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The 2011 Season of the Pompeii *Quadriporticus* Project: The Southern and Northern Sides

Eric E. Poehler - Steven J.R. Ellis

The Pompeii Quadriporticus Project (PQP) is an archaeological and architectural research project that is designed to conduct the definitive study of one of the largest and most important monumental buildings in the World Heritage site of Pompeii, Italy. Combining cutting edge technologies with an exhaustive examination of the physical fabric of the poorly-understood Quadriporticus, and incorporating the results from the excavated remains of its easternmost borders (Pompeii Archaeological Research Project: Porta Stabia), the PQP is putting this long ignored monument back into its archictural and urban contexts.

The PQP is co-directed by Dr. Eric Poehler (University of Massachusetts-Amherst) and Dr. Steven Ellis (University of Cincinnati), who is also the director of PQP's sister project, the Pompeii Archaeological Research Project: Porta Stabia. Our work is generously funded by a University of Massachusetts-Amherst Faculty Reseach Grant / Healey Endowment Grant, the UMass Department of Classics, the Five Colleges, Inc., by the Louise Taft Semple Fund of the Department of Classics at the University of Cincinnati and by a gift from Cardinal Intellectual Property.

In July of 2011, the Pompeii *Quadriporticus* Project (PQP) conducted its second campaign of research on this important and long-neglected monumental building. Building from the results of our 2010 field season[1] – which identified and documented five relative construction phases dating between the original construction of the *Quadriporticus* in the second half of the 2nd century BC and its final destruction in AD 79 – our team expanded the architectural analysis to the southwest, south, southeast and north sides of the building (fig. 1)[2]. The goals for this season's analysis were: (1.) to build upon the 2010 phasing, (2.) to define the changing shape of the southern sector of the *Quadriporticus* in relation to these phases, (3.) to further investigate the major infrastructural components of the building, and (4.) to consider the changing role the structure played in the movement of people in this southern area of Pompeii. The application of archaeological and information technologies were similarly expanded in the 2011 season, incorporating geophysical prospection and photogrammetry as well as further developing the use of the iPad and improved database programs.

Methods and Technology

The PQP continued to invest in technology to advance its archaeological practice during the 2011 field season and did so in three complementary ways: (1.) employing additional iPads on site, (2.) applying photogrammetric recording and analysis techniques, and (3.) conducting Ground Penetrating RADAR (GPR) prospection in the central open area of the *Quadriporticus*.

[1] POEHLER, ELLIS 2011. The authors are grateful to the *Soprintendenza Speciale per i Beni Archeologici di Napoli e Pompei* and the *Ministero per i Beni e le Attività Culturali* for permission to undertake this research, and for all of their energetic support while in the field. Special thanks are due to Dott. Antonio Varone and Sign. Giuseppe di Martino for facilitating our every need, and not least for negotiating the practical matters of our research alongside the sensitive operations associated with the reconstruction of the theater. Our work is generously funded by a University of Massachusetts Amherst Faculty Research Grant / Healey Endowment Grant, the University of Massachusetts at Amherst Department of Classics, by the Louise Taft Semple Fund of the Department of Classics at the University of Cincinnati, and by a gift from Cardinal Intellectual Property.

[2] The PQP is co-directed by Profs. Eric Poehler (University of Massachusetts Amherst) and Steven Ellis (University of Cincinnati). Dr. Nick Ray is the field director. Sydney Evans is surveyor and Ambra Spinelli is archivist. The field team in 2011 included Sara Champlin, Benjamin Crowther, Janet Dunkelbarger, and Heather Pastushok.

Our use of iPads for on-site recording, drawing and analysis in 2010 found that the only major limitation was that having too few iPads created a bottleneck in data entry. This was alleviated in our 2011 season by equipping every team member with an iPad. Even after controlling for a learning curve[3], the increase in efficiency was dramatic: with three additional iPads, 371% more work was completed by 35% fewer people[4].

In order to fully record the three-dimensional state of the *Quadriporticus'* architecture, the PQP employed in 2010 a Leica ScanStation C10 three dimensional laser scanner to capture its open, central area, columns, internal facades and monumental stairway (fig. 2)[5]. Although many rooms surrounding the porticoes were also partially recorded because their poor preservation permitted sightlines into them, the significant time costs to survey the dozens of remaining rooms and spaces meant that only five rooms in the northwest corner

