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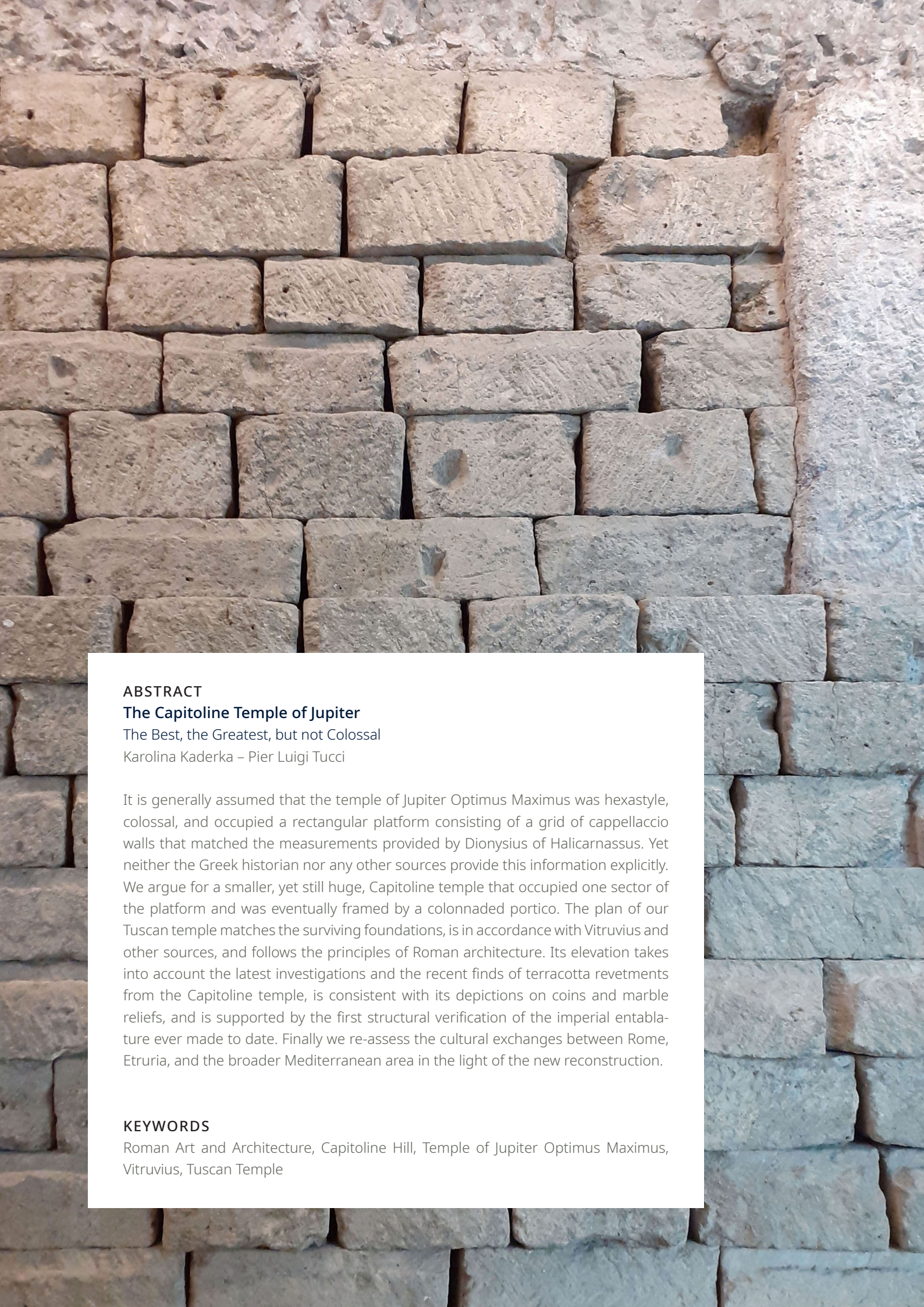
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ABSTRACT

The Capitoline Temple of Jupiter

The Best, the Greatest, but not Colossal

Karolina Kaderka – Pier Luigi Tucci

It is generally assumed that the temple of Jupiter Optimus Maximus was hexastyle, colossal, and occupied a rectangular platform consisting of a grid of cappellaccio walls that matched the measurements provided by Dionysius of Halicarnassus. Yet neither the Greek historian nor any other sources provide this information explicitly. We argue for a smaller, yet still huge, Capitoline temple that occupied one sector of the platform and was eventually framed by a colonnaded portico. The plan of our Tuscan temple matches the surviving foundations, is in accordance with Vitruvius and other sources, and follows the principles of Roman architecture. Its elevation takes into account the latest investigations and the recent finds of terracotta revetments from the Capitoline temple, is consistent with its depictions on coins and marble reliefs, and is supported by the first structural verification of the imperial entablature ever made to date. Finally we re-assess the cultural exchanges between Rome, Etruria, and the broader Mediterranean area in the light of the new reconstruction.

KEYWORDS

Roman Art and Architecture, Capitoline Hill, Temple of Jupiter Optimus Maximus, Vitruvius, Tuscan Temple

The Capitoline Temple of Jupiter

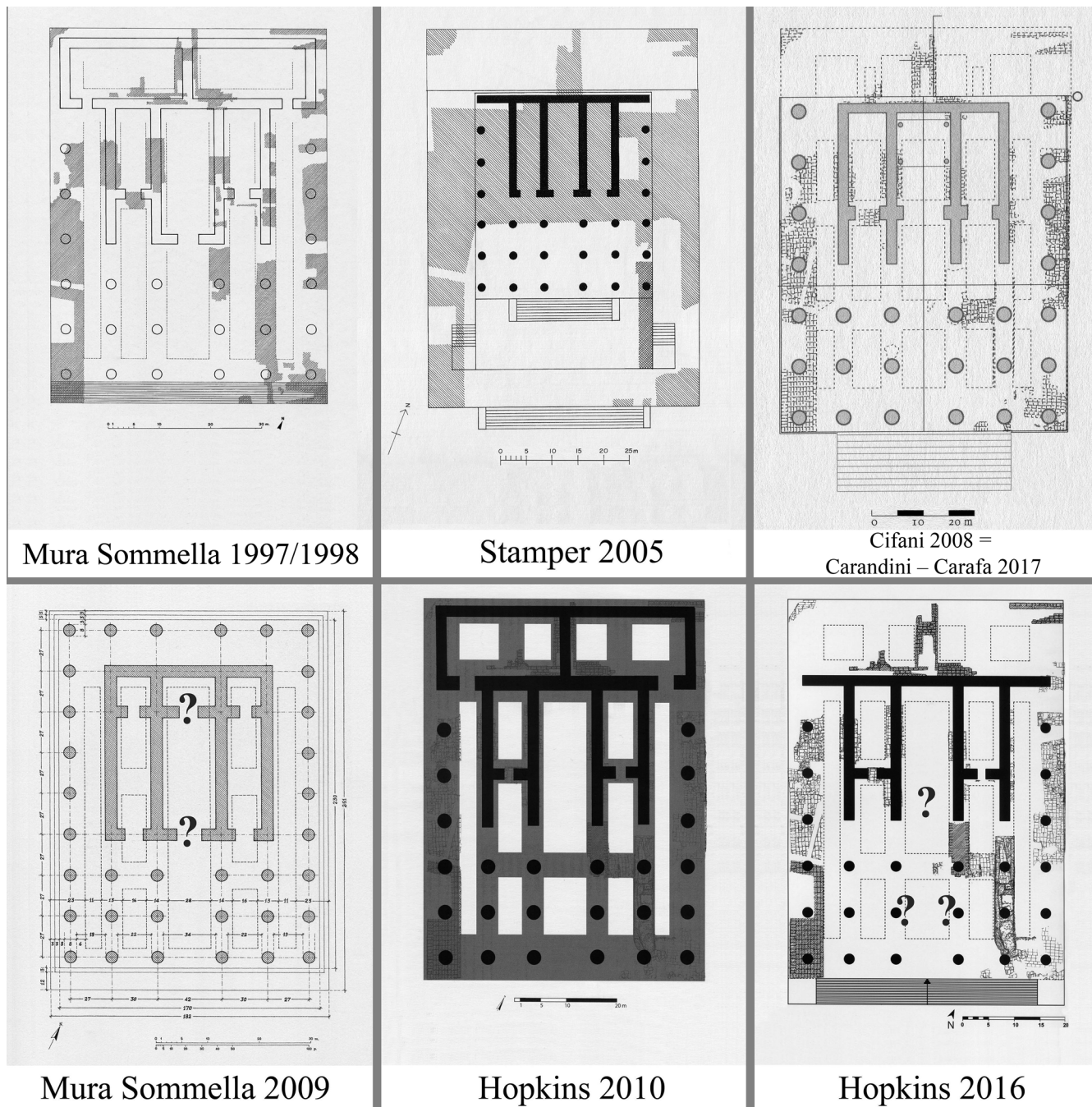
The Best, the Greatest, but not Colossal

¹ In the last two decades several scholars have investigated the design and layout of the temple of Jupiter Optimus Maximus, providing very detailed, yet different, reconstructions based on literary sources, coins, reliefs, and the surviving walls made of cappellaccio blocks (fig. 1). It is generally assumed that the Capitoline temple was hexastyle and occupied a rectangular area of approximately 53 by 62 m – not an actual platform, but a sort of grid of intersecting walls or substructures (fig. 2) – that matches, with some discrepancies, the measurements provided by Dionysius of Halicarnassus (60–7 BC)¹. Pierre Gros, among others, has however rightly pointed out that “the remains of this venerable building are too few to propose a reconstruction of its plan”². Likewise, one of the supporters of the large-scale temple has acknowledged that “the received orthodoxy is that the temple of Jupiter Capitolinus was hexastyle and all the recent plans show it as such. Yet neither Dionysius nor any other source actually says anything to this effect”³. The various reconstructions range between a small temple with the same layout as the colossal one (fig. 1, Stamper 2005) and an extra-long temple with rooms or columns at its rear (fig. 1, Mura Sommella 1997/1998 and 2009; Hopkins 2010). However, the arguments for the colossal temple contain some unreliable assertions: for example, that in the imperial age its entablature would have consisted of marble blocks 12 m long or wooden beams covered by bronze revetments. Both are unlikely. Architects and engineers take technical issues very seriously and yet, with few exceptions, in the case of the Capitoline temple many scholars have overlooked such concerns, as if centuries ago gravity and flexural strength did not play any role just because the Roman builders were unaware of them. In a detailed review of the latest reconstructions, we argue here for a smaller – yet still huge enough – Capitoline temple (fig. 3).

¹ Gjerstad 1960, 168–190; Tagliamonte 1996; De Angeli 1996. The surviving foundation walls and those that can be reconstructed symmetrically on the longitudinal axis are highlighted in fig. 3, left.

² Gros 1996, 124.

³ Siwicki 2020, 95; regardless of the foundations, his alternatives are an octastyle or decastyle temple because “even hexastyle appears to have been very unusual” and “it is also unlikely that the Capitolium had only four columns across the façade.”



1

Fig. 1: Hypothetical plans (at the same scale: discrepancies are due to the original drawings) of the temple of Jupiter Optimus Maximus according to: Mura Sommella 1997/1998; Stamper 2005; Cifani 2008 = Carandini – Carafa 2017, vol. II, pl. 8 (adapted); Mura Sommella 2009 (our question marks indicate walls without foundations); Hopkins 2010; Hopkins 2016 (our question marks indicate the lack of foundation at the entrance to the axial cella and the hypothetical foundation walls)

2 After its dedication in 509 BC, the temple of Jupiter Optimus Maximus remained more or less intact until the fire of the 6th July 83 BC. The second temple was completed in 69–62 BC. Dionysius (4, 61, 4, discussed below) tells us that it was rebuilt on the same foundations, which does not mean that the new plan corresponded exactly to the original one: no doubt the three cellas remained unchanged, but the pronaos might have been slightly remodeled after the introduction of new materials and architectural orders⁴. The *Res Gestae* (20, 1) do not provide detailed information about the Augustan restoration, but it has been argued that it introduced the Corinthian order for the very first time: “I rebuilt both the *Capitolium* and the Theatre of Pompey with a considerable

4 We rule out the notion that an original small temple was turned into a colossal one (as some scholars have proposed: see below) or vice versa.

expense, without displaying any inscriptions bearing my name”⁵. The Capitoline temple was restored again after another fire that began on the 19th December AD 69 from the “eagles made of ancient wood” (Tac. Hist. 3, 71: *aquilae vetere ligno*), which may refer to the temple’s entablature, pediments and roof⁶. The rebuilding was completed by Vespasian, whose new temple was “raised on the original site,” but “additional height was given to the structure; this was the only variation which religion would permit” (Tac. Hist. 4, 53)⁷. The fire of AD 80 damaged the temple one more time and, after its restoration, Domitian had his name inscribed on it (Suet. Dom. 5; Lactant. De Morte Persec. 3, 3); the fragments of huge columns of Pentelic marble that have been recovered on the site belong to this fourth temple. In Late Antiquity the Capitolium was constantly pillaged and later its spoliation was so radical that only the skeleton of the platform has survived.

3 The Domitianic phase has been generally overlooked, although any reconstruction of what the original Capitoline temple looked like would benefit from looking backwards “starting from the more recent periods, which are better documented archaeologically”⁸. In this vein, Ronald Ridley and Cairoli Fulvio Giuliani expressed their concern about the 12 m long architraves of both the original and the Domitianic temple⁹. Earlier, Ferdinando Castagnoli had argued that, like the area sacra at Sant’Omobono, the Capitoline platform could be a *templum* that housed a smaller temple (*aedes*) and its altar¹⁰. Despite these critical observations, recent studies continue to “give credit to the reconstruction of a temple that would be absolutely exceptional in the history of ancient architecture, out of norm and out of scale, not comparable with what we know and that, quite inexplicably, did not awaken the stupefied admiration of contemporary people”¹¹. Since 2010 John Hopkins has been reiterating that “archaeology and ancient literature point to a colossal building”¹². In his view, ancient authors described the temple as “one of the largest and most opulent buildings in Rome,” but a systematic check reveals that nobody, in antiquity, used adjectives such as exceptional, extraordinary, astounding, colossal, immense, enormous, gargantuan, overpowering, impressive, and so on¹³. Dionysius recorded the platform’s perimeter without any comments. Ovid noted that “Jupiter had hardly room to stand upright in his cramped shrine” (Fasti 1, 201): indeed, the axial cella was quite small in comparison with the presumed large scale of the temple and with the cellas of other temples¹⁴. Vitruvius mentioned the Capitoline temple just once, in passing, while dealing with araeostyle temples, which looked splayed, top-heavy, low, and sprawling (Vitr. 3, 3, 5): throughout his treatise there is not a word about the temple’s size. Pliny the Elder (Plin. nat. 36, 24, 102) did not include it among the most beautiful buildings in Rome and was more impressed by the Basilica Aemilia, the Forum of Augustus and the Temple of Peace. Other sources are cited in our final section: apparently the temple of Jupiter Optimus Maximus was celebrated for its

5 *Capitolium et Pompeium theatrum utrumque opus impensa grandi refeci sine ulla inscriptione nominis mei*. See Thein 2016.

6 Kaderka 2018, 229.

7 *Iisdem vestigiis sisteretur: nolle deos mutari veterem formam ... Altitudo aedibus adiecta. Id solum religio annuere*.

8 Foresta 2007, 119 f.; Hopkins 2012, 111 f. and 118, claims that “most brush quickly past the initial design of the temple” and that “scholars segregate the temple from Roman architectural history” yet, see (among others) Crema 1959, 37–42 and Stamper 2005, 6–33.

9 Ridley 2005; Giuliani 2006, 17; cf. Tucci 2006.

10 Castagnoli 1984, 7 f.

11 Arata 2010, 615, but with no drawings of the original temple and of its eventual transformation into a semi-colossal building. Cf. Rendeli 1989, 59: “the temple of Jupiter Capitolinus should be seen as a unique experience, outside any norm, whatever the date, shape or architectural model one wants to reconstruct.”

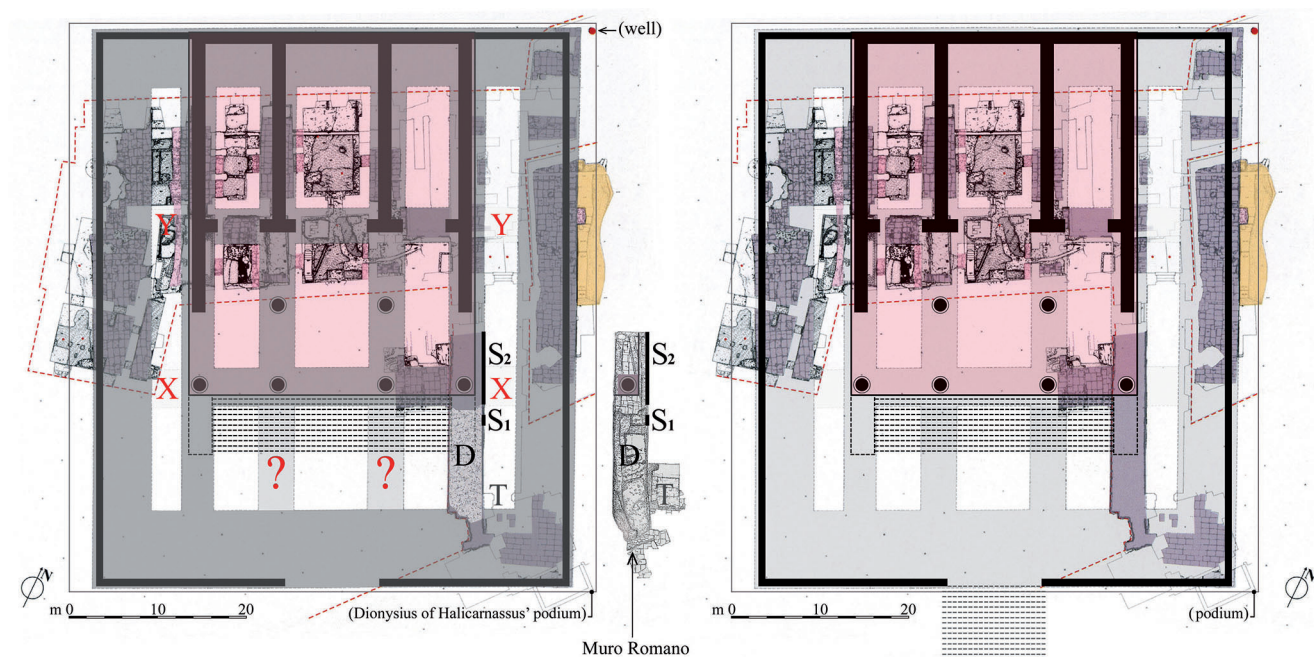
12 Hopkins 2010, 29.

13 *Passim* in Hopkins’ publications. See Favro – Yegül 2019, 83; Siwicki 2020, 87.

14 *Iuppiter angusta vix totus stabat in aede*.



