visible as crop marks on the satellite image of April 28, 2008 in Google Earth), although their positioning on the plan has had to be corrected (see Fig. 12). The geophysical survey also reveals internal detail of some of the insula blocks, including possible shops on the street frontages, and perhaps traces of colonnades along some streets. Moreover, further

[44] Lézine 1966, 1244.
[45] Daux 1869, 227-8.
[46] Daux 1869, 224-5.
[47] E.g. Irisson d'Hérisson 1881, 76.
[48] Moulard 1924, 141 fig. 1.
[49] Daux 1869, 230-1; Irisson d'Hérisson 1881, 77.

observation on the ground revealed the existence of numerous domestic cisterns and remains of other, probably domestic, structures, all aligned on the city grid plan, close to the large baths, indicating that the urban grid extended closer to the large baths than Lézine's plan implies.

The location and nature of the port have eluded archaeologists from Daux onward, and remain unclear. A programme of coring is planned to investigate the possible sites for the port, which must have lain either to the north-west of the present marshy zone along the northwest edge of the site (between the large baths and Zone 1), or to the north and north-east of the zone 1 headland and the theatre in the plain; or perhaps there were port facilities each side of the headland.[50] In 49 BC 200 merchant ships left the port to go over to Curio's troops, but since the Uticans were apparently unable to stop them leaving it has been argued that the port could not have been a closed harbour, at least at this date.[51]

The topographic work of the 2010 season has provided a firmer base on which to reconstruct the town plan. We must emphasise the extent of our debt to the pioneering work by Alexandre Lézine; even though we have disagreed with some of his interpretations, his work on establishing a basic understanding of the town and its spatial development remains fundamental. The geophysical survey has broadly confirmed his general reconstruction of the street grid, although we have been able to adjust its placement more exactly; observation on the ground has shown that it extends closer towards the large NW baths than Lézine thought. There remain questions over whether Utica really had two theatres, two amphitheatres, and two circus-type buildings (or circus and a stadium), which will be addressed by geophysical survey in future seasons. A programme of coring is planned to investigate the coastal environs of the site and to locate the port(s). The geophysical survey has located a probable kiln in the vicinity of the five Punic kilns revealed in 1925, and we hope to excavate this next year. The possible identification of a structure close to the monumental centre as a group of fish-salting tanks rather than a battery of cisterns also invites excavation.

**Excavations in Area II, the monumental centre**

A key aim of the project is to understand and render understandable the monumental centre of the city. Previous work here has included numerous interventions by archaeologists, as well as quarrying for building material during the late nineteenth century. The area is thus strikingly illegible, filled with old spoil heaps and pitted with sondages.

The most thorough examination of the area was carried out by Lézine, who was reasonably confident in his identification of the main features of the urban landscape here. In the middle of this area, north of the colonnaded street, he notes the discovery in 1957 of a large open square, which he describes as just less than 54 m north to south and 110-130 m east to west.[52] On the long sides (north and south) he recorded the presence of further porticos, 11 m deep, the floors of which, to judge from the traces left in the concrete preparation layer, were paved in large panels of white marble. This is Lézine's 'new forum', which he argued replaced an earlier Hellenistic and Republican forum, probably located immediately to the north. Following the movement of the earlier forum to its new site, this older forum was occupied by a large structure. The remains of this structure consist of a central room, 16.70 m in length, again originally paved, which is encircled by a double row of massive robber trenches, presumably following the line of a colonnade and exterior wall; along its southern edge this structure seems to have been flanked by a row of *tabernae* paved with *opus sectile*, several of which are visible to the east, which in turn faced onto what Lézine regarded as the northern portico of his 'new forum'. Lézine excavated a number of sondages in and around this structure but was cautious about its identification. The scale of the robber trenches prove that it was constructed out of cut stone on a massive scale; this was clearly a public and not a domestic

[50] Lézine 1970, 13-14.
[51] Caesar, *De bello civile* II.25; Lézine 1970, 14.
[52] Lézine 1970, 63-64.

building. However, the size of the central paved area led Lézine to question whether this space could really have been roofed: was this an enclosed civic building, perhaps a basilica with interior colonnade, or a porticoed open-air space?[53]

Interestingly, Lézine was not the first commentator to take note of this large building. In his much earlier, and occasionally bizarre, discussion of the topography of Utica, Daux offers a fairly accurate description of this structure, of which more apparently remained in his day:

> 'Vers le centre de l'île s'élevait un monument large de 54 mètres sur 52 de superficie. Au centre était une vaste salle aux parois revêtues de marbre, et dallée de même. Une belle galerie à colonnes l'entourait, large de 8.40 m. Sous cette galerie, qui faisait le tour de l'edifice, c'est-à-dire sous ses quatre faces répondant exactement aux quatre points cardinaux, étaient quatre séries de citernes. Les colonnes, en granit gris clair, à grain serré et bien poli, avaient 80 centimetres de diameter; quelques fragments épars sur le sol conservent des vestiges d'ordre dorique: ces monolithes auraient eu alors 6.40 m de hauteur de fût. Un soubassement à marches précédait le péristyle. Il y avait quatre portes; à chacune d'elles deux colonnes étaient légèrement engagées dans les murs.'[54]

Some of these features remain to be confirmed – the presence of cisterns, for example, and of four entranceways – and it is unclear for the moment how accurate Daux's measurements are. Other details are certainly erroneous: the columns are of the Corinthian and not Doric order, as Lézine also observed. However, his comments on the size of these columns, as well as the basic layout of the structure, seem approximately correct. Perhaps most importantly, Daux also notes that all of the largest column fragments found at Utica, and all the mostly richly carved marbles, especially mouldings for cornices and entablatures, came from the area around this structure. Lézine draws a similar conclusion in his discussion of the location of the forum, and it is striking that at least three of the honorific statue bases from Utica published in the annual reports of the *Bulletin Archéologique du Comité des Travaux Historiques et Scientifiques* also come from the area of this structure and the space along its southern side.