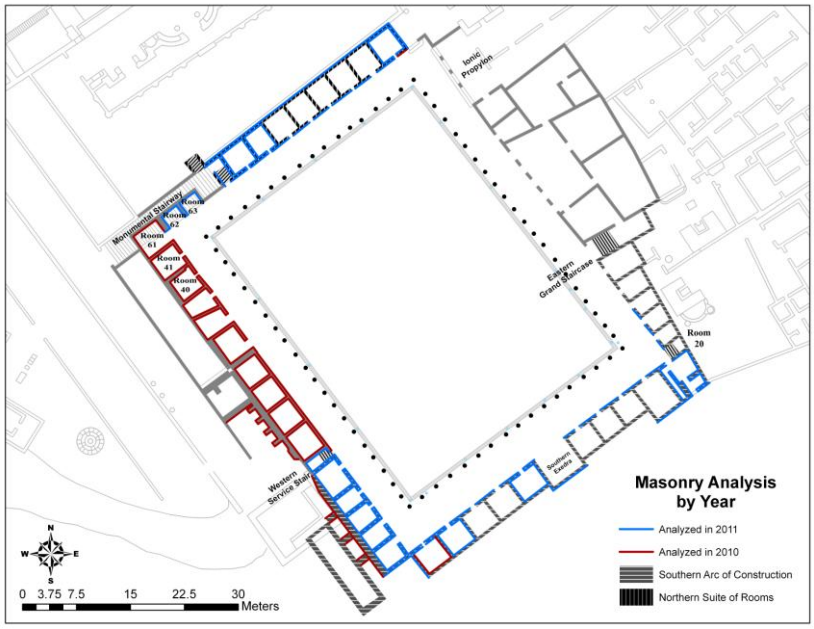

Fig. 1. Masonry Analysis completed in 2010, 2011.

Fig. 2. 3D point cloud of the Quadriporticus*, from northwest*

[3] There were two new and two returning students in 2011.
[4] In 2010 we recorded 246 stratigraphic units of 78 wall faces in 75 people days of work. In 2011 we recorded 913 stratigraphic units of 180 wall faces in 49 people days of work.
[5] The survey was completed by S.I.A. ingegneria e ambiente on July 30, 2010 in nine stations.

Fig. 3. Photogrammetric image of Room 35, wall face 246.

(R_40-41, R_61-63) could be selected for complete capture. Therefore, to complement and to complete the 3D laser scanning, we began a partnership with Autodesk Labs to apply photogrammetric methods to the rest of the *Quadriporticus* in the 2011 season[6]. After testing and refining the imagery capture process, it was possible to model completely or in part fourteen rooms behind the southwest, south and east porticoes (fig. 3)[7]. After computation, these images produce not only photo-real 3D spaces, but also yield highly detailed meshes that can be grafted onto the digital framework created by the 3D laser scanner[8].

Subsurface imaging in the *Quadriporticus'* central area was conducted on our behalf in June, 2011 by the British School at Rome and the Archaeological Prospection Service of Southampton[9]. The Ground Penetrating RADAR (GPR) survey covered the c. 1530m^2 open area in a series of 0.25m x 0.50m transects and reached an approximate depth of three meters. The preliminary results of this survey offer significant evidence for how the *Quadriporticus* developed and was used in the modern, early modern, Roman and pre-Roman periods. In the uppermost slices[10], long, linear features running north-south – the modern sprinkler installations and slightly curving footpath – dominate the images (fig. 4). In the center of the area, however, is a intriguing circular feature that appears between appro-

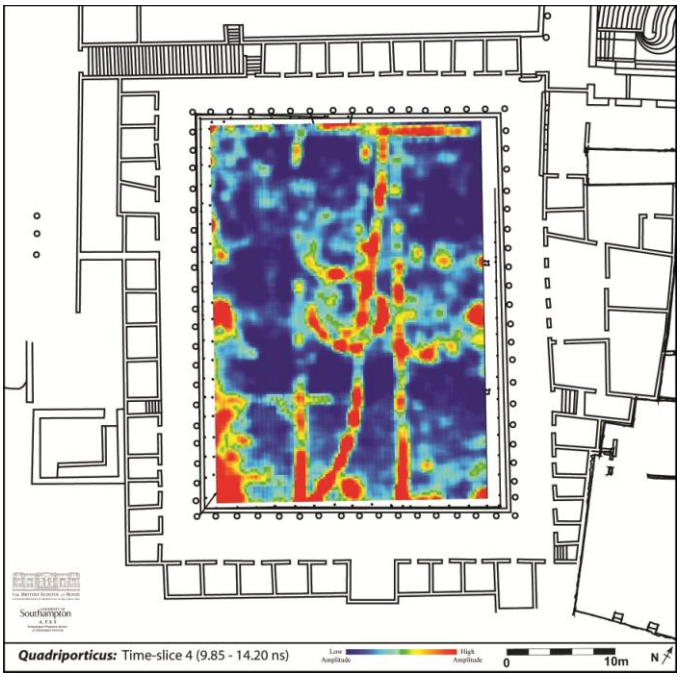

Fig. 4. GeoRADAR image of the uppermost features.

[6] Photogrammetry at Pompeii has a long history, going back at least to Harrison Eiteljorg's work with the Pompeii Forum Project (see EITELJORG 1994, and http://pompeii.virginia.edu/ann-rpts/95/pg-95.html; Kirk Martini in 1998: http://www2.iath.virginia.edu/struct/pompeii/patterns/app-A.html). Near the turn of the millennium a team from Bologna (DISTART) recorded decorative fountains (see http://137.204.130.251/vesuviana/convegno/VESUVIANA_2008_ABSTRACT_POSTER_BITELLI_2.pdf), while a Finnish team studied the House of Marcus Lucretius in 2003 and 2004 (IX 3, 5), resulting in an excellent fly-through and narration (see http://arkisto.metropolia.fi/pompeji/flash.html). After a decade GUIDI *ET AL.* 2008 returned to the Forum with the latest scanning and photogrammetric technologies. Recently, the Via dell'Abbondanza Project (http://www.pompeiiperspectives.org/methodology.html) and the Via Consolare Project (http://www.sfsu.edu/~pompeii/3Dtech.html) have each used photogrammetry to record both architecture and excavations.

