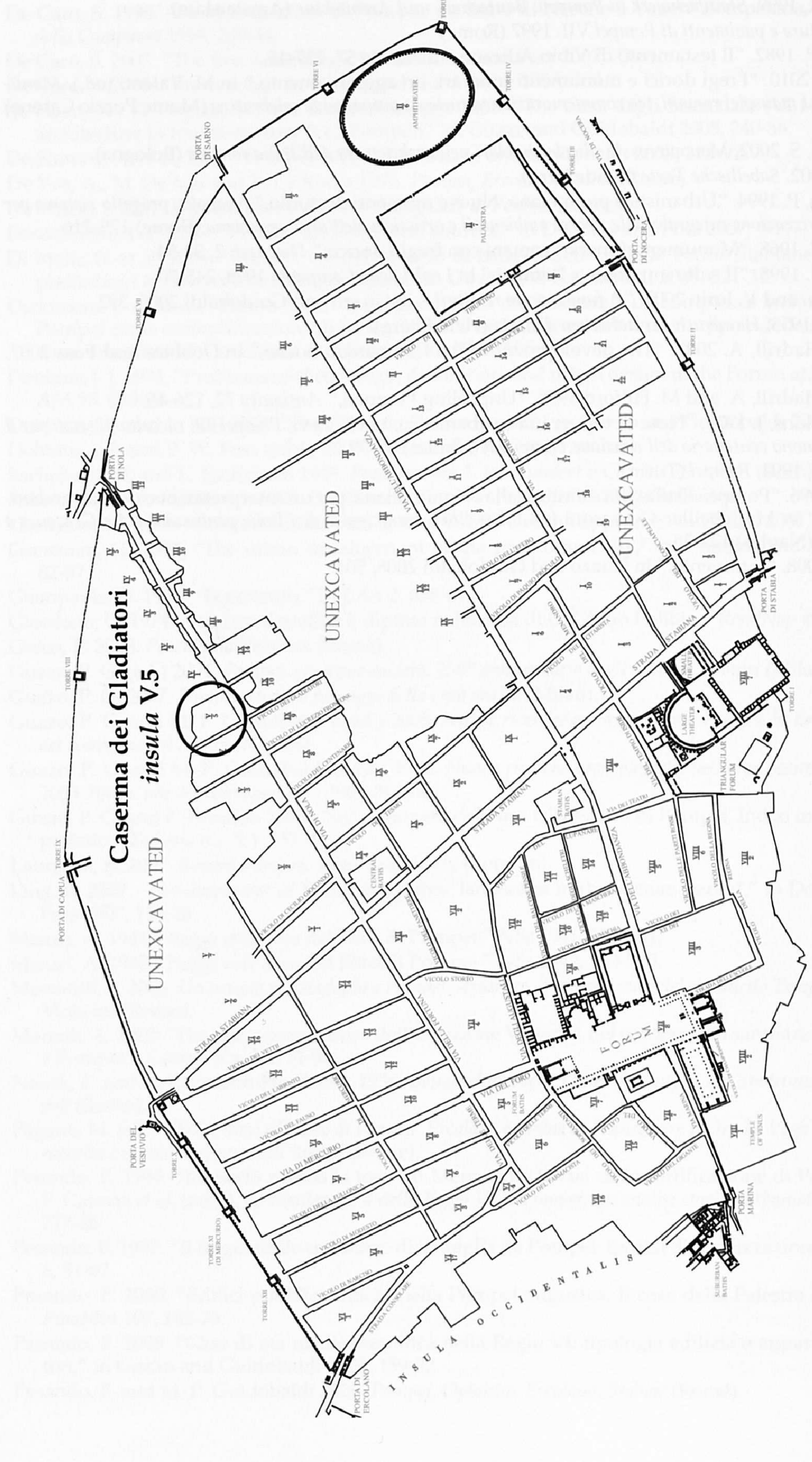

Fig. 1. Plan of Pompeii with the location of the Caserma dei Gladiatori.

Excavations in the Caserma dei Gladiatori: a contribution to the understanding of Archaic Pompeii

Domenico Esposito, Pia Kastenmeier and Catello Imperatore

Introduction

Insula V.5 was first excavated between 1890 and 1899 by A. Sogliano, who brought only the southern portion to light. He identified two complexes: a house at V.5.1-2,[1] and the so-called Caserma dei Gladiatori (V.5.3).[2] Since 2004 a research project on *insula* V.5 has aimed to clarify the historical, architectural and urban development of this still-poorly-understood part of the town. The Caserma dei Gladiatori has long aroused interest because of its unusual plan, which does not seem to respect the typical schemes of the Pompeian house with atrium and peristyle. Moreover, the presence within the property of a large number of gladiatorial inscriptions has prompted more than one scholar to identify the building as an earlier gymnasium (palaestra) for Pompeii's gladiators.[3]

In 1947, during restoration works that followed the Second World War,[4] stratigraphic surveys were undertaken by the Soprintendente, A. Maiuri. They were intended to determine the existence of structures from the period preceding the construction of the house.[5] The excavations revealed portions of floors from Samnite buildings but also several remains of structures built with large local tuff blocks of the so-called *pappamonte*,[6] which must have been part of one or more buildings of the Archaic period. Although these discoveries were most interesting, particularly when situated within the broader debate on the historical and urban development of Pompeii, Maiuri never published the outcome of his surveys.[7]

The topographic and urban characteristics of *insula* V.5

Insula 5 of *Regio* V is located in the NE sector of Pompeii (fig. 1). Although little excavated, this area is important because of its proximity to the via di Nola, one of the main axes of the urban grid from the Samnite period onwards.[8] Beginning at the gate of the same name, the via di Nola connected the town with its eastern suburbs and possibly to the roads leading towards Nuceria and Nola across the interior parts of the Sarno valley.[9] The via di Nola is the extension of the via delle Terme/via della Fortuna, beginning at the Quadrivio di Orfeo (at the intersection of V.1, IX.4, VII.3 and VI.14). From this point the

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1 Mau 1895, 148-55.
2 Sogliano 1899; Mau 1901.
3 See Sogliano 1921; *contra* Mau 1901; also Pesando 2001, especially 191-93.
4 García y García 2006, particularly 62-65 and fig. 102.
5 The records remain unpublished (Archive SAP, A VII 20, Giornale di sgombero e restauro eseguiti in dipendenza "danni di guerra", Anno 1947. See particularly the document "Saggi di scavo eseguiti a scopo di studio nell'area della città dal 1° al 31 luglio 1947").
6 On this material, see Lorenzoni *et al.* 2001, especially 39-40.
7 On the published and unpublished stratigraphical surveys carried out by Maiuri, see Tommasino 2004, 28-29.
8 De Caro 1992, especially 76-79.
9 Even today the layout of the roads outside the town and their relationship with the surrounding territory are unknown. See Spano 1937; Soricelli 1997 and 2001.

road continues with a slight but steady upward slope, which increases in the final stretch between *insula* V.5 and the *Porta Nola*.[10] In that sector, the via di Nola does not follow the regular layout that would be expected from axial planning, but has a slight deviation towards the south. The same irregularity in layout is noted in the last stretch of the via Stabiana, towards the *Porta Vesuvio*. This irregularity may have resulted from a gap in time between the theoretical layout of the axes and their execution, perhaps partly due to a series of pre-existing structures that could not be eliminated.[11] Equally unclear is the connection between the via di Nola and the intramural pomerial road, seen on both sides of the *Porta Nola*, where the road's deviations from its theoretical alignment are more evident. All these anomalies could be explained by the fact that the via di Nola was added to an existing street layout. It is unclear whether the via di Nola replaced an old track of the Archaic period that crossed the plain of Pompeii, acting as the extension of the via delle Terme/via della Fortuna and continuing to the east of the Archaic via Consolare,[12] or whether its creation followed the urban expansion of the Samnite period.[13]

Insula V.5 lies a short distance from the northern stretch of the city wall, especially from the area between Towers VIII and IX. Recent excavations[14] have shown that even in this area the Samnite walls follow roughly the alignment of the Archaic fortifications in *opus quadratum*, built with large blocks of *pappamonte*.[15] The remains of the fortifications in *pappamonte* identified at Tower IX can be connected to the remains originally identified by Maiuri at the *Porta Vesuvio*.[16] The Archaic route of the wall along the E side of the town up to the *Porta Nola* is still unknown because it is difficult to know whether the existing wall follows the alignment of the wall of the Samnite period or not.[17]

The topography within the *insula* is a plateau sloping from northwest to southeast; its highest point is at the edge of the fortifications near Tower IX. The *insula*'s topography resulted only in part from the natural shape of the land[18] since the whole area has been

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10 The whole area outside the *Porta Nola* was highly modified, as is demonstrated by the foundations of the circuit wall in *opus incertum*, south of the gate (Guzzo 2007, 67).