There are certainly at least two types of granite represented: the grey-pink granite from Aswan (Syene) and a fine grey granite, possibly from Mons Claudianus in the Egyptian Eastern Desert. If both are indeed from Egypt then the commissioner of this structure must have been an individual either extremely well-connected to, or even a member of, the imperial family. The few fragments of capitals and bases preserved on site belong to the Corinthian order and are carved in white marble, the grey veins of which suggest Prokonnesian although it is difficult to be sure about this. During excavation, especially of the topsoil and robber trenches, a number of fragments of pilaster capitals and bases in white marble and pilaster shafts in *giallo antico* were discovered; these presumably belong to the interior decoration of the building.

*Work this season*

The identification of the large building, and clarification of its relationship with surrounding structures, is key to the understanding of the monumental centre of the city, and excavation here was commenced to address these questions.[55] Prior to excavation the only prominent visible features were two areas of concrete preparation layer bearing the traces of stripped-out paving: the first, running east-west across the middle of this area which Lézine identified as the northern portico

[53] Lézine 1968, 97-99; 1970, 64 ('monument non identifié').
[54] Daux 1869, 260-262.
[55] Work in Area II was carried out by Elizabeth Fentress, Ben Russell, Yamen Sghaïer, Radhia Bourannen, Sabra Ghouila, Moufida Jenène, Mouna Abdaoui and H'yssn Arfa

of his 'new forum'; the second, the rectangular surface located at the middle of the large unidentified structure to the north. In order to determine the relationship between the first of these surfaces, the structure to the north, and the possible 'new forum' to the south, it was decided to lay out a trench measuring 25 x 15 m. which stretched, from north to south, across the exterior wall of the large structure (hereafter Building 1), the possible row of *tabernae* and the east-west aligned concrete surface, as far as the edge of the possible 'new forum' to the south. Across the centre of the trench the concrete surface (hereafter **2002**) was cleaned and the various holes cut through it excavated. To the north, post-Roman structures were exposed, delineated to the south by the cut made during the earlier excavation of **2002** and to the north by the outermost of the robber trenches that surrounded the large structure; the extent of this trench and its inner equivalent, as well as the surface marooned between them were also determined. Also in the northern end of the trench, particular attention was paid to cleaning and, in places, re-excavating an earlier sondage (hereafter Sondage II.A), probably made by Lézine, close to the north-west corner of the trench. South of **2002**, meanwhile, an extensive area of post-Roman habitation was exposed, including at least three structures. None of this post-Roman activity at Utica is mentioned by Lézine.

*Building 1 and earlier features*

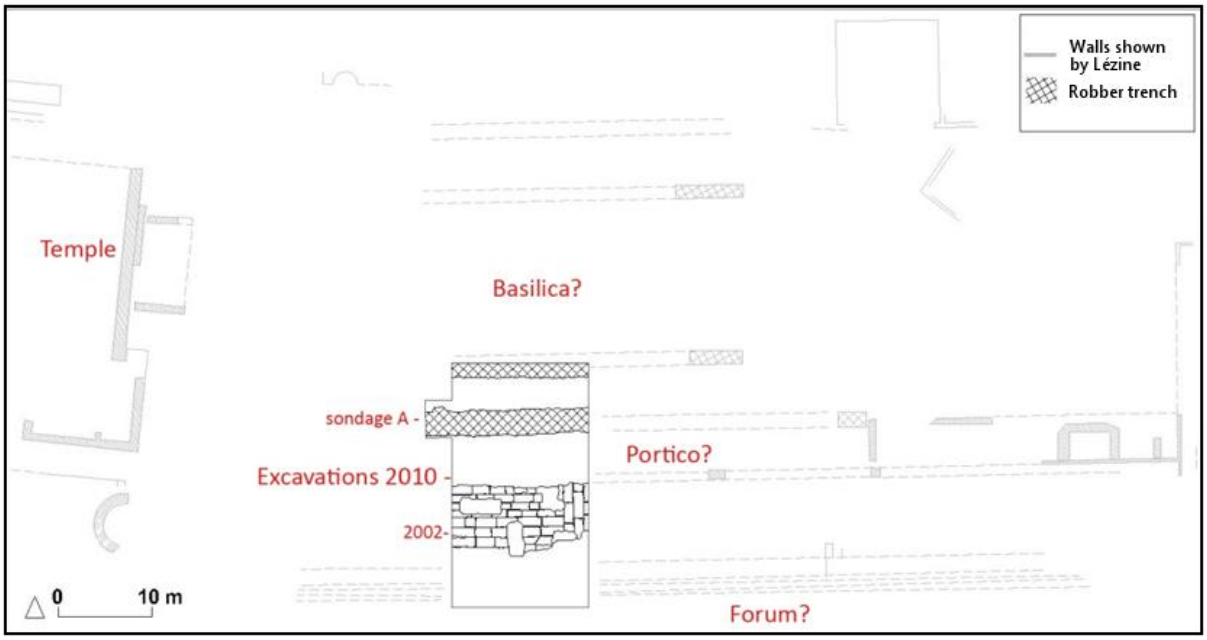


Fig. 21: Building I and excavations.