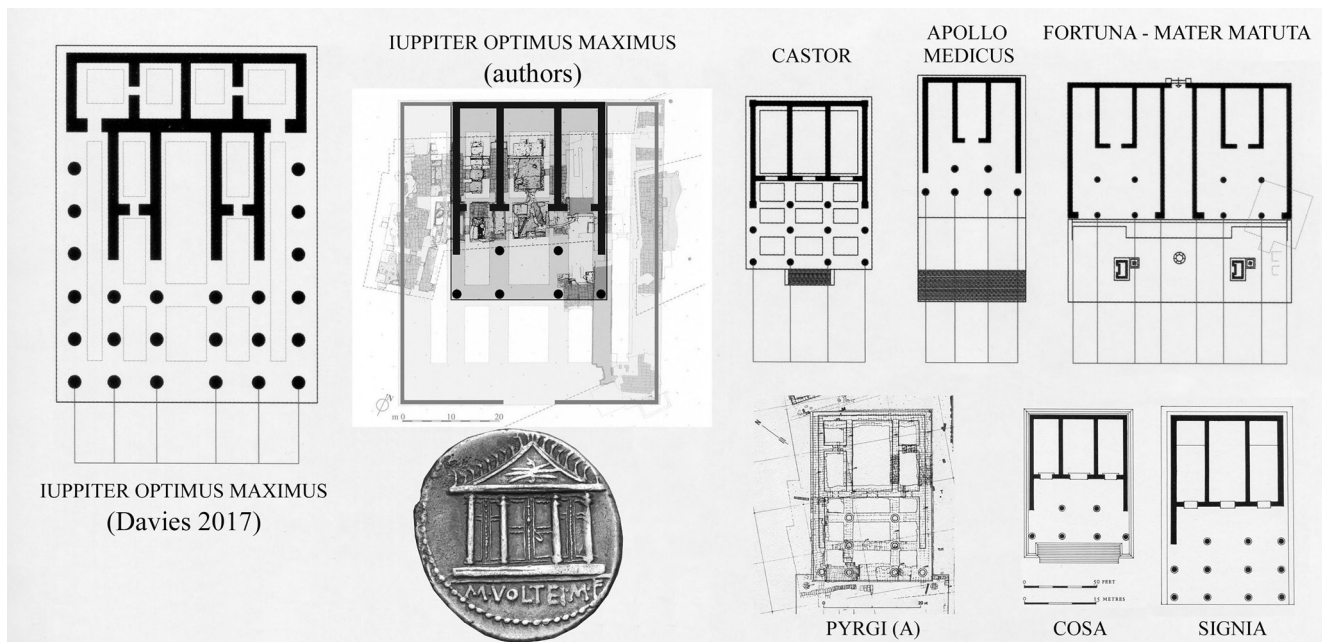
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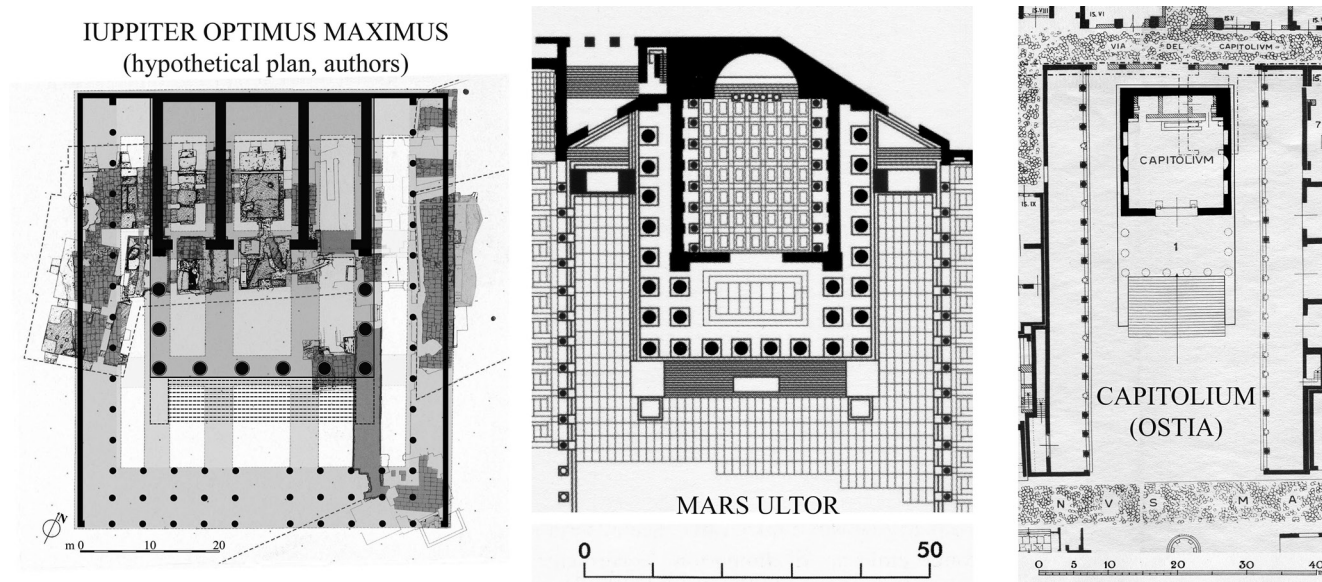
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Fig. 2: The 'Muro Romano' in the Capitoline Museums. a: joint with transverse wall; b: joint with perimeter wall and Domitianic concrete layer on top (from a and b, respectively; see inset)

Fig. 3: Hypothetical reconstruction of the Archaic temple of Jupiter Optimus Maximus according to authors' interpretation of the Dionysius of Halicarnassus description (the gray outline corresponds to his measurements; the rear side is excluded accordingly). Left: foundations highlighted in gray. X-X = stretches that did not exist; Y-Y = stretches uncertain (note that neither X-X nor Y-Y are decisive for the reconstruction of the temple's plan); ?? = longitudinal stretches uncertain; S1 and S2 = Sullan restorations; D = Domitianic concrete layer on top; T = travertine blocks. Centre: detail of the Muro Romano with corner of authors' temple. Right: clean plan of the temple; the layout of the stairway before the platform, which certainly existed but is not attested archaeologically, is hypothetical



4



5

Fig. 4: Left: comparison between colossal versus authors' Capitoline temple with the M. Volteius denarius below. Right, top row: the temples of Castor (484 BC), Apollo Medicus (435 BC), Fortuna et Mater Matuta (early 4th century BC); bottom row: Temple A at Pyrgi (470–460 BC), Capitolium at Cosa (150 BC) and temple of Juno Moneta at Signia (second half of 2nd century BC). All plans at the same scale

Fig. 5: Comparison, at the same scale, between the authors' proposed temple of Jupiter Optimus Maximus (left: all the walls and columns are hypothetical; the stairway before the platform is omitted since its layout is irrelevant for the temple's size and plan – likewise the altar), the temple of Mars Ultor (centre: note the location of the altar) and the Capitolium at Ostia (right)

religious and political importance and its size was of no relevance at all¹⁵. It has been claimed that the *Capitolium* was not “a model of a *typical* Italic or Roman temple,” but our proposed reconstruction, on the contrary, is echoed by many temples, *Capitolia* included (fig. 4)¹⁶. As for the matter of size, suffice it to consider the Augustan temple of Mars Ultor: although smaller than the presumed colossal Capitoline temple, and very much like ours, it had an enormous influence in Rome and in the provinces of the empire. Certainly nobody would describe it as “just another small temple in central Italy” (fig. 5)¹⁷.

4 The earliest plan of the colossal, hexastyle and peripteral *sine postico* temple of Jupiter Optimus Maximus was drawn in the 19th century by Luigi Canina, who placed it on the northern summit of the hill (the *Arx*) despite the complete lack of archaeological evidence¹⁸. Today, on the right spot, the starting point is still Dionysius’ platform, the perimeter of which measured 8 plethra or 246.40 m (1 plethron = 100 Greek feet; 1 Greek foot = 0.308 m), with a difference of 15 feet between the long and short sides (that is, 4.62 m): it measured 207.5 by 192.5 feet, or 59.29 by 63.91 m (fig. 3)¹⁹. After the latest excavations carried out on the temple’s site, the width given by Dionysius appears to be too large (there is a variance of almost 3 m on either side), whereas the length, without the rear foundations (that we exclude from our reconstruction), matches the actual remains (fig. 3)²⁰. The colossal plan is not without its opponents – the “skeptics”²¹. Indeed, many scholars question the structural practicability and likelihood of the colossal design: to cite but a few names and schemes, a temple smaller than the platform, having three cellas and a pronaos with two rows of four columns, has been proposed by Raffaele Mambella and Francesco Paolo Arata, who envision an enlargement of the Archaic temple during the course of the 1st century BC, despite Dionysius’ account and overlooking the problems of the Domitianic version²². Castagnoli and Giuliani, too, believed that the Capitoline temple occupied just a sector of the platform (which, for this reason, the former distinguished from an actual podium), but they did not publish any relevant plan²³. John Stamper’s small temple is the resized version of the standard colossal reconstruction ‘according to Dionysius’ – hexastyle, with three rows of columns on the front, one row on each side – but disregards the grid of the foundations (fig. 1) and rests on a compact platform that could house any kind of temple. Consequently, it has been easy to claim that the temple must have been colossal, although the point of contention here

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- 15 On the temple’s functions, see Platner 1929, 280 (“symbol of the sovereignty and power of Rome, and of her immortality”); Favro – Yegül 2019, 85.
- 16 Hopkins 2012, 124; *contra* Gjerstad 1960, 186: “several temples of Late Archaic Rome were no doubt more or less close copies, on a minor scale, of the temple of Jupiter Optimus Maximus.” Cavalieri Manasse 1990 and Cavalieri Manasse 2008 reconstruct the *Capitolium* at Verona as a smaller version of the Capitoline temple (35 by 42 m, interaxials between 4.5 and 6.2 m), surrounded by a two-aisle porticus, but the plan is conjectural and the foundations match a temple like ours, too. On *Capitolia*, see Cagiano de Azevedo 1940; Castagnoli 1959; Morciano 2012; Crawley Quinn – Wilson 2013.
- 17 Hopkins 2012, 126. On the temple of Mars Ultor, see Ungaro 2007, 118–129; Gros 2015.
- 18 See Ridley 2005, 88.
- 19 Cf. Paribeni 1921, 40.
- 20 Different from the Greek historian’s account, the actual remains measure 53.50 by 62.25 m according to Gjerstad 1960, 178 and 185 (“This must be a mistake of some kind”). Cf. Cifani 2008, 105. For Arata 2010, 605, the discrepancy is due to the lost revetments (602), but we are dealing with 2.90 m extra on either side of the platform and Gjerstad 1960, 176 clarified that “it seems strange that not only the facing, but also its foundation have completely disappeared.” Unlike Hopkins’ section of the temple (here in fig. 11, left), Castagnoli 1984, 8 argued that the mouldings of the (rather low) podium depicted on M. Volteius’ *denarius* (fig. 4) did not surround the platform and belonged to a smaller temple located above it.
- 21 See, e.g., Hopkins 2016, 99 (“a few scholars remain unable to believe that Romans could surmount these extraordinary foundations with an equally impressive temple”) or 105 (“the repeated claims of skeptics”).
- 22 Mambella 1982; Arata 2010, 612–622. See also Kirsopp Lake 1935, 101–108; Riemann 1969, 110–121 (arguing for an original small temple replaced by the colossal one in the 4th century BC); Poucet 1992, 221–228; Gros 1996, 124 f.; Kolb 2002, 91–96; Ulrich 2007, 134; Bianchini 2010, 182 n. 208; Favro – Yegül 2019, 84 f.
- 23 Castagnoli 1955; Castagnoli 1974, 434–436 (clearly mistaken about the foundations’ layout – as emphasized by Cifani 2008, 103 n. 246 – which does not mean that the small temple should be ruled out); Castagnoli 1984, 7–9; Castagnoli 1986 (cf. fig. 7, bottom); Giuliani 1982, 29–31; Giuliani 2006, 17; Giuliani 2012, 36 f.
-

is Stamper's proposed plan and not the small size of the temple in itself²⁴. As a variation on the standard large-scale temple, Mura Sommella first imagined two rooms at its rear and then proposed a peripteral temple surrounded by three steps, although the difference between ground level and the platform's floor was circa 4 m and would have required many more steps (fig. 1)²⁵. Hopkins at first agreed with the two hypothetical rooms, but eventually deleted the entire rear sector, although the relevant foundations there were a key element of his first argument (fig. 1; more below). Interestingly, in the proposed plans of the colossal temple some foundations appear and disappear, while others are purely conjectural: in particular, in the *pars antica* (the pronaos) the two inner longitudinal foundations towards the front should support the two central columns of the inner row but they are not attested to archaeologically (fig. 1, our question marks in Hopkins 2016). Even the front walls and the thresholds of the cellas have no foundations at all (fig. 1, Mura Sommella 2009 and Hopkins 2016); likewise Jupiter's cult statue and throne, under which were concealed 654 kg of gold (Plin. nat. 33, 5, 14; fig. 3, left). Also forgotten, until recently, was a square travertine structure, measuring 3.2 by 3.2 m recorded in 1876 at a distance of 40 cm from the cappellaccio walls: this was identified as the bottom of an underground room (cf. fig. 3, left and fig. 6, centre; it is marked with a T at the east corner of the open space between our proposed temple and porticoes). Its surviving top surface is at 43.10 m asl, around 7 m below the top of the Muro Romano, and the structure consists of at least three courses of blocks, the lowest of which might rest on the layer of Tufo Lionato. The blocks were re-excavated in 2015 to ascertain whether they corresponded to some heavy superstructure (although a column of the colossal temple here must be excluded, being not compatible in plan) or, alternatively, were a reinforcement of the foundations (between four columns, though)²⁶. In the latter case, we would associate the travertine structure with the joint between our proposed porticoes, but it cannot be excluded that it belonged to a temporary, yet necessary, device used during the course of one of the temple's restorations.

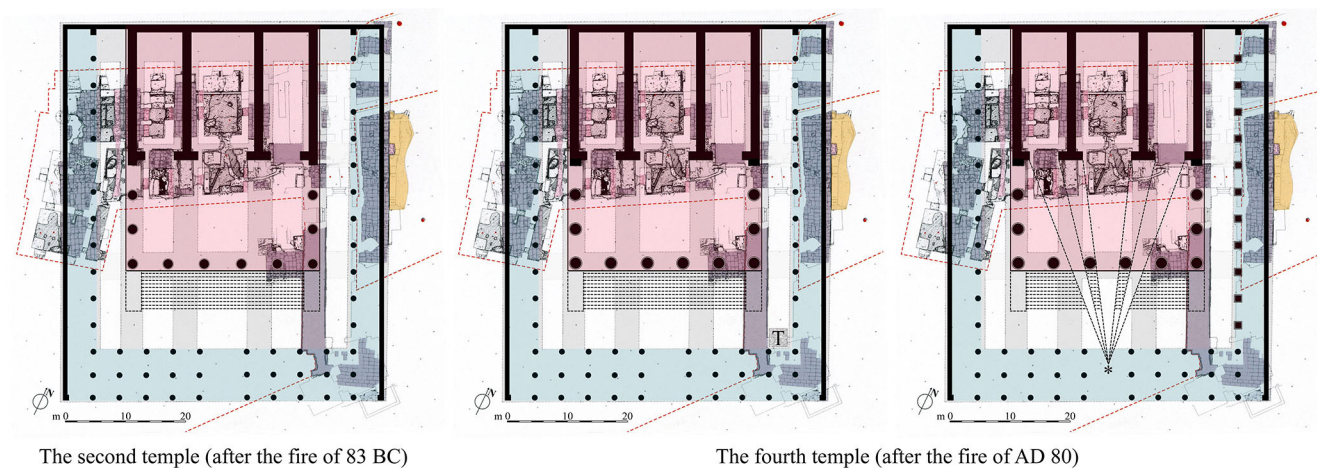
5 The surviving walls have been described as “a sophisticated work of architecture whose immensity saw no parallel anywhere in the region, or even the peninsula,” while others consider them just an accumulation of blocks (fig. 2)²⁷. They seem to be the only crucial element left as regards the reconstruction of the temple, but even

24 Stamper 2005, 6–33; Stamper 2014, 208–212 (ignoring his opponents' criticism); Cifani 2017, 119: “totally implausible.” The layout of the blocks in the tallest surviving foundation wall, the Muro Romano (fig. 2. 3), rules out the possibility that the top courses extended over the entire area of the *templum*.

25 Mura Sommella 2009; contra Cifani 2017, 120 (point 5) and Arata 2010, 593 n. 76 and 609. See Favro – Yegül 2019, fig. 2.2. Gjerstad 1960, 184 envisioned a frontal stairway of sixteen steps climbing a podium 12 feet high (circa 3.60 m).

26 Jordan 1876, 152 f. 167–169. fig. 3 and 6 in pl. XXXa of MonInst 10 (1874–1878). Simply cited in Cifani 2008, 88 f. For the latest investigations see Danti – Marra 2014, 248–251 and fig. 7, suggesting a possible link with a travertine structure found in 1921 in front of the platform.

27 Hopkins 2016, 99; contra Arata 2010, 594. Apparently the outer walls of the platform, about 7 and 9 m thick (sides and front, respectively), are over-sized both for the colossal temple, where they are supposed to carry just a row of six columns, and in our smaller version, where they are just the buttressing walls of the platform. Their excessive thickness does not point to a sophisticated design; moreover the ashlar wall of cappellaccio blocks in the Aracoeli garden, usually associated with the (non-colossal) temple of Juno Moneta, is thicker than the Muro Romano. The plan published in Danti 2001, fig. 1 (survey by Germano Foglia, drawing by Carlo Rosa) is still considered to be the “indispensable base for the continuous studies on the original phases of the Temple of Jupiter” (Danti – Marra 2014, 259 n. 3) and we have used it accordingly. However, ignoring the unhappy choice of a very short segment 4 m long for its scale (compensated for by the underlying 5 m-grid), and the shift of the hatched red outline of the modern buildings, it is worth noting that the plan of the Muro Romano in Danti – Marra 2014, fig. 7 (cf. our fig. 3, centre) is more detailed and shows three more remnants of the front foundation wall towards the E corner, where its actual thickness seems to be slightly less than 9 m. Mura Sommella's plan of 1997/1998 (fig. 1, top-left corner), confirmed in Mura Sommella 2000, fig. 26, has a longitudinal wall in front of the axial cella that is dismissed by Foglia and Rosa's “official plan” (apparently it was missing) but reappears in Hopkins' temple. The wall in question was adopted from much older drawings, whose accuracy is uncertain. See below for further information about the surviving walls. There is no doubt that a new survey and an updated, reliable plan of the entire grid is necessary for a more accurate reconstruction of the temple.



6

Fig. 6: Left: hypothetical plan of the second temple of Jupiter Optimus Maximus, with frontal and side porticoes, according to the authors' interpretation of the Dionysius of Halicarnassus description. The stairway before the platform, which certainly existed but is not attested archaeologically, is omitted since its layout is irrelevant for the temple's size and plan; likewise the altar. Centre: plan of the fourth temple of Jupiter Optimus Maximus (late 1st century AD). Left: viewer's field of vision from the entrance; right-hand side portico with square pillars

so what really matters is what stood above them. Most of all, it is the extremely long marble architraves necessary in the colossal imperial version of the temple that have been omitted from any serious architectural discussion²⁸. However, considering that the presumed colossal Archaic temple of the Tarquins eventually became a colossal Domitianic temple, it is not correct to “limit the study of a temple that has an almost millenary architectural tradition to individual chronological phases”²⁹. The fact that no marble elements from the Capitoline temple's entablature and pediment have been found to date is another unconvincing argument used to dismiss the existence of very long marble architraves in the presumed colossal version³⁰. It would be a strong one if the missing elements were the exception to the rule but, unfortunately, no marble fragments have been recovered so far from any of the many temples that once stood on the Capitoline hill (not to mention other areas of the city) and certainly they did not have a wooden entablature. Instead of reconsidering the temple's size, the supporters of the colossal temple have taken a shortcut that Christian Hülsen suggested more than a century ago when dealing with the entablature of the imperial phase, which in his view consisted of a “wooden structure *more tuscanico*, yet with richer decorations, perhaps of gilded bronze” (more below)³¹.

To dismiss the notion of a small temple, Gabriele Cifani has put forward six further counter-arguments that, however, can be refuted quite easily³². 1) The alternative to the colossal temple is “a small, common temple.” In fact our temple (*aedes*), not to mention its platform (*templum*), would still be the biggest in central Italy during the Republican and imperial age (cf. fig. 4. 5)³³. 2) The foundation grid is tailor-made for the large-scale temple only. To begin with, there was no grid: four short transverse stretches, on either side of the cellas and inside the pronaos, did not exist at all (they have been deleted from recent plans: cf. fig. 1), and the two inner longitudinal foundations

28 Hopkins 2010, 17 n. 10 states that “a full analysis of the question of bronze or marble trabeation in the Republican and imperial temples as well as their effects on the roof are beyond the scope of this paper.” Likewise Gjerstad 1960, 168: “Only the Archaic temple comes here in question.”

29 Foresta 2007, 120.

30 See Danti 2016, 217. According to Lanciani 1875, 188 f., the fragments fell down the hill.

31 Hülsen 1888, 155 (this would be the solution to the problem according to Cifani 2008, 83 and Danti 2016, 217, who is not concerned with “the marble architraves that had to span very large intercolumniations” and by the closed pediment “that was too heavy”). Cf. Lanciani 1990, 99–102.