11 On the possible reasons for the irregularity of the layout of the via del Vesuvio and via di Nola, see Seiler *et al.* 2005, 216-17; Guzzo 2007, 67.

12 Carocci *et al.* 1990, 193-205.

13 Guzzo 2007, especially 66-74.

14 Etani *et al.* 1995, 1996, 1997 and 1999; Etani and Sakai 1998; Sakai 1991 and 2000-1; Sakai *et al.* 1994; Sakai and Iorio 1999.

15 Supra n.6.

16 On the walls in the area of the *Porta Vesuvio*, cf. Maiuri 1930, coll. 168-92 and tav. VI, structure (f); Seiler 2004, 185-86, fig. 9.

17 Maiuri performed stratigraphic tests even at the *Porta Nola* to search for the oldest stages of the gate. At this location no structures related to the pre-Samnite phases were found, and even fewer Archaic structures (id. 1929, coll. Tables X-XI). Similarly, the tests conducted by Chiaramonte Treré did not lead to the identification of Archaic structures, while bucchero fragments were found only in the discharge of débris along the fortification wall between Tower VIII and the *Porta Nola*. Re-opening an old trench by Maiuri, Chiaramonte Treré believed she had found the external surface of the pre-Samnite fortification, re-used as foundations for the Samnite city walls: cf. ead. 1986, especially 13-19, 47 and 58.

18 The strata of the Archaic period found under the Caserma dei Gladiatori are much the same as the ones recorded in the nearby shop V.3.3. Nevertheless, the paved surface of the via di Nola in front of shop V.3.3 has the same elevation as the Archaic strata inside the shop, while in front of *insula* V.5 the elevations of the Roman street are much lower. For the excavation in V.3.3, see Pucci *et al.* 2008, especially 231-35 and figs. 15-16.

affected by human intervention over a long period. For example, in the Roman period the via di Nola cut through the geological stratigraphy of grey prehistoric ash to reach the Bronze Age paleosol.[19] Likewise, House V.5.1-2 and Shop V.5.4, as well as the whole row of rooms that extend along the E side of the partition wall (the back rooms [2] and groups [g] [h], [i], [k] and [l]) of the Caserma dei Gladiatori were created by cutting through existing stratigraphy down to the prehistoric levels. The central part of the block, where the garden of the Caserma dei Gladiatori lies today, was occupied by buildings raised to a higher level than the flanking units. (D.E.)

The building history of *insula* V.5

Insula V.5 has retained traces of a long building history running from the middle Republic until A.D. 79. From stratigraphic analysis and the observation of evidence retrieved within the buildings, it is possible to understand the structure of the *insula* during the Samnite period, as well as to identify the different residential nuclei into which it was divided.

At the SW corner of the *insula*, a housing unit dating from the 2nd c. B.C. remained standing until the town's final phase (fig. 2). The house was studied at the end of the 19th c. by Mau,[20] who managed to reconstruct all of the phases and to propose a reconstruction of its appearance at the time of the eruption of A.D. 79.[21] The house falls within the type of 'case a schiera'.[22] This type usually had a testudinate atrium preceded by a narrow *fauces*, typically flanked by auxiliary rooms or shops. The testudinate atrium overlooked a small courtyard, often equipped with a basin for water-collection connected to a tank, behind which opened residential quarters. First-Style frescoes decorating the house partly survive in *cubicula* (c) and (d). Mau stressed the fact that the walls of *cubicula* (c) and (d)[23] featuring First-Style decoration were actually part of a longer wall that enclosed rooms (c) and (d) which evidently functioned as *tabernae* opening onto the street.

This 'casa a schiera', which from the chronology of the First-Style wall-paintings can be dated no later than the third quarter of the 2nd c. B.C.,[24] is the result of the transformation of an older house which occupied the same area but had a slightly different organisation. Through comparison with other buildings, the chronology of the earlier house can be placed in the 3rd c. B.C.[25]

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19 Coring conducted on the sidewalk in front of shop V.5.1 has shown that the first 80 cm consists of Roman paleosol, which is directly above the Bronze Age paleosol; this has a considerable thickness (*c.*1.70 cm), reaching the volcanic level at a depth of 2.65 m.

20 Mau 1895, 148-55.

21 Ibid. 149, fig. 3.

22 This particular house typology, almost unknown at the time of Mau, has been re-evaluated by A. Hoffmann. Recent work has given further specification to the different typologies of those houses: cf. Hoffmann 1984, 111-13; Nappo 1993-94 and 1997.

23 Mau 1895, 150.

24 Description in Laidlaw 1985, 115-16.

25 A similar example is that of the two 'case a schiera' which together form the anterior part of the Casa di C. Iulius Polybius (IX.13.1-3), or the so-called 'Protocasa del Centauro' (VI.9.3-5.10-12), as well as the first nucleus of the Casa dei Quadretti Teatrali (I.6.11). On the Casa di Polybius, see De Franciscis 1988, especially 32, n.73; Pesando 1997, 137-41. On the 'Protocasa del Centauro', see Pesando 2006b, 228-31. On the Casa dei Quadretti Teatrali, see Esposito 2001-2.

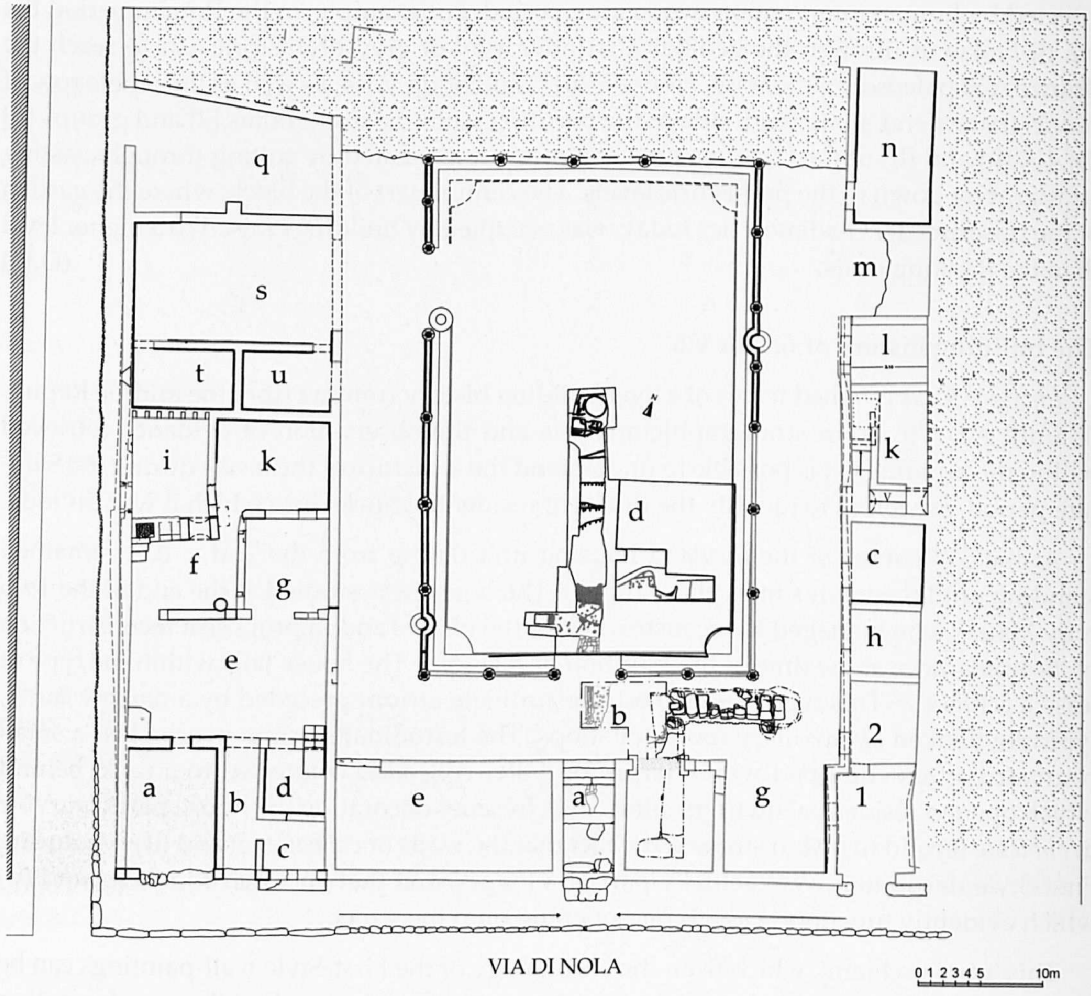

Fig. 2. Plan of the Caserma dei Gladiatori, indicating the location of trenches made between 2004 and 2008.