The earliest levels exposed this season were found in Sondage II.A (Fig. 21), excavated by Yamen Sghaïer. Here cleaning and emptying of the large robber trench of the south wall of Building 1 revealed the cutting of its foundation trench, and, in section, the robber trenches of an earlier north-south wall covered by the pavement of Building 1 (Fig. 22). Clear 'ghosts' of robbed ashlars (**2111** and **2110**) measuring 60 x 40 cm and 60 x 50 cm respectively and lacking a continuing trench between them suggest a doorway. These blocks would have been left *in situ* during the construction of the wall of Building 1, only to be robbed in the nineteenth century when the whole of the structure was removed. The walls on the north side are abutted by a mortar floor around 80 cm below the floor of the Roman building. We have no evidence to date the structure, although there was some unstratified pre-Roman material (particularly Punic red slip ware of the fifth century BC) in the sondage. We may immediately conclude from it, however, that the area on to which the large building was constructed was not free of buildings, and so is unlikely to have been an earlier forum, as suggested by Lézine. It is notable, however, that the orientation of these buildings is apparently close to that of the 'new forum' and its surrounding area.

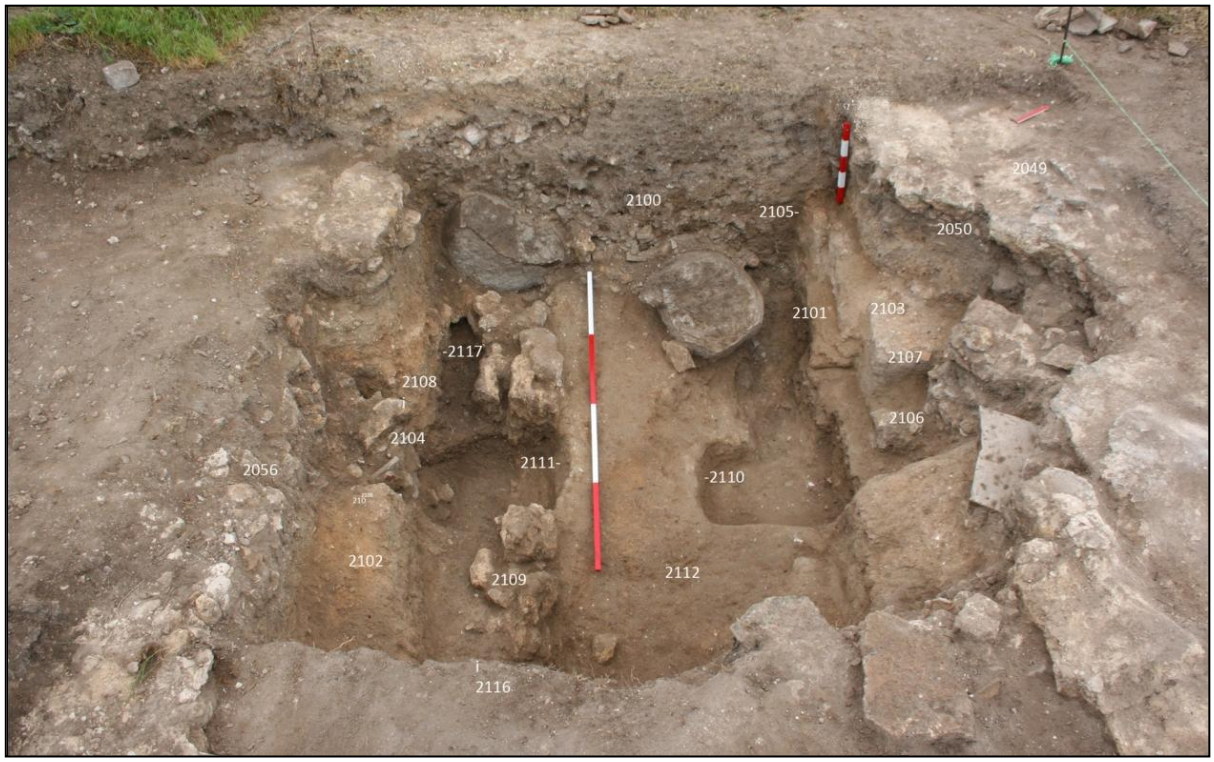


Fig. 22: Sondage II.A, showing the robber trench for the south wall of Building 1 (**2100**), and traces of previous structures.

Elsewhere in the trench, all of the contexts exposed are either roughly contemporary with or later than **2002**. To the north, outside Sondage II.A, the earliest level exposed consisted of a degraded, yellow-grey concrete preparation surface running the entire width of the trench close to its northern edge. This concrete surface originally supported paving, two fragments of which can be seen still in place; one of these was concealed beneath a large granite column drum visible from the surface, which suggests that these columns had collapsed or been pulled down before spoliation of the paving slabs had started. The only complete slab preserved measures c. 80 x 50 cm, considerably smaller than the slabs that originally paved **2002**. This concrete surface and its make-up layer are truncated to the south by the straight edge of the large robber trench, **2105**, which runs almost exactly east-west across the width of the trench. This robber trench is clearly to be identified with the outermost of the double row of trenches which encircle Building 1 and which Lézine marked on his plan of the area just to the west of our trench.

With Lézine's plan in mind it was decided to extend the northern edge of the trench by 2 m to see whether the corresponding inner robber trench could be identified. Sure enough, a straight cut, through the concrete surface and its make-up layer, was found 3.50 m to the north of the northern edge of **2105**, aligned exactly with the robber trench noted by Lézine and visible elsewhere on the ground (Fig. 23). Presumably, therefore, the paved surface is to be identified as that of the interior portico of Building 1. This lies at approximately the same level as **2002**, lending some support to Lézine's suggestion that the large structure and this surface were part of the same phase of activity. Whether **2002** was intended for the paving of an interior space, as Lézine argued, or an external space, is at present unclear. Along its northern edge, **2002** is truncated by a robber trench, **2053**, running the entire length of the trench parallel to the large trenches noted further north; the width or profile of this robber trench is at present unclear since it is overlain by post-Roman structures. This robber trench is aligned with the front of the *tabernae* still visible further to the west and, if we dismiss Lézine's massive eleven-metre deep porticoes as improbably large, must represent the southern edge of the large structure, perhaps the stylobate of a shallower portico in front of the building.


