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HENRIK GERDING & NICOLÒ DELL'UNTO

The Basilica Sempronia and the Forum Romanum

Abstract

The authors of this paper reinvestigate the remains of the Basilica Sempronia, situated below the Imperial Basilica Julia in Rome. By combining the information from the original excavation with a new 3D digital documentation, new observations are made and previous interpretations reassessed. The present remains are discussed in relation to the contemporary built environment, as well as to preceding and following phases. It is argued that the Basilica Sempronia was an elongated hall with closed lateral walls and interior supports. It was erected on a podium that raised the building above the surrounding streets on all sides except the west. The Augustan renewal of the Basilica Julia entailed vast foundation works, which had a huge impact on the site. However, evidence of an intermediate phase indicates the existence of a building complex that merged the previous basilica with the Tabernae Veteres, partly preserving their original dimensions and orientations. This intermediate basilica complex comprised a large paved unroofed surface at an elevated position, possibly a peristyle courtyard. The paper briefly touches upon the possible implications for our understanding of the early Roman basilica, the use of public space, and the development of the Forum Romanum.*

Keywords: Basilica Sempronia, Forum Romanum, topography of Rome, Roman Republican architecture, Rome

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Introduction

The Forum Romanum constituted the religious, political, economic and administrative centre of Rome for more than a millennium. During this time, it went through many changes. It transformed from a liminal zone between Iron Age hilltop settlements into a communal public space and sacred ground, then into an arena for political struggle and civic ambition, and finally, into a showcase for Imperial power and authority. New buildings were constantly added, and the old ones rebuilt or replaced. Although the intensity in building activities diminished towards the late Imperial period, the symbolic significance of the place remained intact.

However, the Forum valley was a difficult environment for construction, due to challenging hydrological conditions. Water ran from the slopes of the surrounding hills as well as from natural springs, creating streams and possibly also waterlogged zones in the low-lying areas. Furthermore, the Forum was regularly flooded by the seasonal fluctuations of the Tiber. Already from the Archaic period this prompted major infrastructural works and a continuous raising of the ground level. The construction of a large drainage channel, the Cloaca Maxima, was accompanied by a massive landfill project, repeated on several occasions during the Republic. During the Principate, the ground level remained relatively stable, but eventually the natural processes of decay and erosion set in. The accumulation of deposits from the hillsides continued through the post-Classical periods, and in some parts of the Forum area, the ancient buildings were eventually covered by up to 8 m of earth and debris.

These two aspects, the long and intensive building history and the geological conditions, both contribute to the complexity of the site from an archaeological perspective. As will be outlined below, there has been a growing interest in the earlier phases of the Forum, but these investigations have usually been restricted to places where trenches could be dug without interfering with Imperial structures—in confined areas between buildings, and in places already disturbed by early modern interventions or catastrophic events. These limited sound-

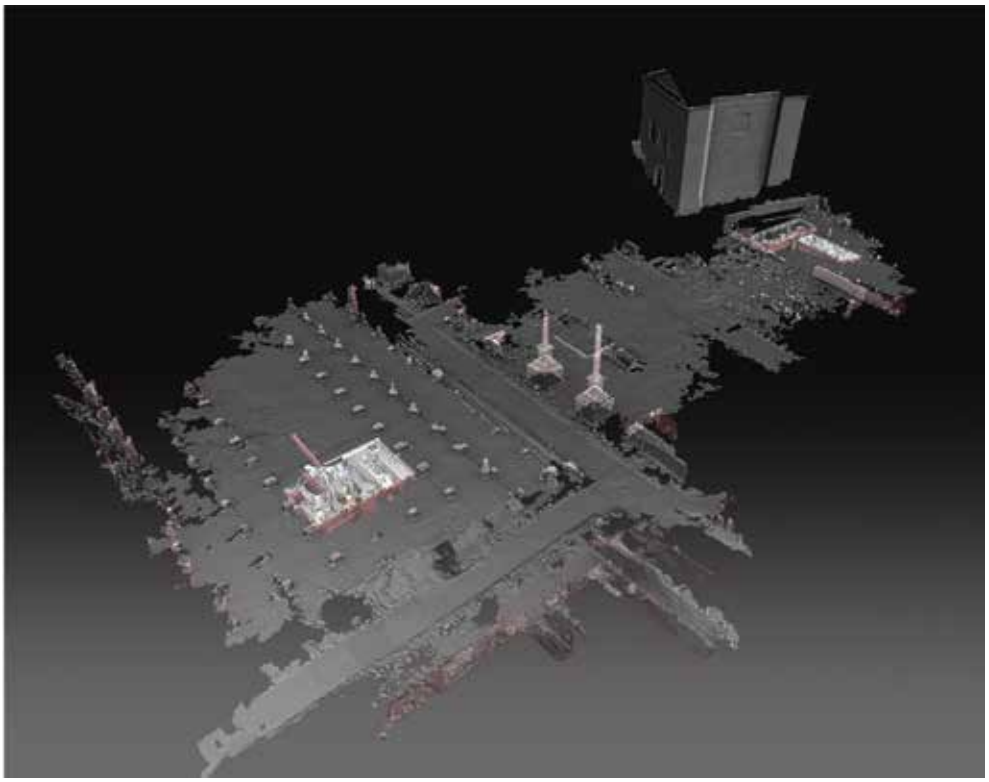


Fig. 1. Digital model of the Forum Romanum. Aerial view from the south-east, highlighting the underground remains of the Basilica Sempronia (left) and the Basilica Fulvia (top right). To explore the model, see https://models.darklab.lu.se/dig_excav/Forum_Romanum/Forum_Romanum.html. Image by Nicolò Dell'Unto, Stefan Lindgren, Danilo Campanaro and Henrik Gerding.

ings into the Archaic and Republican Forum are isolated and situated far apart. Often, they were only partially documented or not fully published, and after completion the trenches were either filled in or covered by concrete roofing in order to restore the appearance of the Imperial phase. This leaves us with an incomplete record of fragmentary and inaccessible remains with no intervisibility. The fragmented state of the archaeological record constitutes a severe hindrance to a satisfactory understanding of the earlier phases of the Forum.

The aim of the present project is to use 3D spatial documentation and visualization techniques to integrate the available information from these isolated remains. Renewed investigations of previously excavated structures, supported by three-dimensional analytical tools, hold the potential of revealing new features and providing a more comprehensive picture. By virtually merging separate and spatially isolated remains in a single georeferenced 3D model, the spatial relationship between various elements can be visualized and accurately assessed. Such a model can also be used to analyse the accumulation and drainage of water, a crucial aspect of the urban layout. With traditional documentation techniques it has been possible to measure and compare the orientation and relative heights of different structures and layers, but only at a limited number of points and with a limited precision; whereas in a digital model you have instant access to the coordinates of countless points. Thus, it is possible to compare dimensions, levels, orientations and slopes without restraints.

Traditionally, ancient monuments are studied in isolation, diachronically, in an attempt to sort out all the different phases of that particular building. However, there is not only the relationship between various phases to consider. Different buildings situated around the Forum also interacted with each other. This project aims to study these buildings as parts of the urban fabric, not just as isolated monuments. For this reason, it is desirable to be able to visualize the exact spatial relationship between contemporaneous buildings.

In this paper, we explore the potential of this approach by discussing a poorly known monument of the Republican period, the Basilica Sempronia. In particular, we try to elucidate the architectural layout of this building, and its development until the time of Augustus. The study is based on a new digital documentation that has been made by the present authors (*Figs. 1–2*). We consider the monument as an integrated part of a larger built environment, interacting with other monuments, not least the Basilica Fulvia, the remains of which have also been documented anew. Information about surrounding structures is drawn upon to formulate well-founded hypotheses regarding the layout of the Basilica Sempronia, but the results also have potential repercussions for our understanding of the entire Forum.

Historical sources on the Basilica Sempronia

Despite its supposed prominence and central location, we only know of the Basilica Sempronia from a single historical source (Liv. 44.16.9–11):

> *Ad opera publica facienda cum eis dimidium ex vectigalibus eius anni attributum ex senatus consulto a quaestoribus esset, Ti. Sempronius ex ea pecunia, quae ipsi attributa erat, aedes P. Africani pone Veteres ad Vortumni signum lanienasque et tabernas coniunctas in publicum emit basilicamque faciendam curavit, quae postea Sempronia appellata est.*
>
> As half the revenues of the year had by decree of the senate been assigned by the quaestors to the censors for the construction of public works, Titus [Tiberius] Sempronius, out of the funds assigned to him, bought for the state the house of Publius Africanus behind the Old Shops in the direction of the statue of Vortumnus, as well as the butcher's stalls and the shops adjacent, and saw to the construction of the basilica which afterward received the name of Sempronian.[1]

The initial construction of this building can be dated to 169 BC, which makes it one of the earliest Roman basilicas, perhaps only preceded by the Basilica Porcia (184 BC) and the Basilica Fulvia (179 BC).[2] The text holds no information on its layout or function, but it can be deduced from the passage above, in combination with other sources, that it stood close by the Forum on the same location as the later Basilica Julia, which was begun by Caesar and completed by Augustus (*Mon. Anc.* 20):

> *Forum Iulium et basilicam, | quae fuit inter aedem Castoris et aedem Saturni, coepta profligate|que opera a patre meo perfeci et eandem basilicam consumptam incendio ampliato eius solo sub titulo nominis filiorum m(eorum i)n|cohavi et, si vivus non perfecissem, perfici ab heredib(us iussi.)*
>
> I completed the Julian Forum and the basilica which was between the temple of Castor and the temple of Saturn, works begun and far advanced by my father, and when the same basilica was destroyed by fire I began its reconstruction on an enlarged site, to be inscribed with the names of my sons, and ordered that in case I should not live to complete it, it should be completed by my heirs.[3]

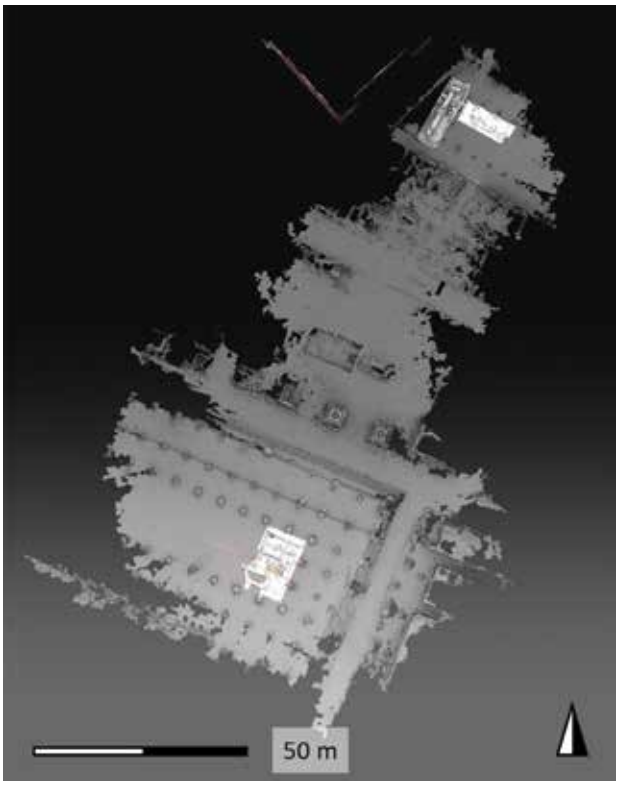


Fig. 2. Digital model of the Forum Romanum. Orthogonal top view, highlighting the underground remains of the Basilica Sempronia (bottom) and the Basilica Fulvia (top). To explore the model, see https://models.darklab.lu.se/dig_excav/Forum_Romanum/Forum_Romanum.html. Image by Nicolò Dell'Unto, Stefan Lindgren, Danilo Campanaro and Henrik Gerding.