The Caserma dei Gladiatori

The Caserma dei Gladiatori was built in the first half of the 1st c. B.C. (fig. 2). Stratigraphic investigations have shown that the area south of the peristyle rests on thick layers of accumulated material, which in turn cover structures relating to older buildings of the mid- and Late Republican periods. This accumulation was necessary in order to create an horizontal platform on top of which the Caserma dei Gladiatori could be built. The Caserma dei Gladiatori is characterized by a considerable height difference from the level of the via di Nola. In the arrangement of the Late Republican period, this difference was accommodated by a double ramp, ending at the E side, with a series of steps and an intermediate landing, very similar to the ramp in front of the Casa dei Diadumeni (IX.1.20) on the via dell'Abbondanza. In the Roman period, two sets of stairs provided access to the interior of the house from the *vestibulum* through the *fauces*. All of the inner rooms are arranged around a large courtyard surrounded by a colonnade of 24 columns. All the rooms around the courtyard have identifiable functions as *oeci*, *exedrae* and a *triclinium*; rooms identifiable as *cubicula* or other private areas seem to be missing.[26]

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26 According to Pesando, this element, along with the hundreds of graffiti read on the peristyle

Evidence for the presence of earlier houses can be found in different parts of the building. Within room (k), for example, there is a wall constructed in a frame (today at a much lower level than originally) and two splayed windows, installed in the 3rd c. B.C.[27] At the top of the wall a second window (blocked in the Roman phase) belonged to a building that can be dated as early as the 2nd c. B.C. (fig. 3). On the opposite side, along the W wall of the W portico of peristyle (b), can be seen two niches, now almost completely covered by the floor of the portico (fig. 4). A little further along, a wall running E-W is incorporated into the dividing wall between the Caserma dei Gladiatori and House V.5.1-2. The stratigraphic investigations conducted under the S portico of peristyle (b) and garden (d) brought to light extensive remains of floors in pebbles and *cocciopesto* (figs. 5-6). These floors belong to the rooms of earlier buildings and also to an earlier cistern that, due to its stratigraphic

Fig. 3. Caserma dei Gladiatori, room (k): view of the E wall, with the windows of a house of the 3rd-2nd c. B.C.

Fig. 4. Caserma dei Gladiatori, view of the niches in the W wall of portico (b).

columns, would confirm the hypothesis that the building was used, at least until A.D. 62, as a house for gladiators' families: Pesando and Guidobaldi 2006, 162.

27 Trenches recently opened in several parts of Pompeii have uncovered walls with splayed windows beneath the Roman ground level: Coarelli *et al.* 2004, 144, 154-55, 162-63 and 172; Coarelli *et al.* 2005, 181 and fig. 19; Pesando 2006a, 48.

Fig. 5. Caserma dei Gladiatori, portico (b): the *cocciopesto* pavement of the Late Hellenistic house.

Fig. 6. Caserma dei Gladiatori, garden (d): pebble floor of the Late Hellenistic house.

position, must be dated between the 5th and the 2nd c. B.C. Unfortunately, the evidence does not yet allow the reconstruction of a precise plan of the houses of the mid-Republican period (3rd-2nd c. B.C.). Nevertheless, it seems that the SW half of *insula* V.5 was occupied by two units almost identical in size: House V.5.1-2, and a second house that must have occupied the area of room (e) of the Caserma dei Gladiatori probably extending as far as the centre of garden (d) — not to mention a larger, separate house in the E half of the block.

Overall, the subdivision of the front part of *insula* V.5 must have been very similar to what is still visible in *insulae* I.12, III.1, III.4, IX.12 and IX.13.[28]

In the excavated part of the *insula* it is therefore possible to identify several (at least three) residential units dating to the 3rd c. B.C., which were modified and partly covered by subsequent building activities of the second half of the 2nd c., and completely destroyed for the construction of the Caserma dei Gladiatori at the beginning of the 1st c. B.C. (P.K.)

The results of the archaeological investigation (fig. 2)

The oldest stratigraphic context brought to light is a massive structure in blocks of *pappamonte* placed directly on the volcanic ash level (fig. 7).[29] Laid in two rows, it served as the foundation for a wall of less durable materials.[30] The first row (4.7 m long) is made up of 10 rectangular *pappamonte* blocks,[31] set directly on the ashy level. On the N side the blocks functioned as a retaining wall against the slope, forming a kind of step that served as a base for the building. The S-facing surface of the blocks was weathered by the elements, to the extent that they now have a curved profile. The structure was oriented E-W (and slightly NW-SE). The only surviving block of the second row is heavily chiseled and modified. The impasto, bucchero and Attic pottery associated with the structure indicate an initial date in the first quarter of the 6th c., with a lifespan extending to at least the first half of the 5th c. B.C.[32]

Fig. 7. Caserma dei Gladiatori, portico (b): view of trench (1) with the Archaic structure in *pappamonte*.

28 On the division of the *insulae* of Pompeii's E sector into lots, see Mar 1995.

29 The ash level relates to an eruption of Vesuvius in protohistoric times. On the problem of Pompeii's pre- and proto-historic geoarchaeological sequence, see Albore Livadie 1982 and 1999; Ranieri and Yokoyama 1997; Robinson 2008 and this volume.

30 The structure is similar to those observed by Maiuri in the tests under Tower XI and at the *Porta Vesuvio*: see Maiuri 1930, coll. 154-58, fig. 11 and tab. IV (f-f'); col. 173 and tab. VI (f). On *pappamonte* structures at the *Porta Vesuvio*, cf. Seiler 2004, 185-86 and figs. 8-9.

31 On the E side the structure has been disturbed by a Roman pit that contained fill of some broken blocks of *pappamonte*. On the W side, the structure was covered by a *cocciopesto* floor dating to the late Samnite period.

32 Among the ceramic fragments found we should count the few fragments of Attic *kylikes* (Bloesh C type). For a similar find, cf. Giglio 2008, 342, n.15.

Fig. 8. Caserma dei Gladiatori, garden (d): block of *pappamonte* and Archaic shaft.

In the centre of garden area (d) (fig. 8) a second cluster of *pappamonte* blocks preserves two rectangular blocks set obliquely and oriented E-W like those found in the S ambulatory of peristyle (b). A large Roman-era pit reduced them to at least one-third of their original size. The blocks were laid directly on the Bronze Age paleosol; at the north is preserved the layer of gray ash that was cut for their placement. They served as foundations as well as for a retaining wall. Immediately north of the *pappamonte* blocks was a circular shaft, also cut directly into the grey ash and underlying layers, but lacking any kind of lining. It was filled with débris from the demolition of a roof of the mid-Republican period,[33] probably from the house that later developed in the S part of the block. The circular structure may have been a cesspit or perhaps a silo.[34]

The *pappamonte* structure discovered under the S sector of peristyle (b) seems to be cut by a circular shaft. The shaft, which might have served as a cistern, was dug directly into the prehistoric volcanic ash and has a profile that tapers toward the mouth.[35] The walls were lined with *pappamonte* and small pieces of Sarno limestone, bonded with clay. The S wall of the shaft was cut directly through a block of *pappamonte* and thus postdates the structure with *pappamonte* blocks. It was covered by a building dating to the Late Samnite period, so it should date between the end of the 6th and the 2nd c. B.C.[36] Comparison with the cisterns of about the 4th c. B.C. found in the *chalcidicum* of the Basilica during Maiuri's surveys seems most fitting.[37]

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33 The fill of the shaft included stones mixed with mortar and fragments of tiles, as well as some fragments of red plaster and a fragment of a white stucco cornice of the First Style.

34 Similar shafts or silos, directly cut into the geological levels and dating to various periods, have been found in other Pompeian buildings, such as the Casa del Chirurgo, Casa di M. Lucretius Fronto, Casa delle Nozze di Ercole and Temple of Lares Pubblici: see Maiuri 1973, 7-8, fig. 4; Peters 1993, 8-9. tav. B; D'Alessio 2008, 278-79, fig. 10; and Eschebach and Eschebach 1995, 29-31, figs. 15.1-3. Archaic wells with no lining have also been found in Rome and Fratte: Cifani 2008, 313-15; *Il parco archeologico di Fratte* (2008) 23.

