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Excavations at the so-called Villa di Tito, Castel Sant'Angelo (RI), May to June, 2019

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The 2019 archaeological investigations at the so-called Villa di Tito (hereafter, 'Villa di Tito') include excavation, 3D imaging reconstruction of standing architectural remains, artefact analysis, and conservation. Our efforts this year have produced a more accurate plan of current and previous excavations, a three-dimensional model of the site and its environs, more evidence for a recent post-abandonment occupational phase, and clear dating evidence for the first renovations carried out on the structure as part of a period of significant architectural expansion and elaboration.

Introduction

Following on the preliminary archaeological investigations carried out at the Villa di Tito, jointly conducted by Saint Mary's and McMaster Universities at the site in 2018, our team returned during May and June of 2019 to expand on what we had previously accomplished. Our primary goals for the 2019 season were the following:

1. Recover more of the structure's overall plan;
2. Find dating evidence for one or more of the phases identified in 2018;
3. Identify the function of one or more of the rooms identified in 2018;
4. Examine one or more areas excavated by Alvino's team in 2010/2011 to determine if they had reached natural stratigraphy;
5. Continue to restore and conserve architectural features excavated in 2018;
6. Produce a three-dimensional plan of the standing architectural remains and the architecture excavated in 2018 and 2019;
7. Begin work on a three-dimensional terrain model from the terraced structure to Lago di Paterno (*lacus Cutiliae*).

History of Archaeological Research at the Site

The Villa di Tito is a terraced Roman villa site in the Velino River Valley of Lazio, within the territory of the *comune* of Castel Sant'Angelo, in the province of Rieti (fig. 1). It is situated on a natural limestone terrace to the north of the Velino River overlooking the karstic Lago di Paterno, likely the ancient *lacus Cutiliae*. The site, clearly visible since its abandonment in antiquity, has been the subject of previous archaeological and historical investigation, as noted in our 2018 report[1]. The site was initially identified by Persichetti and archaeologists of

[1] MCCALLUM *et al.* 2018: 2-4.

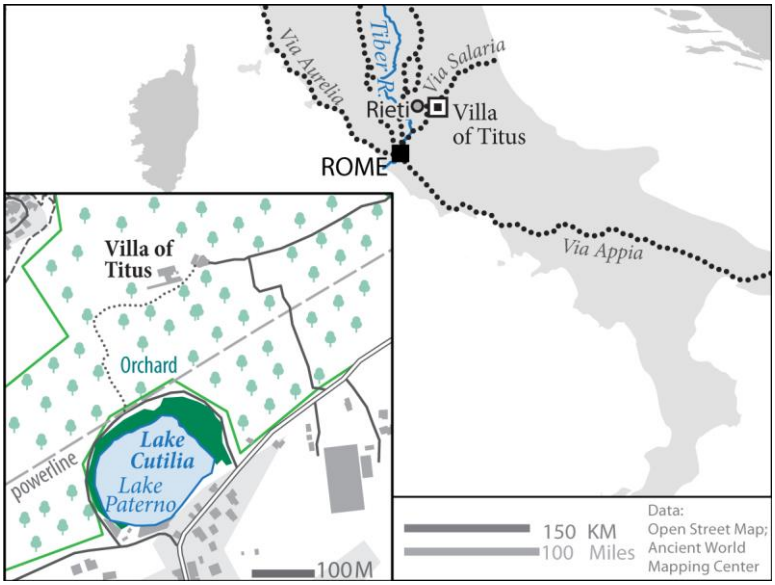

Fig. 1. Map of Central and Southern Italy with detail showing the location of the Villa of Titus. Image courtesy of Will Flanagan, Saint Mary's University.

the 19th century as a bath complex, based on the presence of an ornamental fountain no longer visible within the structure[2].

Excavations carried out at the site in the late 1970s revealed a cryptoporticus in the southeastern corner of the terraced structure with rooms and a floor surface. Restorations carried out in the 1980s shored up the terrace and its southern concrete wall and pilasters, and revealed more of the cryptoporticus, in particular the eastern entrance and some of the interior spaces in its eastern sector.

More recently, under the direction of dottoressa Giovanna Alvino, parts of the terraced structure were excavated in 2010 and 2011[3]. These excavations revealed that the site was not a bath complex, as previously believed, but was more likely a residential structure, a substantial Roman villa, probably constructed during the first century BCE, based on an examination of the masonry techniques and decorative elements. These excavations revealed a series of rooms in the northeastern corner of the terrace, including one with a black and white geometric mosaic installed as part of a program of renovations within the structure.

Ground Penetrating Radar carried out by Piro and Zamuner, also in 2010/2011[4], revealed the presence of an apse within the structure, roughly the equivalent to that excavated in 2018 and 2019 as our Room 10, as well as the presence of at least one large building in an olive grove roughly to the northeast of the terraced structure. In future seasons, we would like to engage in limited archaeological investigation of this olive grove which may include additional geophysics.

Historical Context

The Velino Valley has been an important corridor between the Apennine highlands and the lowlands of the Tiber watershed to the west from the time humans first occupied this part of Italy. During the late Bronze Age and Italian Iron Age, nucleated centres develop in the nearby Rieti basin[5] and it seems likely that a similar process of nucleation took place in the Velino Valley as well. It is also during this same period that a substantial drove road, which would over time develop into the Via Salaria, came into existence and gained prominence as lowland market centres at sites such as Rome developed throughout the Iron Age[6].

Who these residents were, or at least how they conceived of their own identity, is a matter of conjecture. Certainly, by the time of the Roman conquest, this area was part of the Sabina, but the Roman and Greek historical traditions and, more importantly, archaeological data, indicate that this area was home to numerous local groups during the Iron Age, a period of heightened mobility throughout the Italian peninsula[7].

With respect to Roman expansion and incorporation into the Roman social and political system, the Sabines were awarded citizenship quite early, sometime around 270 BCE[8]. Survey evidence indicates that from at least this time through the Republic, settlement patterns and trends within the low-lying Tiberine part of Sabine

[2] PERSICHETTI 1893: 168.
[3] ALVINO 2014a and 2014b.
[4] PIRO, ZAMUNER 2014: 67-69.
[5] CARANCINI, GUERZONI, MATTIOLI 2009.
[6] NARDELLI 2018.
[7] For more on mobility in the Italian peninsula from the late Iron Age to the first century BCE see ISAYEV 2018.
[8] DE SANTIS 2009: 31.

territory were quite similar to that of the Roman campagna in south Etruria, with the appearance of villas and, presumably, an increase in the level of commercial agricultural exploitation[9]. Our understanding of settlement patterns during this same period in the highlands, however, which includes the Velino Valley, is less certain. This area has not been subjected to systematic archaeological survey, pedestrian or otherwise, so only those ancient sites with standing archaeological remains have been documented and included in historical maps of the region[10].