[7] 123D Catch (http://labs.autodesk.com/utilities/photo_scene_editor; formerly in beta form as Project Photofly) is a cloud-based photogrammetry software system that can create 3D models, including both point clouds and photo-real renderings, from standard digital imagery. Special thanks are owed to Autodesk Technologist Shaan Hurley for his efforts to train our team on best practices in image capture and processing.

[8] Examples can be viewed as videos on the PQP's YouTube channel, here: http://www.youtube.com/user/Quadriporticus?feature=watch.

[9] The survey was undertaken by Sophie Hay (Southampton), Stephen Kay (BSR), Nicholas Crabb, and Elizabeth Richley; we thank them for their excellent efforts, as well as Prof. Christopher Smith for inviting us to the BSR for discussions of the preliminary results and their broader applications. For the results of related GPR surveys at Pompeii and Herculaneum by the same group, principally for the Herculaneum Conservation Project and the Pompeii Archaeological Research Project: Porta Stabia, see CAMARDO *ET AL*. *forthcoming*.

[10] "Slice" is the term used in geophysical prospection to describe the horizontal interpolation of the vertical transect data at a specific time during the impulse's path through the ground.

Fig. 5. Waterwheel in south of the Quadriporticus*, by L. S. Gentile, 1805.*

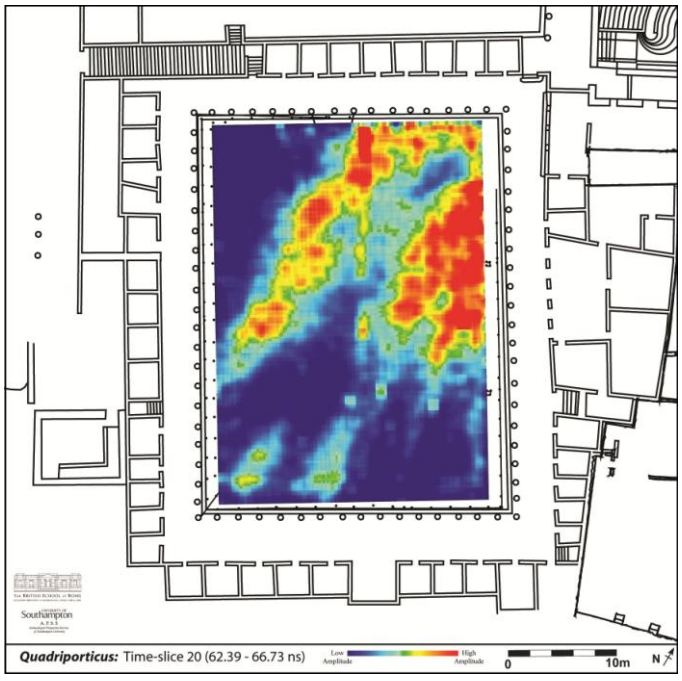

Fig. 6. GeoRADAR image of the deepest features.

ximately 0.30m and 1.00m of depth. Archival research on the early modern garden arrangements in the *Quadriporticus* has revealed a very close fit for this feature with the outer edging of the circular center for a large, 19th century cruciform garden design[11]. Similarly, a painting by Gentile from 1805 (fig. 5) shows a water wheel just north of the southern colonnade and thus allows for the secure interpretation of the (c. 2.5m diameter) circular anomaly in this location as a cistern[12].

Remarkably, however, cisterns appear to be the only significant ancient features in this exceptionally large area. A lower feature in the northwest corner has a vaguely rectilinear external form, but despite its exceptional size, it shows no internal divisions expected by architecture. It is possible that an irregular pit has been filled with a dense material, such as building remains, or that the natural topography rises higher here than in the rest of the area. The detection of two strong, southwest to northeast diagonal bands (fig. 6) – extant from at least 1.40m below the surface and continuing below the surveyed depth – matches the natural contours in this section of the city and suggest that bedrock might be the preferred interpretation for both these bands and the northwestern anomaly[13].

[11] BONNET 1858: fig. 11.
[12] Luigi Salvatore Gentile (Pompei – Caserma dei gladiatori, 1805; for the image see PAGANO, PRISCIANDARO 2006: vol. 1, fig. 1, Parte Seconda).
[13] See POEHLER *forthcoming* for a detailed topographic map of Pompeii.

Results of the architectural survey

The 2011 campaign focused on the rooms and porticoes in the southwest, south, southeast and northern sections of the *Quadriporticus* (fig. 1). The masonry of the facades and door jams in these areas is remarkably consistent as is the overall architectural design: *opus vittatum mixtum* abutting and quoined into *opus incertum* (with isolated, but bonded examples of *opus testaceum*) is used to form a series of rooms on two levels that face onto a long portico, varying only marginally in size and shape. The southern arc of construction is bookended by two stairways that face each other across the building's open area[14]. Only the large exedra in the center of the southern portico interrupts the enfilade of roughly square rooms. The western service staircase offered a narrow (0.70m wide) passage to the wooden balcony that ran the length of the west side as well as its extension around half of the south portico. Conversely, the eastern grand staircase is over three times wider (2.33m) and does not double back, suggesting that it did not access the eastern balcony, but rather lead to the upper floors of the rooms to the north. A smaller staircase (1.61m) in the building's southeast corner (R_20) provided access to the second story balcony in this quarter of the *Quadriporticus*.