35 Esposito 2005, 160.

36 Maiuri (1973, 209-12) dated the cisterns in the Basilica roughly between the pre-Samnite and the Samnite era.

37 Another similar well, dating to the Hellenistic period, was found and partially excavated in the garden of the Casa degli Epigrammi Greci: cf. Staub-Gierow 2008, 95-97, figs. 6-7.

Both the cistern and the *pappamonte* structure were partially covered and re-used in the Late Samnite period in the construction of a new building, of which few rooms are currently known. Beneath the S portico of the peristyle (b) a *cocciopesto* floor was found (fig. 5). The pavement is completely preserved, but the walls were systematically destroyed down to their foundations when the Caserma dei Gladiatori was built. The *cocciopesto* floor is decorated with white limestone chips, a type of decoration frequent in Late Republican floors. To the east, the floor was supported by a *pappamonte* block, also serving as the foundation of the room's E wall. A second floor, made of pebbles inserted in a layer of mortar, was identified in the trench opened in garden (d) (fig. 6). It was cut by a Roman-era pit at the north and is covered by the colonnade of a peristyle (b) at the south. The length of the room was 5.20 m. In the robber trench of the E wall several fragments from an *impluvium* were found, destroyed during demolition of a Hellenistic building between the end of the 1st c. B.C. and beginning of the 1st c. A.D., which was then filled up with rubble to form the base for the Caserma dei Gladiatori. Several fragments of First-Style wall-paintings were found inside the fill, all related to the same decorative context and mixed with small pieces of Sarno limestone, mortar, brick, ceramic fragments and roof-tiles dating to the end of the 2nd c. B.C. and beginning of the 1st c. A.D. (C.I.)

Typology and function of the structures in *pappamonte*

Since structures in *pappamonte* blocks are preserved at Pompeii only in small numbers, it is difficult to reconstruct the plan of those buildings. The construction technique, of square blocks placed side-by-side, and the dimensions of the blocks suggest that the structures found under the Caserma dei Gladiatori belonged to a building of significant size. The two groups of blocks, set about 10 m from one another, were essentially parallel. The unlined pit identified in relation to them, cut directly into the protohistoric layers, must have functioned as a well or a silo. The features identified under the Caserma dei Gladiatori were evidently part of a large building subdivided into several areas or rooms. Within Pompeii, the most fitting comparisons for this technique are found in the foundation rows of *pappamonte* blocks under the Torre di Mercurio[38] and *Porta Vesuvio*,[39] in all likelihood related to the fortifications. Similar structures were also found under the Basilica,[40] in the area of the Temple of Venus,[41] and under Houses VI.13.12-19,[42] VI.14.40[43] and the Casa delle Nozze di Ercole (VII.9.47).[44] All of these structures are characterized by blocks that serve both as foundations and as a retaining wall, and this technique appears to be used mainly in areas marked by noticeable differences between natural ground levels. When the ground was more level, blocks set parallel to the course of the wall were preferred[45] (e.g., walls at the *Porta Nocera*,[46] Tower IX,[47] in *Regio* I *insula* 5,[48] and in the Casa di

38 Maiuri 1930, 154-58, fig. 11 and tav. IV (f-f').
39 Ibid. tav. VI (f); Seiler 2004, 184-85, figs. 8-9.
40 Maiuri 1973, especially 209-10 and 212-17, figs. 122 and 126-27.
41 Curti 2008.
42 Oriolo 2006, 54-55, figs. 12-13; Verzar-Bass *et al.* 2008, 190-95.
43 Coarelli and Pesando 2006, 2, fig. 3; Pesando *et al.* 2007, 48-49, fig. 2.
44 D'Alessio 2008, 278, figs. 5-6.
45 It is possible that such differences also depended on the function of the structures.
46 De Caro 1985, fig. 15.2.
47 Cf. Sakai and Iorio 2005, 325-26, figs. 16-17.
48 Borgard *et al.* 2005, 305 and 302 fig. 8.

M. Lucretius [IX.3.5/24]).[49] Beyond Pompeii, the most interesting comparisons are found in both public and private architecture at Rome, as well as in Latium and Etruria.[50] Fortification structures with foundations and/or a superstructure made of tuff blocks have been identified in excavations between the Palatine and Sacra Via,[51] and at Castel di Decima.[52] During excavations on the Palatine hill, a number of wall structures in *opus quadratum* with tuff blocks were identified as houses.[53]

At Pompeii, structures of *pappamonte* blocks that are likely to have been houses have also been found. The best examples were excavated by Maiuri in the Casa della Fontana Grande (VI.8.1/22)[54] and in House VI.10.6.[55] Under the Casa della Fontana Grande, along the E side of the atrium, he found the remains of a wall (A) preserved for a length of *c.*8 m, built in *opus quadratatum* with *pappamonte* blocks set horizontally without traces of mortar or plaster coating. On the opposite side of the atrium, two walls (B and C) set at a right angle to the first were built in a different technique. Wall B was built with small *pappamonte* blocks mixed with small pieces of travertine and soft lava, mortared with a yellowish pozzolana. Traces of plaster made of sand mixed with white mortar were preserved on the blocks. Wall C was built of *pappamonte* chips in a pozzolana mixture. To the north of wall B, a circular shaft had been cut directly into the geological strata to a depth of *c.*1.5 m.[56]

Even more interesting is the context in House VI.10.6, where at least six walls were constructed in *opus quadratum* with two rows of *pappamonte* blocks aligned horizontally. The surviving structures under the atrium and tablinum of House VI.10.6 belonged to a large edifice with a complex plan. It had a well-preserved core of two adjacent rectangular rooms (*c.*5.80 m wide, 7 m and 5.30 m long); a third room is indicated by the two wall extremities located under the *fauces* and adjacent rooms. An isolated block was found in the SW corner of the atrium, on a continuation of wall A, while the sixth wall, F, lay to the north under the rear room VI.10.5 and in the atrium of house VI.10.4.[57]

In the archives of the Soprintendenza Archeologica di Pompei we have gathered evidence from several unpublished excavations, conducted by Maiuri and others,[58] which brought to light several Archaic contexts of great importance and probably deserving of re-investigation. Along the via di Mercurio in the Casa di Meleagro, a test trench set along the S and W walls within room (10) revealed a wall in regular *pappamonte* blocks, 3.8 m in length; at each end of it was the beginning of other walls, demonstrating the presence of

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49 Castrén 2008, 53-56, fig. 6.3.

50 See, e.g., the Etruscan houses of Acquarossa: cf. Östenberg 1975.

51 Carandini and Carafa 2000, 175-81, especially 177, figs. 131-33.

52 Cifani 2008, 214-15, fig. 215, with earlier bibliography.

53 Carandini and Carafa 2000, 215-59, especially 215-25 and figs. 171, 174-75, 177, 183-84, 189-90 and 194.

54 Maiuri 1973, 161-65, fig. 88.

55 Maiuri 1973, 165-69, figs. 90-92; Pesando 2005, 77, fig. 5; Coarelli and Pesando 2004a, 1, fig. 2.

56 The shaft of the Casa della Fontana Grande is a good comparison for the shaft/silo of the Caserma dei Gladiatori.

57 The test in House VI.10.4 was re-opened in 2001 and verified by Pesando. Fragments of bucchero and Attic cups within the foundation trench confirm the dating of the *pappamonte* wall to the 6th c.: Coarelli *et al.* 2001-2, 223-25 with figs. 3 and 5; Coarelli and Pesando 2004a, 1-2, fig. 2; Pesando 2005, 74-78 and figs. 4-7; Coarelli and Pesando 2005, 18-19; Zampetti 2005, 114-17, tavv. XXIII.1, XXVI.4, XVII.1-2, XVIII.1.g-h, XXIX.1-3, and XXXII.1.g-h.

58 Tommasino 2004.

an actual room.[59] In House VIII.6.3, the foundations of the E and N walls of a garden (2) were constructed with blocks of *pappamonte* on a previously open site. The structures were massive in size (*c.*12.10 m along the E wall, 7.10 m along the N wall). Among the materials collected around the blocks were two fragments of bucchero and a large Archaic tile.[60] In the Casa del Gallo (VIII.5.2/5), in House VIII.5.9, in the Casa della Calce (VIII.5.28) and in the area next to the Terme Repubblicane (VIII.5.36), several structures related to buildings of the Archaic period were revealed during Maiuri's explorations; they had foundations built of *pappamonte* blocks or with a mixed technique of *pappamonte* blocks, soft lava and limestone.[61]

Extensive constructions in *pappamonte*, soft lava, and limestone were also found in tests conducted by Maiuri in the area of the Basilica (fig. 9).[62] The stratigraphic excavation, conducted over a large area of the porticoes and *chalcidicum*, highlighted the presence of large structures in *pappamonte*, soft lava, and limestone either as re-used fragments or as worked square blocks. Almost all the structures identified were related to large buildings subdivided into several rooms,[63] as was indicated by the major walls with foundations in *opus quadratum* of *pappamonte* and the partition walls built in a more rudimentary technique through the use of fragments of *pappamonte*, soft lava and limestone.[64]

Reconstructing the original height of the *pappamonte* structures is an important issue for which there is still little information. It is important to distinguish the *pappamonte* walls with blocks set perpendicular to the course of the wall (like those of the fortifications at

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59 Curatolo 2001, 240; Tommasino 2004, 30-31, fig. 16.