32 Cifani 2017, 118.

33 Cifani 2008, 103 (“a temple of smaller or at least ordinary size”) and Hopkins 2012, 126. The deep Archaic well located at the platform's north corner (fig. 1. 3) could collect rain water either from the colossal temple or from a smaller one placed above the platform itself: therefore it is irrelevant to our discussion.

supporting the two central columns of the pronaos are hypothetical (fig. 1, Hopkins 2016; cf. fig. 3, left). Also, the actual foundations do support our proposed small temple.

3) Criticism of the colossal temple based on the absence of concrete reinforcements after the introduction of marble columns is dismissed by a few surviving repairs. The latter, however, simply confirm that some foundations were slightly reinforced but do not rule out the small temple.

4) Vitruvius included the Capitoline temple among the araeostyle temples that, having intercolumniations larger than three column diameters (D), could not use stone architraves but wooden beams. Yet, *De Architectura* deals with the rebuilding supervised by Quintus Lutatius Catulus, *curator restituendi Capitolii*, and has no relevance to the later phases. Moreover, in current reconstructions the colossal temple is not araeostyle at all (fig. 1): below we show that a remodeling of our pronaos could make its intercolumniations range between 1.5 D (pynostyle) and 2 D (systyle).

5) The existence of stone columns in other Archaic temples supports the colossal version. Again, this observation has no relevance to the temple's size.

6) A central wooden architrave covering a 10.5 meters span “could indeed appear problematic but only if imagined as a post and lintel roof.” However, Pyrgi's Temple A had a post-and-lintel roof that spanned 9.30 m: the difference with the Capitoline temple is minimal (see below).

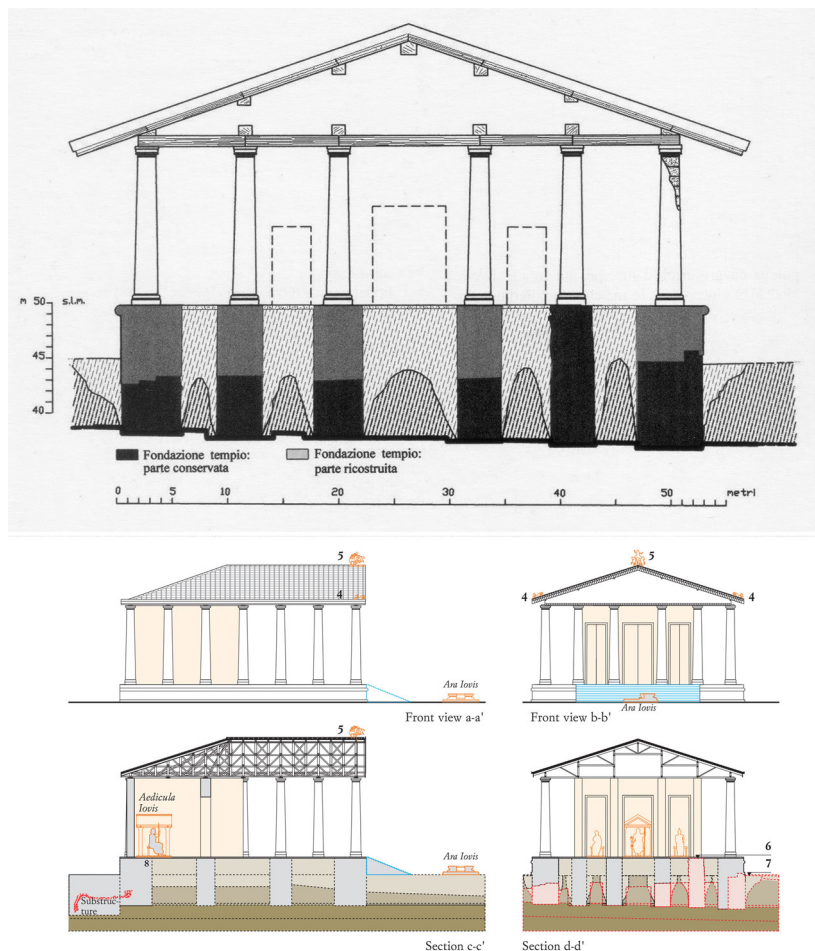
7 As early as 2008 Cifani had already claimed that the supporters of the small temple avoided tackling the structural problems and should take into account Etruscan, Roman and Greek temple construction. Not only they were solicited to “provide suitable evidence, together with sharp comparisons as regards the technical and chronological aspects,” but also to “justify the construction of a monumental structure of circa 3,300 m², inside an already terraced area, with a grid of ashlar walls up to 6.9 m wide and 12 m deep, just to build upon it a small or at least ordinary temple, of which, however, there is no archaeological evidence”³⁴. One might equally ask of the architect of the huge late Republican sanctuary of Hercules Victor at Tibur the reason why he built both an artificial rectangular platform measuring 140 by 188 m (total surface of 26,320 m²) by means of substructures 40 m high, including a *via tecta*, just to support an open area (at almost 200 m above sea level) delimited by side porticoes, and also another platform measuring 40 by 60 m and circa 6.5 m high that, in turn, supported a small or at least ordinary temple measuring 24.75 by 35.72 m³⁵. Apparently, from the Archaic period to the imperial age (see below) Roman architects did design such monumental structures, employing building techniques they could rely on. More recently, Cifani added that the study of the Capitoline temple requires “a multidisciplinary method which makes a critical use of all the evidence available” and “of clear and verifiable graphic reconstructions of the plan and elevation of any hypothesized model”³⁶. In the present paper we do indeed follow his suggestions, whilst also noting that for his temple and, in particular, for the alleged imperial entablature and pediments covered by bronze sheets, no detailed drawings have been published yet (see fig. 7). Alberto Danti has deplored that “a plan of the elevation [sic] matching the walls of the surviving foundations ... has not been made yet”, while Hopkins has stressed the “absolute inability to fit the extant intersecting foundation walls with a smaller temple plan”³⁷.

34 Cifani 2008, 103.

35 Giuliani 2004, 32. 74.

36 Cifani 2017, 120 f.

37 Danti 2016, 215; Hopkins 2016, 102. 105.



7

Fig. 7: Elevations and sections of the colossal Capitoline temple according to Cifani (top) and Carandini – Carafa 2017, vol. II, pl. 8 (bottom)

Bronze and marble. The impossible colossal temple of the imperial age

There is a general consensus that during the early Republican age the temple's wooden beams had terracotta revetments and an open pediment; however, the fourth temple rebuilt by Domitian, which is depicted on two huge 2nd-century AD reliefs (fig. 8. 9), had both the entablature and the pediment consistent with any other Roman temple of the imperial age. The development of Roman architecture implies the widespread use of marble in imperial buildings (cf. Suet. Aug. 29) but, for the colossal temple, we are asked to believe that in the late 1st century AD there was a regression from marble back to wooden architecture and that a temple destroyed by three fires (two of which were in the Flavian age) had its entablature, pediment and roof irresponsibly made of inflammable materials. The supporters of the colossal temple are aware that marble architraves 12 m long are a difficulty because, given that the overall size of the building remained unchanged, they argue that the presumed wooden beams and entablature of the Domitianic temple were covered by bronze sheets, as first put forward by Hülsen in 1888 due to his misinterpretation of the Corinthian order (see below). Paradoxically, the use

Our temple solves all of these issues and is consistent with Dionysius' description, the actual foundations, and the principles of Roman architecture³⁸. As regards the last it is sufficient to show that the Domitianic temple, depicted on two 2nd-century marble reliefs (fig. 8. 9), could not have had very long architraves, either of marble or of wood with bronze revetments. A simple structural verification, never attempted to date, shows that a colossal temple with architraves 12 m long is mere fantasy. Therefore, because the size of the temple remained the same across the centuries, the Archaic one was not colossal either: indeed we argue that the latter was smaller than generally assumed but still huge, truly Tuscan, and tetrastyle (the three intercolumniations of the façade were coordinated with the three cellas that were as deep as the pronasos). We also propose that from at least the 2nd century BC the *aedes* was surrounded by a portico that delimited the actual *templum* – a layout attested elsewhere in the late Republic and throughout the imperial age – and might have been remodeled whenever the Capitoline complex was restored.

K. K. – P. L. T.

38 Our next goal is to provide a series of 3D visualizations of the temple in order to facilitate scholarly debate and assess/improve our proposed reconstruction.

of bronze in Roman architecture was reserved for very small shrines (*aediculae*) rather than colossal ones: we can list Numa's *aedicula* outside *Porta Capena*, first moved to the nearby temple of *Honos et Virtus* and eventually to the small *aedes Herculis Musarum* (Servius Ad Aen. 1, 8); the *aedicula* of Concordia erected in 305 BC in the *comitium* (Plin. nat. 33, 19); and the tiny temple of Janus near the *Roman Forum* (Procopius, Gothic Wars 5, 25). Beside the capitals of the Porticus Octavia (Plin. nat. 34, 13), bronze sheeting was used in altar decoration and in interior architecture as flat, vertical surfaces and little cornices applied directly to the masonry³⁹. This set of evidence is not comparable to the entablature of the presumed colossal Capitoline temple, where the surface to be covered was huge: at least 4 m high, with very complex moldings, and totaling for the four sides a length of 230 m, plus a large pediment with a sculptural group, presumably fixed to a



8

Fig. 8: The temple of Jupiter Optimus Maximus on the extispicium relief (early 2nd century AD). Top: detail of the pediment from a drawing of a lost fragment made in 1576; bottom: detail of the surviving fragment depicting the pronaos

Fig. 9: Left: The sacrifice of Marcus Aurelius at the temple of Jupiter Optimus Maximus (mid-2nd century AD). Right: detail of the building on the right-hand side (top) and hunting scene from the amphitheatre of Augusta Emerita, late 1st century AD (bottom)



9

39 Guarducci 1966; Rossignani 1969; Ricci 1925, 4, and Ricci 1930, 37–39, associated the two horizontal rows of deep holes visible on the surviving marble veneer of the northern side of the podium of the temple of Mars Ultor with a further revetment of gilt-bronze sheets, fragments of which he found nearby. The Pantheon's *oculus* still preserves its bronze decoration; for the lost bronze structure supporting the roof of its pronaos, see Heinzelmann et al. 2018 (note that the Pantheon's pediment and entablature were entirely made of marble and the bronze structure was not visible).

very complex framework made of wood. This gives a total surface of circa 1,500 m² that would have required 120 tons of bronze sheets⁴⁰. Unlike the temple's bronze doors, tiles and quadriga, no ancient author mentioned what would be quite a peculiarity and no modern scholar has clarified how this was effected⁴¹. Obviously the Capitoline temple was not the sort of ephemeral building, like temporary theatres, amphitheatres, porticoes and funerary pyres that were run up for specific events and were not meant to last forever. As far as we know not a single Roman temple employed bronze as a building material to replace marble entablatures. The huge temple of Serapis on the Quirinal hill is particularly significant because some fragments of its entablature and pediment, both made of marble, were as big as those envisioned in the presumed colossal Capitoline temple; however, unlike the latter, it had a front row of twelve columns instead of six⁴².

¹⁰ A wooden entablature supporting a traditional pediment is unlikely (fig. 8. 9) and a colossal marble entablature can be definitely dismissed by structural analysis⁴³. One just needs to verify the marble architrave 12 m long of the imperial phase, the longest in the Capitoline temple, rather than the presumed beam or truss spanning the axial intercolumniation, which would work as well today as in the Roman era⁴⁴. In addition, the temple as proposed by Cifani and the *Atlas of Ancient Rome* requires eighteen architraves 9 m long on the outer colonnades and Hopkins' plan sixteen, while Mura Sommella's peripteral temple needs at least twenty-four architraves of that length on the outer colonnades and another 12 m-long axial architrave at the rear end (fig. 1). Instead our Domitianic, hexastyle temple (fig. 6, centre/right) requires only eleven marble architraves circa 6 m long (and the foundation of the front columns would allow even an octastyle pronaos with correspondingly shorter architraves). Our structural assessment demonstrates what common sense had taught Roman builders two millennia ago: while wooden beams and trusses 12 m long are possible (only if placed correctly, though: see below), marble entablatures of the same length are not⁴⁵.

¹¹ In fact, we realized from the very outset that our structural verification was almost unnecessary. It was, after all, simply impossible to lift and put in place the hypothetical colossal axial marble architrave due to two indisputable facts: 1) the specific weight of Carrara or Pentelic marble is 2,700 kg/m³; 2) with a length of 12.00 m and a section of 1.80 m by 2.50 m, the volume was 54 m³ and the weight therefore 145.8 tons; adding the architrave's protruding mouldings, the weight can be rounded up to 150 tons. Such an architectural element is one and a half times heavier than the monolithic shafts of 50 Roman feet in length (14.85 m) and 6 Roman feet in diameter (1.8 m) that were used in the main imperial temples (and after the Flavian age), the weight of which was approximately 100 tons. Moreover, it is one thing to raise such a monolithic shaft up to the vertical, another entirely to lift an even heavier block up to 18 m in the air⁴⁶. It is not by chance that the architrave-friezes of huge Roman temples were much lighter. The surviving architectural elements and a Renaissance drawing by Baldassarre

⁴⁰ The specific weight of bronze is 8,000 kg/m³; therefore a bronze sheet of 1 m² and 1 cm thick weighs 80 kg.

⁴¹ Such details were not overlooked: see Pliny (Plin. nat. 33, 57) on the ceilings of the Capitoline temple, covered with gold by Lucius Mummius in 146 BC. Livy (Liv. 41, 20, 9) reports that Antiochus IV Epiphanes (reigned 175–164 BC) began a temple of Jupiter Capitolinus at Antioch, in Syria, "not merely gilded, but decorated with gold sheets on all its walls."

⁴² Coarelli 2014, 207–243. The temple on the Quirinal was surrounded by an enclosure wall and, like the temple of Jupiter Optimus Maximus, its rear side overlooked the Campus Martius.

⁴³ An example in Masturzo 2005.

⁴⁴ Hopkins 2016, 202 n. 116.

⁴⁵ The presumed axial architrave had a lower surface of 1.80 m (a width consistent with the top of the column shaft) and a height of 2.50 m (we take as our model an ordinary architrave/frieze). In several Greek temples (e.g. the Olympieion in Athens: see Tölle-Kastenbein 1994, pl. 23) each architrave was made of two or even three parallel marble blocks, but their length did not exceed one half of the longest architraves of the presumed colossal *Capitolium*.

⁴⁶ Cf. Suet. Vesp. 18. See Parisi Presicce – Danti 2016a, 225–228 on the column height.

Peruzzi indicate that the architraves of the temple of Mars Ultor (length: 4.45 m, width: 1.78 m, height: 1.15 m without the frieze) weighed around 25.59 tons⁴⁷. Because their length is not comparable to the 12 m of the axial architrave of the hypothetical Capitoline temple, it was still possible to use, quite exceptionally, a flat and lighter block; in any case, had the Augustan builders laid in place an architrave-frieze (total height of 2.32 m), the weight would have been just 49.61 tons. The pronaos of the Pantheon has architrave-friezes consisting of larger blocks with a width of 1.48 m and a height of 2.12 m: the axial one is 4.95 m long (it appears to be the longest known to date in the entire city of Rome), corresponding to 41.93 tons, while the others are circa 4.51 m long (fig. 10). These blocks are less thick than expected because the column shaft and its top astragal have a diameter of only 1.48 m (5 Roman feet), which is less than the diameter of the fragmentary shafts from the Capitoline temple and other major temples⁴⁸. The architraves (4.90 m long) of the huge temple of Serapis on the Quirinal hill are attested to by Renaissance drawings and by a few surviving fragments. They were a little bit shorter than the axial architrave-frieze of the Pantheon but they were thicker, thus becoming the heaviest in Rome. The Serapis temple was truly colossal and not so much for the length of its architraves but because it was dodecastyle: its width was some 56 m, much the size of the platform of the Capitoline temple, but it was divided into eleven intercolumniations instead of five.

¹² Apparently then, no architraves longer than 5 m and heavier than 50 tons (one third of the presumed colossal axial architrave-frieze of the Capitoline temple) were ever used in Rome (cf. fig. 10). Heavier blocks could be lifted (e.g. the pediment corners, which however stood on the side columns, did not receive further load, and were not subject to flexure), but even across the wider Mediterranean area the largest temples avoided such huge architraves⁴⁹. The longest one (8.62 m) spanned the west axial intercolumniation of the temple of Artemis at Ephesus, which was included among the seven wonders of the ancient world not for its size but for the beauty of its sculpted columns. Pliny (Plin. nat. 36, 21) mentions Chersiphron, the temple's architect, and recalls "his success in lifting the architraves of this massive building into place ... by filling bags of plaited reed with sand and constructing a gently graded ramp which reached the upper surfaces of the capitals of the columns." Coins depicting the Artemis' pronaos suggest the existence of three openings in the pediment, above the axial intercolumniation, to relieve the entablature⁵⁰. However, Pliny does not report any such devices as regards the Capitoline temple, where no openings are attested to in the pediment (cf. fig. 8. 9). Then we have the temple of Hera at Samos with its 8.40 m-long architraves in the three central bays, followed by the temple of Artemis-Cybele at Sardis (7.05 m). All of these temples were dipteral (with a double peristyle of columns all around the *naos*) and Ionic; despite their colossal size, their monumentality was guaranteed in the first place by their length and then by the number of columns on the front, not by the width of their intercolumniations.

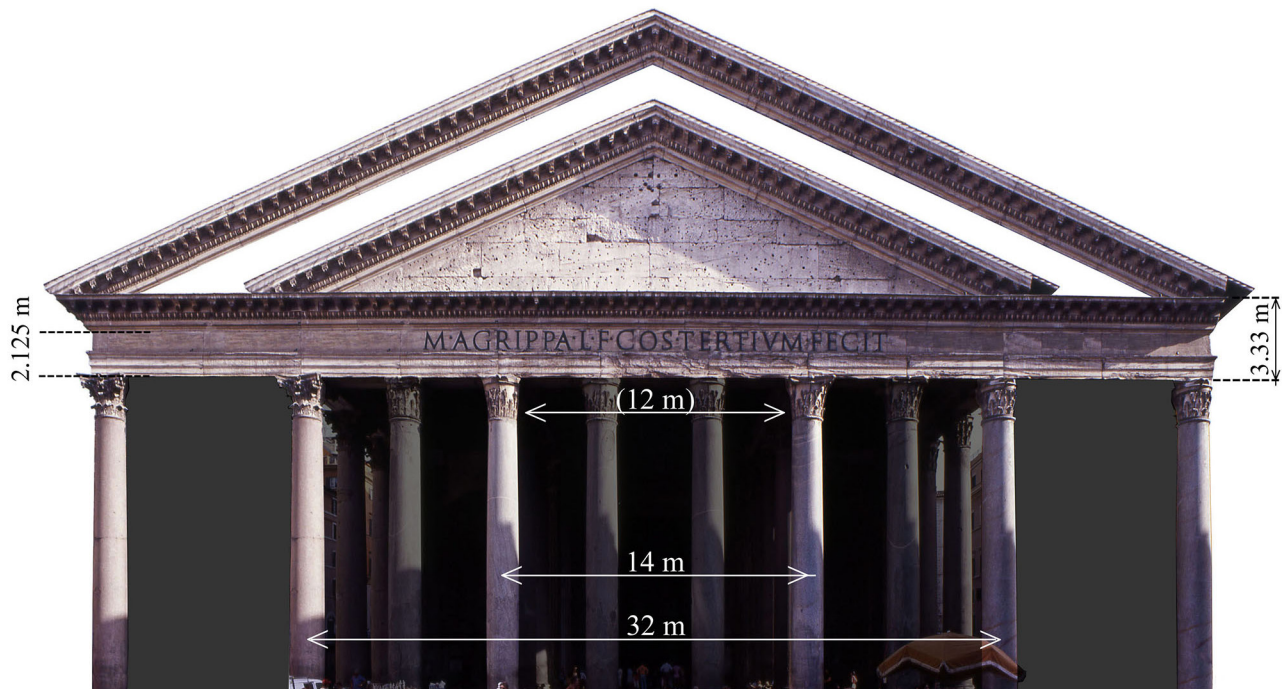
¹³ To visualize the presumed colossal temple of Jupiter Optimus Maximus we have modified the pronaos of the Pantheon, the inner bay of which measures 14 m and corresponds to three interaxials – slightly more than the axial intercolumniation of the Capitoline temple. To get a pronaos of approximately the same width as the latter, we

⁴⁷ The corner blocks seem to be longer than the others but, since the joint with the orthogonal blocks is at 45°, along the longitudinal axis they all have the same length and their weight is identical.