Fig. 23: the northern half of the trench, looking east, showing the two robber trenches. Sondage II.A is just visible in the lower left-hand corner of the image, while Building 2 is found in the centre of the image, to the east.

*Post-Roman features*

Immediately to the north of **2002**, a small structure, Building 2, was uncovered just beneath topsoil, represented by two small walls parallel to each other and orientated north-south, built of fragments of ancient blocks and columns (above Fig. 23). A compacted earth floor associated with these walls was found to stretch across the width of the trench, limited to the south by the cut made by earlier excavators following the line of **2002**. Between the two small walls a post-hole was identified, while a further cut, possibly a shallow robber trench, was excavated running east, roughly at right angles, from the easternmost of these walls. To the north, this compacted earth floor and possibly also the two small walls are cut by the southern edge of the large robber trench (**2105**) already described. This small structure, therefore, appears to post-date the robbing of the wall along the northern side of **2002**, but pre-date the major spoliation of the large structure to the north. It is clearly aligned with it, and may represent a structure facing onto an east-west route still in use at the time it was built. The only ceramics observed were fragments of globular amphorae dating no earlier than the sixth century AD.

In the southern end of the trench the picture is more complicated. The southern edge of **2002** revealed by previous excavations was covered by a hard compact surface of yellow clay between 10 and 20 cm thick, which remains unexcavated. At its junction with **2002** on the east side of the trench this layer was truncated by an irregular trench, consisting of two aligned cuts, further cut by five roughly aligned post-holes, one of which was found sealed by nearly half a filter jar, datable to the eight or ninth centuries AD. The line of postholes seems to relate to a small structure, Building 3, partially excavated by H'yssn Arfa (Fig. 24). Four metres to the south, and parallel to the line of postholes, runs a wall made out of irregular large blocks and column fragments, with the remains of mud packing. The eastern limit of the structure appears to be represented by a robber trench aligned with the section. At its southern end it is cut by an irregular feature, which may represent the robbing of an orthostat**.** The inside of this structure was covered by a lump of what appeared to be collapsed *pisé de terre* walling. Under this, and visible in the section of the cut, are

visible three beaten-earth surfaces creating a buildup of at least 80 cm, which, if they relate to the building, seems to indicate that the structure was built from a much lower level, and robbed out when the ground level around it had risen. This would suggest that there was a substantial difference between **2002** and the level of the pavement to the south of it, the difference between them resolved by steps downwards.

Fig. 24: Building 3, its structure defined by postholes and robber trenches. From the north.

The corner of a more easily-understood structure, Building 4, was found in the southwest corner of the trench. Here an extensive dark grey abandonment layer containing both sherds of globular amphorae, pottery and Islamic filter jars was discovered. This deposit partially overlaid the corner walls of the structure, consisting of low stone foundations, presumably to support walls in *pisé de terre*, which met at a large orthostat. Inside this structure, a compacted surface with burned traces of a brasier was exposed.

The two structures to the south of **2002**, even if they are not yet fully legible, throw new light on a period not yet recorded at Utica, the years following the Arab conquest in the second half of the seventh century, completed by the fall of Carthage in 698. While evidence for early Islamic-period occupation in the centre of Utica is new it is hardly surprising; understanding its extent and nature will be one of the most important aims of the project in subsequent campaigns. As yet, it is not at all clear whether we are simply looking at a transformation of the area of the forum by the existing late-Roman population or a period of abandonment followed by a new occupation which specifically selected a previously empty area. It is, however, interesting that the settlement took place in a rather low-lying area of the city. If the basilica was still partially standing it might explain the attraction of the area, close to an apparently prestigious structure. More important, the early Islamic-period settlement at Utica demonstrates the continuing occupation of the coastal zone at a time when it is generally thought that most settlement had withdrawn into inland areas.

**Excavations in Area III: House of the Grand Oecus**

The 'House of the Grand Oecus' is the largest house so far known at Utica, dating to the late first or early second century AD.[56] It lies to the east of Building 1 excavated in Area II, on a raised terrace immediately N of the street that runs along the southern front of Building 1. It was originally

[56] For this dating, from pottery found in sondages under the house, see Dulière 1974, 3-4 (*Corpus des Mosaïques* I.2). The house is called the 'Maison du Grand Oecus' in the *Corpus des Mosaïques*, given justified hesitation over the appropriateness of its standard name 'Maison du Oecus corinthienne' (2 n.7), and we have adopted this appellation, as well as the room designations used in the *Corpus des Mosaïques.*