60 Tommasino 2004, 39-40.

61 Maiuri 1930, 130-31; id. 1973, 171-82, figs. 93 and 99-101; Pesando 2002-3, 226, nn. 15-16, fig. 4; Tommasino 2004, 36-39, figs. 19-20.

62 In his publication of the tests within the Basilica, Maiuri (1973, 212-16, 218-19 and 221-22) paid much attention to description of the stratigraphy, structures and related materials.

63 In test B-I, a N–S wall was found built of soft lava blocks of blue colour, placed without using mortar or other bonding. In test B-II, an E-W row, 9.5 m long, of *pappamonte* blocks was found along the E portico; it intersected with a second wall of 3.10 m length, which originated under the S portico of the Basilica and in the area of the *chalcidicum* and of which the best-preserved part had two rows of well-worked *pappamonte* blocks (0.6 x 0.5 m). Above this structure, two walls made of fragments of *pappamonte* and soft lava were joined, perhaps forming internal divisions. In test B-III, a single E-W row of lava and limestone was found matching the axis of the *pappamonte* row of test B-II. Test B-IV produced a row in blocks and slivers of soft lava and superimposed *pappamonte* blocks, with two semicircular cuts on the W side. A little further to the west was a well dug directly into the natural soil. In test B-V, another E-W wall, 10.5 m in length, was formed of a foundation of *pappamonte* blocks, irregularly cut and laid without mortar. Above this foundation a second wall was formed of limestone slabs with infilling of compacted soil or small pieces of limestone. A very similar structure was found in excavations by the Scuola di Specializzazione di Matera in the Temple of Venus (Curti 2008, fig. 6). In test B-VII, a N-S *opus quadratum* foundation, 2.05 m in length, was made up of three square *pappamonte* blocks and one lava block. In test B-VIII, a N-S foundation of 4 *pappamonte* blocks was joined to a wall of limestone fragments bonded by clay. Maiuri noted that the two walls were not set on virgin soil but above a level of limestone flakes, which might point to a slightly later chronology. In tests B-IX and B-X, he found other remnants of isolated *pappamonte* blocks or walls composed of rows of two or more irregularly-cut blocks or walls made of fragments of soft lava and limestone without mortar: Maiuri 1973, 212-16, figs. 109, 122-23 and 126-27.

64 Walls made of fragments of *pappamonte*, soft lava, and limestone have been found under House I.2.20-21, in the area of the Temple of Apollo, and in the Casa del Centauro. See Tommasino 2004, 22-23 and fig. 7; De Caro 1986, 9-10 and tav. VIIIa; Pesando 2005, 88-90 with figs. 26 and 29.

Fig. 9. General view of the Archaic structures found under the Basilica.

the *Porta Nocera* and at the so-called *Porta Capua*, or the structures beneath the Casa della Fontana Grande [IX.8.1-22] and House VI.10.6) from those set parallel to the wall (like the fortifications at the *Porta Vesuvio*, under Tower XI, and the structures under the Caserma dei Gladiatori). For the *pappamonte* fortification wall at the *Porta Nocera*, S. De Caro assumed that it had no more than 6-8 rows for a total height of about 3-4 m.[65] For the stretch of wall

65 De Caro 1986, 105.

Fig. 10. The *pappamonte* tuff used at Pompeii.

Fig. 11. The volcanic tuff used at Fratte.

discovered at Tower IX, S. Sakai and C. Iorio suggested that the *pappamonte* wall did not function as the wall of a structure[66] but rather as a sort of terracing wall or fence-line.[67] The recent discovery at the *Porta Marina* of a *pappamonte* structure with 4 rows of superimposed blocks could confirm that these walls functioned as terracing.[68] It is therefore interesting to note that walls constructed with a tuff-like stone very similar to *pappamonte* can also be found in the Late Archaic structures of Fratte acting as terracing walls (figs. 10-11).[69]

At Rome, the Archaic houses excavated on the Palatine often show massive foundations,[70] but the standing walls were preserved to a height of no more than two rows.[71] The common element between the block structures at Rome and Pompeii is that in both contexts the *pappamonte* and *cappellaccio* tuff were used primarily, if not almost exclusively, for the

66 Sakai and Iorio 1999, 53.

67 Sakai 2000-1, 92.

68 See A. Hernandez, "Pompéi extra muros: les campagnes de fouilles 2003-2004," paper read at the Convegno "Nuove ricerche archeologiche nell'area vesuviana (scavi 2003-2006)," held in Rome on February 1-3, 2007.

69 Greco and Pontrandolfo 1990, 31 and fig. 15 (the wall is indicated there in orange). Another terracing wall, partly built in *opus quadratum*, with large tuff blocks, was excavated in Salerno in 1947 behind the via Cristoforo Capone, not far from the Arno river. The excavation was published by Sestieri, who stated that the whole area was used for the disposal of clay, ceramics, and stone materials from the end of the 6th to the 3rd c. B.C.: Sestieri 1952, 86-90, figs. 2-4.

70 See the foundation walls of *domus* 2 and those of room 636 in *domus* 3: Carandini and Carafa 2000, 220-21, figs. 173-75; 223, figs. 182-84.

71 Carandini and Carafa 2000, 218, fig. 171; 221, fig. 177; 225, figs. 189-90; 227, fig. 194.

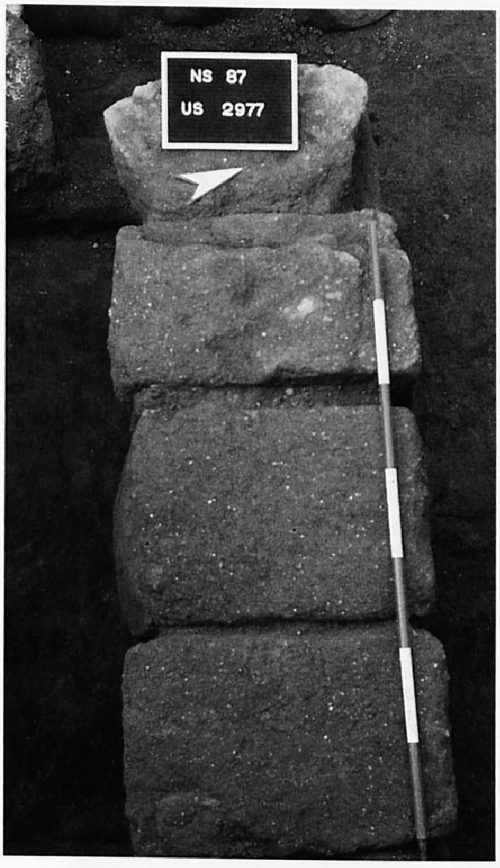

Fig. 12. The *cappellaccio* tuff used at Rome.

foundations of walls (figs. 10 and 12). This is related to the fact that *pappamonte* and *cappellaccio* are very soft stones and easy to work with hand-tools such as picks and axes. Moreover, both materials have low resistance to the weather, as is often evident in the worn surfaces of the exposed blocks; on the other hand, if buried they are well-preserved because of their ability to absorb water.[72] Also common to the Archaic structures of Pompeii and Rome is the use of *opus quadratum* with square or well-worked blocks for the load-bearing walls; walls built with chipped or irregular blocks of heterogeneous material without any bonding agent functioned as secondary walls and interior wall foundations.[73]

For the nature of the standing structures, the information is also scarce. For the Archaic houses at Rome, a raised structure of sun-baked clay, probably with a wooden frame, has been hypothesized on the basis of comparisons with other contemporary contexts in Lazio.[74] At Pompeii in *thermopolium* VI.10.4, a *pappamonte* block was found with a circular hole probably to hold a wooden pole related to the framing of a *pisé* wall.[75] At the Temple of Venus, collapses of sun-baked bricks and architectural terracottas were documented.[76] At the Caserma dei Gladiatori a layer of yellowish clay soil found behind *pappamonte* blocks might relate to the disintegration of *pisé* walls.[77] It is thus likely that buildings with foundations in *opus quadratum* and fragments of heterogeneous materials bore a superstructure in more perishable material such as mudbrick and *pisé*.[78]