⁴⁸ Wilson Jones 2000, 224.

⁴⁹ Cf. Dinsmoor 1950, 337–340 (esp. 339 f.). In the temple of Jupiter at Baalbek the weight of the pediment's corner is about 97 tons (see Wilson Jones 2000, fig. 8.18); its architraves were 5 m long, with the axial one slightly more than 6 m.

⁵⁰ The temple carved on one of the Hartwig reliefs, too, had three similar openings in the pediment: see Kaderka 2018, 194–196, questioning its identification with the temple of Quirinus.



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Fig. 10: The pronaos of the Pantheon enlarged and turned into that of a temple similar to the colossal temple of Jupiter Optimus Maximus

have removed the two central and penultimate columns and we have added two side extensions (fig. 10); in the middle of this modified pronaos we have interaxial distances of 9 m – 14 m – 9 m (for a total length of 32 m) corresponding to 9 m – 12 m – 9 m in the central sector of the Capitoline temple. The axial architrave of such a speculative large-scale temple based on the Pantheon is weakened precisely by the two missing columns and by the increased load of the pediment, which becomes larger and taller (fig. 10). As recalled above, the columns of the Pantheon have a diameter of 1.48 m (5 Roman feet); in the Capitoline temple we can assume shafts, astragals and entablatures of at least 6 Roman feet (see below), which means that the weight of the pediment was even greater than the modified Pantheon model suggests.

14 After this preliminary overview of the structural problems, we can run a check on the colossal axial marble architrave of the Capitoline temple⁵¹. Our observations will no doubt sound very technical, but Roman architecture deserves such an approach. The maximum flexural strength ($\sigma_{\max}$) of a white marble like those quarried at Luni in Italy or at Mount Pentelikon near Athens is circa one tenth of its compressive strength. To put it simply, a marble block can bear a strong compression but cracks quite easily under flexure: it is for this reasons that monolithic columns are much higher (i.e. longer) than stone architraves. Because the breaking load of marble under axial compression is 1,300 kg/cm², its maximum flexural strength ($\sigma_{\max}$), corresponding to the breaking load, is 130 kg/cm². Considering the axial architrave of the presumed colossal Capitoline temple as a beam with a length (L) of 1,200 cm, we can determine its resistance modulus (W), which is a geometrical characteristic depending on the architrave's rectangular section (b is the width of the lower surface and h the height)⁵² and the bending moment (M), which depends on L and on the load p, in order to calculate the actual flexural strength:

$$\sigma = M/W = 1/8 \cdot p \cdot L^2 / \frac{b \cdot h^2}{6}$$

51 Giuliani 2012, 6 (and 36 f. against the colossal Capitoline temple).

52 $W = \frac{b \cdot h^2}{6} = \frac{180 \text{ cm} \cdot 250^2 \text{ cm}}{6} = 1,875,000 \text{ cm}^3$.

In its turn, the load p depends on the architectural characteristics of the actual architrave, pediment and roof of the colossal pronaos, and can be rounded up to 800 tons, or 800,000 kg along 1,200 cm (L)⁵³. The concentrated load on each cm is 666 kg/cm; therefore, $\sigma = 1/8 \cdot 666 \text{ kg/cm} \cdot (1,200 \text{ cm})^2 / 1,875,000 \text{ cm}^3 = 119,880,000 \text{ kg} \cdot \text{cm} / 1,875,000 \text{ cm}^3 = 63.9 \text{ kg/cm}^2$. Although this is one half of the breaking load at flexure (130 kg/cm²), the result is not reassuring at all because such formulae assume a uniform material, which is not the case of white marble, potentially affected by hidden imperfections such as veins or holes, especially if such huge blocks were quarried. A flexural strength of that value could cause the colossal architrave to break suddenly (one more reason why such huge blocks were avoided in Roman architecture). Not by chance, nowadays a safety factor of 30 is applied, which means that the actual σ should be at least 1/30 of the maximum value, and so slightly more than 4 kg/cm². It is argued that if a marble architrave cracks at the centre of its span the fracture is not of structural importance, because the resulting blocks behave like an elementary *plate-bande* that can hardly collapse⁵⁴. However, this observation only applies to shorter architraves (e.g. from 3.6 m between the centres of the columns in the Propylaea of Athens to a maximum of circa 5.50 m at the Olympieion) and not to a hypothetical architrave 12 m long⁵⁵. The main problem, however, remains that a colossal Capitoline temple would have required marble blocks weighing 150 tons that, as noted above, could not even be laid in place over the capitals. In our reconstruction, instead, the various elements of the pronaos are much smaller and lighter. Roman builders were clearly aware of the limits of the materials, otherwise their constructions would be very different: had the marble architraves allowed inter-axial distances of 9–12 m, it would not have been necessary to quarry and erect all those marble shafts in a temple's pronaos and in a portico's colonnade. The reason why the pronaos of the Pantheon is octastyle and not tetrastyle (fig. 10) is precisely that: even if *in theory* longer architraves could work, it was advisable to support the entablature and the pediment with more columns – a sort of safety factor. For technical and proportional reasons, a five-diameter intercolumniation was carefully avoided not only in Roman temples but also in porticoes of the Corinthian order⁵⁶.

53 The total weight (798.277 tons) includes: the architrave/frieze itself (150 tons); the protruding cornice, which could be made of short blocks (2.5 m · 2 m · 12 m = 60 m³, or 162 tons); we consider a pediment just 1.5 m thick (and made of marble, as in the Pantheon), although it should be at least 1.80 m thick, as customary in temples whose column shafts have a diameter of 6 Roman feet: lower rectangle + triangle = (12 m · 5 m · 1.5 m) + (12 m · 3 m / 2 by 1.5 m) = 90 m³ + 27 m³ = 117 m³, or 315.9 tons; the sloping cornices: (6.7 m + 6.7 m) by 1.5 m (depth) by 1.5 m (height) = 30.15 m³, or 81.40 tons; the pedimental sculptures over the central stretch 12 m long (cf. fig. 8, 9), that is 25 m³ or 67.5 tons; the main wooden beams (5 tons); the additional levels of lighter beams in a portion of roof measuring (6.7 m + 6.7 m) by 5.5 m = 73.7 m², weighing 7.37 tons; the accidental load (8.107 tons); the bronze quadriga (1 ton).

54 Heyman 1972, 3–9.

55 One can examine alternative solutions, such as two parallel blocks including architrave and frieze or the architrave alone (still one half of the required thickness), although this technique is not attested to in Rome: in the latter case, the cross section and the own weight (likewise M) would be 1/4 that of the architrave/frieze under consideration, the load p would be one half, but W would be 1/8. The block could be lifted and laid in place, but σ would be four times greater (and so the double of σ_{max}): the architrave would crack. Cf. Coulton 1977, 74: “Doubling the scale of a colonnade will mean doubling the length of the architrave as well as its height and thickness, so that its weight will be eight times greater; so too will the weight of the frieze and cornice which it carries. The strength of the architrave, however, is dependent rather on its cross-section, which will be only four times greater. Thus as the scale of the colonnade increases, the load on the architrave will increase more rapidly than its strength, and for a given set of proportional rules there is a maximum size beyond which disaster will follow.” Roman builders were unaware of such structural issues but could guess that a longer architrave was heavier and more prone to crack than a shorter one. The surviving architraves of the Olympieion in Athens (L circa 5.50 m, b = 1.05 m, h = 1.20 m, for a weight of 18.7 tons) show that our smaller temple, with shorter architraves and a lighter pediment, was feasible.

56 This is one of the reasons why the alleged replacement of the original columns (16.57 m high, according to Gjerstad) with the marble columns from the Olympieion in Athens (16.83 m high, but an intercolumniation of 1.85 D) is not acceptable. Cf. Abramson 1974, 9.

15 As for the actual marble elements of the Capitoline temple, Hülsen examined the Renaissance drawings of a column base (Florence, Uffizi, inv. 1215) and of a marble cornice (Uffizi, inv. 1614 A) supposedly taken from the temple of Olympian Zeus in Athens around 86 BC⁵⁷. This provenance was suggested by literary sources: in fact, Sulla brought only columns to Rome (cf. Tac. Hist 3, 72, 3 and Plin. nat. 36, 25, 61: see below). Because of its size, this cornice is usually divorced from having anything to do with the Capitoline temple or, alternatively, has been attributed to its cellas: its height was circa 103 cm, implying an entablature approximately 3 m high⁵⁸. Hülsen had the canonical proportions of the Corinthian order in mind and, because of the presumed wide interaxial distances and intercolumniations of the Capitoline temple (according to him 9.20 m and 7 m, respectively), he argued that the actual entablature's height "could not be less than five meters: a measurement that is too different from that of the fragment drawn by Sangallo." Apparently his guess that architrave, frieze and cornice had a wooden structure with bronze sheeting originates from his own over-sized reconstruction of the temple's elevation. In fact, the entablature could be slightly higher than that of the Temple of Mars Ultor (4.06 m) and so the Capitoline temple would have been huge but not colossal (fig. 5)⁵⁹.

16 The cornice on the drawing has some little rings between its dentils, which strongly suggests a Domitianic date: wherever it came from exactly, it belonged to the latest rebuilding of the *Capitolium*. Plutarch (Publ. 15, 3. 4) reports that the columns of Domitian's temple, too, had been taken from Athens, where he had previously seen them, and claims that in Rome they were reworked to such an extent that their proportions were spoiled⁶⁰. The diameter of the surviving fluted fragments of column shafts attributed to the Domitianic temple ranges between 1.80 and 2.12 m, corresponding to a lower diameter (D) of 6–7 Roman feet, respectively: a difference of about 1 Roman foot depends on the position of the fragments along the shaft⁶¹. Columns with a diameter of 6 Roman feet (and a total height of 60 Roman feet, approximately 18 m) can be found in large octastyle temples such as the temple of Mars Ultor and the Temple of Peace, which was built at the same time as Vespasian's restoration of the Capitoline temple. In the 2nd century AD similar columns were employed in the Hadrianic temple of Divus Traianus and Diva Plotina and in the Severan restoration of the Temple of Peace, but in both cases the shafts were smooth granite monoliths⁶². It is not surprising that the surviving fragments of column shafts from the Capitoline temple are fluted and consist

57 Hülsen 1888. Beside Poggio Bracciolini's and Pirro Ligorio's reports, only the lost fragments of a column base and of a Corinthian capital (D = 1.84) were recorded: see Arata 2010, 606–608; Parisi Presicce – Danti 2016a, 225–228. The surviving architectural elements are: 1) a column drum found in 1872 inside a modern wall (inv. 2849; Lanciani suggested a diameter of 2.1 m, whereas it measures 1.7 m and might have belonged to the top of a column shaft); 2) another fragment of a column drum (inv. 3378); 3) the fragment of a flat pilaster (inv. 3379); 4) an acanthus leaf. See Lanciani 1989, 69 and Lanciani 1990, 99–102.

58 This height is consistent with a fragmentary cornice drawn by Giovanni Ippollo in the 20th century: see Parisi Presicce – Danti 2016a, 227 f.

59 According to Foresta 2007, 120, the height of the capital (slightly more than 2 m) and the diameter of the shaft (circa 2 m) rule out a smaller temple, but such dimensions are consistent with a huge temple like that of Mars Ultor.

60 "The fourth [temple], which now exists, was both built and dedicated by Domitian ... the whole wealth of the richest private man in Rome would not discharge the cost of the gilding of this temple in our days, it amounting to above twelve thousand talents; the columns were cut out of Pentelic marble, of a length most happily proportioned to their thickness; these we saw at Athens; but when they were cut anew at Rome and polished, they did not gain so much in embellishment as they lost in symmetry, being rendered too thin and slender." See Lanciani 1875, 185: "when the flute was made in Rome." Cf. Siwicki 2020, 193–197. If Plutarch was alluding to the Olympieion, one should recall that its columns had a diameter of 1.925 m (see below).

61 According to Gjerstad 1960, 180, who relied on the Vitruvian proportions for the Tuscan temple, the original columns of the colossal temple were 56 feet high (16.57 m), that is 1/3 of the interaxial width of the temple (168 feet), and had a lower diameter of 8 feet (2.07 m) corresponding to 1/7 of the column height. For Hopkins (cf. fig. 11, left), H = 13 m (1/4 of the temple's width).

62 Siwicki 2020, 116, mentions column heights ranging between 17 and 21 m, the former being "matched in the city at that time only by the temple of Mars Ultor." In fact, Vespasian's Temple of Peace, too, had columns 60 Roman feet high.

of drums of Pentelic marble, as this was customary in Domitian's time; the only exceptional feature is the diameter of 7 Roman feet and the twenty-six flutes instead of the customary twenty-four⁶³. These characteristics suggest that the diameter could really be 2.12 m, resulting in a Capitoline temple that was slightly bigger than other major temples in Rome: the column height could reach up to 70 Roman feet (21 m) and the intercolumniations could be a little bit larger than usual⁶⁴. The height of the Corinthian capitals of the temple of Mars Ultor is 2 m and now, thanks to the latest finds, we know that the Capitoline temple's capitals were 2.05 high⁶⁵. Because in our reconstruction the hexastyle pronaos of the latter has approximately the same width as the octastyle pronaos of the former (fig. 5), we guess that it was precisely its bold layout that made the Capitoline temple unique: its last columns were probably the thickest and tallest in Rome (3 m higher than those of the Augustan temple) and the pronaos had the largest intercolumniations, even if just one half of those of the presumed colossal temple.

17 After the 1st-century BC rebuilding, the hexastyle front of our Capitoline temple measured 30 m between the side columns' centres and, as a whole, the podium was 32 m wide. The original column height could be 10.66 m (one third of the podium's width) and the diameter 1.52 m (one-seventh the column height); with such a diameter (fig. 6, left) the five intercolumniations measured 22.5 m, that is 4.5 m each, and consequently $i = 3 D$ ⁶⁶. However, the temple could be araeostyle as attested to by Vitruvius (Vitr. 3, 3, 5) if its new columns were only a little bit thinner (and the intercolumniations larger): in the araeostyle temple the diameter "is equal to one-eighth their height" (Vitr. 3, 3, 10), which corresponds to 1.33 m and rules out the idea of the re-use of the external Corinthian columns from the Olympieion (see below). It is worth noting that Mura Sommella's and Hopkins' Capitoline temple is not araeostyle at all: because of its colossal height, the diameter of the columns is quite large at the expense of the intercolumniations, which are less than 3 D except for the axial one (fig. 1)⁶⁷. In our temple, in the 1st century AD, on the same podium and with six columns having $D = 2.12$ m, the space between the centres of the side columns was 29.5 m and the five intercolumniations measured 18.9 m; because each intercolumniation (3.78 m) was 1.78 D, the temple was between pycnostyle ($i = 1.5 D$) and systyle ($i = 2 D$) and could have carried marble architraves (fig. 6, centre)⁶⁸.

P. L. T.

63 Cf. Hülsen 1888, 152.

64 Cf. Parisi Presicce – Danti 2016a, 225–228 (esp. 227, III.2.11: "the diameter of the column could reach 2.12 m"). Lanciani 1875, 185, proposed a diameter of 2.1 m comparing the flutes of the column drum found in his contemporary excavations and those of the temple of Vespasian.

65 Wilson Jones 2000, 224; Danti 2016, 217, concludes that the Capitoline temple had "colossal" or "giant" proportions (215 and 217, respectively).

66 Cf. Vitr. 4, 7, 2 on the Tuscan temple: "these columns should have a diameter at the bottom that is one-seventh their height" and "the height should be one third the breadth of the temple" (cf. fig. 11). Cf. Plin. nat. 36, 179: "columns the height of which ... is seven times [the lower diameter]."

67 If just one intercolumniation larger than 3 D made a temple araeostyle, then there could be only one larger axial intercolumniation in our hexastyle temple (as well as in the original tetrastyle layout). Following Vitruvius' araeostyle temple (Vitr. 3, 3, 10, in which $D = 1/8 H$), Cifani 2008, 105, suggests $D = 2.10$ m but, in consideration of his proposed interaxials (8.80 / 8.40 / 12.68 / 8.40 / 8.80 m), his temple is not araeostyle at all: (8.40 m – 2.10 m) : 3 = 6.30 m, that is 3 D (diastyle). He also indicates "interaxials of 6.75 m towards the cellas," which is not consistent with his fig. 85.

68 In the Athenian Olympieion the intercolumniation (i) was 1.85 D. In the Capitoline temple, with $D = 1.8$ m the intercolumniation was around 2.3 D, which allowed marble architraves. From the second Capitoline temple onward the pronaos could be roofed by means of horizontal beams, 16 m long, placed between the pediment and the front wall of the cellas (fig. 6: the width of the doors is hypothetical and the existence of relieving arches above the passageways is likely). To those who may dislike this layout because of the load of the roof, we remind them that the porticoes of the Forum of Augustus had rafters more than 15 m long; in any case, the use of trusses placed across the pronaos and parallel to the pediment is still possible, because their horizontal tie-beams could be slightly shorter than the 100-Roman foot wooden beams of the Diribitorium's roof (cf. Plin. nat. 16, 201). The cellas of the temple of Concordia Augusta and of the axial hall of the Temple of Peace were 20 m deep. Hopkins, who is never concerned with post-Archaic phases, cites the 24 m long tie-beam trusses of Old St Peter's (Hopkins 2016, 104. 202 n. 114: "the example is from much later, but the tectonic feasibility does not change"). Cf. Cifani 2008, 105 n. 251.

Stone, wood, and terracotta. The impossible colossal Archaic temple

18 The obvious observation has been made that any reconstruction of the Capitoline temple “must align walls and columns in the superstructure with the foundation walls below”⁶⁹. The allusion targets Stamper’s small temple and, although serious objections about his proposal were raised as early as 2006, eventually too many pages have been written just to argue that the colossal temple should be the only option⁷⁰. Yet, besides the technical issues outlined in the previous section, in the plans of Mura Sommella and Hopkins the axial cella’s threshold and front wall have no foundations at all (fig. 1) and in the latter’s temple the entrances to the side cellas are extremely narrow (just 1.5 m) whereas the axial one is 10.5 m wide and completely open. Such problems do not affect our temple (fig. 3 and 6). One of Hopkins’ arguments has long been that “the dimensions of the foundations precisely match the dimension of the superstructure” and that “it seems unlikely that the Capitoline Temple would be the only exception to this rule”⁷¹. However, in his latest plan the rear side of the platform is not occupied by the rooms he had envisioned since 2010 (fig. 1); the foundations concerned do not support anything, despite his claim that “the Capitoline foundations do not reinforce or create a terrace.” Later he reiterated that there was “no example of a temple that does not occupy all of its foundation” and that “a small temple covering a fraction of the substructure at Rome would be an anomaly”⁷². In his view, the foundations of the Ara della Regina at Tarquinius, outside the temple proper, served “both to support the superstructure and to extend the hillside”, but it is not explained why “the second function distinguishes the Tarquinian foundations from the Capitoline”⁷³. Further confutation of Hopkins’ argument is provided by his own reconstruction of the platform that supports the twin temples at Sant’Omobono and by other temples (e.g. the *Capitolium* at Cosa, which was located on the local *Arx*)⁷⁴. Moreover, the huge Capitoline platform is consistent with what Dionysius tells us about the preparation of the temple’s site during the course of the 6th century BC. Finally, it has been said that the rear foundation “supported an open area without any structures” and that “at its very rear, the temple was perched at the precipice of the hill, and such buttressing walls would not be tectonically unwelcome;” in other words, Hopkins has argued that “the arrangement of these walls is markedly different from those that support the cellas and columns, and the distinction in arrangement could indicate their use as a buttress of the

69 Hopkins 2012, 115; Siwicki 2020, 92 f.; Hopkins 2010, 21 n. 35 states that Tucci 2006, 390 f. “supports a claim for a small temple;” in fact, the latter highlighted that a short stretch of transverse foundation marked on the excavators’ plan (cf. fig. 3, left: X on the right-hand side) was hypothetical – as eventually acknowledged by Hopkins himself: that stretch never existed – whereas the central transverse wall, just brought to light on the same alignment, “might indicate that the temple itself was limited to the four longitudinal foundations.” Tucci’s review did not suggest that “a bond between the internal longitudinal walls would create an added support against the thrust of the roof” (Hopkins’ words, aiming at dismissing the small temple), since Tucci never mentioned the roof and just concluded that “the question is destined to remain open.”