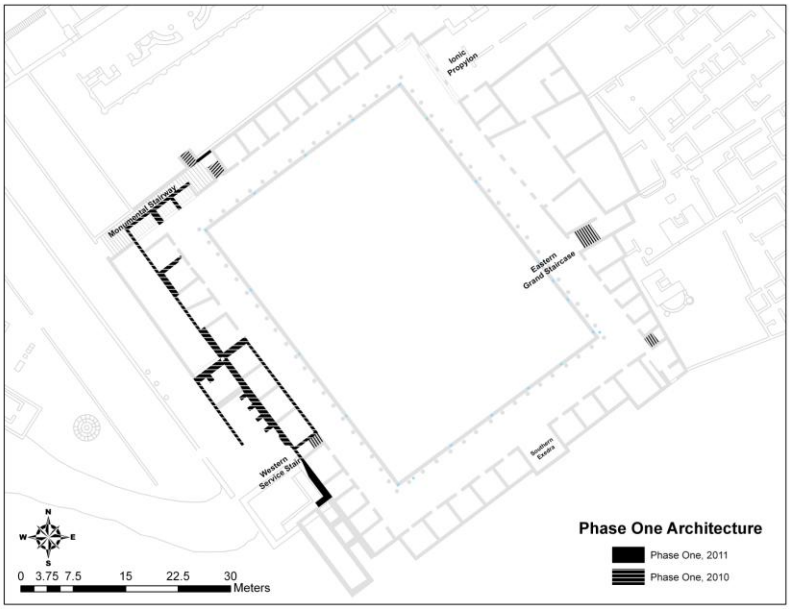

Fig. 7. Plan of Phase One.

The northern side of the *Quadriporticus* incorporated construction techniques and materials that were much the same as those used in the southern arc of construction. Eight similarly (but not identically) sized rooms divide the length of the space between the reformed monumental stairway and the colonnaded area between the *Quadriporticus* and *Teatrum Tectum* (Odeon). The southern façade wall and entrance to each room was created by nine *opus incertum* and *opus vittatum mixtum* wall segments, each roughly centered on abutting cross walls. The back wall of these rooms, which is also the northern perimeter wall of the *Quadriporticus*, preserves some beam holes and scoring in plaster for others as evidence of a planned second story. Access to the upper story rooms was via a wooden balcony, itself accessed by a staircase leading from the landing of the monumental stairway[15].

Phasing

The similarity in design and construction style across the building observed in 2011 demonstrates the extent of changes that occurred within the last decades of the building's existence[16]. The extent of these changes also obscures the *Quadriporticus*' earlier form and only a few remnants of pre-existing architecture could be identified. Despite the paucity of early architecture, the chronology developed in 2010 for the building's west side is confirmed. In the following phasing discussion two items should be kept in mind. First, the enumeration of phases is based on their 2011 sequence. Correlation to the 2010 phasing is made in parentheses in each heading. Second, this relative sequence is composed of construction phases (including re- and deconstruction), not use phases. The distinction makes for a finer stratigraphic granularity and thus multiple architectural elements of a single space, though they may be part of a larger building project, are kept in separate phases.

Phase One (2010, Phase One)

One of the earliest identifiable remnants of architecture (fig. 7) was an arch of Sarno limestone voussoirs embedded in the northern perimeter wall, toward its western end. The antiquity of this arch was first revealed because its style, material and proximity are close to that of other Phase One architectures discovered in 2010 (figs.

[14] The distance from the southwest corner to the western service staircase's south jamb is 17.245m and from the southeast corner to the eastern grand staircase's south jamb is 17.206m. The intercolumniations are slightly different, however: 6th in the west, 7th in the east.
[15] MAZOIS 1824: vol. 3, Plate II reconstructs the staircase in the same manner.
[16] POEHLER, ELLIS 2011: 7.

Fig. 8. Drawing of arch in the north wall of the Quadriporticus, *from northeast (Mazois, 1812-24, vol. 4, Plate VI, fig. 1).*

very large Sarno limestone blocks to quoin the wall as it turned westward. Five blocks are preserved in the west wall of Room 35 (fig. 3). The uppermost block projects through the west side of this same wall, where the excavation of the (Phase Two)[20] cistern revealed the bedding mortar for additional blocks on its top and the presence of a fine and very hard red plaster on its south face. The position of this cistern suggests the arrangement of the earlier space it fills. That is, the cistern's half-thickness northern wall was built against the Phase One construction and its west wall aligns with the westernmost wall of the *Quadriporticus*, bounding the previous space. The presence of the red plaster on the uppermost Sarno limestone block demonstrates that this space was, in some part, open space and part of the original building[21].

Phase Two (2010, Phase Two)

The same red plaster on the Sarno Limestone block also preserves a vertical scoring showing the line of the wall abutting it in the next phase of construction (fig. 10). Matching

Fig. 9. Masonry arch immured in wall face 306, from south.