A final aspect to consider is the roofing systems. It is possible to suggest heavy roofing systems of wood and tiles even for the Archaic houses of Pompeii. A few fragments of roof-tiles, some of which show traces of black paint,[79] come from the excavation of the Caserma

72 Ibid. 256-57.
73 Ibid. 257, n.209.
74 Ibid. 258; Cifani 2008, 243-45, fig. 229.
75 Coarelli *et al.* 2001-2, 224; Coarelli 2008, 404; Pesando 2005, 74 with fig. 7.
76 Curti 2008, 51-52, fig. 5.
77 The layer (Test 1 Us 33) contained several ceramic fragments dating to the 6th and early 5th c. B.C.: Esposito 2005, 158-59 with fig. 3.
78 Comparisons for these structures can be found in Etruria and in indigenous Campanian and Lucanian contexts: e.g., the Archaic houses recently excavated at Fratte, and the so-called Casa dei *pithoi* at Serra di Vaglio, dated, however, to the 5th c. B.C.: see *Il parco archeologico di Fratte* 2008; Greco 1991, particularly 36-40, 65-67 and 84-89.
79 All the fragments come from layers related to the *pappamonte* structure or from Archaic contexts found within the garden of the Caserma dei Gladiatori.

dei Gladiatori, enough to hypothesize the existence of a pitched roof covered with tiles. Maiuri's surveys under House VIII.6.3 (still unpublished) discovered a large roof-tile dated to the Archaic period on the basis of its association with a *pappamonte* wall.[80] Another large painted roof-tile of Archaic type came from the excavation at the *Porta Vesuvio* in the area of the Samnite fortifications: it originally measured 0.72 x 0.48 m and was adorned by two opposing triangles painted brown at the peak.[81] In the atrium of the Casa del Marinaio (VII.15.1), a test yielded (albeit in a secondary context) some pieces of concave roof-tiles, three of which retain traces of red or black.[82] Fragments of Archaic roof-tiles, again in secondary contexts, are reported from the Casa di Modesto (VI.5.13),[83] House VI.13.19[84] and House VI.14.40.[85] There is now the need to review some important discoveries under the Casa della Colonna Etrusca (VI.5.17)[86] and under the Casa di Ganimede (VII.13.3),[87] to which one should add the series of architectural terracottas found in the Temple of Venus[88] and the materials from old excavations of the electrical facility in the Forum.[89]

The presence of weighty roofing systems in Pompeii's buildings is not surprising. Roofing systems that used flat tiles and architectural terracottas are common during this period both in Magna Graecia[90] and in Etruscan areas,[91] as well as in indigenous contexts.[92] The existence of tiled roofs has also been suggested for the Archaic houses on the slopes of the Palatine, where the almost total absence of any fragment of roofing material was offset by the presence of a complex system of wells, cisterns and pipes that has been associated with a tiled roofing-system.[93] A similar system of wells and drains has been found in the Etruscan settlement of Fratte.[94]

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80 Tommasino 2004, 40.

81 Maiuri 1930, col. 247, fig. 44. Similar tiles come from tests in the area of the Temple of Apollo: De Caro 1986, 35-36 and pl. XVa.

82 Antolini and Leone 2010.

83 Carbone and Santificetur 2004, 169, fig. 31.

84 Verzár-Bass *et al.* 2008, 191, n.16.

85 I thank F. Pesando for this information.

86 The antefix fragment (CE/2549) found in the excavation of the Casa della Colonna Etrusca: Bonghi Jovino 1984, 249-51 and tab. 140.2.

87 Reusser 1982, 364-66, figs. 16-18 and pls. 136.1-2, 137.1.

88 Curti 2008, 50.

89 The excavation called I.E. (Impianto Elettrico) was conducted by P. Arthur between 1980 and 1981, the product of collaboration between the Università Ca' Foscari of Venice and the Scuola di Specializzazione in Archeologia of Matera. Among the materials should be mentioned Archaic architectural terracottas belonging to systems rather different from those of the Temple of Apollo and so related to one or more different buildings in the area of the Forum: cf. Cottica and Curti 2008, especially 28.

90 The Archaic houses of Velia presented two different roofing systems: a first system involved simple roofs made of beaten clay and wood, while a second system of heavy roofs had flat *tegulae* and *imbrices* decorated with antefixes and polychrome *simae*: Greco and Strazzulla 1994, 124-29.

91 At Fratte, several heavy roofing systems were found decorated with architectural terracottas related to various systems and therefore probably belonging to several buildings of both public (sacred) and private nature: Greco and Pontrandolfo 1990, 59-61.

92 See the Archaic buildings of Braida and Serra di Vaglio: Greco 1991, 30-44.

93 On the Archaic roofs in Rome, see Cifani 2008, 247-52. On the roofing systems of the Palatine houses, see Carandini and Carafa 2000, 240-42 and 249-50, fig. 228.

94 *Il parco archeologico di Fratte* 2008, 21-23.

The *pappamonte* structures in the context of Pompeii's history in the Archaic period

The discovery of the *pappamonte* structure under the Caserma dei Gladiatori is important in relation to the urban organisation of Archaic Pompeii. It is the most significant structure in *pappamonte* blocks found outside the so-called *Altstadt*,[95] which scholarly tradition has placed in the area corresponding to the current *Regiones* VII and VIII.[96]

Maiuri's investigations under the houses of the Samnite period found several structures in *pappamonte*; since in most cases bucchero fragments were associated with the blocks, they date, in all likelihood, to the Archaic period. Those buildings seemed to be focussed mainly in the area of the *Altstadt*, chiefly under the Basilica,[97] on the S side of the first stretch of the via dell'Abbondanza,[98] and along the main roads that branched off towards the gates, on each side of the via di Mercurio[99] and along the via Consolare.[100] The city wall in *pappamonte* at the *Porta Nocera* and the Archaic structures found under the Caserma dei Gladiatori, all outside the *Altstadt*, were ignored as problematic by Maiuri, who did not offer an interpretation for them.[101] In fact, the distribution of *pappamonte* structures is much broader than the area of the *Altstadt*, and the picture becomes still richer if we consider finds dating to the Archaic period.

Between 1985 and 1992, S. De Caro proposed a new reconstruction of the oldest phases of the town. In the 6th c. B.C. the walls in *pappamonte* encircled the 66 ha that constitute the plateau of Pompeii. Within their perimeter there should have been a limited urbanized area with houses concentrating mostly around the two shrines — that of Apollo near the Forum, and the Doric Temple in the area of the Triangular Forum — as well as along the main roads. For the rest, there would have been large open areas, cultivated or used for pasture.[102] This image of the *Altstadt* as a 'privileged settlement zone', by comparison with the rest of the area enclosed by the *pappamonte* walls, characterized by sizeable unbuilt areas, can be revised. The *pappamonte* structures under the Caserma dei Gladiatori, like those already identified under the Casa di Amarantus (I.9.12)[103] and structures built with limestone and *pappamonte* present in House I.2.20-21,[104] show that, even in sectors far from the *Altstadt*, there were urbanized areas of some size.

The *pappamonte* structure under the Caserma dei Gladiatori has the same orientation as the older structures in *insula* V.5, which is both interesting and problematic. De Caro assumed the existence of roads along a path linking the *Altstadt* to the gates that probably were already in existence during the Archaic period along the E side of the circuit wall.[105]

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95 Structures dating to the Archaic period have been found in *insulae* I.2, I.5, V.3, IX.3 and IX.7, besides the foundation trenches filled with *pappamonte* flakes found in *insula* I.9.

96 Haverfield 1913; von Gerkan 1940; Eschebach 1977; De Caro 1992; Sakai 1991 and 2000-1.

97 Maiuri 1973, 212-16.

98 Casa del Gallo (VIII.5.2), House VIII.5.9, Casa della Calce (VIII.5.28): Maiuri 1973, 161-82.

99 Archaic houses underneath the Casa della Fontana Grande and House VI.10.6: Maiuri 1973, 161-69.

100 *Pappamonte* structures under the Casa di Pansa (VI.6.1): Maiuri 1973, 169-71. On the via Consolare in the Archaic period, cf. Carocci *et al.* 1990, 195-99.