70 Hopkins has never addressed Giuliani’s criticism: see Hopkins 2016, 200 f. n. 101. 105.

71 Hopkins 2010, 31. Whenever size is a factor, Hopkins argues that the *Capitolium* was the exception to the rule.

72 Hopkins 2012, 115.

73 Hopkins 2010, 24.

74 Hopkins 2016, 150–152 seems to suggest that tall platforms only partially occupied by temples (another example is the temple of Apollo Medicus, 433–431 BC, with outer cappellaccio walls and a sort of internal grid: see Ciancio Rossetto 1997/1998) were built to withstand the Tiber’s floods. Even so, it is accepted that these temples had a wide, open space in front of the pronaos. Platforms delimited by porticoes and partially occupied by temples were common in Republican and imperial Rome (as well as in its environs, as attested to by the main late Republican sanctuaries): suffice it to mention the Porticus Metelli and, on the hills, the temple of Divus Claudius (on the Caelian), the temple of Venus and Rome (on the Velia), the temple of Elagabalus (on the Palatine), and the temple of Serapis (on the Quirinal).

rear of the structure”⁷⁵. However, the same buttressing function could apply to the other foundations of the platform, though it is stated that the area was “not prone to collapse, even after two thousand years of erosion.” in fact, such problems have been detected just in front of the Capitoline temple, beneath the Ospedale Teutonico⁷⁶.

¹⁹ The depth of the foundations highlights another problem in Hopkins’ argument, which is too often unrelated to the actual topographical context. The two summits of the Capitoline hill are characterized by a thick layer of natural clay, about 8 m deep, laid down some 340,000 years ago. This “Fluvio-lacustrine unit” is still visible next to the temple’s foundations, beneath the basilica of Santa Maria in Aracoeli and inside the Vittoriano, and overlaps a thick layer of Tufo Lionato from an eruption in the Alban Hills of approximately 350,000 years ago⁷⁷. The clay is unfit to support any kind of structure, so that ancient and modern builders alike have systematically excavated deep inside the hill to lay their foundations on top of the Tufo Lionato (fig. 7)⁷⁸. The cappellaccio walls we see today are impressive just because the original ground level is lost: they belong in part to the temple’s foundations (bottom) and in part to its superstructure (top: cf. fig. 2), but this sense of massiveness would be identical if we exposed the foundations of any Roman building. In short, the claim that the Capitoline temple’s foundations are “fully embedded into the hill” to prove that the temple was colossal is misleading⁷⁹. The topographical context matters, especially if one associates the foundations of the Capitoline temple with those of the temple of Hera at Samos (circa 530 BC): the latter was located in the low, marshy basin of a river next to the coast and not at 50 m above sea level⁸⁰. According to Hopkins, comparison between the temple of Jupiter and the huge Archaic temples of Ionia (characterized by narrow intercolumniations) reveals a similar foundation layout, “with a partial transverse wall under a frontal colonnade and longitudinal walls bound to the perimeter”⁸¹. In fact, in the temple of Hera the transverse foundation walls are found in key points of the *naos*, whereas in the presumed colossal Capitoline temple it runs under the third row of columns according to a hypothetical reconstruction of its pronaos.

²⁰ As for the temple’s original entablature, Hopkins assumes that the clear axial span is just 10.5 m and observes that the rooms of the Upper Building at Murlo and the cella of the tetrastyle Ara della Regina at Tarquinia (circa 575 BC), measuring over 8 m and 9.5 m respectively, were (probably) roofed by means of wooden trusses; the side walls of both rooms and the cella would have made it possible to place such beams at a regular distance of 3–4 m. Trusses may have been used inside the axial cella of the Capitoline temple, resting on top of the side walls and placed next to each other, but their

⁷⁵ Hopkins 2016, 108; his conclusion is that “the rear substructure walls ... are clearly bound to the rest of the temple foundations” but “the question of their function must remain open.” We exclude the rear foundations from our reconstruction because they are omitted in Danti 2001, fig. 1 and because they are not included in the area “measured” by Dionysius (fig. 3).

⁷⁶ Hopkins 2016, 203 n. 124; Parisi Presicce – Danti 2016b and Danti – Parisi Presicce 2019, 353 (who acknowledge they had misinterpreted a crack in the concrete foundation of a newly uncovered building: in fact, the alleged crack marks the edge of the original foundation).

⁷⁷ Alvarez et al. 1996; see also Corazza et al. 2004, 428.

⁷⁸ See Alvarez et al. 1996, 754: “the preparation of the foundations must have represented a serious challenge, given the thick, soft Fluvio-lacustrine unit covering much of the *Capitolium*.” The foundations of the Monument to King Victor Emmanuel II (Vittoriano) were re-designed several times for this reason.

⁷⁹ Hopkins 2012, 115. Cifani 2008, 103 and 105, first claimed that the walls were 12 m deep, then specified that the foundations were circa 7.5 m high and the podium 4.5 m high (4.15 m according to Danti – Marra 2014, 261 n. 55), thus confirming that 12 m was the “average height of the podium, the foundations included.” Hopkins 2016, 101 reiterates that “the foundations were encased deep within the Capitoline ... eight meters into the ground” without any mention of the layer of clay. Danti 2001, 341. fig. 20. 22. 26 show very clearly that in each wall only the lowest course of cappellaccio blocks was inserted into, and rested on, the Tufo Lionato.

⁸⁰ Cf. Hopkins 2016, fig. 93.

⁸¹ Hopkins 2016, 117. One can find the same layout in our reconstruction, in which the extremities of the two central transverse walls are not relevant (fig. 3, left: X-X and Y-Y: the former did not exist at all, as already noted in 2006 and overlooked in Hopkins 2016, 203 n. 125).

use in the pronaos is another matter because of the missing side walls: they would have had to rest on wooden posts and beams that, unlike actual walls, would be unstable. The function of the truss, and particularly of its horizontal tie-beam, was precisely to eliminate the thrust on the side walls, which in any case had to be of sufficient strength. Additionally, Hopkins provides a list of “temples with cellas and colonnades spanning spaces like the Capitoline” to prove that spans approaching 12 m were in use in central and southern Italy⁸². Yet, this approach is not appropriate because the porches of Sicilian temples had narrow intercolumniations and stone entablatures⁸³. Take temple E at *Selinus*: the span of its cella (11.50 m) corresponds to almost three interaxial distances of the pronaos’ columns and its hypothetical trusses were *not* placed over the intercolumniations⁸⁴. Another example: William Bell Dinsmoor described the Demeter temple, also at *Selinus*, as having “a closed pronaos and an adytum behind the cella, but with no columns whatever”⁸⁵. Dealing with the same temple, Trevor Hodge talked of three trusses over the cella (span of 8.47 m), but Hopkins, who mentions a span of 10.35 m, adds that the architects “mounted these on columns” (what columns?) and argues that “western Greeks used the truss to span cellas *and colonnades* [italics ours] as wide as 8.5 m by the middle of the sixth century, when architects in Central Italy were doing the same.” His conclusion is that “architects could have spanned the 10.5 m central intercolumniation of the Capitoline temple with a truss”⁸⁶. In our opinion, the comparative architectural arguments put forward to date as conclusive proof speak rather in favor of the contrary of what they wish to demonstrate.

21 In fact, the closest parallel can be found in Rome’s environs, namely Temple A at *Pyrgi* (470–460 BC): because of its size (24 by 34 m), layout (tetrastyle, with widely spaced columns and three cellas), date (470–460 BC) and location (50 km north of Rome), it may provide further evidence for the way in which the prop-and-lintel roof of the original, tetrastyle Capitoline temple may have been constructed and for the size of its wooden beams⁸⁷. The axial intercolumniation of Temple A is slightly narrower than that of the Capitoline temple (fig. 4); the difference consists only of few centimeters at either end of the axial horizontal beams, and so the temple of Jupiter *could* have been roofed with a similar prop-and-lintel system: if it worked at *Pyrgi*, it could work in Rome (fig. 11, right)⁸⁸. On the eaves of the roof, rafters 15 m long could rest on two supports as long as the centre of gravity fell between them: it was of no importance if in the middle of the pronaos they protruded more than they did on the outer side. Therefore there was no need of wooden trusses in our Capitoline temple and Roger Ulrich, dealing with the large-scale version, argued that “certainly in its original form ... and perhaps throughout its history (but cf. fig. 8. 9), the Temple of Jupiter Optimus Maximus on the Capitoline Hill of Rome was framed with a prop-and-lintel roof.” He added that the central intercolumniation required “immense timbers still only a fraction of the total breadth of the roof ...

82 Hopkins 2016, 97–122 esp. 104: temple E at *Selinus*: 11.70 m; temple of Herakles at *Akragas*: 11.84 m; *Olympieion* at *Akragas*: 12.85 m; temple of Demeter at *Selinus*: 10.35 m, but Hodge 1960, 22 reports 8.47 m (Hopkins has mistaken the width for the depth); temple of Athena at *Syracuse*: 10.50 m; treasury of Gela at *Olympia*: 10.50 m.

83 As noted above, the trusses of the porticoes of the Forum of Augustus spanned 15 m (50 Roman feet) and required horizontal tie-beams 59 cm high (2 Roman feet) and 45 cm large; they were inserted into the walls (traces are still visible) at an interaxial distance of 3.7 m.

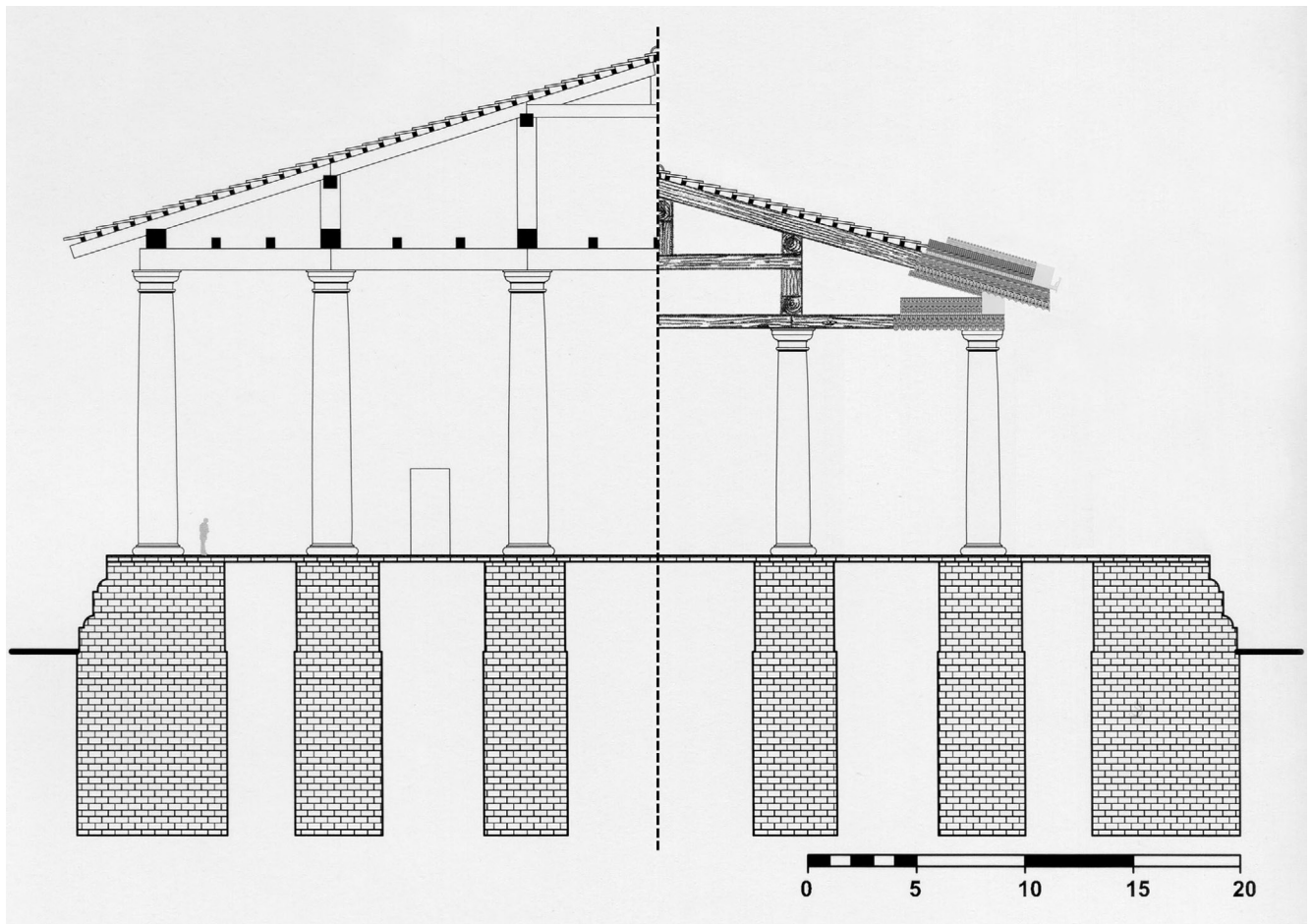
84 See also Hopkins 2016, 104.

85 Dinsmoor 1950, 83.

86 Hopkins 2010, 26; cf. Hodge 1960, 22–24.

87 Ulrich 2007, 126–134 (128: “erected at least a century before the tie-beam truss was introduced to Italy”).

88 Cf. Hodge 1960, 41 f.; Klein 1998, 370; Favro – Yegül 2019, 83; Siwicki 2020, 84. Our argument echoes Hopkins’ about the size of the wooden truss: just a little bit longer than the few attested examples. That the roof of Temple A did not make use of wooden trusses, despite their presumed presence in the Capitoline temple, is a fact: a reasonable explanation is that the latter did not employ any trusses, otherwise one would have to conclude that there was no communication between *Pyrgi* and Rome, located just 50 km apart, while there were cultural and technological exchanges between Rome and far away Ionia.



11

and a far cry from the clear spans that builders would be able to achieve four hundred years later with the knowledge of the tie-beam truss and access to the silver firs of the high Apennines,” thus refuting Hopkins’ trusses further⁸⁹. In the latter’s elevation of the temple (fig. 11, left) the wooden trusses rest directly on the horizontal beams because, as noted above, there were no side walls; across the pronaos their distance is about 9 m, which is excessive, and although trusses can bend and oscillate, one truss should have been incorporated into the pediment (note also that Jupiter’s quadriga placed on the peak of the pediment is missing and there is no way shown to support it)⁹⁰. In the same drawing the joints between the wooden elements and the rafters’ bedding are unreliable, the slope of the roof is mistaken (see below) and the lower tiles literally float in the air⁹¹. The sections of the temple published in the *Atlas of Ancient Rome* show that the roof had a complex wooden structure (fig. 7) but, in Giuliani’s words, “we should assume that Archaic Etruscan architecture, which according to many ignored the simple truss, could make the reticular beam”⁹². We agree that “there is a difference between what technology *can* do and what technology sensibly and efficiently, *might* do. Putting any kind of truss over and across the open interstices of a *colonnade* (rather than a series of them

Fig. 11: Section of the Capitoline temple with a possible roofing system according to Hopkins (left-hand side) and authors (right-hand side: foundations from Hopkins, pediment’s corner by Galluccio)

89 Ulrich 2007, 134.

90 See Liv. 10, 23, 12. Cifani and the *Atlas of Ancient Rome*, too, have proposed a closed pediment (fig. 7). See also Hopkins 2016, fig. 87, which is meant to give an idea of what the temple looked like but, at the same time, should not be taken seriously (as explained in Hopkins 2016, xiii–xiv).

91 Hopkins 2016, 202 n. 116. His fig. 83 is meant to show the schematic roof of an Archaic temple, but the rafters are unreliable; in fig. 113 the hypothetical truss of the temple of Castor is as erroneous as the joints of the rafters and the ‘flying’ tiles at the lower extremities of the eaves.

92 Giuliani 2012, 36.

across the thick, stable walls of a hall), carrying a very heavy terracotta entablature and a pediment, may be a doable but somewhat illogical engineering feat” (cf. fig. 11, left)⁹³. As early as 1935, Agnes Kirsopp Lake had already claimed that “something of the mediaeval belief in the immense size of the Capitolium seems to have crept into modern feeling on the subject, and to have made us feel that anything is possible in connection with it. I think however that we must take into consideration the practical factors”⁹⁴.

22 Dealing with the terracotta revetments of the Capitoline temple, Hopkins focuses on the anthemion frieze, 60 cm tall, which he compares to a similar piece from the second temple of Mater Matuta at Satricum (early 5th century BC), just 28 cm high “or 47 percent as tall.” Note, however, that the width of the temple at Satricum is but 37% of the presumed colossal Capitoline temple and 65% of our temple: one might better conclude just that the Capitoline frieze was taller than expected⁹⁵. The terracotta revetments of the Capitoline temple brought to light during the recent excavations (from 2014 onward) on the site of the Ospedale Teutonico and cleverly reconstructed by Francesco Galluccio confirm that its architrave was approximately 59 cm high and attest that it was surmounted by another decorative element 70 cm high that made it look thicker, whereas the wooden rafters, with a slope of 16° (exactly as in Temple A at Pyrgi), were 95–97 cm high, which is appropriate for our small temple too (fig. 11, right)⁹⁶. We might continue this game of proportions further and recall that in the Satricum temple the terracotta revetments of the rafters were 130 cm high, whereas the new finds from the temple of Jupiter Optimus Maximus indicate that in the latter the same elements were 205 cm high⁹⁷. The *ratio* between these corresponding elements is 1 : 1.57; consequently, the Capitoline temple’s width should be that of the Satricum temple, 21 m, multiplied by 1.57 and so “only” 32 m, which is the actual width of our temple and clearly much less than the 53 m of the colossal version. Hopkins could not take into consideration the latest findings because until 2014 a few fragments of anthemion decoration were “the only part of the Capitoline revetments that remain”⁹⁸. He did though publish the famous roof tile painted with the meander motif from the Antiquarium Comunale (fig. 2, right), which he describes as a “roof tile ... from the site of the temple ... far larger than similar architectural terracottas from monumental temples at Pyrgi, Caere, Satricum and elsewhere in Rome”⁹⁹. The recent finds from beneath the Ospedale Teutonico include fragmentary tiles of the same size and with identical decorative motifs; they are undoubtedly huge but can be made to fit either the presumed colossal temple and our proposed temple. For example, a *bipedalis* (59 by 59 cm) could be used in an ordinary wall

93 Favro – Yegül 2019, 84 (yet, they do not comment on the imperial version of the colossal temple).

94 Kirsopp Lake 1935, 108, who stresses that “the architrave blocks of the Olympieion in Athens, from which, as we have seen, the columns for the Capitolium may have come, measure only 6.553 m.” In fact, the latter is the length of the corner block, whereas the average length is circa 5.50 m (Tölle-Kastenbein 1994, pl. 23).

95 Cf. Arata 2010, 618 n. 235, about the terracotta revetments. The marble entablature of the octastyle temple of Mars Ultor is 4 m high, which does not mean that, proportionally, the huge temple of Serapis on the Quirinal had a higher entablature.

96 Galluccio 2016, esp. 249. pl. 8 and 250 for the slope. 256; Danti – Parisi Presicce 2019 for further findings; cf. Gjerstad 1960, fig. 118.