Perhaps, this is the same building mentioned in a letter by Cicero (*Att.* 4.16.7–8):

> *Paulus in medio foro basilicam iam paene texerat isdem antiquis columnis. illam autem quam locavit facit magnificentissimam. quid quaeris? nihil gratius illo monumento, nihil gloriosius. itaque Caesaris amici, me dico et Oppium, dirumparis licet, <in> monumentum illud quod tu tollere laudibus solebas, ut forum laxaremus et usque ad atrium Libertatis explicaremus, contempsimus sescenties sestertium; cum privatis non poterat transigi minore pecunia. efficiemus rem gloriosissimam.*
>
> Paulus has now almost roofed his basilica in the middle of the Forum, using the original antique pillars. *The other*

[1] Transl. Schlesinger 1951 (Loeb).

[2] For the possible existence of an even earlier basilica in the Forum, see Plaut. *Curc.* 470–474; *Capt.* 813–815; Duckworth 1955; Gaggiotti 1985; Freyberger 2016b, 15. The question of the origin of the Roman basilica has been discussed, for example, by Müller 1937; Crema 1959, 61–67; Gros 1996, 235–260; Welch 2003.

[3] Transl. Shipley 1924 (Loeb).

> *one, which he gave out on contract, he is constructing in magnificent style. It is indeed a most admired and glorious edifice*. So Caesar's friends (I mean Oppius and myself, choke on that if you must) have thought nothing of spending sixty million sesterces on the work which you used to be so enthusiastic about, to widen the Forum and extend it as far as the Hall of Liberty. We couldn't settle with the private owners for a smaller sum. We shall achieve something really glorious.[4]

The letter is dated to the beginning of July 54 BC, but most scholars assume that the project was initiated in 55 BC.[5] The most common interpretation, which is reflected in the translation by David Roy Shackleton Bailey, is that Cicero speaks of two different basilicas. Furthermore, it is widely held that Caesar furnished Paullus with the means for reconstructing the basilica on the north side of the Forum (Basilica Aemilia/Paulli), but also for building a new one on the south side on his behalf (Basilica Julia).[6] However, Esther Boise Van Deman suggested that Cicero was referring to two basilicas on the north side of the Forum,[7] whereas Evelyn Shuckburgh believed that the passage only discusses a single basilica, giving the following translation:

> Paullus has almost brought his basilica in the forum to the roof, using the same columns as were in the ancient building: the part for which he gave out a contract he is building on the most magnificent scale.[8]

Since Hieronymus notes that a Basilica Julia was dedicated in Rome in 46 BC,[9] we are led to assume that Caesar inaugurated the building before it was completed by Augustus. The date of destruction of the first Basilica Julia cannot be determined. Various conflagrations, which devastated the Forum or the Palatine in 14, 12, 9 and 7 BC respectively, have been suggested as the likely cause.[10] The Augustan replacement mentioned in the *Res Gestae*, perhaps briefly known as the Basilica of Lucius and Gaius,[11] constituted one of the most magnificent edifices in Rome. As the predecessor of this building, the Basilica Sempronia played an important role in defining the spatial configuration of the Forum Romanum.

History of research

For a long time after the abandonment of the Forum, the interest in the ancient remains was limited to the search for collectables and reusable building material, but eventually the visible ruins also attracted the attention of antiquarians, artists and architects. The first archaeological excavation on the Forum Romanum was conducted by the Swedish diplomat Carl Fredrik Fredenheim from November 1788 until January 1789, with the permission of Pope Pius VI.[12] A trench was sunk close to the north-east corner of the Basilica Julia (*Fig. 3*).[13] The scientific purpose of this excavation was to establish the limits of the Forum towards the south. Fredenheim reached the floor of the Imperial basilica, without being able to identify it, and removed parts of its pavement, but does not seem to have proceeded below this level. The findings were meticulously recorded (considering the standards of the time) and the results were published by the German scholar Jeremias Jacob Oberlin in 1796.[14] The work carried out by Fredenheim signalled the beginning of a nearly continuous archaeological activity in the Forum area, which is still ongoing today.

Carlo Fea was appointed Commissario delle Antichità by Pius VII in 1801 and conducted work in the Forum Romanum for almost 30 years. In 1816 he directed his attention to the area around the Temple of Castor and Pollux next to the Basilica Julia, making use of Fredenheim's findings. However, when this work ceased the ancient topography of the area was still not properly understood. In 1848 Pius IX resumed excavations in the Forum Romanum.[15] These were headed by Luigi Canina, who had correctly identified the location of the Basilica Julia some years before. In 1853 the work stopped short once more, with only half of the Basilica Julia being exposed. Systematic excavations of the Forum area were not initiated again until after the capture of Rome in 1870. One of the primary aims was to recover and preserve the appearance of

[4] Transl. Shackleton Bailey 1999 (Loeb). Our emphasis. It should be noted that in some other editions, the same passage is attributed to letter 4.17.

[5] Early on, the *Realencyclopädie der classischen Altertumswissenschaft* used this passage to pinpoint the curule aedileship of L. Aemilius (Lepidus) Paullus (*RE* 81) to 55 BC. This deduction was perpetuated by Broughton (1952, 216). The extension of the Forum is usually seen as a reference to the Forum Julium, but other interpretations have also been put forward (see Purcell 1993; Millar 1998, 176).

[6] E.g. Platner & Ashby 1929, 78; Coarelli 1975, 81; Miles 2008, 236. The notion that Caesar sponsored the construction finds support from Plutarchos (*Caes.* 29) and Appianus (*B Civ.* 2.26) but is perhaps contradicted by Dio Cassius (49.42.2).

[7] Van Deman 1913, 25 n. 2. Cf. the alternative theory of Steinby (1993), which separates the Basilica Aemilia from the Basilica Fulvia/Paulli.

[8] Transl. Shuckburgh 1899. Cf. Davies 2017, 238f., 261, 316 n. 126.

[9] Jer. *Ab Abr.* 1971: "*Romae basilica Iulia dedicate*" (Helm 1956, 156 l. 16).

[10] Dio Cass. 54.24.2, 54.29.8, 55.1.1, 55.8.5. There is no consensus, due to the lack of explicit information. Cf. Desmond 2019.

[11] Suet. *Aug.* 29.4. Cf. Dio Cass. 56.27.5.

[12] Oberlin 1796; Fredenheim 1808; Bildt 1901.

[13] For convenience, the axis of the Forum is described as having an east–west orientation.

[14] Oberlin 1796.

[15] Lanciani 2000, 375–378.

Fig. 3. Digital model of the Forum Romanum, overlapping a satellite image of the Forum (Google Earth). Archaeological interventions mentioned in the text: 1) Fredenheim 1788–1789 (approximate position); 2) Boni/Gjerstad 1904/1949 (approximate position); 3) Romanelli and Carettoni 1946–1948; 4) Carettoni and Fabbrini 1960–1964 (east trench); 5) Carettoni and Fabbrini 1960–1964 (west trench, approximate position). Illustration by Nicolò Dell'Unto, Stefan Lindgren, Danilo Campanaro and Henrik Gerding.

the Forum from the Imperial period, according to a plan first devised by Giuseppe Valadier.[16] As a result, the floor of the Basilica Julia was fully uncovered between 1871 and 1872 by Pietro Rosa, who also cleared the adjoining parts of the Cloaca Maxima. The same scholar also performed some anastylosis and consolidation work on the Basilica Julia.

From 1898 until 1912 excavations were conducted in the Forum under the supervision of Giacomo Boni, an archaeologist characterized by artistic talent and methodological rigour.[17] He continued the huge task of clearing the Forum down to early Imperial levels, but soon started to direct his interest towards the earlier phases of the Forum, making notable discoveries by the Comitium and the so-called Sepulcretum.

The interest in early Rome was shared by the Swedish archaeologist Ejnar Gjerstad, director of the Swedish Institute in Rome and later professor at Lund University, who also conducted investigations and deep soundings in the central parts of the Forum Romanum. In 1939 he participated in the re-excavation of the Comitium area, the architectural and stratigraphic development of which he subsequently published,[18] and in 1949 he reopened a deep trench in the middle of the Forum (by the so-called Equus Domitiani) in order to validate and publish the previous work of Boni.[19] This excavation revealed the complete stratigraphy down to virgin soil 5.87 m below the Imperial marble pavement (6.89 masl). Verifying Boni's observations, Gjerstad identified a succession of pavements, three of which were assigned to the Regal period and six to the Republican Forum. Gjerstad also carried out excavations on the Via Sacra (close to the temple of Vesta) in 1953–1954 and in 1957. Although the historical interpretation suggested by Gjerstad concerning the chronological framework of Regal Rome became hotly contested, the factual results of his work constituted an essential contribution to the elucidation of the development of the Republican Forum.

[16] Filippi 2017, 145f.
[17] Gjerstad 1952, 108.
[18] Gjerstad 1941.
[19] Gjerstad 1953.

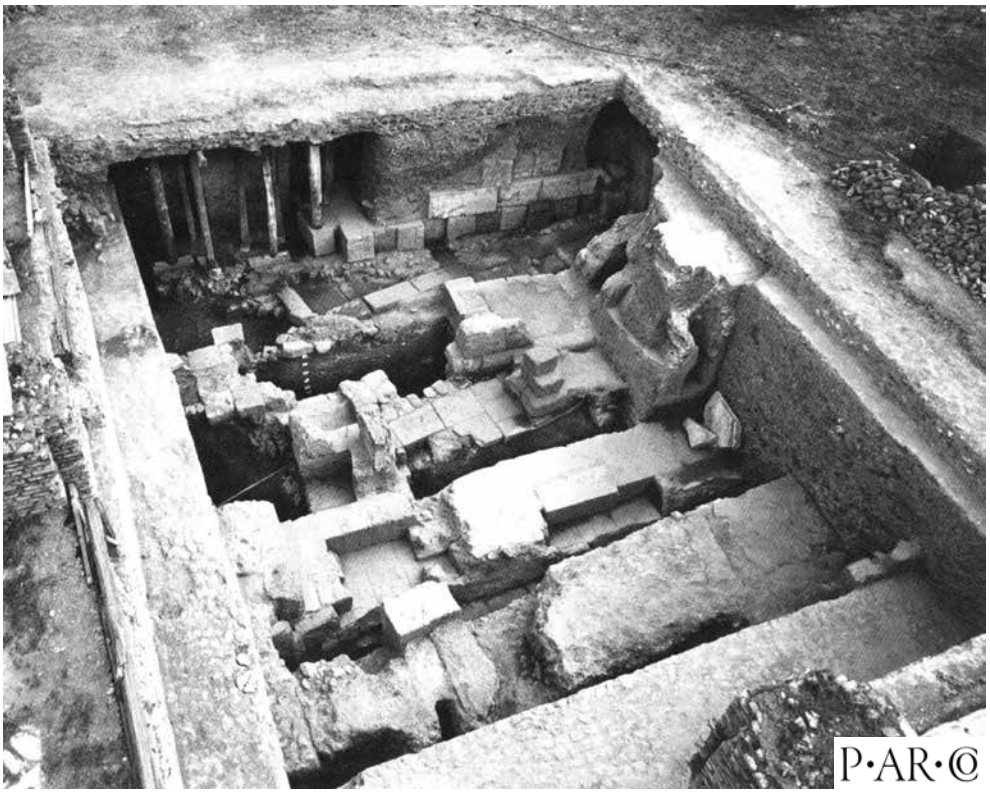


Fig. 4. The east trench in the central nave of the Basilica Julia after completed excavation by Carettoni and Fabbrini in the 1960s. View from the north-east. PaC Archivio fotografico, 49 FR/BG. By concession of the Ministero della Cultura – Parco archeologico del Colosseo.