With respect to the history of villas in ancient Italy, the site is not atypical for a late Republican structure. Similar sites can be seen at Bellona in the province of Caserta[11] and elsewhere. The structure is composed of a substantial *basis villae*, a roughly 60 x 25 m E-W x N-S concrete terracing wall, on which was constructed the core of the building. The *basis villae*, as just noted, includes a cryptoporticus at its eastern end.

There are other monumental structures contemporary with the Villa di Tito in this part of the Velino Valley (fig. 2). These include the so-called Terme di Vespasiano (fig. 3)[12], roughly 2.6 km to the south and west at Caporio (a *frazione* of the *comune* of Cittaducale), and the so-called Ninfeo dei Flavi (fig. 4) in the public gardens of the nearby town of Borgo Velino, roughly 3.6 km to the north and east of the Villa di Tito. As is noted in our discussion below,

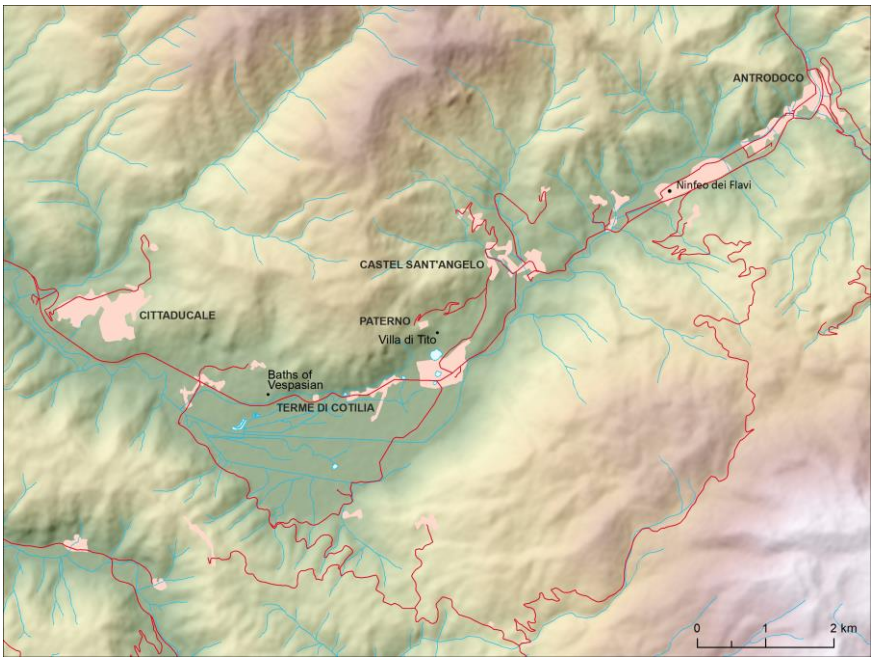

Fig. 2. DEM showing location of ancient and modern sites mentioned in the text, as well as the current road system, in the Velino Valley. Image courtesy of Greg Baker, Saint Mary's University.

Fig. 3. Aerial view of the Terme di Vespasiano (north toward top of page). Image courtesy of Greg Baker, Saint Mary's University.

[9] MARZANO 2007: 759-796; STERNINI 2004: 62-64; LAUNARO 2011: 151-157 and 165-182.
[10] Survey has been carried out in the nearby Conca di Rieti (COCCIA, MATTINGLY 1992; COCCIA, MATTINGLY *et al.* 1995; ALVINO *et al.* 2016; JAIA *et al.* 2016), but this basin is quite different topographically than the Velino valley, making comparisons difficult.
[11] DE CARO, MIELE 2001: 548-549.
[12] SANTILLI 2016: 62-67 and 80-88; DE PALMA 1984; REGGIANI 1979.

Fig. 4. The so-called Ninfeo dei Flavi at Borgo Velino.

there are a number of similarities between these three structures. Further east along the Via Salaria are other comparable Roman sites, such as the ancient village of Falacrinae, the reported birthplace of Vespasian, recently excavated by the University of Perugia and the British School at Rome[13].

Method

Excavations were carried out using standard techniques and methods. Due to the difficulty accessing the terrace for mechanized excavating equipment, and the presence of substantial pieces of concrete collapse, which made access to our archaeological trench difficult, all excavation was done manually. All archaeologically sealed contexts were dry sieved using a 2.0 cm mesh to recover artefacts and ecofacts, and at least 40 litres of soil were taken from each context for flotation with the goal of recovering archaeobotanical and small faunal remains. For those contexts with particularly high levels of archaeobotanical remains, such as the hearths described below, we collected 100% of the soil found therein.

Photography and photogrammetry were accomplished using both a drone (DJ Mavic Pro 2) and a camera mounted (a Nikon DSLR) on a hand-held, telescoping pole. Additional measurements used for creating overlays in addition to photogrammetry were done using a Leica TCR 1203+ total station.

Three-dimensional rendering was accomplished at the Maritime Provinces Spatial Analysis Research Centre (MP_SpARC) at Saint Mary's University using Pix4DMapper professional desktop photogrammetry software. The photogrammetric plans featured in this report were generated by dott. Marco di Lieto (di Lieto & c srl) in his office in Matera and have been modified by Matthew Munro of the University of Calgary.

Carbon 14 dating was carried out by Dr. Xiao-Lei Zhao and Carley Crann at the André E. Lalonde AMS Laboratory/Laboratoire SMA d'André E. Lalonde, at the University of Ottawa.

Overall plan

This year's excavations provided more information about the overall plan of the terraced building (fig. 5). Clearly, the structure we are excavating is a long, terraced villa, measuring approximately 60 metres E-W x 25 metres N-S, with a well-defined *cryptoporticus* occupying the southeastern corner of the structure and covering ca. 102m^2. Ten rooms are clearly identifiable, including those rooms excavated by Alvino's team in 2010/2011. The rooms we excavated in 2018 and 2019 are all on the northern limit of the terraced structure, bordering a long natural terracing wall of bedrock, to which the northernmost walls are attached. These rooms are orientated along a long, east-west running corridor that initially ran from the easternmost wall of the structure westward to Room 10 and, as we shall see below, beyond the limit of our excavation area this year. There is clear evidence that this corridor continues to the west beneath our western section wall, so its full extent will only be known through future excavations.