8-9)[17]. Stratigraphically, the arch is earlier than any other masonry in the area. Moreover, this arch and the springing for a second, lower arch to the east exists only above the rectangular tuff blocks – visible in the perimeter wall's north face (fig. 8) – that underlie the monumental stairway's lava steps. This relationship indicates that this masonry survived until the truncation of the stairs in Phase Four and the yellow tuff stone filling the arch suggests its construction *ante*-dated the Phase Three construction identified in 2010 (fig. 9)[18].

The other Phase One architecture is the ground level continuation of the second story terrace wall (from 2010) in the southwest of the *Quadriporticus*. Existing as a section of *opus incertum* made up of exclusively lava stone, the wall forms the back wall of rooms 35 and 36. Based on the width of the modern reconstruction above it, this wall was approximately 0.90m thick, a measurement matching that of the second story terrace wall seen farther north[19]. Such robust construction is echoed in the use of

[17] The long and narrow Sarno limestone voussoirs where also used nearby in the Altstadt sewer's construction and in the arches supporting the monumental staircase. POEHLER, ELLIS 2011: 5.
[18] POEHLER, ELLIS 2011: 5-6.
[19] POEHLER, ELLIS 2011: 5. It should also be noted that while some ground level Phase One architecture used the characteristic massive Sarno blocks, such as forming the rooms beneath the monumental stairway, other areas were built in exclusively lava stone *opus incertum*. For example, the north side of the monumental stairway is constructed in this style below the lava steps, including the tuff block underlying the steps (fig. 8), but used the characteristic Sarno limestone construction above the steps.
[20] The determination of the cistern's phasing comes from its use of the Phase Two rear wall of the *Quad* to buttress (via cross-walls) its eastern side. The length of the cistern also suggests contemporaneity with the Phase Two rear wall as it continues beyond that wall's current extent where, in its final form, buttressing is no longer possible.
[21] This same plaster was found on the wall behind the (now missing) top step of the western service staircase.

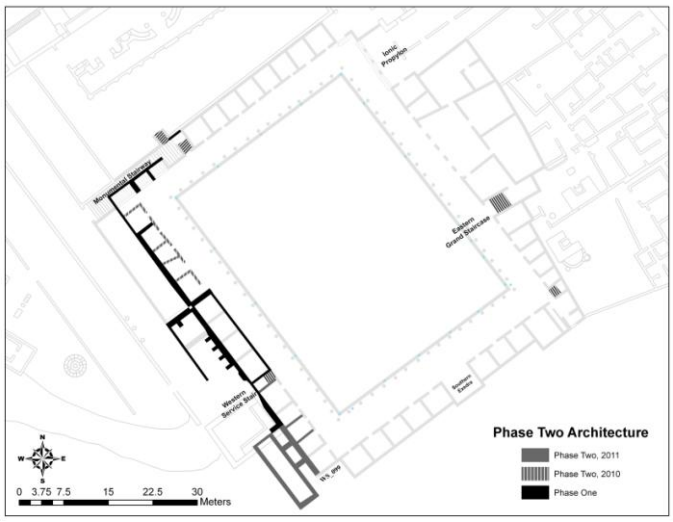

Fig. 10. Plan of Phase Two.

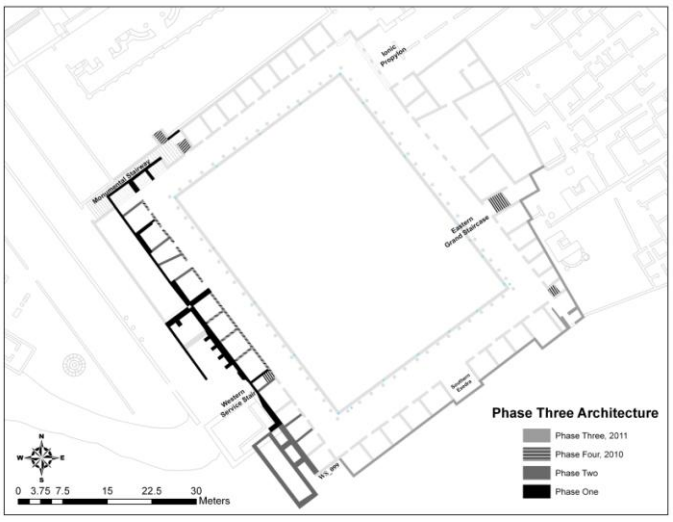

Fig. 11. Plan of Phase Three.

Fig. 12. Southeast corner of the Quadriporticus *(wall face 510), from west.* Opus vittatum *with* opus testaceum *course.*

the thickness of the Phase One architecture, this wall is also made up of *opus incertum* and extends the length of the rest of the west side of the building, creating a new back wall to the *Quadriporticus*. In fact, the wall's ragged and unquoined south end continues slightly beyond its junction with wall segment 099, implying its full length was truncated in a later period. Two lava *opus incertum* walls adjoin this new back wall and create the first clear division of space in the southwest of the building[22].

Phase Three (2010, Phase Four)

The south side of the *Quadriporticus* was also given a back wall in a single build from the southwest to the southeast corner, divided by the central exedra (fig. 11)[23]. Without need to also serve as a retaining structure, the southern perimeter wall is narrower than the Phase Two wall. Its masonry is characterized by *opus incertum* of mainly lava west of the exedra and a mix of lava and Sarno limestone to the east[24]. Both sides, however, have a distinctive and unifying six-course band of brickwork just below the ceiling[25]. This brick course also extended into the masonry of the rear wall of the east side and although modern reconstruction interrupts the brick work, the *opus vittatum* that forms the *Quadriporticus*' southeast corner (fig. 12) is seen throughout

[22] Where plaster does not obscure the relationship, these walls appear to abut the Phase Two rear wall. Nonetheless, the similarity of materials to the Phase Two wall and because they are abutted by the Phase Three architecture indicates that these walls belong to Phase Two.