The archaeological investigation of the Imperial Basilica Aemilia, situated on the north side of the Forum, had been initiated by Boni and was continued by his successor Alfonso Bartoli. It was taken up again in 1946 by Pietro Romanelli and Gianfilippo Carettoni, who also uncovered remains of its Republican predecessor (Basilica Fulvia).[20] A few years later, the attention was directed towards its counterpart on the south side.

In 1960–1964, Carettoni and Laura Fabbrini carried out excavations in two separate areas within the central nave of the Basilica Julia. They began in January 1960 by opening a trench measuring *c.* 16 × 10 m in the east end of the nave, just to the south of where Fredenheim had excavated (*Fig. 3*). In the report, Carettoni describes how he and his colleague made use of an existing hole in the concrete bedding for the marble floor. The pavement had been destroyed in connection with an earlier scavenge dig, perhaps made in 1763,[21] which allowed the 1960 excavators to proceed below the level of the Imperial basilica without causing any additional damage.

In this trench they uncovered an assemblage of fragmentary architectural structures, some of which were plausibly identified as belonging to the original Basilica Sempronia (*Fig. 4*). Unfortunately, the preliminary report from February 1961, summarizing the work of the first year, was never followed up by a full discussion of the evidence, and the western trench was not published at all.[22] Furthermore, the plan and section published with the preliminary report do not correspond to the final state of the excavation (*Fig. 5*). However, unlike its western counterpart, which was eventually backfilled, the eastern trench was preserved under a concrete cover, corresponding to the floor level of the Imperial basilica. Thus, the structures that Carettoni and Fabbrini exposed were left accessible for future studies.

In 2016 the present authors undertook an archaeological survey of these structures in collaboration with the Soprintendenza Speciale per il Colosseo, il Museo Nazionale Romano e l'Area Archeologica di Roma (present Parco Archeologico del Colosseo) and under the auspices of the Swedish Institute in Rome. The visible remains under the Basilica Aemilia were included in the survey, to allow comparison between the early basilicas. The documentation campaign comprised a digital acquisition, which was carried out with a Faro Focus

[20] Carettoni 1948; 1960, 193; Coarelli 2006, 32f. For the history of research on the Basilica Aemilia, see Freyberger 2016b, 11–13.
[21] Oberlin 1796, 24.
[22] It is often stated that the excavations in question lasted from 1960 to 1964. However, the fact that Carettoni (1979, 211) later only refers to the results from 1960 indicates that the following work added very little.

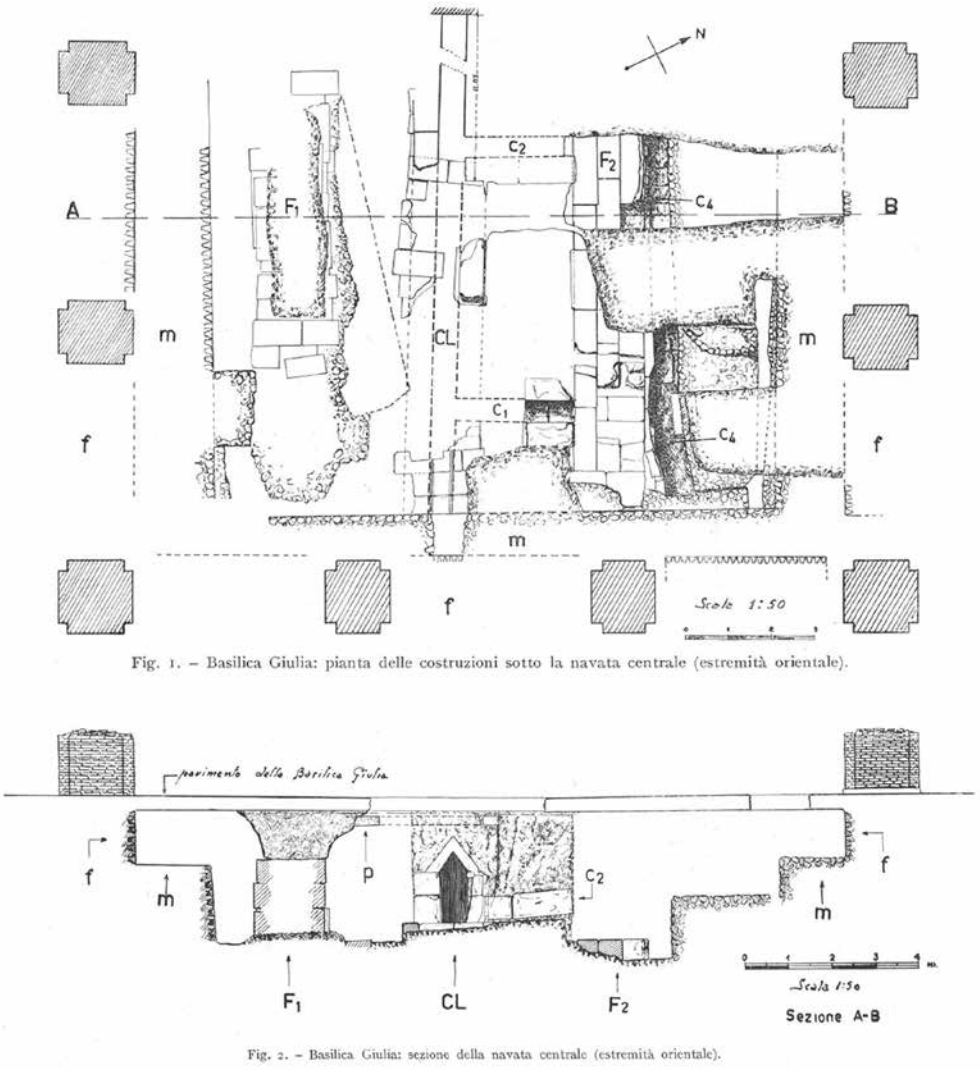


Fig. 1. – Basilica Giulia: pianta delle costruzioni sotto la navata centrale (estremità orientale).

Fig. 2. – Basilica Giulia: sezione della navata centrale (estremità orientale).

Fig. 5. Plan and section of the east trench in the central nave of the Basilica Julia, illustrating the situation during the first season of excavation in 1960. Modified from Carettoni & Fabbrini 1961, figs. 1–2.

3D phase shift laser scanner and photogrammetry.[23] The laser scanner allowed the documentation of dark and narrow parts of the underground compartments. The photogrammetric approach, based on the use of Metashape Pro, was employed for the recording of a preserved stratigraphy in the deep section. Once acquired, the point clouds were processed using the open-source software Meshlab.[24]

A similar digital documentation was made the following year by a team lead by Marco Galli. Their investigation treats unpublished material from the Carettoni and Fabbrini excavation but also incorporates newly conducted geophysical investigations. The preliminary results are published in a series of recent papers.[25] Another valuable contribution was made by Dunia Filippi, who recently reviewed the same excavation and also made available some previously unpublished drawings.[26]

[23] The digital acquisition was carried out by the authors in collaboration with Stefan Lindgren of the Lund University Humanities Laboratory.

[24] Stefan Lindgren and Danilo Campanaro performed the data processing. The resulting 3D model is available online at the DARKLab web site, https://models.darklab.lu.se/dig_excav/Forum_Romanum/Forum_Romanum.html.

[25] Falzone *et al.* 2019; Galli 2019; Galli *et al.* 2018; 2019a; 2019b; Galli & Ismaelli 2019; Scardozzi *et al.* 2020.

[26] Filippi 2020, 115–124. Unfortunately, this publication only became known to the present authors after the initial submission of the article. Filippi's important study anticipates several of the conclusions presented here, but her interpretations diverge on some accounts, as will be detailed further on.

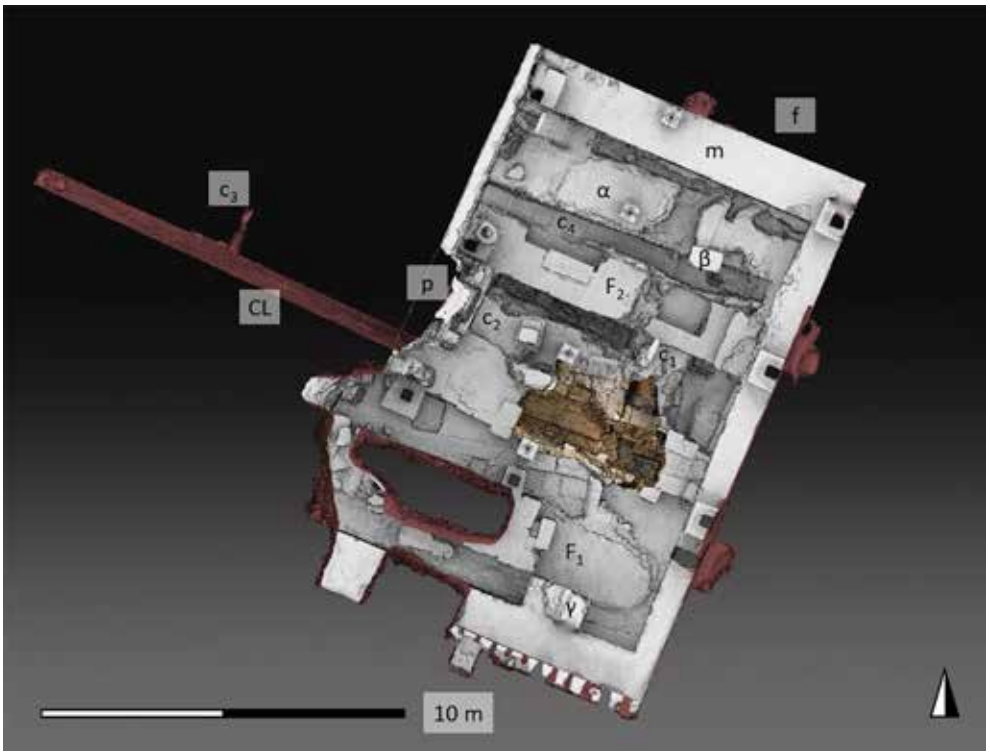


Fig. 6. Digital model of the east trench in the central nave of the Basilica Julia (current state). Orthogonal top view. Visible surfaces are shown in grey. The (artificial) rear side of these surfaces are shown in red. The central (deep) part of the trench is shown in natural colours. To explore the model, see https://models.darklab.lu.se/dig_excav/Forum_Romanum/Forum_Romanum.html. Image by Nicolò Dell'Unto, Stefan Lindgren, Danilo Campanaro and Henrik Gerding.