[13] COARELLI *et al.* 2011.

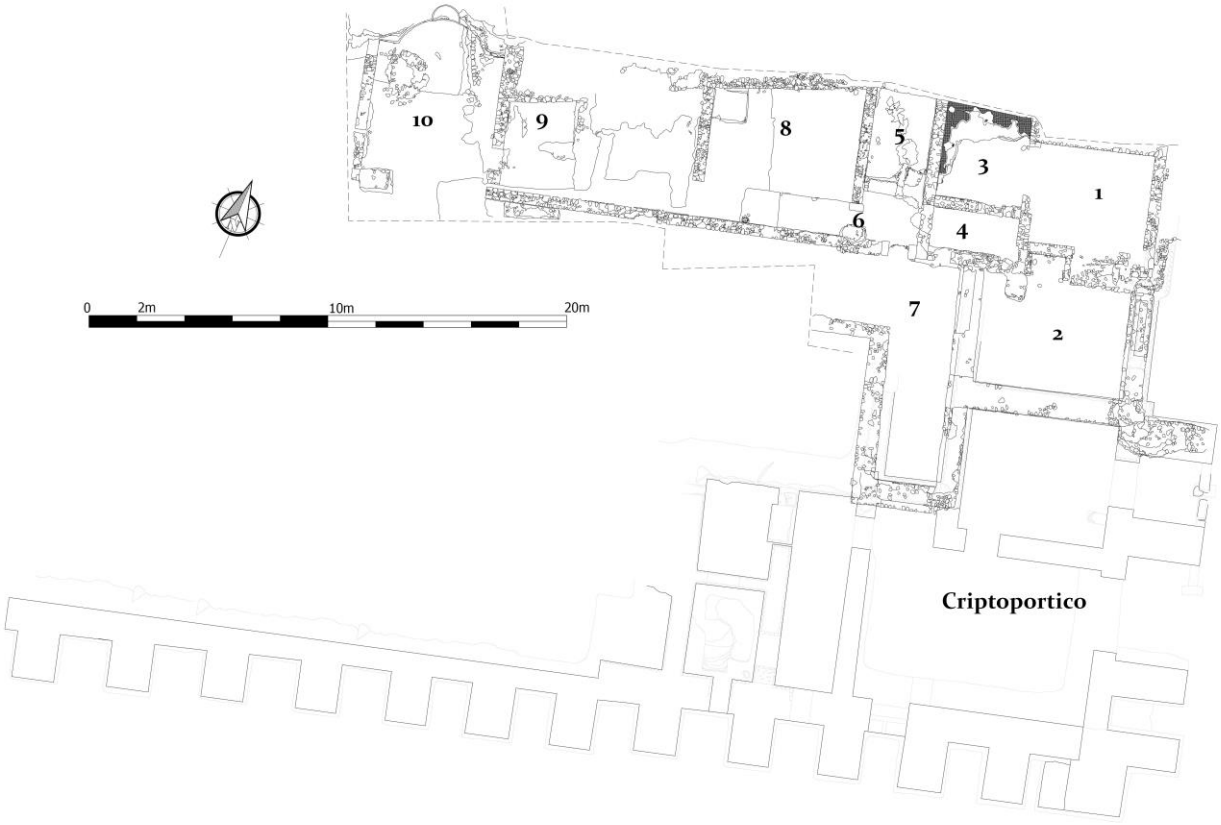

Fig. 5. Plan of excavations at the Villa di Tito.

Room 5 (4.9 x 2.5 m N-S x E-W, ca. 12 m^2)

This is the only new area that we opened up this year. Room 5 had originally been excavated by Alvino's group in 2010/2011. We decided to find out where these excavations had left off, and to ascertain if they had reached natural soil or bedrock below the archaeological stratigraphy. Much to our surprise, after we removed a thin layer of vegetation and topsoil, we revealed an extensive levelling fill within most of the room, save at its southern end where a threshold stone had been reused and inserted as part of a major renovation (fig. 6). There was clear evidence, particularly along the eastern wall of Room 5, for the presence of a floor that had been destroyed at some unknown point in the past, perhaps during the re-occupation of the building. The fill layer (fig. 7) was composed principally of tile and ceramic material, with many large pieces of

Fig. 6. Room 5 at beginning of excavations in 2019, showing the reused stone threshold and a relatively dense fill layer beneath an ancient floor, itself no longer extant.

Fig. 7. Composition of the fill in Room 5 (SU 1170), showing roof tile and pottery.

Fig. 8. The southern end of Room 5 where it once opened onto the corridor, Room 6. The patch of concrete, mortar, and tile in the left centre of the image shows a structure or new surface built on top of an existing concrete floor layer.

various types of transport amphorae, including examples of Tyrhennian productions of Dr. 2/4. Within this fill was a great deal of datable material, including the aforementioned transport amphorae, all of which can be dated to the early first century CE, diagnostic pieces of Italian Terra Sigillata, datable to the Claudian period, and three coins of the emperor Claudius. There was no material recovered that could be dated later than the middle of the first century CE, and most of it is datable to the middle of the first century CE or earlier, with very little residual material datable to the second half of the first century BCE. This indicates that there was a major reworking of this part of the villa at this time, an activity discussed in more detail below.

Bedrock sits beneath the fill in all but a small area in the southeast corner of the room (fig. 8). Evidently, at some point in the middle of the first century CE, Room 5 in its final form was added to the original plan of the villa as part of the Period 1, Phase 2 renovations to the building.

During Period 1, Phase 1, Room 5 was a much smaller space, the aforementioned southeastern corner of the later Phase 2 room. The function of this tiny space, and its relationship to the bedrock to its north and west are both unclear. There is no trace of a floor throughout the room contemporaneous with that of the small patch of concrete flooring in the southeastern corner of Phase 1, but it is clear that most of the eastern, northern, and western walls existed at this time, indicating that the outline of the room was extant during this initial phase. Perhaps in Phase 1 the room had a natural stone floor, or possibly there was a floor built directly upon the bedrock that was for some reason removed prior to the Phase 2 renovations.