[23] The southern exedra has been almost completely rebuilt in the modern period. The 1879 Plastico model in the *Museo Archeologico Nazionale di Napoli*, however, shows a band of brick throughout the back wall demonstrating that the exedra was built as part of Phase Three; on the veracity of this model, see KOCKEL 2004. Additionally, the external southwest and southeast corners used *opus vittatum* to quoin adjoining walls in manner identical to that observed at the extreme southeast corner of the *Quadriporticus*.

[24] Most of the eastern rooms could only be briefly examined in 2011. Some of the differences in materials may be from modern reconstruction and patching.

[25] ADAM 1994: 139-144, fig. 311-14, 332 illustrates the use of a band of brickwork in an *opus incertum* wall under the broad rubric of *opus mixtum*.

Fig. 13. Plan of Phase Four and Five.

the eastern perimeter wall up to the eastern grand staircase. North of this staircase, parts of the perimeter wall are quoined in *opus vittatum mixtum*, suggesting their construction in the following phase.

Phase Four (2010, Phase Five)

In the fourth phase of construction (fig. 13) most of the *Quadriporticus*' interior perimeter was rebuilt, completely or in part, in *opus vittatum mixtum*. For the 'modernizing' impact that this major campaign had on the appearance of the *Quadriporticus*, this phase has been dubbed the "facelift". This colloquial term is also apt for the minimal intrusion beyond the facades: only three walls of this phase serve to form interior spaces in the entire southern arc of construction[26]. At the same time, the new façade incorporated relatively little of the earlier architecture. In the southwest, the *opus vittatum mixtum* façade wall abuts four pre-existing cross walls (fig. 14), while in the southern enfilade of rooms two earlier walls are built against by the façade in the southeast corner. The remaining nine cross walls[27] all post-date the new façade. In constructing the central exedra the builders used brick to quoin the corners adjoining the façade. Like the

Fig. 14. Wall face 233, from south. Opus vittatum mixtum *builds over the extant* opus incertum.

[26] These are WS_101, WS_060 and WS_052.
[27] Three walls in the south that were seen to abut in a cursory examination have been left gray in fig. 13 because of the preliminary nature of their assessment.

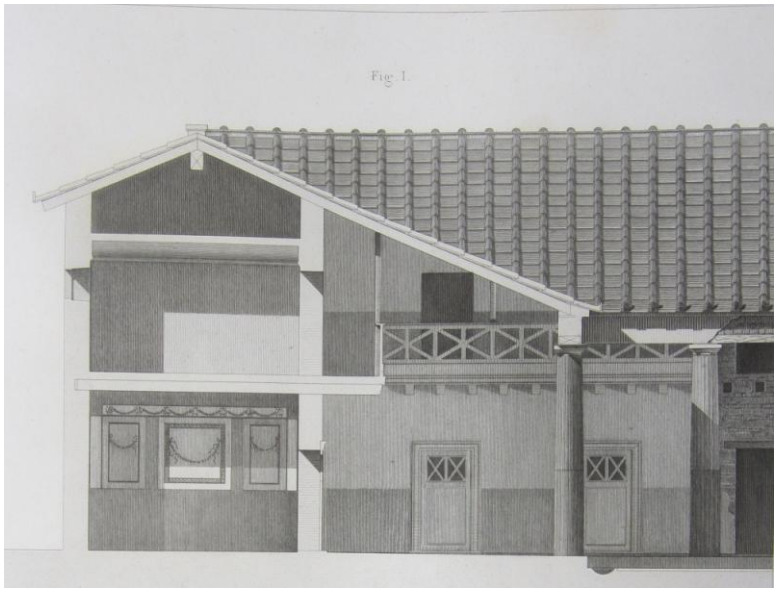

Fig. 15. Drawing of the south portico's decorative scheme (Mazois, 1812-24, vol. 3, Plate IV, fig. 1).

masonry of the western service staircase's southern edge[28], an identical and continuous mortar bonds this brickwork to the *opus vittatum mixtum* in the rest of the façade. Additionally, a covering of plaster decorated in the 4th style further unified the southern arc of construction, demonstrating also how near to completion this phase of construction was in AD 79. Mazois' illustrations (fig. 15) show this decoration only decades after excavation. After centuries, however, only traces remain to be identified today.

The plaster is preserved, if faded, in the northern rooms of the *Quadriporticus* (fig. 16). Here too, the plaster covered the entire area, though scoring on it for construction also shows that this part of the building was still unfinished. As in the south, an *opus vittatum mixtum* façade is abutted by later cross walls except in the eastern edge of the building where this construction style is used to quoin two corners and bond the rear wall to the façade. Although our work in the northern rooms is incomplete, the extant evidence suggests the *Quadriporticus*' northern perimeter wall and façade may have been built together. Because there is only a trace of an earlier (see Phase One) perimeter wall at the bottom of the monumental stairway, the reconstruction of the north side prior to Phase Four has important ramifications for earlier movement though the *Quadriporticus* (see below). The most obvious impact is the truncation of the monumental staircase and its reorientation in three directions (fig. 13): north to the *post-scaenae* area, and south to the ground and upper levels of the north portico.