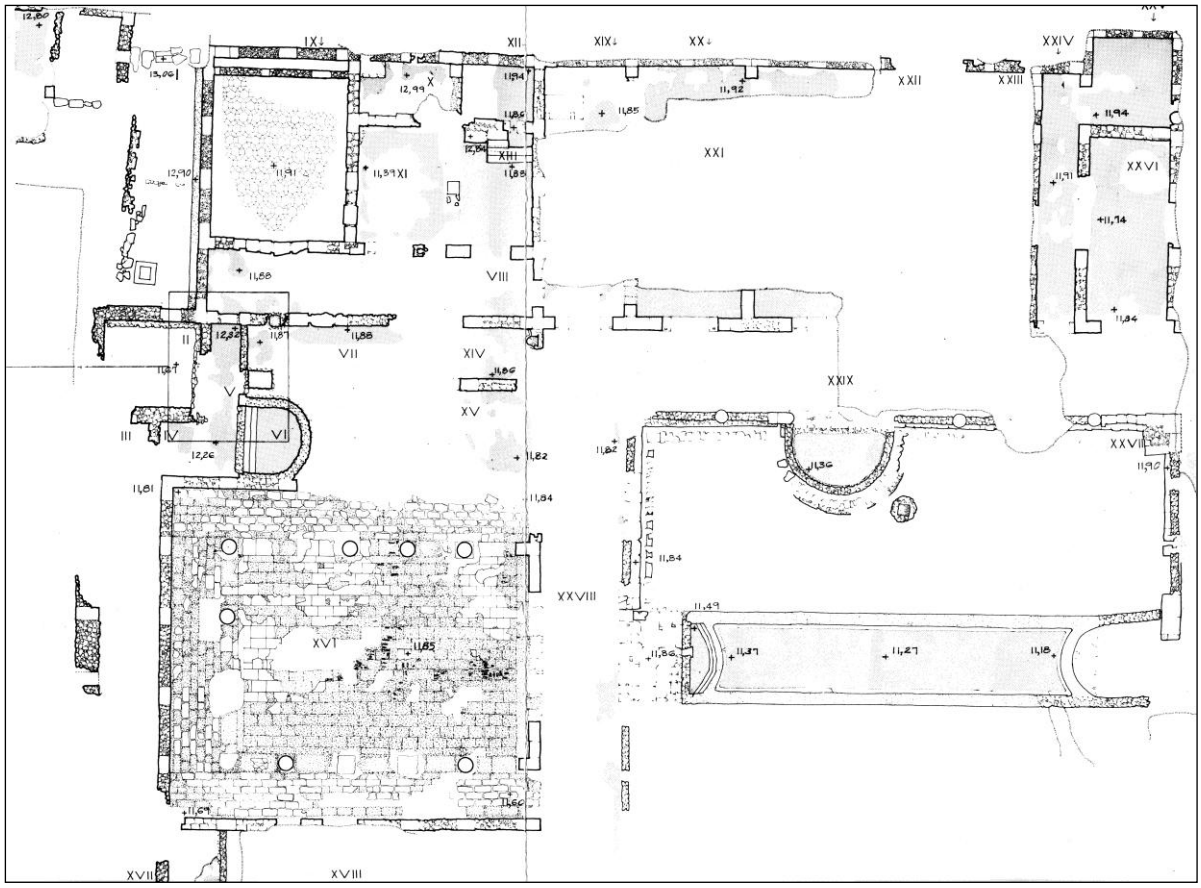

Fig. 25: The plan of the House of the Grand Oecus published in the *Corpus des Mosaïques* 1.2 (Plan 1).

excavated by Paul Veyne and André Lézine in 1957, but was not published in any detail.[57] It was then documented by the *Corpus des Mosaïques* team, under the direction of Margaret Alexander and Mongi Ennaïfer in the early 1970s, which led to the publication of a full and (as we were able to establish this season with the aid of a Total Station) very accurate plan (Fig. 25), as well as a reconstruction and exhaustive account of the floors, as one would expect; the walls by contrast received no attention in this volume.[58] This documentation is invaluable, as the house has suffered a great deal in the intervening decades: the mosaics are badly degraded, and the *opus sectile* floor of the famous oecus (Room XVI) is now in very poor shape indeed.

In this pilot season, work in the House of the Grand Oecus had two principal aims.[59] One was thoroughly to clean the house (largely a matter of gardening: see frontispiece) and to establish the degree to which the walls and the mosaic and *opus sectile* decoration had deteriorated, in order to make appropriate plans for the conservation of the house, and for its eventual presentation in an attractive and legible manner. The other was to investigate two earlier sondages in order to clarify the dating and establish whether there were earlier phases of occupation – the *Corpus* declares that their sondages 'n'ont révélé aucun sol antérieur à ceux visibles actuellement' other than in two areas that were reworked in a later period[60] – and to determine areas of focus for future seasons.

[57] The house was noted as early as Daux's plan of Utica (with the 'Maison Ouest', as 'h'): Irisson d'Hérisson 1881. It is 'L' on Lézine's plan of the city: Lézine 1968, fig. 1. For brief mentions by those involved in the 1950s excavations: Lézine 1968, 101; Lézine 1970, 61 and fig. 5, O ('Palais'); Veyne 1961-1962, 10.

[58] Dulière 1974, 1-18 with plates 146-169 and plans 1-2. On the project at Utica generally: Alexander and Ennaïfer 1973.

[59] Work in Area III was carried out by Josephine Quinn, Dirk Booms, Fathi Dridi and Elyssa Jerray, with the assistance of Candace Rice.

[60] Dulière 1974, 1; the interventions were in rooms II-VII, which were made into a small bath, and X-XIII where the stairs leading to the northern entrance were modified.

Fig. 26: The oecus after cleaning, looking W. Sondage B is just in front and to the right of the further 2 m scale.

The oecus itself was cleaned in detail (Fig. 26), which revealed the slumping of the floor everywhere except around the column foundations and the cistern (elongated and with rounded ends, possibly reusing a pre-Roman cistern) underneath the room, thanks to poor consolidation and levelling of the terrace on which the house was built. This process had already started in antiquity, as an ancient restoration is visible in the southern part of the room, consisting of a thick layer of earth and stone (including part of a marble cornice) on top of which a new floor preparation in white mortar was laid.

When we established that the House's *opus sectile* and mosaic pavements were in a worse state than expected, we decided to leave the exposure and cleaning of the other rooms with floor decoration until plans for the conservation campaign were fully formulated. Thereafter, we focussed on the two existing sondages. Sondage III.A, just outside the oecus in room XV, was cleaned and slightly extended to reveal two walls along the alignment of those of the Roman house (Fig. 27), although It is not yet clear whether these are in fact partially robbed-out walls of the house itself or belong to an earlier phase or structure; the trench will be further extended next year and fully discussed in the next interim report. By contrast, Sondage III.B in the oecus itself was investigated as far as was possible without endangering the floor of the room.