Room 8 (irregularly shaped, ca. 6.0 m E-W x ca. 4.5 m N-S, ca. 27 m^2)

The excavation of Room 8 was begun in 2018, and excavations in 2019 were expanded to the west and south. Initially, work here was slowed by the presence of three large pieces of collapsed masonry (fig. 9) which had to be removed manually early on so that we could excavate the room's entire extent.

We were able to remove several layers of wall and plaster collapse and finally reached a surface in Room 8. This surface is made of concrete and represents either a concrete floor or a concrete subfloor whose surface, of an unknown material, may have been removed at some point prior to the structure's collapse. While most of the Stratigraphic Units within the collapse layers were devoid of artefacts other than tile fragments, the soil layer, a light clay, immediately above the floor itself contained both artifacts, including pottery and many iron nails, as well as faunal remains. All of the artifacts recovered are Roman and none date to later than the first half of the second century CE. The significance of this datable material for our understanding of the site's history is difficult to ascertain at this time, but it may indicate that the building, or perhaps this part of it, was not in use much later than the middle of the second century CE.

Fig. 9. An example of a large piece of intact masonry collapse, measuring ca. 2.0 x 4.5 metres, and roughly 1.4 metres thick.

Fig. 10. Detail of floor, western, and northern wall within Room 8. The northern wall, on the left side of the image, shows clear evidence for an incannucciata wall surface, with its thin layer of wall plaster that would have once covered a layer of reeds or common cane.

Room 8 is one of a series of rooms lining the villa's northern wall, built up against a natural terrace of bedrock to the north and opening onto a long corridor, Room 6, to the south. It measures 6.3 m E-W and, given its trapezoidal floor plan created by the back wall being affixed to the bedrock at a different angle than the rooms to the east, measures 4.0 m on the west wall and 4.6 m on the east wall. The eastern wall separates it from Room 5 and the western wall from Room 9. The room's northern wall, which is built up against a natural terrace of bedrock, is constructed entirely of roughly hewn chunks of local limestone mortared into place. There is a very interesting feature in the northwestern corner of the room. Here, along the western wall, the wall plaster is quite thick, ca. 8 cm, but, when the plaster turns the corner to follow the northern wall, it thins and is not, in fact, affixed to this wall at all (fig. 10). Instead, the plaster surface of the northern wall becomes a skim coat for an *opus incannucciata* wall. That is, between the stone surface of the northern wall abutting the natural bedrock terrace and this thin layer of plaster was placed a layer of reeds, onto which the plaster was affixed. These reeds served to waterproof the room: were water to seep through the northern wall from the bedrock behind it, it would hit the mat of reeds, and be directed downward to the floor-level and a possible drain (we did not complete excavations between the wall and the plaster). A significant amount of this plaster, with the impression of reeds on the side between the reeds and the northern stone wall clearly visible, was recovered all along the face of this northern wall, indicating a plaster collapse post-abandonment.

The eastern wall shows evidence for two construction phases, probably associated with Period 1, Phases 1 and 2 and related to the renovations in the adjacent Room 5 (fig. 11). Some element of this wall was clearly filled in during Phase 2, although we have no idea why at the moment. The northern and western walls, however, currently show evidence for only a single phase, so the reworking of the eastern wall did not result in a major reconfiguration of the space overall.

The function of this room during either phase is not known. We have not completely excavated the room down to floor level, so it is possible that fixtures or architectural features associated with specific activities will reveal themselves, but to date none have been identified.

During the 2020 season, we will clear the entire room down to floor level, excavate a long construction trench associated with the *opus incannucciata* wall, and go below the concrete floor in an attempt to obtain dating material and to identify earlier phases, should they exist.

Fig. 11. Aerial view of Room 5, with a filled doorway or other opening on the western wall (between Rooms 5 and 8) indicated.

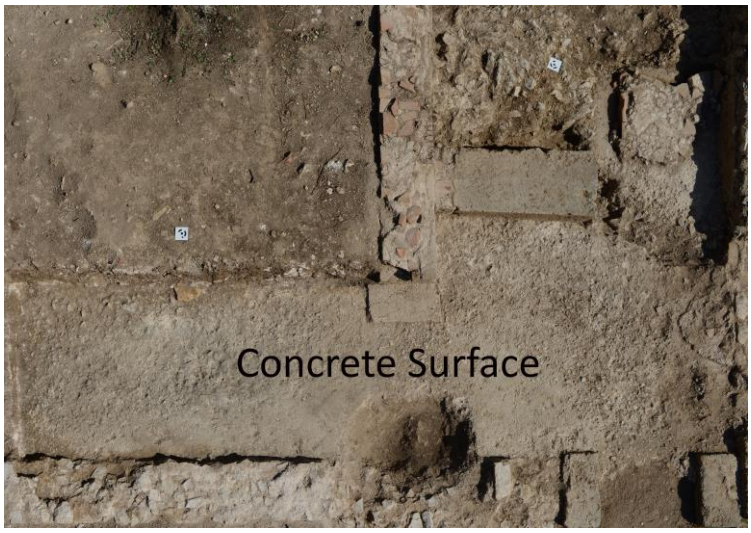

Fig. 12. Aerial view of the concrete floor surface within Room 6 (corridor) and Room 8.

Room 6, East-West Corridor (18.2 x 1.5 m E-W x N-S, ca. 28 m^2)

This long corridor initially began at the eastern edge of the building and continued westward to Room 10. A continuation of this corridor on the western wall of Room 10 was revealed during this year's excavations. As we have yet to find and excavate construction trenches associated with this corridor or the walls associated with it, phasing and dating is difficult. At the same time, it seems clear that the corridor was an important architectural axis throughout the life of the structure. Rooms 1, 5, 8, and 9 all open off the northern wall of the corridor and the corridor itself runs roughly parallel to the terracing wall that forms the northern limit of the building. Rooms 8 and 9 are entirely open to the corridor, meaning that the southern wall of the corridor also forms the southern boundaries of these two rooms. This indicates that throughout its use life, the corridor and these two rooms were part of a single architectural unit within the building.

It is also clear that during a subsequent phase, the easternmost part of the corridor was interrupted by a series of walls associated with the expansion of Rooms 1 and the creation of Room 4 (now separated from Room 3), when north-south walls within both rooms were extended to the south, obstructing the corridor in whole or in part. Also, excavations in 2019 revealed that at some point access to Room 10 from this corridor was blocked by a substantial masonry structure, as was the western entrance to Room 10 from the western continuation of this corridor. This blockage is discussed in more detail below in our description of Room 10.