Archaeological remains under the Basilica Julia

In the following description, we will first treat the evidence from the better-known east trench of Carettoni and Fabbrini (*Fig. 6*). Then follows a brief account of the west trench.

THE FLOOR OF THE BASILICA JULIA

The floor of the Imperial Basilica Julia consisted of two layers; a pavement of coloured marble slabs resting on a layer of *structura caementicia*, about 0.40–0.45 cm thick.[27] Over the northern and central parts of the east trench, this floor had been partly removed or destroyed by looters, looking for reusable material in early modern times. To the south, the excavation proceeded under the intact concrete bedding, leaving it suspended in the air. Beneath the floor, the excavators encountered thick layers of earth fill, which originated from one or several construction phases and contained mainly late Republican material. These layers were partly disturbed by the looters, who in some places had reached a considerable depth. Scarce fragments of Arretine *terra sigillata* and volute lamps of Julio-Claudian type represented the most recent material in the fill.[28]

THE TRAVERTINE PAVEMENT (p)

Slightly below the concrete floor some limited remains of a travertine pavement were preserved *in situ*.[29] Their presence shows that the construction work associated with the concrete floor of the Basilica Julia did not entail a complete excavation of the area, but left parts of an older floor in place. Thus, the central parts of the fill, where undisturbed, should rather be associated with the travertine pavement. However, the limited remains of this pavement indicates that later interventions were extensive, at least in this part of the basilica.[30] The loss of the travertine floor cannot be attributed solely to the scavenge dig.

[27] Carettoni & Fabbrini 1961, 53. For a reconstruction of the Imperial marble floor, see Freyberger 2016a. This floor sloped slightly downwards from west to east, with a difference in elevation of about 30–40 cm.

[28] Carettoni & Fabbrini 1961, 54, 57.

[29] Carettoni & Fabbrini 1961, 57. The level of this floor is presently found at *c.* 13.95 masl. Galli *et al.* (2019a, 18) gives 13.80 masl, but may refer to the bedding of the travertine slabs, rather than their top surface.

[30] Cf. Falzone *et al.* 2019, 3.

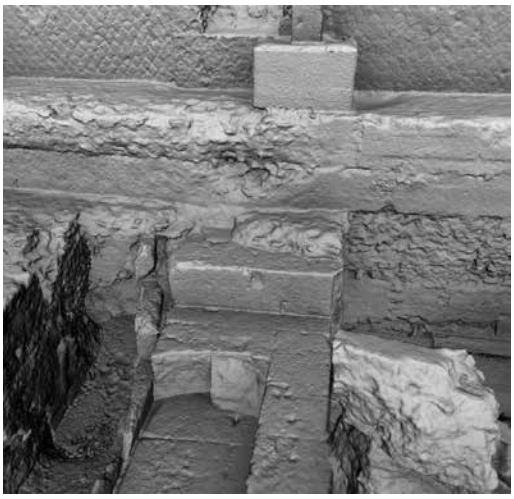


Fig. 7a (above, left). Concrete foundation wall m, east section, partly overlaying ashlar foundation wall F_2. View from the west. Photograph by Henrik Gerding.

Fig. 7b. (above, right) View of digital model, showing corresponding elements. Image by Nicolò Dell'Unto, Stefan Lindgren and Danilo Campanaro.

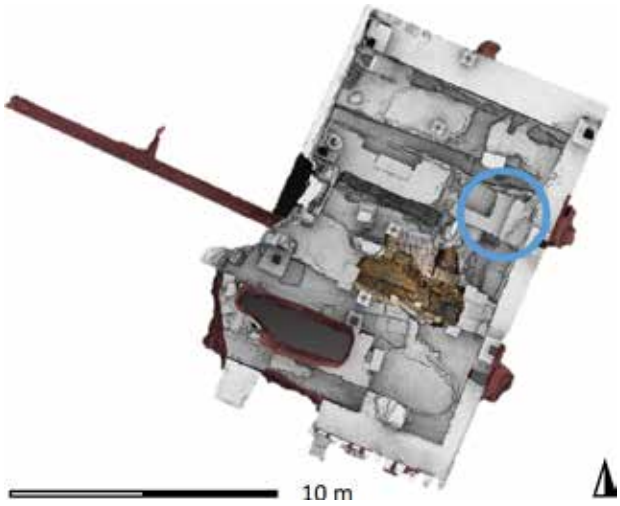


Fig. 7c (right). Orthogonal top view of digital model, with corresponding elements marked. Image by Nicolò Dell'Unto, Stefan Lindgren, Danilo Campanaro and Henrik Gerding.

THE CONCRETE FOUNDATIONS OF THE BASILICA JULIA (f, m)

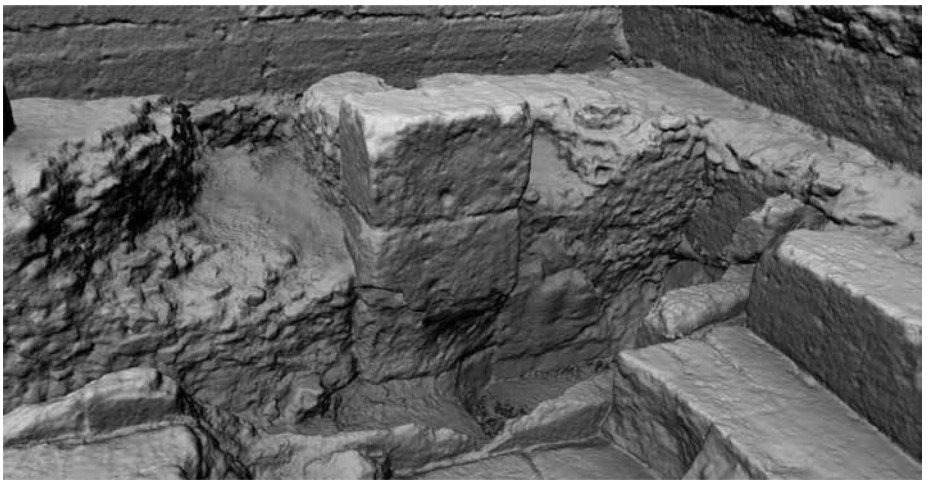
The area explored by Carettoni and Fabbrini was delimited on three sides by the massive concrete foundations of the Basilica Julia. These two-tiered substructures carried the piers that surrounded the central nave of the basilica. The lower part is considerably wider than the upper one and creates a ledge on all three sides. Both levels of the foundations were made of *structura caementicia*, but whereas the upper one (f) was consistently constructed with a facing of *opus reticulatum*, the lower one (m) was cast partly in a trench, partly within a wooden shuttering (*Figs. 7a–c*), except for a section on the south side, which also displays reticulate masonry. These differences provide an indication of the depth to which the site was excavated when the foundations were prepared. The presence of the volute lamps in the adjoining fill indicates that the foundations should be attributed to the Augustan phase.

THE EARLY CONCRETE FOUNDATIONS (α, β, γ)

Next to the north foundation wall (m), another concrete wall (α) was uncovered at a somewhat lower level.[31] Carettoni and Fabrini only mentioned this wall very briefly in their report and did not give it a designation, but it shows on the plan and the accompanying section.[32] The wall is *c.* 1.8 m wide and was cast directly in a trench, without wooden shuttering, reaching a depth of at least 10.10 masl. Undoubtedly, it is a foundation wall that once carried one or several courses of ashlar blocks, the imprints of which can still be discerned. These blocks have all

[31] The top level of this wall ranges from 11.86 masl (in the east) and 12.11 masl (in the west). The difference is partly due to irregularities in the surface, but possibly also indicates that the concrete foundation and the structure it was supporting were sloping along their entire length, perhaps with a slope of up to 1.5–2%.

[32] Carettoni & Fabbrini 1961, 57, figs. 1–2. The designations α, β, γ are introduced by the present authors.



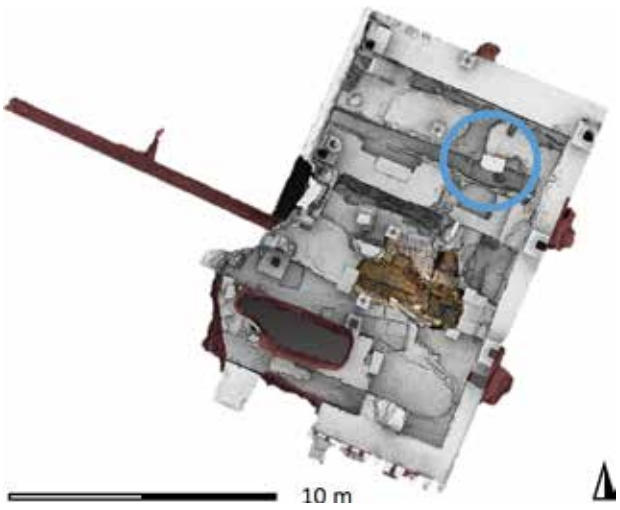


Fig. 8a (above, left). Ashlar structure β, partly incorporated in concrete foundation wall α. View from the south. Photograph by Henrik Gerding.

Fig. 8b (above, right). View of digital model, showing corresponding elements. Image by Nicolò Dell'Unto, Stefan Lindgren and Danilo Campanaro.

Fig. 8c (left). Orthogonal top view of digital model, with corresponding elements marked. Image by Nicolò Dell'Unto, Stefan Lindgren, Danilo Campanaro and Henrik Gerding.

been robbed, but three other blocks (β), which were stacked on top of each other and partly incorporated in the concrete structure, still protrude from the south side of the wall (*Figs. 8a–c*). They are made of *Grotta Oscura tufo* and measure *c.* 0.56 m high, 0.60 m wide and 0.90–0.96 m long.[33] There is a deep furrow cutting across the concrete wall next to the three blocks.

Wall α clearly predates the foundations (m, f) of the Imperial Basilica Julia, as it is cut off and overlain by the latter.[34] The two structures are not perfectly aligned but deviate from each other by about 4°. In the south-east corner of the trench, another concrete structure (γ) can be found that once abutted to wall F_1 (see below) and was later cut by the Imperial foundations (*Figs. 9a–c*). Galli *et al.* have suggested that this structure is contemporary with the concrete foundation wall α to the north,[35] and the present authors draw the same conclusion.

THE ASHLAR FOUNDATION WALLS (F_1 AND F_2)

In the central area of the trench, two more foundation walls run parallel to each other in an approximate east–west direction. These are made in *opus quadratum*. Elongated ashlar blocks made of *Grotta Oscura tufo* are arranged in alternate courses of headers and stretchers. Carettoni and Fabbrini reported the width of both walls as 1.80 m in average, and the distance between them (from axis to axis) as 7.25 m.[36] The present authors measured the south wall (F_1) as *c.* 1.80 (1.76–1.84) m wide and the north wall (F_2) as *c.* 1.62 (1.57–1.67) m wide; the clear distance was found to be *c.* 5.5–5.6 m and the interaxial distance

[33] This structure (β) is interpreted as belonging to the 4th-century BC phase by Galli *et al.* (2019a, 15 fig. 7).
[34] As the trench for wall m was dug, the crossing wall α was removed, rather than being incorporated.
[35] Galli *et al.* 2019a, 15 fig. 7.
[36] Carettoni & Fabbrini 1961, 54.