Fig. 27: Sondage III.A from SW, revealing two walls along the alignments of those of the House of the Grand Oecus.

*Sondage III.B*

A clean rectangular cut west of column '6' (the second from the north of the four in the western range) is visible in both the plans and the photographs in the *Corpus des Mosaïques* (Fig. 25) though it is not one of the sondages that they claim to have made, so is presumably to be dated to the French excavations of 1957.[61] Now, however, the hole is much larger with very irregular edges (Fig. 28), both as a result of additional digging, and from the collapse of the sides. When the modern fill **3017** (cut: **3039**) was taken out and the sides thoroughly cleaned, it became apparent that more recent digging had indeed taken place, as metal wires, a modern metal spoon and plastic bags were discovered, and, deposited right at the bottom, several fragments of the mortar that had originally been used for the restoration of the *opus sectile* floor of the *oecus* after the *Corpus des Mosaïques* excavations, as well as many of the marble and slate slabs from the same pavement. However, after the removal of this fill, the stratigraphy visible in the sections made it possible to establish that there were earlier phases of occupation underneath the Grand Oecus. The bottom of the earlier sondage was reached, but since this was a constructed context (see below), still earlier phases might be found underneath with further investigation (and appropriate safety measures).

Fig. 28: Sondage III.B, looking E (through the colonnade and into the oecus).

The earliest phase uncovered in the trench consists of the preparation in mud brick and clay (**3046**) for a floor in very loose, white mortar (**3045**) (Fig. 29). At a later point, a wall running N-S

[61] Dulière 1974, 3: the wording here is not however conclusive.

(**3047**) was constructed on top of this floor. Two other pavements were linked to this wall: to its east, it was abutted by a layer of grey sand (**3044**), on top of which another layer of mud bricks was constructed (**3043**) as the preparation for a yellowish white gravelly mortar floor (**3050**). To its west, it was abutted by a similar mud brick preparation layer (**3056**; it can be supposed that this was also placed on top of floor **3045**, although the limited size of the trench meant that it was impossible to reach that level on this side of the wall). On top of **3056**, a floor (**3048**) was constructed, consisting of a mortar layer with large stones and a hard surface that included very small fragments of terracotta and coloured stone and pebbles. This floor was covered by a very hard pinkish brown layer (**3049**), which also abutted the wall, and which can be interpreted as a later floor level. Covering this floor, and also covering the wall and a very small part of the floor on its east side, we discovered a thick layer that included mud bricks, but also large patches of hard grey clay and dark beige sand (**3054**), which we have interpreted as evidence of the destruction of the upper part of the wall **3047**, which collapsed to the west. This destruction layer contained diagnostic pottery, which may generate a more focused date when fully studied.

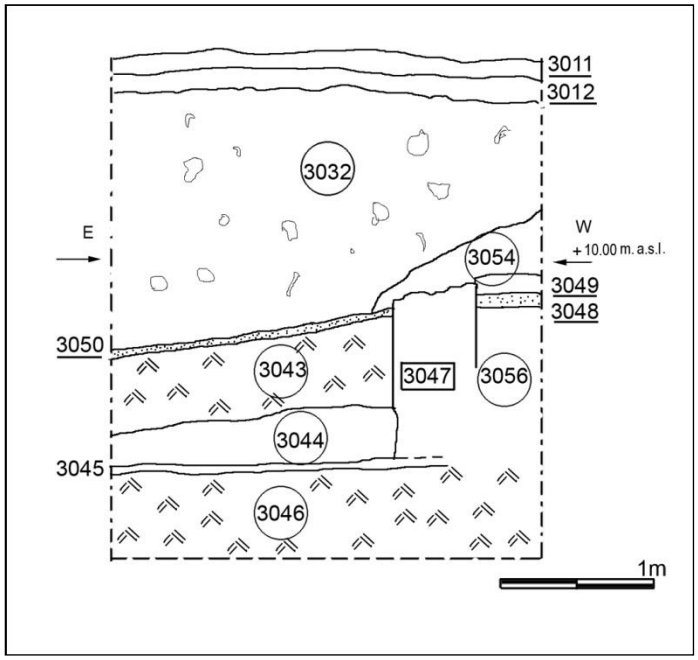

Fig. 29: South section of Sondage III.B.

At some later point the ground was prepared for the construction of the Grand Oecus. Holes for the foundations for the columns were excavated and the foundations for column 6 built into them. (Figs 29 and 30: cut **3051**; fill **3052, 3015**). These consist of a first layer of concrete (*c*. 12 cms thick), on top of which two ashlars were placed, with additional layers of mortar (*c*. 4 cm thick) between them. The fill of the construction cut consists of dark grey clayey sand and includes several fragments of pottery. Afterwards the whole area was levelled by a thick layer of light pinkish brown sand (**3032**), containing many fragments of pottery and fresco. The presence of limited amounts of shell could indicate that parts of the fill came from the river or the harbour, although the fragments of fresco indicate that decoration (though apparently no construction materials) from earlier phases or habitations was used. This levelling layer was recut by **3033**, into which the upper ashlars (**3015**) of the foundation for the column were replaced. The reason for this recut is obscure: perhaps the base was slightly off-alignment, and its position was readjusted. The alternative remains that the earlier construction cut actually relates to an earlier phase of the building on the same plan, but the absence of any contemporary floors seems to rule that out.[62] The column (**3014**) itself was placed

[62] We are grateful to Andrew Wilson for the following hypothetical reconstruction of events: 1) Foundation trench 3051 was cut through demolition levels of earlier structures; 2) A conrete pad was laid on the floor of this and some ashlars placed on top (not necessarily those we now have); 3) The base of the cut was filled with 3052, and the area levelled up with 3032 – it is as yet not clear why two separate layers of fill were required; 4) At this point the builders realised that their foundation blocks were not properly aligned with where they needed the column to be, and may have been too insubstantial - note that the concrete pad is markedly smaller than the blocks now *in situ*, and its centre is substantially off from the centre of the column; 5) They recut 3033 on the south side through the fill 3032 (and must have cut on the E and W sides too), and to the N they may have had to shave or cut back vertically the edge of 3052 and 3032 to adjust the foundation blocks (or insert new, larger ones) further to the N. The blocks in there must have been removed in order to do this.