To the south of Rooms 5 and 8, at the end of our excavation season, we managed to reach an ancient surface (fig. 12). This surface is a concrete floor or subfloor that may run the entire length of the corridor, although only future excavation will provide certainty. The concrete surface itself is quite rough although almost perfectly level. This may mean that it was once the foundation for some other sort of flooring material such as a mosaic, tile, or *opus sectile* surface, although we have not detected the impression of any such floor. If the concrete is the surface of the floor, then it seems likely that the corridor and Room 8, which is entirely open to the corridor along its southern edge, had a utilitarian function, unlike Room 3 wherein Alvino's team unearthed a black and white mosaic.

On the western end of the corridor, where it enters Room 10, we discovered a number of interesting anomalies. First, as it discussed below with respect to Room 10, it appears that at some point the doorway from the corridor into Room 10 was full or partially closed by a small masonry wall. Also, excavations to the south of the southern wall of the corridor reached bedrock without encountering a floor surface of any sort, or a construction trench associated with the wall. It appears, then, that the wall and the corridor are built directly on top of the limestone bedrock that forms the natural terrace. It may also be that the ancient structures to the south of the corridor, at least near the corridor's western end, have been destroyed. Alternatively, the area to the south of the corridor may once have been an open courtyard. This courtyard may have had a simple earth surface, possibly associated with a garden. It is also possible that the surface of the courtyard was the bedrock itself, although this seems a little unusual. Again, only future excavations will reveal the true nature of this part of the ancient structure.

Room 10 (5.5 x 5.3 m N-S x E-W + diameter of the apse, 4.7 m, ca. 32 m^2)

Room 10 was also initially discovered during excavations in 2018 (fig. 13). Its full dimensions are still not known, as the southern wall has yet to be discovered. It sits at the westernmost limit of our trench and, like most of the other rooms excavated, its northern wall is built up against the natural bedrock terrace. Unlike Rooms 5, 8, and X, we have yet to reach the most recent floor level in this space, so the phasing is perhaps less clear. At the same time, and as was noted in our report from 2018, there is architectural evidence to suggest that this room was created as part of the Phase 2 renovations. First, the northern part of the room has been cut into the bedrock and the masonry technique used in the construction of the northern wall is different. Rather than roughly-hewn pieces of limestone cemented together with mortar, this wall is concrete core masonry with both quasi-reticulate and brick (*opus latericium*) facing. Also, the northern wall, cut into the bedrock, is not in line with the northern wall of Rooms 5, 8, and 9, sitting roughly 2 metres to the north.

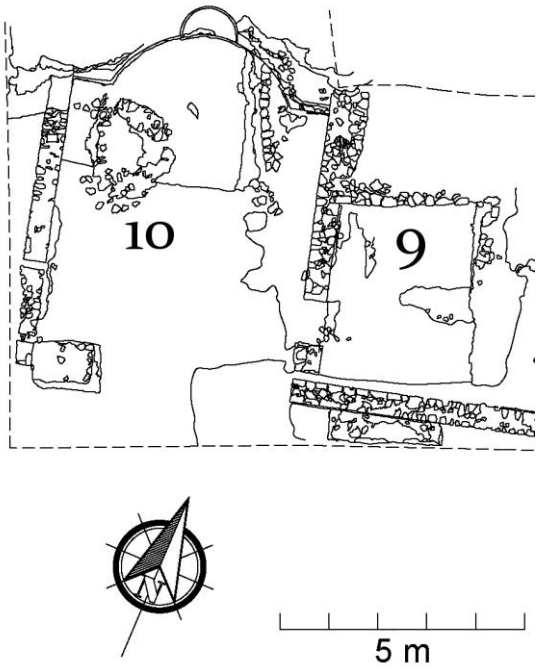

Fig. 13. Plan showing Rooms 9 and 10 at end of excavation in 2019.

The room itself is also architecturally distinct for other reasons. The northern wall is principally apsidal and set into it is an arched, semi-circular niche, possibly a platform for displaying statuary (fig. 14). The brick facing within the apse and niche is also exceptionally regular and very well constructed, more reminiscent of masonry on public buildings at Rome during the early imperial period rather than contemporary examples at nearby buildings in the Velino valley, including that at the nearby the Terme di Vespasiano. Finally, the apse was covered by a semicircular concrete vault, set above the arched ceiling of the niche.

Fig. 14. Aerial view of Room 10, showing clearly the relationship between the rectangular southern part of the room and the formerly vaulted apse and niche on the rooms northern edge.

Fig. 15. View of Cryptoporticus from the north.

At the moment, we know of two entrances to Room 10. One is from the east-west corridor, labelled on the site plan as Room 6, described above, which entered this space through the eastern wall; the second is opposite the first on the western wall, and likely a continuation of this corridor.

As with the other architectural spaces, we are currently only able to postulate room function. At the same time, the presence of the apse and niche, the room's size, as well as the brilliantly executed brick facing, suggests that Room 10 was a place of display, possibly a reception or cult space, within the overall terraced structure.

Cryptoporticus (ca. 102 m^2)

Thanks to the efforts of the Soprinentendenza Archeologia, Belle Arti, e Paesaggio per le Province di Latina, Frosinone e Rieti, during February and March of 2019, vegetation and the spoil heap from Alvino's excavations were removed from within the cryptoporticus (fig. 15). This operation, overseen by dott. Simone Nardelli, has revealed intact stratigraphy, including significant wall collapse events (fig. 16), a concrete floor and associated drain, and at least one previously undocumented interior wall preserved to a height of roughly 2 metres (fig. 17). In short, the cleaning has revealed an area within the cryptoporticus easily accessible for excavation, with intact archaeological stratigraphy and rooms previously unknown. As one of our goals is to identify and examine parts of the villa complex once associated with productive activities and the lives of non-elites, this newly cleared area will form one of the foci of future excavations. Marzano proposes, on the basis of a passages in Columella[14] and Varro[15] and on the archaeological remains from villas throughout Lazio and Campania,

[14] COLUMELLA 1.6.3.
[15] VARRO 1.13.