Fig. 9a (above, left). The south-east corner of the trench. View from the north. In the background, concrete foundation wall m and concrete structure γ (middle). In the centre, the bedding for ashlar foundation wall F_1. In the foreground, the corner of an impluvium. *Photograph by Edoardo Santini.*

Fig. 9b (above, right). View of digital model, showing corresponding elements. Image by Nicolò Dell'Unto, Stefan Lindgren and Danilo Campanaro.

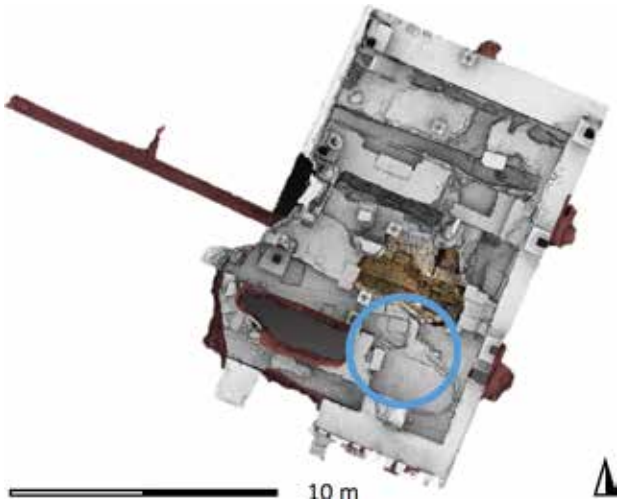
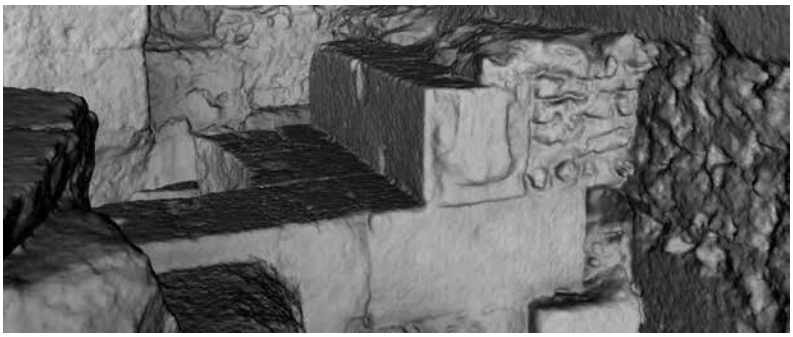


Fig. 9c (right). Orthogonal top view of digital model, with corresponding elements marked. Image by Nicolò Dell'Unto, Stefan Lindgren, Danilo Campanaro and Henrik Gerding.

c. 7.25 m.[37] The blocks in F_1 are 0.54–0.56 m high and 0.48–0.61 m wide, the ones in F_2 0.52–0.54 cm high and 0.50–0.58 m wide. The length of the blocks varies greatly in both walls; the stretchers measure between 1.09 and 1.45 m in length, whereas the headers sometimes extend through the entire thickness of the wall and sometimes consist of two separate blocks meeting roughly in the middle of the wall (*Fig. 7a*).

The two walls have been robbed to different degrees. Wall F_1 is preserved to a maximum height of 13.06 masl (although its extreme eastern part has disappeared completely), while wall F_2 stands up to 11.69 masl. Another significant difference between the two walls is that the former rests on a compacted layer of rubble and clay at 11.41 masl (*Figs. 9a–c*), whereas the latter extends down to a depth of at least 9.60 masl. Yet another course of blocks (headers) is visible below this level, indicating that the footing of the foundation wall is situated at *c.* 9.10 masl (*Figs. 10a–c*). Several blocks have low anathyrosis bands (0.12–0.22 m wide), forming a Π, on connecting surfaces (*Figs. 11a–c*). Six header blocks of wall F_1 and one (or possibly two) in wall F_2 exhibit mason's marks. These are discussed in detail in the *Appendix*. The orientation of the walls diverges by less than 1° from the Imperial foundations (m, f) but more than 3° from the early concrete foundation (α). They obviously predate both concrete foundations, since they are cut off and partly overlain by one (m, f) and have left an imprint in the other (γ). It should be noted that the early concrete wall (α) must have cut wall F_2 obliquely further west, due to their different orientation.

[37] The dimensions and lateral positioning of the blocks are rather irregular, even if the joints are carefully executed, which makes the measuring quite difficult. We have excluded the most anomalous blocks from the range of measurements, since they distort the picture. For example, a header block in F_1, measuring 1.59 m in length, was most probably intended for F_2. Galli & Ismaelli (2019) gives the width of the walls as 1.60–1.90 m and the distance between them as 5.70 m.



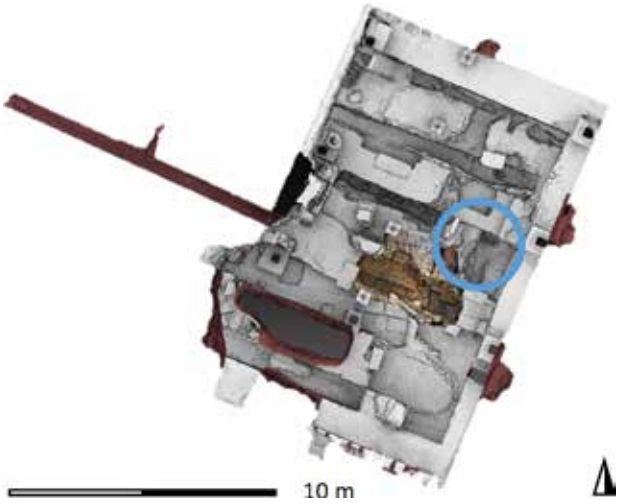


Fig. 10a (above, left). South side of ashlar foundation wall F_2. View from the south. Note that a fifth course of blocks is visible at the bottom. The block furthest to the right in the fourth course has been cut to accommodate the foundation trench for concrete foundation wall m. Photograph by Henrik Gerding.

Fig. 10b (above, right). View of digital model, showing corresponding elements. Image by Nicolò Dell'Unto, Stefan Lindgren and Danilo Campanaro.

Fig. 10c (right). Orthogonal top view of digital model, with corresponding elements marked. Image by Nicolò Dell'Unto, Stefan Lindgren, Danilo Campanaro and Henrik Gerding.

THE DRAINAGE CHANNELS (CL, c_1, c_2, c_3, c_4)

A covered drainage channel (CL), 0.58–0.60 m wide and 1.55–1.60 m high internally, ran between and nearly parallel to walls F_1 and F_2, with a divergence of about 1°. Within the east trench the channel has been almost completely demolished and robbed,[38] but to the west a 12-m-long section remains completely intact. It has a slope of *c.* 2%. At a distance of 20.3 m from where the east section of the Imperial foundations (m) cuts the channel, it has been blocked by another structure. According to Carettoni and Fabbrini this is the sewer of Pope Alexander VI (built around AD 1500), which traversed the Forum from north to south and cut through the foundation walls of the Basilica Julia, as well as the drainage channel under the central nave.[39] The walls of the channel are made of two courses of ashlar blocks of varying length. The height and width, as well as the quality of the stone, is consistent with the blocks in walls F_1 and F_2.[40] The roof consists of stone slabs leaning against each other (*a cappuccina*).

Three tributary channels (c_1, c_2, c_3) were connected to the main channel, situated *c.* 6 m apart. Channel c_1 is poorly preserved and c_3 is not yet excavated. All the visible remains are confined to the area between the main channel (CL) and the northern foundation wall (F_2). Again, the walls are built of the same kind of blocks, but this time they only constitute a single course. c_2 and c_3 are covered by slabs leaning against each other *a cappuccina*, but the openings in the wall of the main chan-

[38] Since this area was partly covered by travertine pavement, the destruction must have been caused mainly by tunnelling looters.

[39] Carettoni & Fabbrini 1961, 57. Cf. Scardozzi *et al.* 2020.

[40] As also noted by Iacopi (1993, 188).

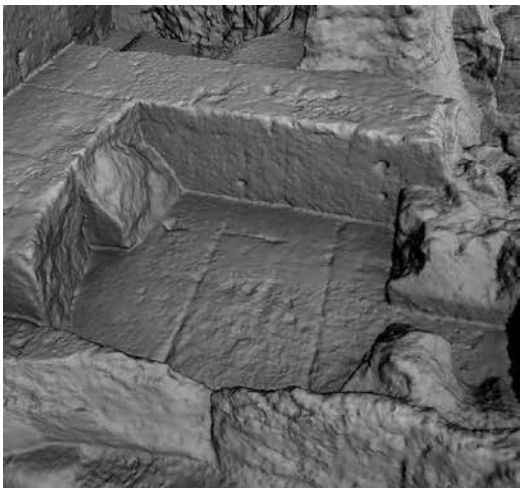


Fig. 11a (above, left). Detail of ashlar blocks in foundation wall F_2. View from the north. Photograph by Henrik Gerding.

Fig. 11b (above, right). View of digital model, showing corresponding elements. Image by Nicolò Dell'Unto, Stefan Lindgren and Danilo Campanaro.

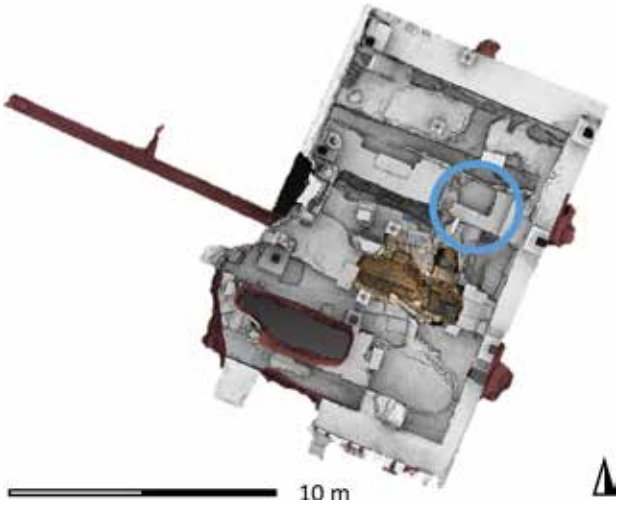


Fig. 11c (right). Orthogonal top view of digital model, with corresponding elements marked. Image by Nicolò Dell'Unto, Stefan Lindgren, Danilo Campanaro and Henrik Gerding.

nel are cut as arches.[41] The internal width is *c.* 0.45 m and the height *c.* 0.96 m. The slope, 15–18%, is unusually steep.