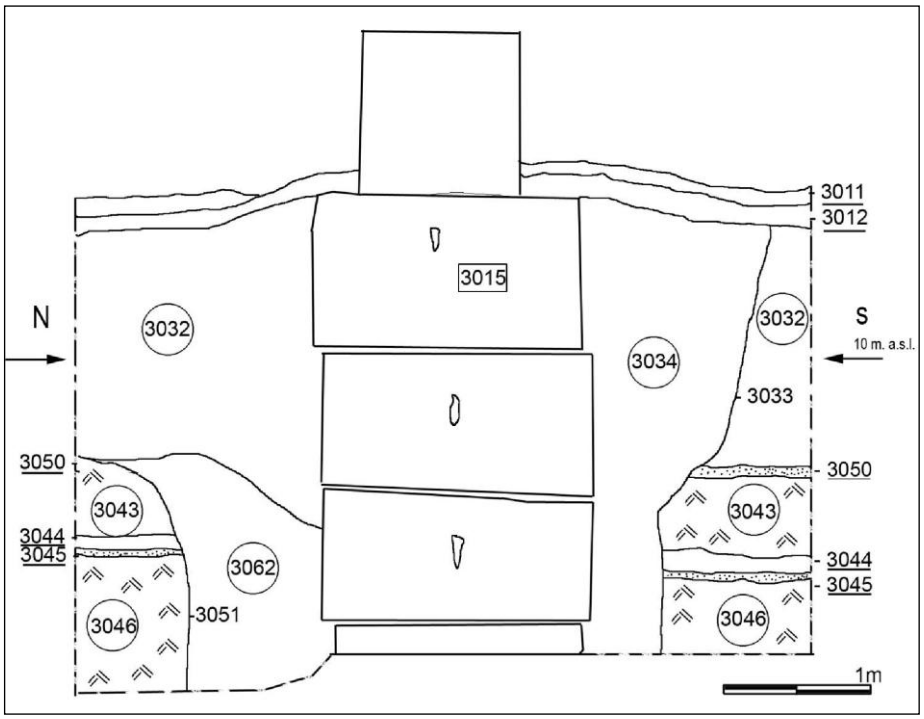

Fig. 30: East section of Sondage III.B.

immediately on top of these blocks, without a proper base. The cut and its fill for these foundations were only found on the southern side of the blocks, indicating that the blocks were placed against the northern side of the cut (which in its turn cut the earlier cut **3051**). The fill (**3034**) contained large amounts of shell, perhaps indicating an intensive dredging of the harbour.

It is possible that the levelling of the whole area took place just before the construction of the house (or this phase of it) itself, as no other layer was found between **3032** and the mortar layers (**3011** and **3012**) that served as the preparation for the *opus sectile* floor (**3010**).

Although we await the full study of the diagnostic pottery to suggest dating for the reconstruction proposed here, and further investigations in Sondage III.A and perhaps elsewhere are needed, it is already clear that floor **3045** and wall **3047** (with its related floors) reveal the presence of at least two phases of earlier construction on this site.

**Utica's trading connections and economic links**

Curiously for a city regarded in antiquity as an important port, we do yet have a clear overview of Utica's economy and its trading links. Already by the mid first century BC Utica's town council was composed of 300 Romans who were doing business there as merchants and money-lenders.[63] Several ancient writers indicate that salt production was an important feature of the region – the account of the events of 49 BC refers to salt lagoons around Castra Cornelia (Qalaat al-Andalous),[64]

This is possible because the blocks would have been suspended in a pincer clamp gripping them on the E and W faces (we can see the pincer holes in the W face on photo and section drawing) and manoeuvred from the S where there is room to crowbar them if necessary. They put the lowest block as far to the N as they could while keeping it safely on the concrete pad, and the second block on top of it. They were still a bit nervous about the foundation being off-centre from the column and so the third block is displaced by a few cm to overhang the first two to the N. It is still not quite central with respect to the column, but it would do; 6) They filled in the recut with 3034 and lay the floor.

[63] Plutarch, *Cato* 59.2.

[64] Caesar, *De bello civile* II.37.

and Pliny likens the salt heaps around Utica to hills (*HN* 31.81)**.** We would expect the exploitation of other marine resources, and although the Franco-Tunisian coastline survey does not mention marine production at Utica,[65] the presence of *Murex trunculus* points to a possible purple dyeing industry. The possibility that one of the structures to the NW of the monumental centre is a Roman fish-salting complex will be investigated in a future season. The city's relationship with the river Medjerda, which for much of the Roman period probably reached the city to the East of Qalaat al-Andalous, is also unclear, but as the largest port city in the region we would expect it to have acted as the key maritime export point for the extensive agricultural production of the Medjerda valley. Export-related amphora production might therefore be expected, and it is possible that the Punic kilns excavated in the 1920s may have been engaged in amphora manufacture.