97 Galluccio 2016, 250.

98 Hopkins 2016, 202 n. 110.

99 Hopkins 2016, 102 f. Caption of fig. 82 (with mistaken dimensions). 202 n. 110 (“eaves tiles that are 45 percent larger than their nearest comparanda”); in the relevant note he cites Ferrea 2005, 36–38, which in fact revealed that the tile was found in 1883 on the Esquiline hill. See Cifani 2008, 107; Arata 2010, 602 and n. 110; Galluccio 2016, 278. On huge ridgepole cover tiles made of terracotta, which were not unique to the Capitoline temple, see Damiani 2019. As for Hopkins’ anthemion frieze, a comparison between his reconstruction (Hopkins 2016, fig. 80) and Galluccio’s amazing drawings (Galluccio 2016, 258–262. pl. 3. 15) demonstrates that the stylistic comparisons of the former are worthless, given that the actual decorative motifs are quite different. Of course Hopkins could not take into consideration the new fragments (brought to light in 2014) but he should have warned the reader that his frieze was hypothetical and based on less than 5% of the entire layout – apparently he took as proven a tentative reconstruction proposed in Mura Sommella 1997/1998, fig. 12 and Mura Sommella 2000, fig. 27.

2 Roman feet thick as well as in the 6 m thick wall of the Pantheon rotunda whereas, following Hopkins' proportional rule, in the latter one would expect the use of colossal bricks¹⁰⁰.

23 As for the cultural interactions between the wider Mediterranean and Rome, as exemplified by the similarity of the terracotta ornaments of the Capitoline temple on the one hand and of the Temple of Artemis at Ephesus or the Temple of Hera at Samos on the other hand, Hopkins highlights the exchanges and interrelationships already discussed, among others, by Giorgio Gullini. Twenty-five years ago the Italian scholar stressed how models, materials and craftsmen were imported to central Italy and clarified that the roofing system, without wooden trusses, "in the typical Tuscan arrangement, is a precise replica, and a logical development, of the wooden layout of the Ionic roofs"¹⁰¹. Expanding on Gullini's argument, Hopkins has even proposed to see "a single building team's fingerprint in the colossal Samian and Roman temples" but he has not explained why the builders in Rome would have adopted the wooden truss that, in his view, was common in southern Italy¹⁰². Instead he argued that the "simultaneous influx of new roofing systems and other examples of Ionic craftsmanship to the west ... suggest that Samian craftspeople may have traveled widely to the west, and particularly to Rome." We should imagine builders and skilled craftspeople at Samos "busily working until the sudden interruption of construction [of the temple of Hera], when they were left with expertise and plans, but no work. It is possible that they sat with nothing to do for the subsequent three or four decades – more than a generation"¹⁰³. If so, we should have to assume that those unemployed builders and artists became too old and died before reaching central Italy. More wisely, Gullini highlighted "the strong influence of Ionic architectural models in Etruria, between the last quarter of the 7th and the middle of the 6th centuries BC, after the arrival of workers and workshops ... which led Tarquin the Proud to call from there the craftsmen for the construction of his spectacular temple of Jupiter Capitolinus"¹⁰⁴. In addition, he argued that "the inspiration to Ionic models is confirmed by the characteristics of plan and structure that we can identify in the canonical layout of the Tuscan temple. The deep pronaos can be compared to the large hypostyle hall placed before the cella in the temples that Ionic and especially Samian architecture seems to like most since the early 6th century BC." As for the genesis of the triple-cella temple, Gullini stressed that "if, from a religious point of view, [it] can be justified by the capitoline triad in the Capitoline temple, it is more difficult to explain for two deities like *Fortuna* and *Mater Matuta* at Sant'Omobono." Following Ionic models, he concluded that "it originates from the enclosure with pronaos around the actual shrine

100 The argument in Colonna 2015, 64 f. is contradictory: his claim that the huge terracotta decorations cannot suggest "a direct relationship with the temple's dimensions" for a series of reasonable technical reasons (with explicit criticism of Hopkins' argument: see 64 n. 7) is followed by the conclusion that the same elements do evoke a colossal building, that is, a temple that occupied the entire platform (indeed Colonna supports Mura Sommella's reconstruction). Parisi Presicce 2016, 11 (point 3) states that the terracottas found in the latest excavations are too big for the ordinary temples of the *area Capitolina* and too small for the alleged colossal temple of Jupiter Optimus Maximus. Instead of arguing for a non-colossal temple, he wonders whether the latter consisted of three smaller shrines because of the different thickness of the foundations: "Thus, can it be excluded that the sacred building, at least in the original phase of the time of the Tarquins, consisted of three independent temples, each with its individual entablature?" Yes it can, because such a layout is dismissed by Dionysius' report explicitly (as already noticed by Mura Sommella 2016/2017, 286 n. 31) and by Parisi Presicce's own statement: the surviving terracotta elements are too big for his three hypothetical independent temples of average size. It is worth stressing that the fragments brought to light are just a fraction of the entire pedimental decoration, which therefore cannot be re-assembled and reveal the temple's width. In theory, the terracottas' modularity allows for a sequence *ad infinitum* whereas the length of the wooden (and eventually marble) architraves is not unlimited and can suggest a reliable reconstruction of the temple.

101 Cf. Gullini 1993, esp. 426. 714 n. 18.

102 Hopkins 2016, 119; cf. Gullini 1993, 426. 714 n. 20.

103 Hopkins 2016, 119.

104 Gullini 1993, 426. See Danti – Marra 2014, 247 about the involvement of various crews, many workers and one or more architects during the original construction process.

that, in the prevailing frontal view, surrounds it on three sides whereas the fourth, opposite the prostyle front, corresponds with the rear of the shrine” – a layout that matches our proposed Capitoline temple perfectly (fig. 3)¹⁰⁵.

K. K.

An alternative reading of Dionysius’ description of the Capitoline temple

24 Because the current reconstructions of the Domitianic colossal temple are impossible, going back in time one should acknowledge that the original temple, too, must have been smaller than the platform made of cappellaccio walls. Accordingly, we propose an alternative interpretation of Dionysius’ description of the Capitoline temple, since most translations take no account of the archaeological evidence and the structural problems. The main point to resolve is: was the platform a *templum* on which stood a smaller *aedes*¹⁰⁶? For a better understanding of the question, we may recall that Vespasian’s *Templum Pacis*, measuring 120 by 135 m, with 100 columns and a large cella, in fact consisted of a quadriportico, at the rear side of which stood the actual temple. Literary sources neither describe its pronaos nor tell us whether it was hexastyle or octastyle; without the Forma Urbis and the recent surveys to guide us, the number of the columns and the size of the building would suggest a gigantic temple¹⁰⁷. The same uncertainty surrounds the *Capitolium*. According to Rodolfo Lanciani, who identified the correct location of the temple of Jupiter Optimus Maximus on the southern summit of the Capitoline hill, the word *Capitolium* “always and exclusively referred to the sacred enclosure that contained the temple.” He seems to mean the southern summit of the hill rather than an actual *temenos* of the temple, although he mentions “il peribolo del tempio” explicitly¹⁰⁸. Apparently the literary sources indicate with the term *Capitolium* the entire hill, its southern summit, and the temple of Jupiter Optimus Maximus, in which case the same word might refer to the whole architectural complex corresponding to the platform (*templum*) or to a smaller temple (*aedes*).

25 Just before his description Dionysius uses the word *naos*, meaning the three cellas, with reference to the construction undertaken by Tarquinius Priscus in 582–578 BC. Because the *naos* alone could not have the size outlined by the Greek historian in the following lines, his measurements arguably refer to the actual platform. Hopkins claimed that they referred to “*krepis* or *naos*” and not to a “high base” (in contradiction with his reconstruction of the temple’s podium: fig. 11, left), but his remark has already been tackled by Cifani, who rather translates “it stood upon a high base” and states that “the word κρηπίς cannot only be translated to mean a staircase around the temple, because it was commonly used to indicate a groundwork, the foundations or the basement of a building”¹⁰⁹. Also, considering the point that the first and the second temple were identical, it has been said that Dionysius is reliable because he talks of “a temple that stood just a generation before him, in the time of our fathers”, or that he provides

105 Gullini 1993, 426; see Cagian de Azevedo 1940, 60–63. This point is missed by Hopkins 2012, 123 (“the origins of the triple cella remains unclear”) and Hopkins 2016, 120 f. 206 n. 161, who believes that the cultural exchanges between Ionia and Rome related especially to the temple’s size and foundations disregarding the general plan (Ionic architects achieved monumentality by making their dipteral temples very long), intercolumniations (no more than 8.40 m), architectural order (Ionic), and roof structure (no trusses).

106 See CIL VI, 10234 (*in templo divorum in aede divi Titi*), which refers to the (*Templum*) *Divorum* in the Campus Martius.

107 Tucci 2017.

108 Lanciani 1875, 171.

109 Hopkins 2010, 29; Cifani 2017, 113. 120. Hopkins 2016, 201 n. 109 reiterates that Dionysius’ measurements refer to the *naos*.

“a reliable indication of the work made by Tarquin the Proud, the only Archaic part that could still be fully appreciated – at least as regards the volume – in the imperial age”¹¹⁰. For the sake of precision, it should be stated here that the Greek historian deals with what the second temple looked like in his own time and with his own experience of the monument. That said, his description (4, 61, 4) remains vague because in the first sentence the subject (“It”) refers to the original architectural complex and then to whatever Catulus’ workmen had actually built on top of the platform, which was clearly visible above ground level. We offer our own translation:

26 “It stood upon a high platform and was eight hundred feet in circuit, each side measuring close to two hundred feet; one would find that the length exceeded the width by not quite fifteen feet. What was built in the time of our fathers [Catulus’ second temple, 83–69 BC] after the burning of the original one was erected upon the same foundations, and differs from the ancient in nothing but the magnificence of the materials. The front, facing the south, has three rows of columns, and there is a single row on the sides. The interior includes three parallel shrines [*sekoî*] separated by party walls; the one dedicated to Jupiter is in the middle, while on one side stands that of Juno and on the other that of Minerva, all under the same roof and the same pediment.”

27 Had Dionysius said explicitly that the *Capitolium* was a traditional temple whose cellas and pronaos occupied a podium measuring 53 by 62 m, the large-scale temple would be a fact. Instead, an explicit statement on whether the temple looked colossal and occupied the entire platform is clearly missing¹¹¹. He reports that a platform with those dimensions was built on top of the hill; that after the fire of 83 BC whatever stood there was laid out on the original foundations; that in his own time the architectural complex was richer than in the previous phase (but it is worth recalling that he did not have direct knowledge of the original temple, since he was born twenty-three years after the fire); that there was a façade with three rows of columns and two sides with just one colonnade. The only way to solve the issue of the marble architraves 12 m long – a problem created and left unsolved by the supporters of the colossal temple – is to assume that the Greek historian was talking about the front and sides of a *templum* corresponding to the platform and not about the actual temple, inevitably smaller than the platform.

28 We should not expect from Dionysius the kind of information provided by our archaeological guides: dates, building materials, number of steps, column number and height, architectural order, inscriptions, pedimental sculpture, coloured marbles, cult statues, and so on. It is almost exceptional that at least he reports the size of the platform, although his measurements are not completely reliable¹¹². In fact, it is of particular interest what Dionysius does *not* say: for example, whether the Capitoline temple was tetrastyle or hexastyle, despite the claim that, “as he describes it, the temple had three rows of six columns”¹¹³. Dionysius shows little interest in the pronaos: the six columns do not appear in his text and are just a modern guess based on the foundations of the presumed large-scale temple¹¹⁴. Because of the technical issues discussed above,

110 Hopkins 2012, 116 and (identical) Hopkins 2016, 107; Arata 2010, 605.

111 Cf. Arata 2010, 605. A perimeter of 8 plethra was not exceptional, compared to the greatest Greek temples.

112 Dealing with the temple of Jupiter Feretrius on the Capitoline, Dionysius (Ant. Rom. 2, 34, 4) reports that “ancient traces of it still remain, of which the longest sides are less than fifteen feet” (circa 4.5 m).

113 Hopkins 2012, 117 (see also 130 n. 29 in the same contribution).

114 Grunow Sobocinski 2014, 456, asks: “What evidence supports the hexastyle orthodoxy?” If one supports the colossal version of the temple and the usual interpretation of Dionysius’ text, without tackling the issue of the 12 m long architraves, the only way to place three rows of columns on the surviving foundations and one row on either side of the cellas is to assume a hexastyle layout. Instead she claims that “the hexastyle plan persists unquestioned in part because of strategies for remembering and distinguishing temples used by novices in the study of Roman architecture” (457) and concludes that the colossal hexastyle temple is convincing (461).

we believe that the rows of columns belonged to a portico located at the edge of the platform (fig. 6), which the Greek historian considered to be a pre-existing feature of the architectural complex (more below)¹¹⁵. Moreover, at the end Dionysius reports that the three cellas stood under the same roof and had a common pediment, which would be superfluous details if the columns he had just talked about belonged to the pronaos of a traditional temple. Therefore, we are not forced to reconstruct a smaller Capitoline temple of the same layout as supposed for the colossal one: relying on the surviving foundations and contemporary architecture, we can argue that the original temple was tetrastyle. Indeed, we do not propose four columns just to match the earliest depiction of the pronaos on a *denarius* (see below), which can be debated and does not exclude a hexastyle pronaos: in fact, our choice is based on the grid of the foundation walls (fig. 3) and on the tetrastyle layout in widespread use at the beginning of the Republican age. In our hypothetical pronaos we might even add another inner row of columns parallel to the front, since the foundations allow us to do so, and the resulting plan would be almost identical to Temple A at Pyrgi and to the temple of Castor in the Roman Forum (fig. 4).

²⁹ The Capitoline temple appears tetrastyle on a *denarius* of Marcus Volteius, minted in the early 70s BC while it was being rebuilt and probably recalling the basic characteristics of the pronaos (fig. 4), and hexastyle on Petillius Capitolinus' *denarius* of the late 40s BC, but this is not necessarily of historical interest. Our assumption (unless the temple was hexastyle from the outset) is that the pronaos was "improved" by Q. Lutatius Catulus and that this change is not at odds with Dionysus' report. Cicero solicited Catulus to build a temple more striking and more magnificent than the original (Verr. 2, 4, 69: *praeclarius magnificentiusque*; cf. De orat. 3, 46, 180 about the pediment). According to Ellen Perry, the difference consisted "only in the extravagance of the materials," but a remodeling was allowed "if the deviation was widely acknowledged as improvement"¹¹⁶. An increased number of columns in the first row of a slightly remodeled pronaos – without altering the temple's width, as in the temple of Castor after its late-2nd century rebuilding¹¹⁷ – together with an inevitable restoration of the nearby portico could be seen as an actual improvement of the ante-83 BC layout. Dionysius speaks of a new temple that stood on the original foundations, with three cellas and a pronaos the same size as the original ones (which he never saw) and possibly with a façade modified by Catulus, who wished to enhance the temple's appearance, especially as regards the visibility of the pediment. Therefore the temple was still the same, despite possible (or, better, inevitable) changes that might have affected the columns: the Greek historian did not count them and, unlike Vitruvius, he did not check if the temple was araeostyle or not, since he was more struck by the beauty of the materials. Moreover, Dionysius' stress on the permanence of the temple on its original foundations can be explained by the continuous remodelings and shifts experienced by the main temples in Greece and Asia Minor – Artemis at Ephesus, Hera at Samos, the Older Parthenon in Athens – during the course of their restorations. Christopher Siwicki, too, discussed Dionysius' mention of the "extravagance" of Catulus' temple and argued that the new building was not

¹¹⁵ The only scholar who took a similar reconstruction into consideration was architect Efisio Luigi Tocco in the 1850s, when the temple of Jupiter Optimus Maximus was still located on the northern summit of the Capitoline. He sketched some plans and one elevation showing a (small) decastyle temple delimited by a portico, so that it was just partially visible from outside: see Tucci 2018, 274–279, fig. 85 ("Altro modello del Tempio di Giove Capitolino, ed il più probabile"). ⁸⁸ Apparently Tocco changed his mind and in his 1858 monograph on the Roman Forum he published the imperial phase of an unlikely larger temple, the colossal pronaos of which has fourteen Doric columns in each of the three front rows (cf. Tucci 2018, fig. 80: at least Tocco avoided excessively large intercolumniations).

¹¹⁶ Perry 2012, 177 f. 196.

¹¹⁷ Davies 2017, 102: "a new hexastyle façade was erected in lieu of the original second row of columns" and, inevitably, the six columns were not coordinated with the original foundation grid (Davies' fig. 3.29); the four frontal columns and the two inner ones, closer to the cellas, disappeared.

simply a replacement but an improvement, although he disagrees with the prevailing view that the second temple had Corinthian marble columns and prefers “stuccoed tuff and travertine” as above the *Tabularium*¹¹⁸. Indeed, Catulus is credited with the introduction of the marble columns from the *Olympieion* in Athens (D = 1.925 m, h = 14 m, H = 16.83 m = 8¾ D), as attested to by Plin. nat. 36, 45, despite Vitruvius’ view that the Capitoline temple was low (Vitr. 3, 3, 5) and his silence about the reuse of columns from the Greek temple, on which he was well informed (cf. Vitr. 7, pr. 15–17)¹¹⁹. Some scholars believe that the Athenian columns were simply taken to Rome and had nothing to do with the temple of Jupiter Optimus Maximus: Siwicki remarks that Pliny used the plural, *Capitolinae aedes*, implying that “either Sulla intended the columns for more than one temple, or that Pliny was unaware of which one they were destined for”¹²⁰. Yet, as a rule the plural refers to the three cellas of the Capitoline temple: Dionysius mentions its three *sekoï*; Tacitus (Hist. 4, 53) reports that *altitudo aedibus adiecta* (see below on Hist. 3, 71); Martial (5, 10, 6) uses the plural for “the mean temples of Catulus” (*Catuli vilia templa*); Ammianus Marcellinus (16, 10, 14) talks of “the shrines of Tarpeian Jove” (*Iovis Tarpei delubra*). It is not impossible, however, that the columns in question belonged to the cella of the *Olympieion* of Athens, which was decorated with two different sets of smaller columns: if so, the latter might have been reused inside the cellas of the second Capitoline temple, or even in our proposed porticoes (see below)¹²¹. The fact that Sulla seized them before the fire of 83 BC is irrelevant, since they might have been taken to further decorate the cellas or to replace the preexisting ones; another possibility is that he “merely took one or two sample capitals from the peristyle, to serve as models in Rome”¹²². In any case, it is likely that the restored temple had an odd appearance, combining Archaic and Hellenistic features.

30 Arata, too, claims that the original temple occupied just part of the platform and was tetrastyle, relying on Volteius’ *denarius*, but he assumes that during the course of Catulus’ restoration one row of marble columns was added on either side of the temple, thus making the pronaos hexastyle, and a further row of six columns was placed on the front: the new colossal building occupied the entire platform and its layout changed from Tuscan to peripteral *sine postico*, which design was widespread in the 1st century BC¹²³. Arata himself acknowledges, however, that such a radical intervention “greatly modified the original external appearance of the original temple”¹²⁴. Indeed, even resting on the same foundations, the new Capitoline temple would have been unrecognizable. Moreover, the price Arata has to pay for his vision is the impossibility of the enlarged marble version of his proposed temple. He claims that the first Flavian rebuilding employed “more solid and decorative architraves made of marble” and we do not question this claim, but he clearly underestimates the interaxials of the presumed colossal temple and mentions architraves 7 m long (instead of 12 m) that have no relation to the foundations¹²⁵. His statement that the architraves of the temple of Serapis

118 Siwicki 2020, 103–105. 112; however, the travertine capitals associated with a temple that stood above the *Tabularium* date from the Flavian age. Relying on numismatic evidence, after dismissing such in the previous pages, Siwicki (110 n. 95) comments on the temple’s semi-fluted columns but does not discuss the alleged colossal entablature and pediment.

119 For the *Olympieion*’s columns, see Tölle-Kastenbein 1994; Wilson Jones 2000, 224. The colossal plan of the Capitoline temple requires at least twenty-four columns whereas our temple needs only ten.

120 Siwicki 2020, 107. 109 f.; see also De Angeli 1996, 149; La Rocca 2011, 3 (“in the Capitoline temples”). On Sulla’s sack of Athens, see Parigi 2019.

121 See Tölle-Kastenbein 1994, pl. 35. Abramson 1974, 19 f. is interesting but not always convincing.

122 Dinsmoor 1950, 280 n. 4. La Rocca 2011, 3 f., suggests that Sulla reused the unfinished column drums taken from the abandoned building site of the Athenian temple, assuming that it would be easier to adapt these unfluted shafts to the Tuscan order of the Capitoline temple.