Phase Five (2010, Phase Six)

The construction of a series of cross walls between the *opus vittatum mixtum* façade wall and the southern and north perimeter walls makes up the Phase Five architecture (fig. 13). These *opus incertum* walls created most of the individual rooms behind the porticoes and where they did, the rooms were far more dimensionally consistent than the rooms in the southwest and southeast, whose shapes were determined in part by preexisting architectures.

Fig. 16. Decorative scheme of the north portico rooms (Plastico model of Pompeii, 1879).

Some Broader Themes:

Infrastructure

In addition to the surprising absence of any preexisting architecture in the GeoRADAR results, the absence of the sewer hypothesized in 2010 was of particular importance[29]. Stratigraphic evidence showed that this section of the sewer, in the northwestern corner of the *Quadriporticus*, changed its alignment in the final period, but due to the debris filling its entrance from the latrine, it was not possible (nor, we judged, safe) to explore the sewer farther south. In lieu of entering the space, a high-powered flashlight revealed what standard illumination devices could not: upon reaching the area below the western portico, the sewer bent southward to run beneath the portico (figs. 17-18). The amplified light also permitted us to see that immediately after its turn to the south, the sewer is blocked by debris. Most importantly, we could now see that the construction of the sewer changed in both style and materials. Rather than

[28] POEHLER, ELLIS 2011: 3, n. 6.
[29] For a comprehensive treatment of sewers in Pompeii, see POEHLER *forthcoming*.

Fig. 17. Western portico sewer, from northwest at latrine opening.

Fig. 18. Plan of sewerage hypotheses.

the vaulted ceiling of cut Sarno limestone voussoirs identified in the original sewer, the new sewer's concrete ceiling used almost exclusively red, brown and purple cruma stones. The extensive use of this material was identified in 2010 as a chronological marker for the period of the sewer's reorientation and the exclusive use of cruma in the new sewer is a dramatic confirmation of this interpretation (fig. 17)[30].

The discovery of the final phase sewer's alignment beneath the western portico raises interesting new possibilities in reconstructing the final section of the sewer, but it does not contradict our larger interpretation of its construction as a kind of emergency procedure, conducted in response to a collapse of the western part of the building[31]. Indeed, this new design makes the procedure appear more ingenious, daring, and perhaps immediate. Rather than clearing the northwestern section of destruction debris in order to outflank the collapsed material, the engineers instead went under the problem, which may have required no more effort than the construction of the new sewer itself. In fact, if a cistern like the enormous double-chambered cistern (19.80m x 3.90m) beneath the eastern portico[32] existed beneath the western portico, the effort to redirect the sewer would have been limited to connecting to the cistern, repurposing its interior and reconnecting the sewer to an exit. The course of the sewer beyond what is visible today and the exit are still in question. Two scenarios seem most possible from the evidence gathered in the 2011 field season (fig. 18).

1. After the new channel (tan) reached the requisite distance and elevation, it rejoined the original sewer's course via a bypass (yellow), using its (as yet unknown) exit from the city[33].
2. The new channel (tan) maintained a straight course below the western *portico*, under the southwestern part of the building and out of the city via an unknown, but new exit.

Each of these scenarios has its own merit and criticisms and solving this question will be a priority of the 2012 field season.

[30] See Phase Four of our 2010 season in POEHLER, ELLIS 2011: 6-7.
[31] POEHLER, ELLIS 2011: 8.
[32] We are grateful to Dott. Giovanni Di Maio for sharing his recent documentation of this cistern.
[33] From the change in elevation between the original sewer's intersection at the northwest corner of the *Quadriporticus* and the remaining section in Room 40, an approximately 5.5% slope of the sewer can be determined. This slope would put the original sewer below ground just before the space of the western service staircase. See the photogrammetric reconstruction of Room 40 for a profile of the original sewer (supra n. 8).