Fig. 16. Photo showing stratigraphy within the Cryptoporticus*, revealed after cleaning by the Soprintendenza Archeologia Belle Arti e Paesaggio per le province di Frosinone, Latina e Rieti in the winter of 2019.*

Fig. 17. View of Cryptoporticus *from the northeast showing preserved and partially exposed wall in the upper section towards the back centre of the photo.*

that the *cryptoporticus* within a rural villa was a possible place in which to house slaves and some of their productive activities[16]. She also notes that *cryptoportici* in general have not been examined archaeologically in sufficient numbers or systematically to either prove or disprove such an assertion, and that often the focus has been on decorative examples which were clearly part of the *pars urbana* of a particular rural villa. Excavations within the Villa di Tito's *cryptoporticus* may very well contribute to the discussion on the housing of slaves on such estates and, as noted elsewhere, it appears that some elements of the original architectural layout and installations of this area are preserved beneath a layer of collapse.

Periods and Phasing

It is now clear that there are two distinct periods of occupation at the site. The first period corresponds to the construction of the villa itself. The second period amounts to a reoccupation of the site after a period of abandonment, at which time parts of the original structure had started to collapse.

Within the first period are two identifiable construction phases. Current evidence points towards a first phase that starts some time during the first century BCE, although this is based almost entirely on the presence of residual ceramic material in fills associated with the second phase of Period 1. Only the excavation of construction trenches and fills associated with the first phase of Period 1 will provide proper dating evidence. During this period, the building itself appears to have been relatively modest, located in the northeastern corner of what would become the large terraced villa that is visible today from the SS 4, above Lago di Paterno. Our investigations to date indicate that the 'villa' at this time may have consisted of as few as six rooms aligned along a bank of east-west running bedrock (Rooms 1 – 6 on plan, fig. 5), defined by a long stone wall, itself mortared to the bedrock. Room 7, an area partially excavated in 2010/2011, may represent the remains of an early portico or exterior courtyard for this first construction phase, but this is entirely speculative. The nature of this structure is unclear due to the incomplete nature of the current evidence. Based on the subsequent residential function of the later terraced structure, however, it seems likely that this was a modest country villa.

Phase 2 is now clearly datable based on the discovery of a sealed floor fill and construction trenches associated with major renovations of the villa. The datable material includes Italian Terra Sigillata, transport amphorae (Dr. 2/4) and bronze coins minted during the reign of Claudius (fig. 18). This points to an early imperial, Julio-Claudian date for this renovation. Also, epigraphic evidence in the form of stamped tiles corroborates this date (figs. 19, 20, 21)[17].

[16] MARZANO 2007: 147-153.
[17] McCallum, Beckmann *et al.* 2019: 12-13; LEZZI 2009: 114.

Fig. 18. Detail of the fill in Room 5 showing a Dr.2/4 amphora and a bronze coin minted during the reign of Claudius in situ *during excavations in 2019.*

Fig. 19. Photo of a stamped tile recovered during excavations at the site in 2018.

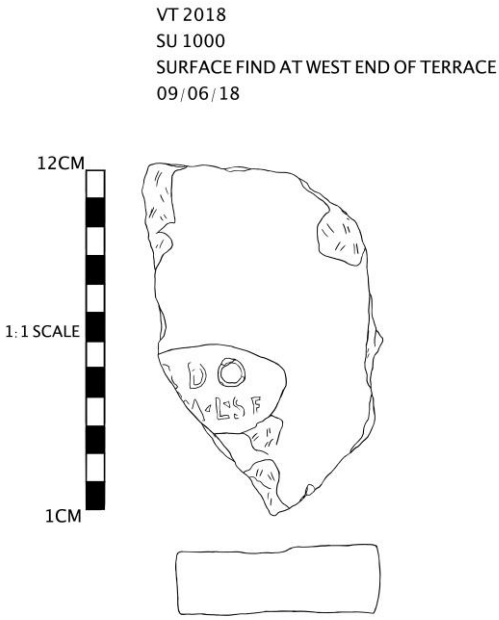

Fig. 20. Drawing of stamped tile from Figure 19.

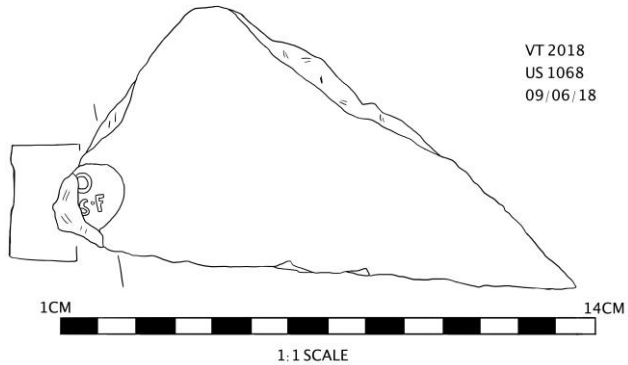

Fig. 21. Drawing of second stamped tile recovered during excavations in 2018.

Fig. 22. View of the Villa di Tito from the southern shore of Lago di Paterno.

Fig. 23. Plan showing some of the Lombard-period layers excavated in Room 10.

The Period 1, Phase 2 renovations were substantial. They include the creation of the artificial concrete terrace structure and the extension of the building another 40 metres to the west. This resulted in the creation of Room 10, the raising of original floor levels, and the insertion of at least one black and white mosaic, although presumably we will find evidence for other mosaics or even *opus sectile* flooring as excavations at the site proceed.

The changes during this renovation amount to the monumentalization of the previous structure. The result is a building clearly visible from the ancient Via Salaria below (fig. 22). Moreover, the monumental terraced structure essentially framed activities on the Lago di Paterno, sitting to the north of and hovering above this sacred lake. This was surely no accident; it likely represents an intentional reworking and renewal of the traditional religious landscape of the Velino Valley.

It is, of course, possible that there are other phases in Period 1, evidence of which have yet to be discovered. One of the goals of our 2020 campaign will be to excavate beneath the most recent floor levels of Rooms 5, 8, and 10 to determine if there were earlier construction and occupation phases.

Period 2 saw a reoccupation of the structure many years after its initial abandonment. As mentioned in our previous report[18], there is clear evidence in the form of post-holes for the construction of a small building, possibly a *capanna* or hut, on top of the black on white mosaic excavated by Alvino. This year, we discovered that the area within the apse and niche, described above as part of Room 10, was also transformed into some sort of simple shelter, in part constructed on top of a previous wall collapse and colluvium (fig. 23). Carbon 14 dating indicates that Period 2 can be dated to the mid-seventh through mid-eighth century CE.[19] This indicates that the Roman-period villa had been abandoned and was in a partial state of collapse by this time, as the Lombard-era structures and hearths were constructed on top of early masonry collapse layers (fig. 24). These structures were subsequently buried by the collapse of the vaulted apse and the associated terracing wall, and whatever may have remained of the ceiling/roof at this time.