Full study and quantification of the ceramic assemblage will shed further light on trading connections and imports to the city, but for the moment we wish merely to call attention to the quantity of bricks imported from Italy. Stamped bricks of Italian origin, some of the mid second century AD, were found in early investigations (mainly the Irisson d'Hérisson expedition),[66] including at least one from the large baths at Utica,[67] and brickstamps which are also Italian are reported from the domestic baths in the House of the Grand Oecus.[68] This fits a larger pattern in which Italian brickstamps, mostly from the Tiber Valley but also from Campania, occur at most of the major north African ports, having arrived no doubt as return cargoes in ships that exported north African agricultural produce to Portus and the ports of the Bay of Naples.[69] However, the fragmentary unstamped bricks from our sondages in the spoil dumps of old excavations, and also from the backfill of robber trenches in the basilica, were nearly without exception in Italian fabrics from the Rome/Tiber Valley region. They suggest that the reported stamped bricks are merely the tip of the iceberg; the volume of bricks imported as such return cargoes is likely to be greatly underestimated by studies of the brickstamps and systematic fabric analysis is also required.[70] While some of these shipments may have been ordered for specific building projects (the NW baths, and the roof of the possible basilica (Building 1)), their apparently common occurrence at the site and use also in domestic bath suites may suggest a more regular traffic in this material. While the brick imports underscore the importance of Utica's trading connections with Portus, other heavy imports included millstones from Mulargia on Sardinia and from Pantelleria, also to be explained as heavy ballast cargoes on return voyages, suggest trading connections with ports on other routes.[71] While special orders for public building projects no doubt account for nearly all of the variety and range of imported coloured marble column shafts, and for much of the marble veneer, the range of coloured veneer types found in private houses also suggests import for a local market rather than specially commissioned orders. Utica displays more or less the range of marble veneers that would be expected at a major coastal centre.[72]

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[65] Slim *et al.* 2004.

[66] *CIL* VIII.22632, 3 = *CIL* XV.733 (AD 148) ; *CIL* VIII.22632, 4 = *CIL* XV.740; *CIL* VIII.22632, 30 = *CIL* XV.659 ; Bloch 264 = *CIL* VIII.22632, 57 ; Bloch 427 = *CIL* VIII.22632, 60; XV, 2215.

[67] Delattre 1911, 325-326. Unfortunately he did not copy or identify the stamp, although he recognised it as an Italian brickstamp of the second century AD.

[68] Three bipedales all with the same stamp (*CIL* XV.1 no. 367), from the joint reign of Lucius Verus and Marcus Aurelius (161-169). Dulière 1974, 3.

[69] Wilson 2001.

[70] Tomber 1987 demonstrates that at Carthage also there are a number of unstamped imported bricks, but the implications for the scale of the phenomenon have not been explored.

[71] Williams-Thorpe 1988, 282 fig. 10, and 286.

[72] Compare most recently the city of Meninx on Jerba: Morton 2007.

**Conclusion**

The initial pilot season has already enabled the project to make major strides towards its main goals, as outlined above. While understanding of the port must await future coring, we are able to demonstrate early Islamic occupation at the site, in the form of *pisé* houses on spolia foundations, built over the ruins of Building 1, the probable Roman basilica. Investigations in the 'House of the Grand Oecus' have demonstrated the existence of earlier structures underneath. We have established a firmer and more accurate basis for a plan of the site, and established that much of the current morphology of the northern edge of the site results from the dumping of spoil from earlier excavations. The re-location of Punic kilns excavated by Moulard and de Prorok in the 1920s provides an opportunity to examine what they were producing (on which little detail has been published), and magnetometer survey has identified a probable kiln nearby which will be targetted for excavation to determine whether it is Punic or Roman.

**Acknowledgements**

We are grateful to the Institut National du Patrimoine and in particular to its Director, Fathi Bejaoui, for the invitation to work at the site of Utica, and for affording us all necessary administrative and logistical support during the preparation and running of the pilot season. We owe a great debt of gratitude to our sponsors: Lorne Thyssen, the Society of Antiquaries of London, the John Fell Oxford University Press (OUP) Research Fund, All Souls College, and Oxford University's Institute of Archaeology. We would also like to thank the British School at Rome for their participation in the geophysical survey, and the Università di Siena for the loan of a Trimble DGPS instrument. Tunis Air kindly waived excess baggage charges.

The sections of this report on the Digital Elevation Model and the campaign of geophysics were written by Emanuele Mariotti and Sophie Hay respectively, and we are grateful to them for their specialist assistance. The team in 2010 consisted of, besides the directors : Mouna Abdaoui (Faculté des Lettres de Sousse), H'ssyn Arfa (Faculté des Sciences Humaines du 9 Avril), Wafa Ben Slimane (INP), Dirk Booms (University of Cambridge), Radhia Bourannen (Faculté des Lettres de la Manouba), Fernanda Cavari (Università di Siena), Fathi Dridi (Faculté des Sciences Humaines du 9 Avril), Hannah Friedman (University of Oxford), Faouzi Ghozzi (INP), Sabra Ghouila (Faculté des Lettres de la Manouba), Sophie Hay (British School at Rome), Elyssa Jerray (Faculté des Lettres de Sousse/Aix en Provence), Moufida Jenène (Faculté des Sciences Humaines et Sociales de Tunis), Meya Kallala, Emanuele Mariotti (Università di Siena), Candace Rice (University of Oxford), Ben Russell (University of Oxford/British School at Rome), Yamen Sghaier (Faculté des Sciences Humaines et Sociales de Tunis), and Gregory Tucker (British School at Rome). We are very grateful to Nacer Soltani, Hedi al-Habib Sellini, and Boujemaa al-Hedhli (INP) for their wise advice and assistance with the logistics of the project.

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