There is also another channel (c_4), which does not belong to the same drainage system. It was built of *cappellaccio* blocks and tightly fitted against the north side of foundation wall F_2, although it diverges slightly from the wall at the eastern end (*Figs. 12a–c*). The floor consists of a row of rectangular slabs, at least 65 cm wide, and the remaining south wall of up to three courses of blocks of varying length, *c.* 0.45 m high and half as thick. The walls probably carried a horizontal cover. There might have been additional courses, now lost, but the estimated internal dimension (at least 0.50 × 1.30 m) would probably have been sufficient to allow maintenance. The exposed part of the channel has a slope of 4–4.5%, with a floor level ranging from 10.70 to 10.35 masl. It must have been built after wall F_2, but seems to have been partly destroyed in connection with the construction of foundation wall *α*. Some of the most recent artefacts recovered in the fill, possibly dating to the Augustan period (see above), were found in this channel.[42]

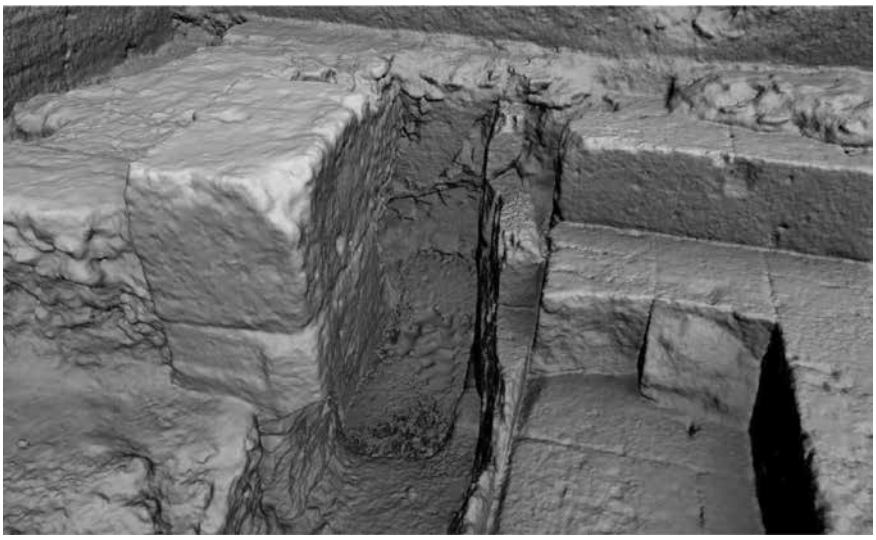
THE SO-CALLED "HOUSE OF SCIPIO"

Below wall F_1 and channel CL, Carettoni and Fabbrini encountered various structural remains made of *peperino* or *cappellaccio* blocks, which all have the same orientation and probably belong to the same building. Among them is the corner of what they interpreted as an *impluvium*.[43] The preserved width

[41] The description given by Carettoni & Fabbrini (1961, 57) is slightly misleading.

[42] Carettoni & Fabbrini 1961, 57. The width of the channel is here estimated to have been 0.60 m.

[43] Carettoni & Fabbrini 1961, 57.



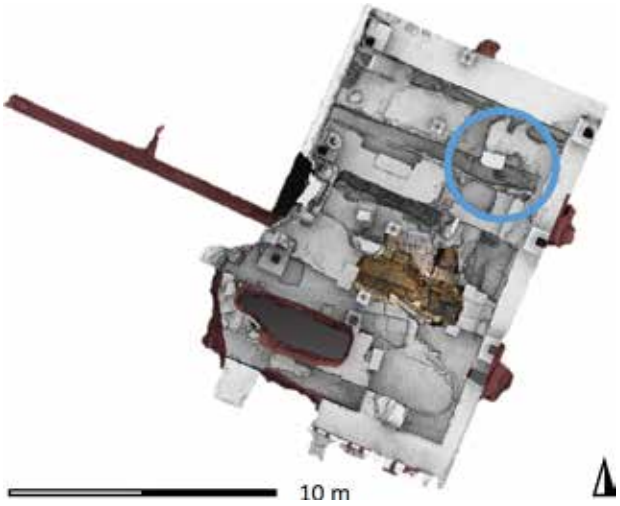


Fig. 12a (above, left). South wall of drainage channel c_4 between ashlar foundation wall F_2 (right) and concrete foundation wall α (left). View from the west. All three walls are overlain by concrete foundation wall m. Photograph by Henrik Gerding.

Fig. 12b (above, right). View of digital model, showing corresponding elements. Image by Nicolò Dell'Unto, Stefan Lindgren and Danilo Campanaro.

Fig. 12c (left). Orthogonal top view of digital model, with corresponding elements marked. Image by Nicolò Dell'Unto, Stefan Lindgren, Danilo Campanaro and Henrik Gerding.

of this structure is *c.* 1.40 m, whereas the preserved length is at least 6.70 m, perhaps as much as 7.15 m, which would make it an unusually large *impluvium*.[44] These remains were not further discussed in the preliminary report, but the alleged *impluvium* soon became associated with the house of P. Scipio Africanus, mentioned in Livius 44.16.9–11 (see above).[45] In 2016, Klaus Freyberger took a more careful stance, calling it merely a "building with a courtyard".[46] Galli *et al.* first described it as "a large public building with an atrium",[47] but later reverted to the traditional interpretation of a domestic house.[48] They also provide a tentative reconstruction of the layout of the house.[49]

THE DEEP SECTION (INCLUDING AN EARLY WALL)

A deep trench (*c.* 1 × 4 m) was excavated by Fabbrini in the only place that was not obstructed by architectural remains, i.e. the razed part of the main channel CL (*Figs. 13a–c*). It extended to a depth of 6.07 m below the floor of the Basilica Julia but

[44] Galli & Ismaelli (2019, 206) give the minimum dimensions 3.70 × 7.70 m, and suggest that it originally measured 5.20 × 9.15 m. Filippi (2020, 118) records the preserved length as 6.50 m, but still finds it excessive and opens up the possibility that it might not be an *impluvium*. Nevertheless, she prefers to interpret the building as a *domus*.

[45] See e.g. Coarelli 1975, 82.

[46] Freyberger 2016a, 64.

[47] Galli *et al.* 2018, 553. Cf. Falzone *et al.* 2019, 2.

[48] Galli *et al.* 2019a, 17, 19; 2019b, 667; Galli & Ismaeli 2019.

[49] Galli *et al.* 2019a, 18 fig. 9. Note that structure β is seen as part of this house (Galli *et al.* 2019a, 15 fig. 7).

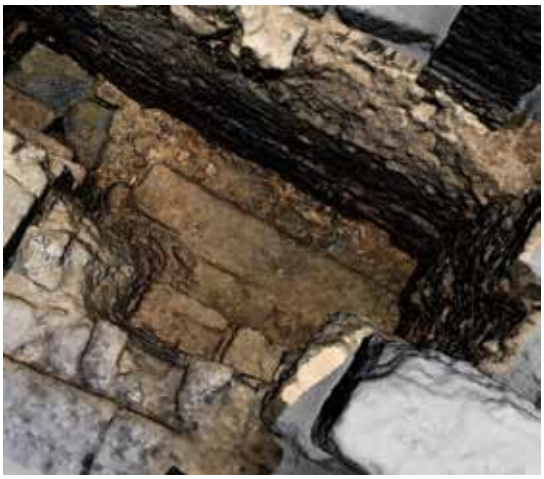
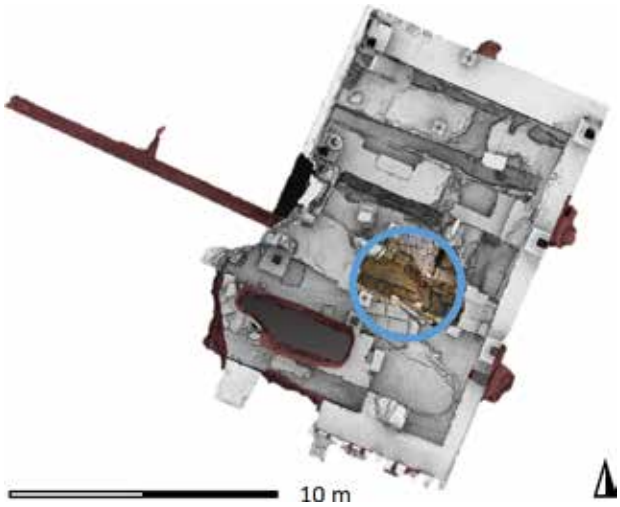


Fig. 13a (above, left). The deep section in the east trench below the Basilica Julia. View from the north-west. Photograph by Nicolò Dell'Unto.

Fig. 13b (above, right). View of digital model, showing corresponding elements. Image by Nicolò Dell'Unto, Stefan Lindgren and Danilo Campanaro.

Fig. 13c (right). Orthogonal top view of digital model, with corresponding elements marked. Image by Nicolò Dell'Unto, Stefan Lindgren, Danilo Campanaro and Henrik Gerding.



did not reach virgin soil.[50] Close to the bottom of the trench, Fabbrini encountered a row of ashlar blocks. The orientation of this structure coincides with that of the early concrete wall (α). A stratigraphic sequence, comprising twelve strata, was documented by the excavator but not fully published in the preliminary report. For a discussion of the strata, see below.

THE WEST TRENCH

A second trench was opened within the central aisle of the Basilica Julia in 1962. It remained open for several decades, periodically covered by a protective roof, before it was backfilled in the late 1980s or early 1990s. There is no published report on this part of the excavation, only some indirect information. Filippi gives the length of the Basilica Sempronia as at least 39.70 m.[51] This deduction must stem from the distance between the eastern limit of the east trench and the western limit of the west trench. Both trenches are shown in a small plan published by Freyberger,[52] which likewise indicates that the total distance corresponds to *c.* 40 m. Freyberger's plan suggests that the west trench was approximately 10.4 × 8.9 m, which can be reconciled with the measurements given by both Galli *et al.* and Filippi: *c.* 10 × 10 m.[53] The size and location is corroborated by photographs of the west trench from the 1980s, where the continuation of the main channel

[50] Carettoni & Fabbrini 1961, 58f. Today, this distance measures *c.* 5.70 m, but it is likely that the trench has filled up slightly.

[51] Filippi 2017, 162.
[52] Freyberger 2016a, 64 fig. 2.
[53] Galli *et al.* 2019a, 3; Filippi 2020, 115.

Fig. 14. Reconstruction of the Basilica Sempronia and the Tabernae Veteres, presented by the Digitales Forum Romanum *project (http://www.digitales-forum-romanum.de). View from the north-east.*
© digitales-forum-romanum.

CL is clearly visible.[54] The continuation of wall F_2 was also encountered in this trench,[55] and is recorded in the plan of Freyberger. The plan correctly shows that channel CL was not parallel to walls F_1 and F_2, but it appears to exaggerate the deviation compared to the measurements obtained by the present authors (*c.* 1°).

Previous interpretations and architectural reconstructions

Since the remains below the Basilica Julia were first discovered, several attempts of reconstructing the Basilica Sempronia have been made. However, it should be noted that until recently they were all based on the same preliminary report written by Carettoni and Fabbrini.