101 Maiuri 1939, 237-38, fig. 42; Tommasino 2004, 28-29.

102 De Caro 1985, 108-10; id. 1992, 73-74; Cristofani 1991, 15-16.

103 Fulford and Wallace-Hadrill 1999, 47-50, figs. 5-7; Wallace-Hadrill 2005, 103, fig. 10.

104 Tommasino 2004, 22-23, fig. 7.

105 Until recently, no part of the *pappamonte* circuit wall was identified on the E side.

Excavations in the Casa delle Nozze di Ercole (VII.9.47) have brought to light structures with *pappamonte* foundations[106] whose orientation was consistent with that of the arrangement of *insula* VII.9 in the Hellenistic era.[107] M. Fulford and A. Wallace-Hadrill believe that the Archaic foundation pits identified under the Casa di Amarantus (I.9.12) showed the same alignment followed by successive structures of *insula* I.9 and the surrounding streets.[108] This led them to argue that the network of roads currently visible in the E sector of the town, whose creation is generally dated to the Hellenistic era,[109] must also be traced back to the Archaic period and is to be associated with the cultural influence of the Etruscans.[110] The same similarity of orientation between Archaic structures and successive buildings can be seen in *Regio* VI, where the orientation of buildings with *pappamonte* foundations is the same as that of the superimposed houses of the mid-Republican period. However, F. Coarelli has stressed that, while the orientation is very similar, the urban structure looks completely different: the buildings with *pappamonte* foundations have survived only in the empty or unbuilt spaces in between houses of the mid-Republican period, showing that there was no continuity in the system of ownership of these buildings.[111]

The same lack of continuity applies to the roads. Recent excavations conducted by A. Varone[112] and R. Berg[113] in the alleys to the east and west of *insula* IX.12 have revealed a deep stratification that goes back to the Neolithic period; it should be noted, however, that the oldest roads do not go back beyond the second half of the 3rd c. B.C. The recent discovery of a road layout dated to the Archaic period under the vicolo del Fauno seems to indicate the existence of a system of parallel roads on the axis of the via di Mercurio.[114] This data would complement the evidence from the excavations at the *Porta Vesuvio*, where the beaten-earth road excavated by Maiuri[115] and again by F. Seiler has an orientation comparable with that of the road system in *Regio* VI and of the via di Mercurio.[116]

Overall, however, there is not yet sufficiently solid data to argue for the existence of a developed urbanization in the Archaic phase,[117] and there is even less evidence to support the notion of subdivisions along the road axes of the area enclosed by *pappamonte* walls. The first urban organisation of Archaic Pompeii may thus be summarized as follows. During the 6th c. B.C., public or sacred buildings as well as several houses around the whole

106 Carafa 1997, 22; 1999, 27-28, figs. 10a-b.

107 Carafa 1999, 31; D'Alessio 2008, 276, 278 figs. 5-6, and 280. Carafa stressed that the orientation of such structures "è sempre coerente con quello delle più tarde *insulae* e, soprattutto, che [tali strutture] si trovano anche all'esterno della supposta *Altstadt*".

108 Fulford and Wallace-Hadrill 1999, 105-12; Wallace-Hadrill 2005, 103.

109 Sakai 1991, especially 52-54; De Caro 1992; Nappo 1993-94, especially 92-98.

110 Berry 1998, 65-66, fig. 78; Fulford and Wallace-Hadrill 1999, 105-10; Wallace-Hadrill 2005, 103.

111 Coarelli 2008, 175.

112 Varone 2005.

113 Berg 2005 and 2008.

114 Befani 2008, 2-3 and 10.

115 Maiuri 1930, col. 185, tav. VIc.

116 As it has generally been considered best not to dig the road surface, we do not have dating material. However, the overlying ceramic materials have yielded a date in the 3rd c. B.C., which offers a good *terminus ante quem*. Moreover, the beaten earth road presents a row of heavily-eroded *pappamonte* blocks on the S side which seem to be contemporary with the road surface: Seiler 2004, 186-87, fig. 11.

117 Guzzo 2007, especially 47-52, and his discussion in Guzzo and Guidobaldi 2008, 511-12.

perimeter of the town point to a topographically-discontinuous but still significant urbanization. This in turn supports the notion of a structured and organised community. The definition of spaces having public and sacred values (e.g., the construction of the Temple of Apollo and the Doric Temple), as well as the creation of the market square in the area corresponding to the later civic Forum, are associated with a first layout of the main roads and, at least in *Regio* VI, of a network of secondary roads along which the first nuclei of dwellings with stone foundations and more solid structures were built. In this way a road system was created, perhaps based on paths used to connect the various built nuclei, which helped urbanize the spaces intended for public functions.[118] Masonry structures related to houses or buildings of a certain importance existed throughout the whole urban area, though with a higher concentration in its W sector. Archaeological layers dating to the Archaic period, even far from the *Altstadt*, argue for a structured presence on the whole plateau of Pompeii during this period.

The rôle of the indigenous culture, although strongly influenced by that of the Etruscans,[119] can be seen in the earliest urbanization of Pompeii.[120] Its birth was the result of a synoecistic process, the combination of several indigenous communities living in scattered villages,[121] according to a model generally accepted for the whole of the Sarno valley.[122] Despite the fusion of these communities into a centre (i.e., an area enclosed and protected by circuit walls, in which public spaces and sacred spaces were defined), there was evidently a practice of setting up scattered nuclei without a clear intent to merge into a single social milieu.

The chronological development of Archaic Pompeii should also be considered. The materials associated with the *pappamonte* structures under the Caserma dei Gladiatori point to a foundation date in the first quarter or first half of the 6th c., with a lifespan that extended at least until the early 5th c. B.C. Such structures seem to have had a lifespan contemporary with or closely following the construction of the *pappamonte* circuit walls.[123]

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118 Structures identifiable as city gates have been excavated under the Torre di Mercurio (Maiuri 1929, coll. 151-58, tav. IV), at the *Porta Vesuvio* (Maiuri 1930, coll. 168.191, tav. VI; Seiler 2004) and east of the *Porta Marina* (Arthur 1986, 31).

119 On the question of the identity of Pompeii's first founders, see Lepore 1984, especially 13-16; Cristofani 1991, 18-19; De Caro 1992, 74-75; Cerchiai 1995, 127-40; Guzzo 2007, 45-46.

120 On this aspect, see the observations by Guzzo 2007, 46-47.

121 The existence of a settlement during the Bronze Age on Pompeii's hill corresponding to *Regio* V has been demonstrated (Nilsson 2008; Robinson 2008 and this volume). A second settlement could be imagined southeast of the amphitheatre where the surveys of De Caro (1985; 2008, 512) have brought to light abundant Bronze-Age material. Recently, a necropolis has been identified on the hill of S. Abbondio, 500 m south of the amphitheatre; it lay close to the settlement that must have developed on top of the same hill (Mastroroberto 1998). For the protohistoric phase, the evidence is very poor (cf. Horsnæs 1997). Besides a bronze *fibula* from the Temple of Apollo (De Caro 1986, 19) and the 7th-c. material from the excavations within the Casa della Colonna Etrusca (Bonghi Jovino 1984, 72 and pl. 60.7-8; 76 and pl. 65.2), Iron-Age levels have been found in the garden of the Casa degli Epigrammi Greci (Robinson 2008, 126-28, fig. 3), in the Casa dei Postumi (Dickmann and Pirson 2005, 157; Robinson 2008, 129-30, fig. 8), and in the Casa di Giuseppe II (Carafa and D'Alessio 1995-96, 141; Carafa 1997, 24-29; id. 1999, 20-21 and 27-33; D'Alessio 2008, 276 and 279-80).

122 Cristofani 1991, especially 10-14; Johannowsky 1994; Cerchiai 1995, 127-40; Guzzo 2007, 39-55.

123 The dating of the *pappamonte* wall is now fixed at the beginning of the 6th c. B.C.: De Caro 1985, 104-5.

This is important for reconstructing the layout of Archaic Pompeii because it shows, as has already been observed,[124] that the material found within the *Altstadt* is not older than that found outside it. Thus there is no conclusive evidence to confirm the assumed earlier dating of the *Altstadt* in relation to the surrounding area.[125]

The *terminus post quem* obtained in the excavations of the Caserma dei Gladiatori does not go beyond the first quarter of the 5th c. B.C. This coincides with what is seen even in parts of the town where the Archaic structures were being abandoned, apparently as a result of exceptional events such as the flood recorded in *Regio* VI.[126]

The apparent lack of continuity of occupation on the plateau from the mid-5th until the end of the 4th c. B.C., is demonstrated by the sudden decrease in offerings in votive pits at the two main urban sanctuaries,[127] as well as in the extra-urban sanctuaries of the Bottaro[128] and Fondo Iozzino.[129]

Recent excavations by F. Pirson and J.-A. Dickmann in the Casa dei Postumi (VIII.4.4)[130] have revealed the presence of a massive N–S wall in horizontally-arranged blocks (*c.*2.6 m thick) of *pappamonte*, limestone, and soft lava. Geophysical survey conducted by the same scholars under the Terme Stabiane pointed to the existence of a structure similar to a fortification ditch which, they believe, can be dated to between the 6th and the 5th c. B.C., although it is not possible to know whether it was contemporaneous with the *pappamonte* wall or followed its destruction (which would then make it contemporaneous with another wall featuring the use of orthostats).[131]

Based on these findings, Coarelli and Pesando have proposed a new reconstruction of the historical development of Archaic Pompeii, reversing the traditional view of a progressive development from a small town (i.e., the *Altstadt*), limited to the area between the Forum and the Triangular Forum, to the large city (the *Neustadt*), enlarged to include *Regio* VI in the 5th c. and then gradually all other *Regiones*. According to them, the proper chronological sequence would see first the large *Altstadt*, enclosed by the *pappamonte* circuit within the full perimeter of 66 ha and extensively urbanized, and then the *Neustadt*, which would be the result of an urban contraction —a reduction of the urbanized area within the limits of *Regiones* VII and VIII.[132]

Generally, the contraction of the town during the 5th c. has been interpreted in terms of a "structural crisis",[133] a "temporary end of the community",[134] the "de-structuring"

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124 De Caro 1986, 19-20.