[18] McCallum, Beckmann *et al.* 2019: 9-10.
[19] The Carbon 14 dating was carried out by technicians at the A.E. Lalonde AMS Laboratory at the University of Ottawa, in August and September of 2019.

Fig. 24. Detailed photo of Lombard-period hearth within the niche in Room 10.

Unfortunately, the nature of the Period 2 occupation is not known. We collected 100% samples of the hearths encountered as well as less complete samples of the habitation layers associated with these hearths and surrounding dry masonry structures that will undergo flotation in the near future to see if there is any environmental data that might provide clues about activities at the site during Period 2. What we can say is that the Lombard-era structures are much more ephemeral than the Roman period villa, and quite clearly reuse elements of the villa itself in their construction. It seems quite likely that during Period 2 the site was being used to process agricultural materials, store agricultural equipment, or as shelter for shepherds and their flocks. It was clearly no longer a site of elite social display.

Construction Materials and Techniques

To date, most of the materials used in the construction of the villa are clearly local. This includes varieties of limestone still in use throughout the Velino valley today as well as locally manufactured tiles, as is indicated by the stamps on them which are found only locally. Lime used in the mortar and concrete was also likely produced locally, although no analyses have been conducted to determine provenience. Similarly, it seems highly probable that timbers used in the building's construction were also local. Perhaps the only imported material is the pozzolana used as an essential ingredient in the concrete, which must have come from somewhere to the west of the Tiber River, within the various volcanic complexes of west central Italy, including Rome.

The masonry construction techniques recorded to date are to a certain extent related to specific Periods and Phases. Period 1, Phase 1 saw the use of local limestone cemented in place, as part of the northern perimeter wall/terracing wall of the building, along with *opus incannucciata* to deal with seeping groundwater. Other walls show a consistent use of *opus quasi reticulatum* mixed with stone quoining at wall joins and wall ends, a masonry technique seen locally at Rieti[20] and regionally at Cottanello[21], and in general fairly common for the late republican and early imperial periods in west central Italy. This second technique continues to be used in Period 1, Phase 2, which also saw the development of *opus latericium*, seen most vividly in Room 10.

Dry, stacked masonry typifies structures built during Period 2, which saw the reuse of building material from Period 1. As noted in our 2018 report, there is also evidence for the use of organic building materials such as wooden posts and possibly thatch or wattle and daub in the construction of a hut (*capanna*) on top of the mosaic in Room 3.

The Local Setting

As noted above, the Villa di Tito is not the only monumental archaeological site in this part of the Velino Valley datable to the early imperial period. Just a couple of Roman miles (3.2 km) to the west and south along the Via Salaria stand the so-called Baths of Vespasian, which was may have been a substantial Sabine sanctuary site dating back to the pre-conquest Iron Age. All of these complexes appear to have undergone monumental renovations at around the same time, based on an analysis of building techniques and the presence of stamped tiles from the same manufacturing centres at the Villa di Tito and Terme di Vespaiano sites (fig. 20)[22].

[20] For comparison with Rieti, please see CELLINI 2018: 114, fig. 97.
[21] For an example of this at the villa at Cottanello, see GASPARINI, SFAMENI 2017: 129, fig. 4.
[22] MCCALLUM, BECKMANN *et al.* 2019: 12; DE PALMA 1984.

As noted in the report on our 2018 excavations, the tiles recovered at both sites are stamped with the name of the *dominus*, or owner of the property wherein the tiles were manufactured, Lucius Volumnius, as well as the name of his slave, Cerdo, who would have been the *officinator* of a brick and tile yard. The style of the stamps, which were found as residual material and as surface finds, indicates a Julio-Claudian date of manufacture[23]. The presence of these stamps at both sites, and the lack of such stamps outside of the Velino Valley generally, indicates a production center somewhere in the vicinity of both sites, perhaps between Cotilia and Castel Sant'Angelo (RI).

It is possible that the changes at both sites are part of a larger, regional program of renovation, capital investment, revitalization, and monumentalization associated with historically and religiously significant Sabine centres. Should this be true, as we suspect it is, the genesis of this movement is not currently known. It may be that a powerful family of Sabine ancestry reacting to the new post-Augustan Italy in which traditional institutions and networks were being replaced by new ones, decided to commemorate through architectural renewal two important Sabine centres in the heart of the Velino Valley, both associated with traditional cults and in nodal positions along the Via Salaria. There is even the possibility that members of the Flavian family were involved in this activity, although we can offer no concrete evidence in support of this assertion.

Clearly, then, this monumentalization required a significant investment. As such, it seems clear that the owner of the building at this time was a member of the local decurial elite, possibly at nearby Reate, or perhaps even a member of the Equestrian or Senatorial order at Rome. Taking the aforementioned fill layer and associated construction trenches in Room 5 as dating evidence for this renovation at the Villa di Tito, a Claudian or mid-first century CE date seems likely. This may coincide with the rising fortunes of the *gens Flavia* in the decades prior to Vespasian assuming the role of *princeps* and founding of the Flavian dynasty, but this is, for the moment, a purely speculative assertion.

The ruins of another monumental villa complex, the so-called Ninfeo dei Flavi, are also visible approximately 3.6 km to the east and north of the Villa di Tito in the public gardens of the town of Borgo Velino. There are several architectural points of connection between the Villa and the Ninfeo: both are podium structures, and both use a mixture of *opus incertum*, *opus reticulatum*, and *opus vittatum* in their construction. The occupational history for the Ninfeo is not known, however, so it is difficult to understand if it was built as part of a conscious program of architectural renovation and monumentalization within this part of the Velino Valley. Only future excavation at the site may provide relevant data that will clarify the two sites' relationship.

Compared to other, contemporary villas within the Sabine area, including those at Cottanello[24] and Vacone (localita Sassogrosso), the Villa di Tito is a more ambitious structure, at least with respect to the engineering challenges presented by the site's location on the side of a steep hill and their resolution. The creation of a 60-metre-long concrete terrace jutting out from this hillside resembles more a public works project than the construction or renovation of a private residence, and its highly visible location within the Velino valley also takes it cues from Roman religious architecture. The capital investment here, then, is notable and substantial for a villa of the late republican and early imperial periods.