In their brief report, Carettoni and Fabbrini tentatively suggested that the two foundation walls (F_1 and F_2) belonged to the original Basilica Sempronia,[56] an identification that has been universally accepted. They also attributed the drainage system (CL, c_1, c_2, c_3) and the travertine pavement (p) to the same building phase.[57] The walls are interpreted to have carried colonnades (in analogy with a similar wall found under the Basilica Aemilia).[58] According to the excavators, the tributary channels (c_1, c_2 and c_3) stopped at the north foundation wall (F_2), where they received water from vertical shafts. These would have been cut into the face of the wall, as c_1 and c_2 leave no room for built shafts beside the wall. Although the report does not elaborate on this particular issue, a logical consequence of their interpretation must be that the basilica had either a hypaethral hall or an open (colonnaded) clerestory, which let in some rainwater. However, the latter scenario would hardly have necessitated such an extensive drainage system in the interior of the basilica, with collection points every six metres.

John Stambaugh illustrated his discussion on the topography of the Republican Forum with a reconstructed (axonometric) bird's-eye view, which has been reproduced in various contexts.[59] The drawing suggests that the Basilica Sempronia was a freestanding clerestory building, surrounded on all sides by exterior colonnades. It is situated behind the Tabernae Veteres but does not extend all the way from the Temple of Castor and Pollux to the Temple of Saturn; there is another building depicted to the west of the basilica and an open area to the east. The accompanying text does not discuss the layout of the basilica, and the illustration should probably be seen as an artistic impression.

The *Digitales Forum Romanum* portrays the Basilica Sempronia as a closed building with a single gable roof, extending from one end to the other without a clerestory (*Fig. 14*).[60] The system of interior supports does not show in this view, but it is likely that the reconstruction entails three parallel aisles. The building is placed on a high stepped *krepis*, with three entrances on the east façade. It occupies the entire length of the Forum but is situated behind and separate from the Tabernae Veteres. The website does not offer a discussion on the proposed reconstruction but repeats the assumption that the two foundation walls carried internal columns.[61]

In a paper from 2010, Diane Favro and Christopher Johanson present a schematic 3D reconstruction of the Forum as it would have appeared in 160 BC.[62] The basilica is represented as a clerestory building with a gable roof over the raised central nave, surrounded by a flat terrace roof at a lower level. The Tabernae Veteres seem to be incorporated in the building. Since the buildings are shown as solid volumes, the model does not indicate to what extent the exterior of the basilica

[54] See e.g. https://www.jstor.org/stable/community.15997337 (Artstor).
[55] Falzone *et al.* 2019, 4 fig. 2.
[56] Carettoni & Fabbrini 1961, 59. This identification was later reaffirmed (Carettoni 1979, 211).
[57] Carettoni & Fabbrini 1961, 57.
[58] Wall α. For the remains under the Basilica Aemilia, see Carettoni 1948.
[59] Stambaugh 1988, 112 fig. 8.
[60] http://www.digitales-forum-romanum.de.
[61] Cf. Bartz 2014, 28 September.
[62] Favro & Johanson 2010, figs. 5, 7, 10–11.

was open (colonnaded or arcaded). Again, the reconstruction is not discussed *per se*.

The atlas of ancient Rome treats the Basilica Sempronia both in text and in plans: "The building stood behind the *tabernae argentariae veteres* and occupied approximately 1591 square meters. It was an elongated rectangle, probably similar to the shape of the basilica of Ardea. Two foundations from the monument remain today, delimiting a *spatium medium* described by Vitruvius, about 7.10 meters wide and at least 39.70 meters long."[63] Filippi, the author of this text, concludes that the basilica did not extend all the way to Vicus Jugarius, since Livius only mentions a few buildings being purchased by the censor.[64] In the accompanying plans, the Basilica Sempronia appears to be conceived as a building with a central nave and an internal ambulatory colonnade.[65] The columns would have been carried by the two foundation walls F_1 and F_2. The basilica attaches directly to the Tabernae Veteres but is indicated as a separate edifice. It has a row of *tabernae* also along its east façade.

According to Freyberger, the basilica incorporated the Tabernae Veteres as an integrated part of the building.[66] This complex extended all the way from Vicus Tuscus to Vicus Jugarius and thus occupied almost the same area as the Caesarean and the Augustan basilicas. The proposed plan shows a central nave (or a courtyard?) with surrounding aisles (or porticoes?) on three sides and a row of *tabernae* on the fourth (north) side. It is unclear from the plan whether the peripheral spaces constituted an interior or exterior colonnade (or whether they were open/closed on both sides), but it is suggested in the text that the building was arcaded from the beginning. In this reconstruction, the walls F_1 and F_2 are interpreted as the foundation walls of the south aisle or portico, not the central nave or courtyard. It should also be noted that the tributary drains (c_1, c_2, c_3) are believed to have extended all the way to the Forum, having their inlets in front of the *tabernae*.

In several recent papers by Galli and others, the work of Carettoni and Fabbrini is partly reassessed. One of them re-establishes that the two foundation walls (F_1 and F_2) belonged to the Basilica Sempronia, just as the drainage channel (CL), and that they formed the central nave of the basilica.[67] Another paper reports that the same walls can be dated to the second quarter of the 2nd century BC from pottery finds, and suggests once more that they carried the colonnades of the central nave.[68] It is also stated here that geophysical investigations indicate a three-aisled building measuring *c.* 20 × 60 m, and that the basilica would have been physically separated from the Tabernae Veteres to the north. The results from the geophysical investigations are presented in detail in a separate paper.[69] Unfortunately, there are few indications of the layout of the Basilica Sempronia in this report, although the authors draw the preliminary conclusion that the basilica did not extend to the Forum square to the north, nor to the Vicus Jugarius to the west.

Before we examine the evidence for the layout of the Basilica Sempronia in detail, we will briefly summarize and discuss the spatial context, both before and after the construction of the basilica in 169 BC. This summary provides an important background for the interpretation of the evidence.

The spatio-temporal context

THE FORUM PAVEMENTS AND THE CLOACA MAXIMA

A common starting point for discussions on the early history of the Forum is the stratigraphy recorded by Boni and Gjerstad next to the so-called Equus Domitiani (*Fig. 3*). Although the interpretation of this data is highly disputed, we will take Gjerstad's observations as a point of departure.[70] In the upper part of the trench, the excavators recorded the beddings for six consecutive stone pavements from the Republican period; in the lower part, three pebble pavements were identified, attributable to the Regal period. These latter three correspond to Gjerstad's strata 20, 21 and 22a, with their upper surfaces at 9.26–9.39, 9.13–9.22 and 8.89–9.03 masl respectively.[71] Whereas the earliest of Gjerstad's "Regal pavements" (stratum 22a) has been given various dates between 575 and 675 BC,[72] the third one (stratum 20) is usually dated to the end of the 6th century BC.

During the same period the natural stream that once traversed the Forum valley was replaced by the Cloaca Maxima.[73] This artificial channel entered the Forum from the north-east, close to the shrine of Venus Cloacina. The section leading up to this point was later replaced and is often referred to as the

[63] Filippi 2017, 162. Vitruvius (5.1.5) describes a building with a central nave (*spatium medium*) and a surrounding aisle.
[64] Filippi 2017, 195 n. 436.
[65] Carandini 2017, vol. 2, tab. 15, 19.
[66] Freyberger 2016a, 64f., fig. 2.
[67] Galli *et al.* 2019a, 19.
[68] Galli & Ismaelli 2019, 206.
[69] Scardozzi *et al.* 2020.
[70] For a recent re-evaluation of the stratigraphy, see Filippi 2020.
[71] Gjerstad 1953, 31, 33, 42f., figs. 8–9. The question of a possible earlier pebble pavement is left out of this discussion (cf. Ammerman & Filippi 2004, 23; Filippi 2017, 151).
[72] Gjerstad 1953, 73 (*c.* 575 BC); Carafa 1996, 17 (*c.* 650 BC); Hopkins 2016, 29, 32 (*c.* 600 BC); Filippi 2017, 153 (675–650 BC).
[73] The construction of the Cloaca Maxima is associated with both Tarquinius Priscus and Tarquinius Superbus (Liv. 1.38.6; 1.56.2; Dion. Hal. 3.67.5; 4.44.1). According to Bianchi (2010, 8), it was completed in the 520s BC.

braccio morto.[74] Having passed the aforementioned shrine, the channel turned south in the direction of the Vicus Tuscus and the Velabrum, crossing the central Forum area obliquely. Although it underwent several repairs and alterations, it is likely to have remained an open channel, at least until 193 BC, when Plautus mentions it as a visible landmark in the Forum area.[75] The extent to which the original construction is preserved in the present structure is a matter of debate. Thus, we can only speculate on whether the level of the channel floor was ever raised. Still, a reasonable estimate would be that the bottom of the original channel was situated at about 8 masl in the central Forum area, with a difference of about 20–25 cm from one side of the Forum to the other.[76] Thus, the channel would have had a depth of *c*. 0.8 m in relation to the first Regal pavement (stratum 22a) and a depth of *c.* 1.2 m in relation to the third Regal pavement (stratum 20).[77]

The construction of the third Regal pavement and the (more or less) contemporary Cloaca Maxima constituted the final stages of an enormous landfill project, which aimed at raising the ground level of the Forum valley above the level of seasonal inundation, at about 9 masl.[78] This was a prerequisite for any permanent use of the central Forum area. Before that, major building activities were concentrated to the surrounding slopes and outcrops, such as the ones occupied by the Comitium, the Temple of Saturn and the Temple of Castor and Pollux. However, more severe floods would still have affected the Forum occasionally. Thus, another significant increase of the ground level was made in the mid-5th century BC in connection with the construction of the first Republican pavement (stratum 18), which would have been situated at *c.* 10 masl at the Equus Domitiani.[79] The next repaving was carried out after the Gallic sack of 387/6 BC, according to Gjerstad (stratum 16), and would have raised the Forum floor by another 35–40 cm.[80] In conjunction with the major refurbishment of the Forum, undertaken after 338 BC, a new pavement was laid at about 10.86 masl (stratum 13).[81]

The continuous raising of the ground level would have made it necessary to add new shoulder blocks on either side of the Cloaca Maxima and, as mentioned above, we should not discount the possibility that the bottom was raised as well. Eventually, however, the channel was covered up. This was probably done in connection with the construction of the fourth Republican pavement,[82] which is situated about 11.43 masl (stratum 9).[83] This intervention represents one of the greatest raises of the Forum floor that occurred during the Republican period and may have been prompted by the roofing of the Cloaca Maxima, or *vice versa*. Gjerstad dated the pavement to the early 2nd century BC and the testimony of Plautus would suggest a date after 193 BC.[84] Indirectly, the project can be seen as a consequence of the great fire in 210 BC, which destroyed many of the buildings around the Forum,[85] but more specifically, it may be connected to the erection of the Tabernae Novae or the Basilica Fulvia.[86] Either way, it is unlikely that these buildings did not relate somehow to the new, higher, pavement.

THE SITE OF THE BASILICA SEMPRONIA BEFORE 169 BC

In the deep section beneath the Basilica Julia, excavated by Fabbrini in 1960, the stratigraphy is still clearly visible, once the infiltrating groundwater has been pumped out (*Figs. 13a–c*). In the south-east corner, close to the bottom of the trench, a thin layer of smooth pebbles is distinguishable, situated at *c.* 9.30 masl (stratum XII).[87] It resembles the pebble pave-

[74] In its earliest phase the Cloaca Maxima passed to the west of the small shrine. Walls have been found under the Tabernae Novae, which seem to have stood on either side of the Cloaca Maxima and been aligned to it (Freyberger *et al.* 2007, 495, fig. 5; Freyberger 2016b, 45, *Beilage* 2). They most likely date from before the fire in 210 BC. Whether or not they belong to early *tabernae*, their orientation clearly deviates from that of the later Tabernae Novae, which accords with the later phase of the *braccio morto*. The change in the course of the *braccio morto* may have occurred before or after the fire. Either way, the adjustment of the channel appears to be motivated by the buildings on the north side of the Forum having been given a new orientation.