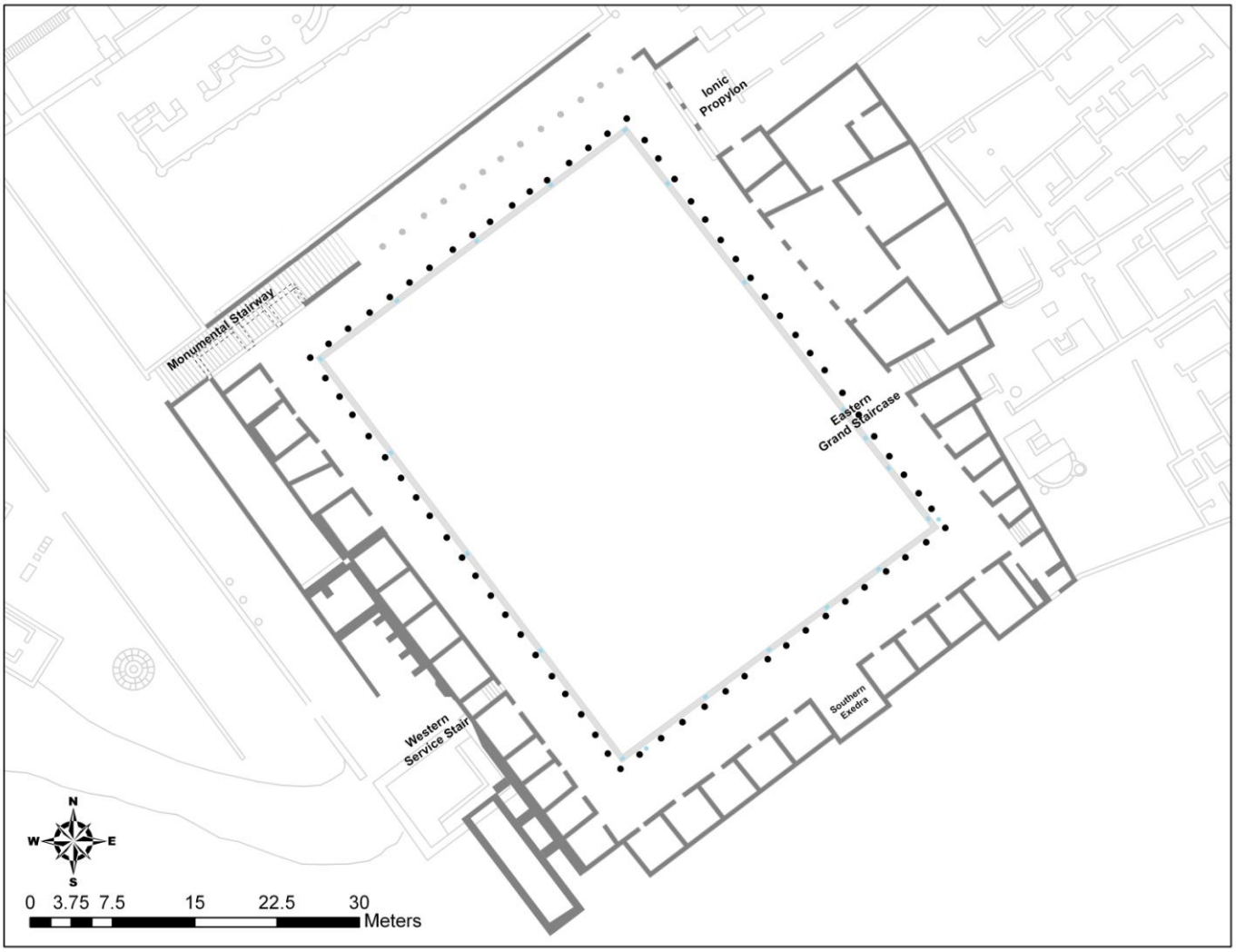

Fig. 19. Plan of hypothetical corridor between monumental stairway and Ionic Propylon.

Movement in the Quadriporticus

Architectural analysis in the southern arc of construction and in the northern suite of rooms demonstrates that these areas of the building had been altered (during Phase Four) to create a suite of individual spaces. The implications of our observations in the north suggests that this change altered both the appearance of and access to the monumental staircase. Without these rooms, we must reconstruct a radically different visibility of and movement corridor to the monumental stairway that ultimately accessed the Triangular Forum. Without the northern rooms, the monumental stairway and Ionic Propylon at the *Quadriporticus*' northeast corner would have been inter-visible and been far more directly interconnected as part of a monumental pathway between the Porta Stabia and the Doric Temple. Without the northern rooms, however, we are challenged to reconstruct an architectural environment sufficient to support the roof that surely covered the northern portico. At this point there is little evidence for anything other than reasoned speculation, but the absence of any earlier walls suggests a more *stoa*-like building form with a second row of taller interior columns supporting the roof (fig. 19).

Concluding remarks

The 2011 season of the Pompeii *Quadriporticus* Project successfully examined the southwest, south, southeast and northern areas of the building and validated the general phasing from the 2010 season. Our use of technology also expanded by equipping every team member with an iPad for on-site recording and analysis, as well as employing both geoprospection and photogrammetric techniques. The results of this season's study forced a re-

examination of previous infrastructural hypotheses and permitted a new hypothesis regarding the shape of and movement through the north side of the *Quadriporticus*.

In the 2012 season the PQP will continue its work improving the use of iPads in archaeological fieldwork to not only record observations[34], but also to assist in constructing and testing of phasing interpretations while those data are being recorded. A dedicated campaign of photogrammetric capture will document in 3D most of the remaining spaces. The 2012 season will examine the east side of the *Quadriporticus* and will begin to systematically integrate the stratified, datable evidence from the Pompeii Archaeological Research Project: Porta Stabia's excavations in *insula* VIII.7[35]. We hope that a full understanding of the east side's architectural phasing will permit the extension of a few key pieces of evidence for an absolute chronology throughout other parts of the *Quadriporticus*.

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[34] In this we appreciate the efforts of John Wallrodt (University of Cincinnati), whose advancement of the use of iPads at PARP:PS has also benefitted our work at the PQP.

[35] See especially Trenches 9000 (ELLIS, DEVORE 2006: 10-12), 13000 (DEVORE, ELLIS 2008: 8-11), and 28000 (ELLIS, DEVORE 2010: 12-15).