As noted above, *lacus Cutiliae* at the dawn of the first millennium CE was an important cult site associated with the goddess Vacuna for centuries, and was considered to be the geographic centre of the Italian peninsula. That the villa is situated immediately to the north and above the lake is probably not a coincidence. Instead, it seems highly probable that the monumental terrace, and its superstructure, was designed to frame the lake and serve as an architectural backdrop to this important Sabine cult site. This would have been an extremely effective means of advertising the status of the villa's owner and that of his or her family, not only to participants in ritual activities at the cult site, but to any passersby on the Via Salaria. Essentially, the villa's owners could visually claim some element of patronage over the cult site, and perhaps acted as a patron of the site as well. This phenomenon is documented by Pliny the Younger in his *Letters* (9.39), wherein he describes his plans to renovate a temple to Ceres on his estate in the Upper Tiber valley, near *Tifernum Tiberinum* (Citta di Castello). Excavations carried out at the site of this estate, directed by Braconi and Saez, have identified the remains of a small temple on the grounds of the estate, quite possibly the one mentioned in Pliny's letter[25].

[23] Please see, STEINBY 1978-1979: 82, n. 214 and 215; and LEZZI 2009: 114.
[24] PENSABENE, SFAMENI 2017.
[25] BRACONI 2003: 38; BRACONI, SAEZ 2001.

Fig. 25. Photo of conserved and restored top of a Dr. 2/4 amphora recovered during excavations at the site in June of 2018. Photo courtesy of Stefania Zucconi.

In future seasons we intend to engage in targeted field survey in an attempt to identify other contemporaneous structures between the villa and the lake, and to subject the lake itself to limited archaeological and environmental investigation, including coring, pollen coring, side-scanning sonar, and photography from an underwater remotely operated vehicle. It seems essential to define better the relationship, both physical and social, between the villa and the lake, as both were central elements of the local topography during the Roman period.

Conservation

From May to September 2019, conservation of archaeological materials and the site's architectural remains were carried out by Stefania Zucconi. With respect to the architectural elements at the site, Stefania focused on the various parts of the long terracing wall that forms the structure's northern limit, particularly the section containing the apsidal wall into which is set the aforementioned niche.

Stefania is in the process of cleaning and conserving our coins and other metal artifacts, and has restored some of our pottery (fig. 25).

3-D and Terrain Modelling

Greg Baker, the Research Instrument Technician of the Maritime Provinces Spatial Analysis Research Center, has generated a three-dimensional model of the standing architectural remains and excavated areas as well as a terrain model between the site of the Villa di Tito and Lago di Paterno (figs. 26 and 27). The models were put together by Greg in the Maritime Provinces Spatial Analysis Research Center. These models will allow us to place the Villa di Tito within its topographic context, and to relate our stratigraphic excavation data with the standing architectural remains at the site, and the terrain model will be used in future seasons to guide surface survey, pollen coring, targeted geophysics, and other related non-destructive archaeological research methods.

The photogrammetry process involved low-altitude aerial photography that was captured using a DJI Mavic 2 Pro Remotely Piloted Aircraft (RPA). Flight navigation and nadir image capture was automatically controlled using Pix4D Capture (Android version 4.5.0). Manually piloted flights were also conducted with Pix4D Capture and DJI Go (Android version 4.3.16) to supplement nadir imagery where vertical surfaces required additional oblique imagery for complete coverage of the survey area. Imagery was captured with a planned 80% front- and side-lap. High-resolution collections were flown 20m above ground-level for a resulting Ground Sample Distance (GSD) of 0.5cm. Contextual imagery was also captured from flights at an altitude of 60m AGL, resulting in an average GSD of 2.5cm.

Ground Control Point (GCP) targets were laid out prior to flight. A minimum of five targets are visible per flight. Additional targets were placed to ensure that no location within the survey area was more than 1.5x the distance represented on the ground by the longer edge of any given image. Care was taken to ensure that targets were placed around the outer edges of the survey area, and represented the full range of elevations present in the survey area. Additional targets were placed as Check Points (CP) for quality control purposes, when and where necessary. GCP and CP targets were surveyed with a Leica Geosystems total station.

After imagery was captured, the data was downloaded from the onboard SD card and processed using Pix4DMapper Professional desktop photogrammetry software (Windows version 4.4.12). GCP locations were manually marked in the imagery and tagged with their surveyed locations. The imagery was then processed into a 3D model, and a Densified Point Cloud, Mesh, Orthomosaic, and Digital Surface Model were saved in LAS, OBJ, and TIFF formats, respectively.

Fig. 26. 3-D terrain model (point cloud) showing the Villa di Tito and the Lago di Paterno. Image courtesy of Greg Baker, Saint Mary's Uniersity.

Fig. 27. 3-D model (point cloud) of the standing architectural remains of the Villa di Tito. Image courtesy of Greg Baker.

Conclusions

Returning to our research goals for the 2019 season, this year we have made significant progress on a number of fronts that have now laid the groundwork for future excavation seasons. We have improved our understanding of the structure's overall layout and the arrangement of rooms within the terraced structure. We can now definitively date Period 1, Phase 2 renovations to the structure to the middle of the first century CE, as well as the Period 2, Lombard-era reoccupation of the site, datable to the 7th/8th century CE. While we do not know the function of any interior space with certainty, Room 3, excavated by Alvino and containing the black and white mosaic, was likely a reception area of some sort, and Room 10 was clearly a large and significant interior space used for display and possibly associated with reception or cultic activity. Our limited investigation of areas previously excavated by Alvino's team indicate that they had not, in fact, reached virgin soil, at least not in Room 5, and, as noted above, our continued excavations in this room have provided excellent dating evidence for Period 1, Phase 2 renovations.

Outside of our excavations, we were also able to move forward our work conserving and, where nece-ssary, restoring architectural elements. Stefania Zucconi has insured that the long terracing walls that define the northern edge of the site, including the apsidal wall and its associated niche, will endure for many years to come and has laid the groundwork for one day leaving the excavated architecture exposed as part of an archaeological park, although this will only be possible through a long-term commitment of funds to cover the excavated area and for future maintenance of the archaeological remains.

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