125 See De Caro 1985, 1986, and 1992, 70-71; Carafa 1999, 28-29.

126 The excavations here have documented the presence of a sterile stratum of alluvial origin: Coarelli *et al.* 2001-2, 224; Pesando 2005, 74; Coarelli and Pesando 2006, 19; Guzzo 2007, 57. Such a stratum was not identified in the Caserma dei Gladiatori.

127 De Caro 1986, 23-24; id. 1992, 75. Only the roof of the Doric Temple was restored in the Late Archaic period: De Waele 2001, 335.

128 d'Ambrosio 1984, 20.

129 d'Ambrosio 1993-94, 220-21; Guzzo 2007, 43-44.

130 Dickmann and Pirson 2002, 298-302; iid. 2005, 156-57.

131 Iid. 2005, 157.

132 Pesando and Guidobaldi 2006, 19-20; Coarelli 2008, 175; Coarelli and Pesando 2006, 18-19.

133 Pesando and Guidobaldi 2006, 6 and 20.

134 Zevi 1982, especially 359-65; id. 2008, 504 and 515.

and consequent "transformation" of the town[135] following the process of 'Samnitization' in Campania. Evidently Pompeii, like other Campanian towns, such as Cumae and Capua, went through a structural transformation in the 5th c., due to the advance of the Samnite populations towards the coastal areas.[136] At Pompeii, the signs of this can be seen in the contraction of the town within the limits of the *Altstadt* — which it would now be better to call the *Neustadt* — and in the new fortification of the town.

We suggest an alternative hypothesis, as pointed out already by P. G. Guzzo.[137] Pompeii between the 6th and the 5th c. B.C. demonstrates substantial ethnic and cultural continuity, but a real difference can be seen in the organisation of the urban structure, which in the 6th c. was still organised in a non-systematic way, although enclosed by *pappamonte* walls, while in the 5th c. the urban structure was marked by a regular grid (the "fish bone" grid) which represents the first example of a settlement that has been laid out in a regular manner.[138] This new urban plan, which almost represents the moment of the foundation of the *Neustadt*, was accompanied by a series of technological and economic achievements. First there is the circuit wall in *pappamonte* and limestone around the perimeter of the fully urbanized area, with a gate and ditch on the E side.[139] This wall is largely contemporaneous with the construction of the outer ring of walls, with a double curtain built in the orthostat technique dated to the first half of the 5th c. and directly comparable to the walls of Cumae.[140] It may not be a coincidence that the construction of walls with orthostats coincides with the decrease in offerings in votive pits at the two main shrines, urban and suburban, and, more importantly, with the fact that the local government abandoned the restoration and new decorative programmes of the Doric Temple and that of Apollo.

Nevertheless, during this period there are other significant buildings within the town, such as the limestone and *pappamonte* structures excavated by Maiuri under the *chalcidicum* of the Eumachia Building.[141] The materials found above their floor levels date to the mid-4th c. (the foundations of these walls were not excavated). Under shop 20 of the Casa di Ganimede (VII.13.3), a wall in *pappamonte* and limestone was associated with a pottery fragment of the mid-5th c. and a Campanian black-figure fragment.[142] The test excavations carried out in House IX.7.25[143] led to the discovery of a wall fragment of small limestone blocks bonded by clay and covered with plaster on both sides; the materials associated with the wall date from the end of the 6th through the 5th c.[144] The road constituting the E extension of the via degli Augustali cuts through the wall, demonstrating that the town's

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135 Coarelli 2008, 175; see also Coarelli's discussion in Guzzo and Guidobaldi 2008, 502.

136 Pesando and Guidobaldi 2006, 11-15; Coarelli and Pesando 2004b, 42-49; Coarelli 2008, 175; Guzzo 2007, 58-62; and Guzzo's discussion in Guzzo and Guidobaldi 2008, 505.

137 Guzzo 2007, 57-62; id. 2008, 505.

138 De Caro 1985, 109; id. 1992, 69-70; Guzzo 2007, 59-60.

139 The so-called *Porta Scea* under the Stabian Baths was connected with a sacred area by the presence of the hypogeal chamber identified as a *'templum sub terris'*. Cf. Dickmann and Pirson 2005, 156-57; Guzzo 2007, 59; id. 2008, 505. On the *'templum sub terris'* hypothesis, see Guzzo 2007, 53 and the contributions by Curti and Guzzo in Guzzo and Guidobaldi 2008, 504-5.

140 Cf. d'Agostino *et al.* 2005-6, 53-54.

141 Maiuri 1973, 53-59, figs. 19-25; Guzzo 2007, 60.

142 Reusser 1982, 361, nn. 15-16; Guzzo 2007, 60.

143 Giglio 2005; Giglio 2008, 343.

144 Giglio 2008, 342, n.15.

eastwards expansion occurred at the expense of earlier constructions of the 6th and 5th c. B.C.[145]

The above evidence leads to the conclusion that the 6th and 5th c. saw the structuring of an urban community of indigenous people who had been scattered through the late 7th c. B.C. according to the model of hut villages in the Sarno valley. The structuring occurred at the beginning of the 6th c. with the construction of the *pappamonte* circuit wall in order to control the axes to and from the Sarno valley, the definition of the orthogonally-arranged main roads, and the creation of two main sanctuaries, of Apollo and of the Doric Temple. The community now began to structure its settlement in a form that can be defined as 'urban'. It is possible to link this earliest urban form to the first nuclei of houses that were built with stone foundations (in *opus quadratum* with blocks of *pappamonte*) and superstructures in perishable materials (mudbricks, *opus craticium*), as well as tiled roofs. These groups of houses were arranged in a discontinuous fashion, clustering along the main streets (the via Consolare, via della Fortuna, via di Nola, via di Mercurio, and via dell'Abbondanza). Among these more densely urbanized zones, many areas remained open, some having a sacred function, such as the areas of the Casa della Colonna Etrusca (VI.5.17), the votive column of the Casa di Orfeo (VI.14.18-20), and possibly that under the Casa di Ganimede (VII.13.3). This seems to have been Pompeii's appearance during the whole of the 6th c. At the end of that century there was a contraction, partly due to catastrophic natural events, as is shown by the levels of flooding that occurred in *Regio* VI and outside the *Porta Marina*, but behind the contraction we should also detect a political or military process related to the advance of the Samnites.

From the point of view of town planning, the real revolution occurred during the 5th c. The town was enclosed by a double circuit of walls, the outside one built with a double curtain with orthostats according to the model of the Greek walls of Neapolis and Cumae, the inside one double-curtained and reinforced by a ditch, at least on the E side. Inside the town, large-scale planning with the definition of a true road network (the "fish bone") can be seen, respecting pre-existing roads (specifically, the via di Mercurio, via delle Scuole, the via Marina, and via dell'Abbondanza). Along with the new street grid, new buildings were constructed in *pappamonte* and limestone.

The two towns (that of the 6th and that of the 5th c. B.C.) seem to reflect the same social order and *ethnos*, recorded historically as Opici or Sarrasti.[146] The real gap appeared only at the end of the 5th c., at the conclusion of the process of the Samnitization of Campania, which led to the great urban change at the beginning of the 3rd c. B.C.[147] (D.E.)

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145 See Coarelli's discussion in Guzzo and Guidobaldi 2008, 514.

146 Guzzo 2007, 61.

147 Pesando 2006b.

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