123 Arata 2010, 616 f.; see Mambella 1982.

124 Arata 2010, 619.

125 Arata 2010, 620; indeed, he has not published a plan of this version of the temple.

on the Quirinal hill were 7 m long is followed by a reference to my review of Stamper's book that reports their exact length: 4.9 m¹²⁶. Had he considered the actual size of the architectural elements, he would have noticed the missing match with the surviving foundations and reconsidered his own proposal.

31 Another source (Varro, in Gell. 2, 10) reports that Catulus wished to "lower the *area Capitolina*, in order that the ascent to the temple [*aedes*] might have more steps and that the podium [*suggestus*] might be higher, to correspond with the elevation and size of the pediment; but that he had been unable to carry out his plan because the *favisae* had prevented that." The *favisae* were underground chambers in which sacred objects no longer in use were collected, and were located within the *templum*¹²⁷. Therefore, they might have stood within the Capitoline platform, to be identified with the structure Catulus wished to lower: leaving aside the presumed underground space recorded by Jordan in 1876 (see above), several voids still preserved beneath have been identified with such depositories. As for the ascent to the temple, why add more steps to the alleged colossal version, considering that its podium (i.e. the platform) was already 4 m high¹²⁸? It is more likely that Catulus wished to improve access to, and visibility of, our small temple located on top of the platform¹²⁹. Moreover, the lowering of the area in front of the colossal podium would have affected countless monuments located on the southern summit of the hill, the foundations of which would have been exposed. As in the case of the word *Capitolium*, the *area capitolina* could correspond either to the Capitoline *templum* – the platform and, in particular, the porticoed square that stood before the staircase of our temple (cf. Velleius 2, 3, 1. 2) – or, depending on the context, to the space in front of the platform¹³⁰.

126 Tucci 2006, 389.

127 Cagianò de Azevedo 1940, 69 f.; Cassatella 2005, 78. Note that the fragments of terracotta decorations found in the area of the Ospedale Teutonico, in front of the temple of Jupiter (to which they belonged), consist of at least three different groups dating from the end of the 6th century to the late 3rd century BC. The findspot corresponds to the *area Capitolina*, but Galluccio 2016, 237 states very clearly that the terracottas were removed from their original depositories and gathered in a single place between the late 3rd to the middle of the 2nd century BC in order to raise the ground level.

128 Cf. Danti – Marra 2014, 261 n. 55: 4.15 m high. Overlooking this detail, Flower 2008, 78 f. claimed that "if the earlier temple had already been reached by a series of steps, the design issues debated during the 70s BC would not have arisen," and concluded that "there is no parallel for a design that would have placed a small archaic temple on top of such a huge podium" (as if we had a parallel for the plan of the hypothetical colossal temple). Gjerstad 1960, 185, who envisioned a staircase of sixteen steps, remarked that "if the podium had been of a considerable height, the desire of Catulus to increase its height would have been less understandable than if the podium was low." Arata 2010, 621 f. first stated that Catulus wished to raise the podium of an original (small) temple by lowering the platform's floor, then occupied the latter with the pronaos of his new colossal temple. Parisi Presicce 2016, 11 (point 1) asks – and does not answer – a series of "what if?" questions about the podium (e.g. was its upper part raised in the Severan phase?), but his claim that the column drum found in 1875 was *in situ* (without a base? Cf. Parisi Presicce – Danti 2016a, 221. 225) and marked the Domitianic elevation is unlikely. Lanciani 1875, 184–187 clarified that the column drum in question was "moved by chance" and could be associated to the temple of Jupiter only because of its Pentelic marble.

129 Except for two restorations in concrete dating from the time of Sulla (cf. fig. 3, left: S₁ and S₂), another two remnants and the layer of concrete on top of the Muro Romano belong to a Domitianic phase: Danti – Marra 2014, 258 f. (thickness of the layer: 30–38 cm). Parisi Presicce 2016, 11 (point 2) wonders whether the Muro Romano was reconstructed with blocks saved from the axial cella of the temple after a catastrophic event, due to the presence of pebbles in the vertical joints. It is worth recalling that during the course of Vespasian's reconstruction of the temple "gold and silver and virgin ores" were incorporated into the foundations (Tac. Hist. 4, 53) and it is unlikely that in the following Domitianic restoration the foundations were rebuilt again, adding pebbles for ritual reasons. We are also asked to believe that, to preserve the "relics" of the destroyed walls of the axial cella (which moreover are unlikely to have been built with cappellaccio blocks), the decision was taken to bring to light, demolish and replace the top of the Muro Romano (if so, why remove another sector of the temple?); we should also overlook that the haruspices directed that the remains of the burned temple be removed to the marshes – *in paludes* (see Tacitus, above).

130 It would be interesting to understand the meaning of *vestibulum Iovis Optimi Maximi, aditus omnes, omnes gradus* and *tota area* in Pliny the Younger's Panegyricus of Trajan, circa AD 100 (Trajan was "adopted" in the Capitoline temple). For example, in Livy (24, 3), dealing with the temple of Juno Lacinia at Croton, *in vestibulo templi* does not refer to the pronaos and means "in the space in front of the temple," where the altar stood.

32 Returning to the temple, it is worth stressing that the latest investigations carried out on and around the Muro Romano may quite demolish the colossal plan and, at the same time, strongly support our reconstruction. The chemical analysis of the *opus caementicium* revealed that two interventions date from the time of Sulla and therefore belong to Catulus' restoration (S_1 and S_2 in fig. 3, left), whereas the concrete layer on top of the Muro Romano is Domitianic (that is, post AD 80)¹³¹. In the hypothetical plan of the colossal temple, the Sullan restorations should be related to one of the eight inner columns of the pronaos – the one closer to the E wall of the right-hand side cella (cf. fig. 1, Hopkins 2016). The adjacent column toward the façade would fall in the middle of the Muro Romano, where the top surface of the Domitianic concrete layer reaches 50.08 m asl and is close to the level of the lost floor: however on the site of this alleged colossal column there are no traces of the existence of structural elements such as travertine or marble blocks – not even an imprint on the concrete's surface. Without any such traces, the colossal column most scholars place in this sector of the pronaos (along with its symmetrical pair) throughout the existence of the Capitoline temple is a mere illusion. Finally, we recall that the foundation walls supporting the two nearby columns in the middle row, toward the temple's axis, are not attested archaeologically to date (fig. 1, 3, left)¹³². Instead, in our proposed reconstruction of the temple, the Sullan reinforcements S_1 and S_2 consolidate the foundation of the actual podium and to be precise the right-hand side of the pronaos: not one of the inner columns, as in the colossal plan, but the corner column and the pedestal before it (fig. 3, left). This sector of the pronaos corresponds exactly to the northern stretch of the Muro Romano where several courses of cappellaccio blocks are missing (were they replaced by now eventually removed travertine blocks?), so that the top surface of the wall is at 46.72–46.74 m asl, about two and a half meters below the Domitianic concrete layer: the vertical breaks can be seen on either side of the wall (cf. fig. 2 a, top-right corner) and especially from the north¹³³. Last but not least, on the southern stretch of the Muro Romano the Domitianic concrete layer appears to be, quite simply, the preparation of an open area's floor¹³⁴.

P. L. T.

The Capitoline temple and its architectural context

33 Our proposed plan of the Capitoline complex is consistent with many temples built in and outside Rome and central Italy in the early Republican age, whereas others must acknowledge that the side columns and pronaos of the colossal temple are

131 Danti – Marra 2014.

132 Cf. Tucci 2006, 390 n. 24 for an early (and unheeded) warning about the lack of traces left by a colossal column on top of the Muro Romano. In our reconstruction the two inner longitudinal foundations toward the front (marked with ?? in fig. 3, left) are not necessary, whereas the two longitudinal ones next to them might have supported the rectangular pedestals placed on either side of the temple's staircase. Such pedestals would have been as tall as the temples' podium and at least one half the length of the cappellaccio walls between the pronaos and the platform's stairway, so as to require actual foundations (and the builders may have considered it useful and wise to create a bond with the front foundation wall).

133 Danti – Marra 2014, fig. 9.

134 Hopkins 2012, 115, dealing with the concrete layer, claims that “the purpose ... could not be to reinforce pavement” (but cf. fig. 2: the concrete covers the cappellaccio blocks between the columns of his pronaos). Arata 2010, 601 imagines the original floor made of several blocks of tuff, eventually reinforced by the concrete layer (which he dated to the late Republican age, whereas now we know that it is Flavian). Danti – Marra 2014, 258 claim that the Sullan reinforcements suggest “the presence of a column or another decorative element” (precisely as in our plan: fig. 3, left) and stress that S_1 is at the same level as the top five courses of cappellaccio blocks of the Muro Romano, which have slightly different characteristics compared to the original ones (title page photo); therefore they wonder whether those five courses might be Sullan as well, but they admit that there is no certainty. We just wish to point out that the stretch with five anomalous courses was largely unloaded and, most of all, that the concrete structure S_1 is unlikely to be the reinforcement of a Sullan wall: if so, Catulus' masons restored their own work!

“anomalous for central Italy ... there is no earlier temple and no earlier foundation in central Italy that even vaguely suggests a triple colonnaded porch ... there is simply no precedent for anything like the Capitoline’s tripteral hexastyle façade in central Italy,” and “even in the wider Mediterranean world, it is hard to find a precedent”¹³⁵. We would argue that these anomalies should be taken as further evidence that the Capitoline temple was not colossal. Hopkins compared his large-scale temple with twelve temples from central Italy dating from 510 to 450 BC; leaving aside the four peripteral temples, the others do not match his plan at all whereas they are consistent with, and smaller than, our temple of Jupiter Optimus Maximus¹³⁶. It is sufficient to look at Temple A at Pyrgi, at the temple of Saturn (498 BC) and at the temple of Castor in the Roman Forum (484 BC), all tetrastyle and with three cellas (fig. 4), to realize that they might have originated from our Capitoline temple¹³⁷. It is generally assumed that actual *Capitolia* did not follow the layout of the *Capitolium* in Rome but, again, this is true only if one has the plan of the colossal temple in mind: from the 2nd century BC onward many *Capitolia* – at Cosa (with a platform before it), Minturnae, Signia and Luni (see fig. 4) – appear to be smaller, yet identical, copies of our temple¹³⁸. It is also worth recalling the side porticoes of the *Capitolia* at Pompeii, Brixia, and especially Ostia (fig. 5, right), where temple and porticoes formed a sort of independent space. The temple at Le Verbe Incarné in Lyon (early 1st century AD) and the Flavian Curia in the *Old Forum* at Lepcis Magna had porticoes and narrow areas at the front, too, thus creating an inward-looking space that was typical of Roman architecture¹³⁹. The area before the pronaos may appear to be narrow from a modern perspective, but the perception of space in ancient Rome was different: suffice it to consider the visibility of the four temples at *Largo Argentina*, all facing and close to the entrance wall of a large quadriporticus, or the *temple of Apollo ad theatrum Marcelli*, almost touching the outer wall of the Augustan theatre¹⁴⁰. Indeed, it is worth recalling that our proposed temple of Jupiter within an enclosure was a remodeling of the original *templum* facing a 20 m deep space; eventually the front portico became like a covered sector of that area, and the pronaos would have looked truly impressive when seen from a short distance.

³⁴ Originating from a new interpretation of Dionysius’ description, our plan is reliable not only as regards the imperial phase but also in its original, very likely tetrastyle, phase of 509 BC (fig. 3). Its layout is close to the 6 : 5 length-to-width ratio prescribed by Vitruvius for the Tuscan temple (Vitr. 4, 7, 1), whereas in the presumed colossal temple the same ratio is 7 : 6. In our reconstruction we could shift the temple’s rear wall a little bit forward to get cellas (*pars postica*) and pronaos (*pars antica*) of exactly the same depth, while the correct ratio for the width of the three cellas (3–4–3) is already guaranteed. The reason why Vitruvius did not mention the temple of Jupiter Optimus Maximus when dealing with the Tuscan temple might be Catulus’ remodeling of its pronaos – from tetrastyle to hexastyle – which made it no longer relevant¹⁴¹. It is worth recalling that Vitruvius did not include the Capitoline temple among those that were peripteral or peripteral *sine postico* (cf. Vitr. 3, 2, 5), an omission that does not seem to have bothered the supporters of those plans; instead Castagnoli was puzzled by the

¹³⁵ Hopkins 2012, 121; Hopkins 2016, 115.

¹³⁶ Hopkins 2012, fig. 6.8.

¹³⁷ Cifani 2008, 103.

¹³⁸ See Cifarelli 2003; Stek 2009, 26. On Cosa: Brown 1960, 69–72.

¹³⁹ Le Mer – Chomer 2007, 531–535. Fig. 484; Rocco – Livadiotti 2019; see Eingartner 2005 for temples between porticoes. In Rome, the temple of Divus Traianus had a very narrow space in front of the pronaos and its façade was concealed by Trajan’s Column and by the Basilica Ulpia; according to recent reconstructions, it was framed by porticoes, too (cf. the Trajanic *dupondius* showing an octastyle temple between side porticoes: RIC II Trajan 578).

¹⁴⁰ See La Rocca 2015.

¹⁴¹ Likewise Castagnoli 1966/1967, 14; *contra* Arata 2010, 617 n. 214 (contradicted by himself at 618).

appearance of the latter layout in the 6th century BC and its absence in other *Capitolia*¹⁴². Last but not least, Vitruvius reports that the Capitoline temple was araeostyle and, indeed, in our second temple the intercolumniations are still larger than three column diameters (fig. 6, left).

35 As for Vespasian's rebuilding of the Capitolium in AD 70, Siwicki says that Tacitus (Hist. 4, 53), after mentioning the ruins (*reliquiae*) of the old shrine (*delubrum*), claims that the new temple (*templum*) "should be erected [*sisteretur*: placed] on exactly [in fact, "exactly" is not present in the Latin text] the same footprint (*isdem vestigiis*) ["on the same place," "on the same remains," as in Hist. 3, 72 (*Isdem rursus vestigiis situm est*): the gods were unwilling to have the old plan (*veterem formam*) [we prefer "layout"] changed"¹⁴³. Siwicki's translation reflects his assumption that exactly the same plan was retained in the temple's rebuilding, but Tacitus' passage looks very much like Dionysius' "on the same foundations" and *vestigium* has the same meaning as in Catulus' restoration¹⁴⁴. Dealing with the latter, Siwicki mixes two sources: "both Dionysius and Tacitus [Dion. Hal. Ant. Rom. 4, 61, 4; Tac. Hist. 3, 72] report that this second version had been rebuilt on the foundations and *vestigium* of the first temple," but both authors mention a reconstruction on the same foundations as the burned temple, which suggests the same arrangement of the cellas but does not exclude a transformation of the pronaos (from tetrastyle to hexastyle)¹⁴⁵. Instead Siwicki's conclusion is that "the second Catulan and third Vespasianic versions explicitly [*sic*] retained the footprint (*vestigium*) of the original temple" since the temple was rebuilt "on the same foundations *and to the same plan*" (*italics ours*)¹⁴⁶. Finally, explicit confirmation that Domitian's *Capitolium*, like its two predecessors, retained the same plan as the original is lacking but it seems reasonable to assume that, just a decade after Vespasian's restoration, the same arguments and thinking were valid. The temple was still hexastyle, with marble architraves about 6 m long; despite the same width as the main octastyle temples, its interaxials were larger and close to the limit for a marble entablature (cf. fig. 5). As noted above, the pronaos is depicted on two 2nd-century AD reliefs (fig. 8. 9): these, in the middle of the pediment, show Jupiter over an eagle, flanked by Juno and Minerva¹⁴⁷. In our temple these deities are all about 5 m high: huge but still feasible, unlike the unbelievable size they attain in the colossal pediment (cf. fig. 8. 10). The earlier relief, dating from the Trajanic era, depicts a religious ritual, called the *extispicium*, performed in front of the temple of Jupiter Optimus Maximus; an almost complete image is preserved on some Renaissance drawings (cf. fig. 8)¹⁴⁸. The depiction of the hexastyle pronaos looks like an orthogonal

142 Castagnoli 1966/1967, 14; Castagnoli 1955. Likewise Kirsopp Lake 1935, 137.

143 Siwicki 2020, 119; indeed, see Liv. 6, 4, 12. Cf. De Magistris 2010, 146 (*forma* would be the temple's outline). On the ceremony: Scheid 2017, 239–241.

144 Dealing with Catulus' temple, Siwicki 2020, 187 n. 85 (like Withycombe 2016, 170) states that Pliny was impressed by the temple's substructures, but in Plin. nat. 36, 104 the *substructiones Capitolii* are the retaining walls of the Capitoline hill. For the sake of accuracy, the temple's foundations are underneath the Palazzo/Villa Caffarelli (or Museo Nuovo) and the nearby open area, not under the Palazzo dei Conservatori as in Favro – Yegül 2019, 83 and Siwicki 2020, 87.

145 Siwicki 2020, 130. Cifani 2008, 81 states that the second temple had "the same size, plan and architectural order of the previous one." Cf. Flower 2008, 89; Perry 2012, 177.

146 Siwicki 2020, 86. 112 (see 118); later he reiterates that ancient sources "explicitly [*sic*] state" that the plan was retained (119; see also 133). Likewise De Angeli 1996, 149: "on the same foundations, and so with the same plan."

147 Kaderka 2018, 221–230. 345 f. (see also 55 f. on the temple and 255–260 on its depiction on coins). Mura Sommella 2016/2017 not only reiterates her temple's peripteral plan, despite the problem of the steps, but also suggests that its pediment, after Catulus' restoration, was decorated by the Gorgon flanked by two panthers, all made of bronze, that she identifies on a specimen of Petilius' *denarius* of the late 40s BC: these figures would be a restoration of an Archaic pedimental group made of terracotta, as in the eastern temple at Sant'Omobono. The problems of this argument are the unreliable and unclear depiction on that coin, the material and excessive size of the presumed decoration, and the fact that the hypothetical Archaic model would have been displayed in a pediment that was most probably "open".

148 See Tortorella 1988; Kaderka 2018, 221–223. 345 f. fig. 47 d–f.

elevation but, although the three entrances to the cellas are framed by columns (note the identical intercolumniations and the excessive width of the axial door if it were a colossal temple), the point of view could be at the entrance to the architectural complex (fig. 6, right); anyway, because the temple's side is visible as well, apparently we are dealing with a combination of different views and perspectives. The fact that on this relief the pronaos seems to be larger than the cellas (see the ashlar wall above the three doors) is not a serious problem, recalling that in reality the colossal layout is impossible for technical reasons and remembering the temple's elevation sculpted on one of the reliefs of Marcus Aurelius from the church of Santa Martina (fig. 9), dating from AD 176–180, in which the Capitoline temple appears simplified and tetrastyle¹⁴⁹.

³⁶ An interesting feature of the latter relief appears on the temple's right-hand side: four and a half piers placed in a row – neither columns nor flat pilasters – with an ashlar wall in the background. It is unlikely that this peculiar building stood so close to, and was almost as high as, the Capitoline temple, or that it stood behind it, next to the cliff. Maria Laura Cafiero described it as “a building whose identification is uncertain, perhaps a portico that surrounded or flanked the Temple,” and noted that “the roof of the building with piers is decorated with statuary groups of hunting scenes involving the lion [in fact, a lioness], the bear and the bull,” to which we shall return at the end of this section¹⁵⁰. Those unusual square pillars, topped by unconventional Tuscan-looking capitals that gave a sort of Archaic flavor to the architectural complex, might have belonged to the temple's side porticoes. The ashlar wall behind the pillars could be a fire-break wall that minimized the risk of further destruction (fig. 6, right): as it happens the fire of 80 AD was the last in the Capitoline temple's long history, although partial damages (caused by lightning) are still attested to in the literary sources. Two Renaissance drawings are supposed to show the remains of a portico located on the platform¹⁵¹. Also, in the 16th century Flaminio Vacca reported that “many pillars” – not column drums or shafts – of white marble were found on the site of the Capitoline temple: from the relevant capitals he and Vincenzo De Rossi carved a lion for the Villa Medici and the decorations of the Cappella Cesi at Santa Maria della Pace, respectively¹⁵².

³⁷ Although Catulus' workmen may have realized that the side and front walls of cappellaccio blocks were about 7 m and 9 m thick (fig. 3), thus allowing for the construction of porticoes with intercolumniations of about 4 m, it is also possible that older colonnades framed the temple even before the fire of 83 BC. Such a layout is already attested to by two important monuments of late-Republican Rome: the Porticus Octavia, built in the 160s BC in the circus Flaminius, was *duplex*, probably meaning that it had two aisles and three rows of columns (cf. Vitr. 5, 9, 2); the nearby Porticus Metelli, completed in the 140s BC, had an open portico consisting of two parallel rows of columns on the

¹⁴⁹ Kaderka 2018, 223–227. 346.

¹⁵⁰ Cafiero 1986, 40.

¹⁵¹ See Moralee – Moe 2015 (Francesco Di Giorgio's plan of the “porticho del Champitolio”, circa 1470); Mura Sommella 1997/1998, 75–78 (Giovanni Antonio Dosio's plan of Rome, 1562).

¹⁵² Vacca 1594, 28 f. The word “pillars” is used twice and Vacca was well aware of the difference between a column and a pillar. As noted earlier, Plutarch (Publ. 15, 4) mentioned the disproportionate columns of the Domitianic *Capitolium*; since the diameter of the surviving fragments from the actual temple ranges between 1.80–2.12 m and the columns could not be taller than, say, 21 m (or 10 D), how could they have looked thin and slender? The most reasonable assumption is that the drums of Pentelic marble, still unfinished in Athens, were excessively reworked. Yet, since Plutarch did not say that the vertical elements were rendered ‘too tapered’ (implying a difference between lower and top diameters of a column shaft), we wonder if the marble blocks were given a square section in order to build the piers of the portico carved on the Marcus Aurelius' relief, which would explain Plutarch's statement. Surviving examples of squarish piers, in the portico of the House of Julia Felix at Pompeii and in the Hall of the Doric Pillars of Hadrian's Villa at Tibur, look quite thin and slender. If so, Plutarch would mean pillars instead of columns and his focus would not be on the actual temple.

front side of a tall platform¹⁵³. Nobody has ever envisioned or described a Capitoline temple with porticoes on the basis of an alternative reading of Dionysius and we are aware that there is no archaeological evidence, but the same problem affects the colossal temple too¹⁵⁴. The latter possibility, however, is cancelled out by the hypothetical architraves of the imperial phase, the implausibility of which is an important piece of evidence. Rather the existence of porticoes is the only way to make sense of Dionysius' account and to reconstruct a reasonable temple on the cappellaccio walls. Porticoes located next to the temple of Jupiter Optimus Maximus since the Republican age may be alluded to by literary sources. Velleius Paterculus (2, 3, 1. 2), dealing with the events of 133 BC that led to Tiberius Gracchus' assassination on the Capitoline hill, reports that "at this crisis Publius Cornelius Scipio Nasica Serapio [cos. 138 BC] appeared. He was ... the son of the Scipio [Publius Cornelius Scipio Nasica Corculum, cos. 162 and 155 BC] who, as censor [in 159 BC], had built the porticoes on the Capitol" (*porticus in Capitolio*). Slightly earlier, in a well-known passage dealing with the rise of luxury in Roman society around the mid-2nd century BC, Velleius highlighted that "it was at this time [159 BC] that there were built, on the Capitol, the porticoes of Scipio Nasica" (*Tum Scipio Nasica in Capitolio porticus*), as well as "the already mentioned porticoes of Metellus, and, in the Circus (Flaminius), the portico of Gnaeus Octavius" (2, 1, 1. 2: note Velleius' use of the plural for the first two buildings, possibly indicating the existence of more than one wing)¹⁵⁵. Interestingly, Velleius talks exactly of the two buildings closest, from an architectural point of view, to the enclosure we have proposed for the Capitoline temple on the basis of Dionysius' account: the Porticus Octavia and the Porticus Metelli (renamed Porticus Octaviae in the Augustan age), both located in the circus Flaminius and dating from the 160s and the 140s BC, respectively¹⁵⁶. Note that, five years after the construction of Scipio Nasica's porticoes, a fig-tree grew up from the altar of the temple of Jupiter Optimus Maximus, replacing a palm-tree that had appeared there around 171–168 BC: "at Rome, in the Capitol, during the wars against Perseus, a palm-tree grew from the altar of Jupiter (*in Capitolio in ara Iovis*), a presage of impending victory and triumphs [two triumphs over Perseus were celebrated in 167 BC, one of which by Cn. Octavius, who shortly after built the already mentioned Porticus Octavia]. This palm having been destroyed by the tempests, a fig-tree sprang up in the very same place, at the period of the lustration made by the censors M. Messala and C. Longinus [154 BC], a time in which, according to Piso, an author of high authority, all sense of shame had been utterly banished" (Plin. nat. 17, 38, 244)¹⁵⁷.

153 Coarelli 1997, 515–538. The short side of the Forum of Caesar, opposite the temple, had three rows of columns and a frontal staircase in its second, Augustan phase (44–29 BC): see Delfino 2008, 54 ("open" layout) fig. 5; Gros 2010, 274 fig. 5.

154 Cf. Castagnoli 1959, 326: "It is uncertain whether the *Capitolium* in Rome had side porticoes."

155 Coarelli 1997, 517 f. with n. 2, proposed that it was built after 167 BC, like the two other porticoes mentioned by Velleius, and rightly attributed it to Publius Cornelius Scipio Nasica Corculum, the censor of 159 BC, because its construction falls in a gap of Livy's text; yet, Velleius himself had already mentioned the author of the portico explicitly.

156 The Porticus Metelli surrounded the pre-existing temple of Juno Regina and the new temple of Jupiter Stator, whereas the Porticus Octavia was somehow related to the temple of Neptune. Despite the lack of archaeological evidence, the latter portico has been proposed as a model for the Forum of Caesar and later imperial fora (Senseney 2011, esp. 432 n. 2, mentioning Gjerstad's view about "the frontal axiality of its Temple of Venus Genetrix and its thorough isolation through high enclosure walls", considered to be Near Eastern in origin and eventually assimilated in Hellenistic Asia Minor; the Ptolemaic porticoed enclosures would be an alternative model), but now it is worth considering the Capitoline temple as a possible prototype. Cf. Amici 1991, 58; Delfino 2014, 177–183 (esp. 178, dealing with "self-celebrative monumental enclosures inside which stood temples that could not be seen from outside").

157 In 151 BC Scipio Nasica Corculum stopped the construction of Rome's first permanent theatre that was being erected precisely by M. Messala and C. Longinus at the SW corner of the Palatine Hill, right in front of the Capitoline temple; on his decision, see Campbell 2003, 76 f.; Coarelli 2012, 277–282; Marcattili 2020, 93–95. Since the prodigy of the fig-tree at the beginning of M. Messala and C. Longinus' censorship possibly took place in the area surrounded by Scipio Nasica Corculum's porticoes and could cast a shadow on their construction (an example of *pudicitia subversa*?), the order to demolish their theatre might have been a sort of revenge on the part of Scipio Nasica himself.

The identification of our proposed porticoes surrounding the temple of Jupiter with those of Scipio Nasica is hypothetical because their location *in Capitolio* is ambiguous; it is just a possibility and, even if mistaken, it would not negate our reconstruction of the Capitoline complex¹⁵⁸. Nobody knows if Dionysius considered the Capitoline temple's porticoes to be an example of *luxuria* and *magnificentia*, but certainly they would have looked like an improvement on the original architectural complex and their rows of columns would have been as impressive as the actual temple.

38 Another literary source seems to attest the existence of an older portico around the Capitoline temple and sheds further light on Dionysius' colonnades, the layout of which remains uncertain. Livy (40, 51, 3), dealing with the "whitening of the temple of Jupiter in the Capitol and the columns around it (*columnasque circa*)," reports that Marcus Aemilius Lepidus, the censor of 179 BC, "also removed from those columns the statues that stood unseemly before them, and took down from them the shields and military ensigns of all sorts hung thereon"¹⁵⁹. The conjunction *-que* (which is used to mean "and") is very significant, telling us that temple (*aedes*) and columns (*columnae*) were two distinct entities. Because *aedes* implies the entire temple (its columns included, otherwise Livy would have mentioned the *cella*), then "the columns around it" (we recall that the temple was not peripteral) might have belonged to a portico – one of the earliest in Rome – built around the Capitoline temple before 179 BC¹⁶⁰. Moreover the display of statues against a temple's columns is unlikely, whereas it was quite common in colonnades (as in the later Forum of Augustus). That said, Scipio Nasica's *porticus*, dating from 159 BC and the only one whose construction on top of the Capitoline hill is explicitly attested to, if related to the temple of Jupiter Optimus Maximus might have been a remodeling of a pre-existing portico or a new architectural feature that was restored and improved by Catulus. In any case, in our view Dionysius did see a portico around the Capitoline temple. Eventually Domitian gave it the shape visible on the Marcus Aurelius relief (fig. 9), showing either the elevation of the right-hand wing parallel to the temple's north side or the façade toward the *area Capitolina* (a look at the Marcus Aurelius relief depicting the emperor's *adventus* is enough to realize that the architectural background could be

158 The fact that Velleius, writing around AD 30, may have been referring to the original founder of the Capitoline portico instead of Q. Lutatius Catulus is not surprising: dealing with the Porticus Octaviae, he still referred to Q. Caecilius Metellus Macedonicus (see above). According to Reusser 1993, 37, the portico of Scipio Nasica stood at the edge of the *area Capitolina*. Tacitus (Hist. 3, 71), dealing with the fire of the Capitol in AD 69, mentions two porticoes located along the Clivus Capitolinus and a third (in fact, Tacitus uses the plural: *in porticus adpositas aedibus*) next to the Capitoline temple (the three cellas), which therefore caught fire. Wiseman 1978, 171 claims that the fire of AD 69 spread "to the porticoes around the Iuppiter temple. Wellesley rightly identifies these as the colonnades originally set up by Scipio Nasica in 159 BC (no doubt rebuilt by Catulus or Augustus after the fire of 83 BC), and assumes that it was behind the temple, on the north (i.e. NNW) side, that they caught fire"; both Kenneth Wellesley (in the early 1970s) and Peter Wiseman assumed that the Capitoline temple was colossal and did not consider the possibility that Scipio Nasica's porticoes could delimit a smaller temple on top of the platform. Another portico associated with the temple as early as the second half of the 2nd century BC is mentioned by Diodorus Siculus (34/35, fragment 28a: "the portico behind the temple") and might be located on the rear foundations. In 65 BC, while the Capitoline complex was being completed, "Caesar decorated ... the Capitol as well, building temporary colonnades" (Suetonius, Caes. 10, 1: *Capitolium ornavit porticibus ad tempus extractis*).

159 *Aedem Iovis in Capitolio columnasque circa poliendas albo locavit, et ab his columnis, quae incommode obposita videbantur, signa amovit clipeaque de columnis et signa militaria adfixa omnis generis dempsit*. Cf. Vitruvius 3, 2, 7, about the dipteral temple of Quirinus: in this case, "around the temple it has two rows of columns" (*circa aedem duplices habet ordines columnarum*) appears to be a different and more technical way to indicate a key element of the *aedes*. Only Martial (11, 1, 9) mentions the porticoed square (*porticus Quirini*) that surrounded the temple.

160 Cagianò de Azevedo 1940, 73, argued that "perhaps the origin [of *Capitolia* between porticoes] is explained by the fact that such a temple was generally located in the forum, which had side porticoes, and so even when it was built elsewhere it was surrounded by porticoes so as to be inside a square." He also stressed the need of a "clear separation of the temple from the nearby buildings." We add that in Roman architecture many building types, from the *domus* to the huge imperial *thermae*, were inward looking and delimited by strong boundary walls. See Morciano 2012, 99 for a list of *Capitolia* within enclosures.

arranged with a high degree of freedom)¹⁶¹. It is worth noting that Tacitus, dealing with the siege of the Capitol in AD 69, reports that “the fire passed to the porticoes adjoining the temples; the eagles supporting the pediment, which were of old timber, caught the flames” (Hist. 3, 71). His text reads *lapsus ignis in porticus adpositas aedibus* and we know now that the plural could be used for the three cellas of the Capitoline temple, which is mentioned immediately afterward (see above, and particularly Hist. 4, 53 about the *altitudo aedibus adiecta*). It is likely that a fire in the side and front porticoes, in their unknown configuration before the Domitianic rebuilding, could spread to the temple’s roof¹⁶². In our hypothetical plan (fig. 6) these porticoes delimited the Capitoline temple’s *temenos* on three sides, but there could have even been a fourth wing behind. As for the three sculptural groups showing the lioness, the bear and the bull being killed by the *venatores* (cf. fig. 9), which must have been an easily recognizable feature on top of the portico (like the five chariots that decorated the temple’s roof: see fig. 8), they may be associated not only with the *ludi* held by Republican generals and then by the emperors after their triumphal processions (the war booty could be used to pay for the shows) but also with the *Ludi Magni*, the main festival games held in honor of Jupiter Optimus Maximus and including *venationes* as well¹⁶³.

K. K.

Final considerations

39 The architectural and technical aspects highlighted above suggest that the widespread acceptance of the colossal plan(s) of the temple of Jupiter Optimus Maximus is no longer a matter for personal choice. As for Dionysius, we believe we do not read too much into his text. Other literary sources that are supposed to highlight the colossal size of the building actually allude to a very different narrative. A frequently cited passage dealing with the *amplitudo Jovis templi* (Liv. 1, 53) in fact relates to how Tarquinius Priscus *envisioned* the temple before its actual construction: “He [Tarquinius Priscus] then sketched out the design of a temple to Jupiter, which in its extent should be worthy of the Roman empire, worthy of the majesty of the City itself”¹⁶⁴. In a speech delivered shortly after the fire of 83 BC, while the Capitoline temple was still in ruins, Cicero mentioned “Jupiter Optimus Maximus, at whose nod and command the sky, hearth, and seas are ruled” (Pro Rosc. 131), without any reference to its colossal size¹⁶⁵. Ammianus Marcellinus’ description of Constantius’ visit to Rome in AD 357 highlights the admiration of the emperor for “the temple(s) of Tarpeian Jupiter,” which showed how divine things

161 On the mode of depicting architecture on historical reliefs, see Quante-Schöttler 2002; more recently, with a focus on decorative features of temples, Kaderka 2018, 16. 145–236.

162 *Inde lapsus ignis in porticus adpositas aedibus; mox sustinentes fastigium aquilae vetere ligno traxerunt flammam alueruntque*. Reusser 1993, 37 n. 23 associates Tacitus’ *porticus* with the building carved on Marcus Aurelius’ relief but does not discuss its location. Coarelli 1974, 45 (and plan at 40) reiterated Lugli’s identification with the *Aedes Thensarum* (see Pisani Sartorio 1993), which he placed over the huge concrete foundation visible in Via del Tempio di Giove. Mazzuca 2014, 33 reports (without references: presumably Reusser 1996, who deals with the same concrete foundation) that the marble relief depicts the side of the Flavian temple of Jupiter Custos/Conservator.

163 The closest parallel for the couple on the left-hand side is a fresco depicting hunter and lion from the amphitheatre of Emerita Augusta (late 1st century AD) (fig. 9, right). Wild animals, both real and fantastic, populate the top of several buildings in Roman frescoes: see Bragantini – Sampaolo 2015, 440 (panthers from the Villa di Arianna at Stabiae). Cf. Flecker 2015.

164 It cannot be excluded that the original design (immediately resized) was that of a colossal temple located on the entire platform.

165 It is worth recalling that after 46 BC Julius Caesar wished to build a temple to Mars “greater than any in existence” (*quantum nusquam esset*) on the site of his *naumachia* in the Campus Martius (Suet. Caes. 44, 1), a project abandoned after his assassination. One wonders what its size would be if the Capitoline temple, that Caesar knew well, was indeed a colossal building.

were superior to those of men (16, 10, 14). Constantius praised also the imperial baths, the Colosseum, the Pantheon, the Columns of Trajan and Marcus Aurelius, the temple of Venus and Rome, the *Forum Pacis*, the Theatre of Pompey, the Odeon, and the Stadium, but what impressed him even more was the Forum of Trajan: a “giant construction that defies any description and impossible to replicate” (16, 10, 15)¹⁶⁶. The fame of the *Capitolium* was not a matter of size but of history, site, and prestige: it was Jupiter, not his temple, that deserved to be called the Greatest¹⁶⁷. Located at 50 m above sea level, the building could be seen from any part of Rome and, at the same time, it was possible to behold the entire city from it (cf. Vit. 1, 7, 1, about *Capitolia* in general, to be placed “in the very highest place, the vantage from which to see the greatest possible extent of the city walls”¹⁶⁸). Despite recent attempts to rewrite the history of Roman architecture overlooking its basic principles, the widespread mythologizing about the temple of Jupiter Optimus Maximus should be reconsidered: in our view, it did not belong to the 6th-century BC Mediterranean wave of colossal temples such as the Artemision at Ephesus and the Heraion of Samos; rather, its original goal was to stress Rome’s supremacy within the Latin league and to replace the federal sanctuary of *Iuppiter Latiaris* on the Alban Hills. According to our proposed reconstruction it was a non-colossal Tuscan triple-cella temple that might disappoint those who seek at any cost for bolder connections across the Mediterranean area. We agree, but from a diametrically opposed viewpoint, that its presumed colossal version “dramatically alters the history and urban image of early Rome and the history of Roman architecture”¹⁶⁹.

K. K. – P. L. T.

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¹⁶⁶ *Per giganteos contextus circumferens mentem, nec relatu effabiles nec rursus mortalibus adpetendos.*

¹⁶⁷ As confirmed by the sanctuaries of Jupiter Optimus Maximus Dolichenus and Heliopolitanus.

¹⁶⁸ *Excelsissimo loco unde moenium maxima pars conspiciatur.*

¹⁶⁹ Hopkins 2010, 33.

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Fig. 1: Mura Sommella 1997/1998, fig. 6; Stamper 2005, fig. 16; Carandini – Carafa 2017, vol. II, pl. 8: Sistema Informativo Archeologico, Sapienza Università di Roma, courtesy of Prof. Paolo Carafa; Mura Sommella 2009, fig. 14 (adapted); Hopkins 2010, fig. 5 (by his permission); Hopkins 2016, fig. 72 (slightly adapted), by J. Atelbauers with J. Hopkins and R. Beacham (published by permission of J. Hopkins)

Fig. 2: Left from Danti 2001, fig. 1 (drawing G. Foglia and C. Rosa, adapted) and 5; right, authors
Fig. 3: 4 (second plan from left). 5 (first plan from left). 6: authors, drawn on Danti 2001, fig. 1; detail of the Muro Romano in fig. 3 redrawn from Danti – Marra 2014, fig. 7

Fig. 4: Top row (except for authors' plan of the Capitoline temple) redrawn from Davies 2017, fig. 2.10; bottom row: coin from Roma Numismatic Ltd [<http://www.RomaNumismatics.com>, last visited on the 30th August 2021] Lot 900, E-sale 76; Temple A at Pyrgi from Pugliese Carratelli 1986, pl. XXII; temples at Cosa and Signia from Boëthius 1978, fig. 127

Fig. 5: Centre, from Ungaro 2007, fig. 142; right, from Calza et al. 1953

Fig. 6: From Danti 2001, fig. 1 (drawing authors)

Fig. 7: Top from Cifani 2010, fig. 4; bottom Carandini – Carafa 2017, vol. II, pl. 8: Sistema Informativo Archeologico, Sapienza Università di Roma, courtesy of Prof. Paolo Carafa

Fig. 8: Top: adapted from Paris, BnF, Album de Pierre Jacques de Reims, fol. 48r; bottom: Paris, Musée du Louvre, MR 792 (Ma 1089)

Fig. 9: Left and top right: Capitoline Museums, Palazzo dei Conservatori, M.C. 807; bottom right: Mérida, Museo Nacional de Arte Romano (Ministerio de Cultura y Deporte), CE 26719, Archivo fotográfico, foto Lorenzo Plana

Fig. 10: Authors

Fig. 11: Left-hand side and foundations from Hopkins 2016, fig. 84, by J. Atelbauers with J. Hopkins and R. Beacham (published by permission of J. Hopkins); right-hand side section, authors, pediment's corner from Galluccio 2016, pl. 9

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