[75] Plaut. *Curc.* 476. For the date of this play, see Slater 1987. Bianchi (2010) argues that the channel was covered from the Regal period (cf. Carafa 1996, 11–13). However, the suggested reconstruction would place the top of the channel at 10.30 masl, a level that was only reached with the second Republican pavement.

[76] Calculating with a modest slope of 0.25–0.30%.

[77] Cf. Hopkins 2007, 10. The central Forum area was probably sloping slightly towards the Cloaca Maxima. Thus, somewhat lower levels are projected for the pavements than measured by Gjerstad at the Equus Domitiani.

[78] Ammerman 1990; Hopkins 2007.

[79] Gjerstad 1953, 33, 42, 74. We add 15–20 cm to the levels given by Gjerstad, to account for the missing pavement slabs.

[80] Gjerstad 1953, 33, 75.

[81] Gjerstad 1953, 33, 79. This may correspond to the pavement of *cappellaccio* slabs identified by Van Deman (1922, 4–7) in many places around the Forum at 10.60–10.90 masl. However, considering the varying levels, block sizes and orientations, it is likely that these scattered finds derive from different pavements/periods.

[82] Richardson 1992, 172.

[83] Gjerstad 1953, 33, 81.

[84] Cato is supposed to have surfaced the Forum with gravel in 184 BC to prevent loitering (Pliny *HN* 19.24), but the story may be a fabrication, meant to illustrate the austerity of Cato. Davies (2017, 133) sees it as a mere threat.

[85] Liv. 26.27.1–5.

[86] Davies (2017, 131) places the (re)construction of the Tabernae Novae at 193 BC.

[87] According to Galli *et al.* (2019a, 3), quoting Carettoni & Fabbrini 1961, 59–60, the trench reached layers belonging to the earliest period of the Republic, at a depth of 9.18 masl. Carettoni & Fabbrini (1961, 59)

ments identified by Boni and Gjerstad next to the so-called Equus Domitiani, and it may be conjectured that it constitutes the continuation of one of these pavements (most likely stratum 20).[88] It could also be related to the pavement that was recorded/hypothesized on the west side of the Temple of Castor and Pollux at about 9.40 masl, although this would have been situated on the other side of the Cloaca Maxima.[89]

Immediately above this level, in stratum XI, Fabbrini encountered the remains of a wall, consisting of a single row of 44-cm-wide tuff blocks (top level 9.58 masl; bottom level 9.26 masl).[90] Since we are likely dealing with a foundation wall, it is probably not related to the pebble pavement mentioned above, but some higher level, and a date closer to the middle of the 5th century BC seems most likely. Galli *et al.* suggest that the Temple of Castor and Pollux determined the orientation of this wall.[91] The wall is interpreted by them as belonging to a monumental building, dated to the early 5th century BC.[92] However, similar walls, at the same approximate level and with the same width, have been found further east, next to the Temple of Castor and Pollux, presumably preceding it.[93] Furthermore, the orientation of the wall in stratum XI does not match that of the temple perfectly. Instead, it can be noted that the orientation of the wall coincides with that of the early concrete foundation (α). Even before the Temple of Castor and Pollux there was probably another structure that would have had a significant impact on the layout of the area: a retaining wall holding back the huge Archaic landfill in the Forum valley, as suggested by John Hopkins.[94] Although we have no physical evidence of a monumental terrace wall, separating the raised Forum floor from the lower Velabrum, its existence is a logical consequence of the data at hand and is supported by many parallels. This hypothetical wall would have been situated only a small distance to the south of Fabbrini's trench and probably determined the orientation of the early buildings in the area.

The Tabernae Veteres, a row of shops/stalls along the south side of the Forum Romanum, probably goes back at least to the late 4th century BC. Perhaps they were contemporary with the Tabernae Argentariae on the north side of the Forum, believed to have been built in 318 BC, but they may be older.[95] It is therefore possible that they adhered to the same orientation as the Archaic structure found in Fabbrini's deep trench, thus being parallel to the suggested monumental retaining wall. Admittedly, this is a tenuous hypothesis, but it would explain the repeated occurrence of this orientation.

The so-called "House of Scipio" (dated to the early 4th century BC by Galli *et al.*)[96] had quite a different orientation though. The house probably had its main entrance towards the Vicus Tuscus,[97] and it is also likely that its main façade was situated close to the Cloaca Maxima, which passed in front of the house. Considering how the present channel turns sharply before it passes below the Augustan Basilica Julia, it is reasonable to assume that the line of the Cloaca Maxima was adjusted to accommodate for the foundations of this building (or one of its predecessors).[98] It is therefore a distinct possibility that the orientation of the Cloaca Maxima once determined the orientation of the "House of Scipio" and by extension the orientation of its *impluvium*.[99] From a passage by Livius (44.16.9–11 quoted above) we can deduce that there were butchers' stalls and other shops in the close vicinity of

state that the trench proceeded to 8.62 masl, whereas we measured the bottom of the trench at 8.98 masl. It is probable that the trench originally was deeper than it is today, and that it has filled up with sedimentations of mud, due to the constant presence of water.

[88] The excavators did not mention this particular layer in their preliminary report, but point to the parallels between this stratigraphy and that of Boni/Gjerstad (Carettoni & Fabbrini 1961, 60). Neither is it mentioned by Filippi (2020), who provides a detailed analysis of this stratigraphy on the basis of previously unpublished drawings by Fabbrini. Thus, further investigations are necessary to validate this observation.

[89] Nielsen 1990, 101; Nielsen & Poulsen 1992, 75, pl. 11. Nielsen tentatively connects Archaic walls standing on this pavement to the wall found in Fabbrini's deep trench.

[90] Carettoni & Fabbrini (1961, 59) give the level of the wall as a range: 9.57–9.45 masl, which is somewhat misleading.

[91] Galli *et al.* 2018, 554. According to Roman tradition, the Temple of Castor and Pollux was vowed in 499 or 496 BC and completed in 484 BC (Liv. 2.20.12, 2.43.5; Dion. Hal. 6.13). It is generally believed that the building had a great impact on the future orientation of the Forum. See e.g. Nielsen 1990, 101.

[92] In other publications the building is interpreted to have had residential functions (Galli *et al.* 2019b, 667). Filippi (2017, 55; 2020, 117), preferring a date in the 6th century BC, first interpreted it as a domestic house, assuming a continuation in the use of the area until the time of Scipio Africanus, but later chose to leave the question open. Freyberger (2016a, 64) describes the row of blocks as the base for a drainage channel.

[93] See note 89 above.

[94] Hopkins 2016, 30–32.

[95] Coarelli 1985, 142–146, 149. Often, the *tabernae* are seen as originating from the Regal period (See e.g. *LTUR* III [1996], 15 s.v. Tabernae Veteres [E. Papi]). Even if this were true, though, they would probably have been rebuilt, as the Forum floor was repeatedly raised.

[96] Galli *et al.* 2019a, 5; 2019b, 667; Falzone *et al.* 2019, 2. Filippi (2020, 118) places it "before the 3rd century BC."

[97] Filippi 2017 *pro*; Galli *et al.* 2019a *contra*. Many reconstructed plans of the mid-Republican Forum area indicate an entire row of small atrium houses along the south side of the Forum, facing either north or south (Stambaugh 1988, 112 fig. 8; *Digitales Forum Romanum*; Favro & Johanson 2010, 18 fig. 9; Russell 2016, xviii map 2). These must be considered entirely hypothetical.

[98] The section of the Cloaca Maxima that passes under Basilica Julia can be dated mainly to the Augustan period, but Bauer noticed parts made in *Grotta Oscura tufo*, which he tentatively associated with the Basilica Sempronia (*LTUR* I [1993], 289 s.v. Cloaca, Cloaca Maxima).

[99] If the Cloaca Maxima was an open channel at this time, it would have effectively divided the Forum in two parts, reducing the impact that the Temple of Castor and Pollux had on the orientation of buildings on the other side.

the house. They may have been situated along its front, facing the Vicus Tuscus, but most likely Livius is talking of separate structures further to the west.

THE DEVELOPMENT OF THE BASILICA SEMPRONIA AFTER 169 BC

Based on the literary sources, it is generally assumed that the Basilica Sempronia was demolished to make way for an entirely new building, commissioned by Julius Caesar.[100] Furthermore, it has often been assumed that the basilica begun by Caesar had the same approximate dimensions and layout as the later Basilica Julia, erected by Augustus after a fire in 14, 12, 9 or 7 BC.[101] This is probably due to the apparent lack of any archaeological evidence pointing to the contrary, although the *Res Gestae* does state that Augustus extended the site (see quote above). Filippi takes a slightly different stance, describing the work of Caesar as a restoration or reconstruction of the existing basilica.[102] Although the accompanying plans show a building (identified as Vitruvius' Basilica Julia Aquiliana) that is larger than the Basilica Sempronia, they also imply that this basilica was thoroughly remodelled by Augustus.[103] A particularly elusive question concerns the fate of the Tabernae Veteres: did the construction of the Caesarean basilica involve the removal of the *tabernae*? Were they replaced by new shops on the south side of the basilica at this stage, or did it happen at some later point in time?[104] These questions aside, the Old Shops mentioned by Livius (see quote above) most likely predate the fire in 210 BC and therefore should be related to the third Republican pavement, going back to the 4th century BC.[105] Even before any intervention by Caesar, the floor of the central Forum area had been raised more than 1 m, which would have compromised the use of the shops. It therefore seems likely that the Tabernae Veteres had already been rebuilt before Caesar, perhaps in the Sullan period.

Freyberger has recently presented an interpretation of the building phases of the Basilica Julia and its predecessors.[106] This account is characterized by a relative independence from the literary sources. Instead, the archaeological remains and, in particular, preserved architectural elements form the basis for the interpretation of the development of the building. In all, Freyberger identifies eight distinct phases:[107]

1. The earliest layers date from *c.* 500 BC, including a structure that probably constitutes the base of a channel. (This probably refers to the row of blocks found in Fabbrini's deep trench.[108])
2. A building with a courtyard probably existed in the 4th century BC. (This refers to the so-called "House of Scipio".)
3. The Basilica Sempronia was built from 170 BC over an extensive drainage system.
4. The façade of the basilica was embellished with half columns on all sides in the second half of the 2nd century BC.
5. The basilica was completely rebuilt in the first half of the 1st century BC, and thus attained its final layout.
6. In the Caesarean period the basilica was clad with marble.
7. Further embellishments were made in the Augustan period.
8. The basilica was renewed after a fire in AD 283.

This narrative differs from standard accounts in that it presumes a major reconstruction in the first half of the 1st century BC, unknown from the literary sources, whereas the Caesarean and Augustan phases are both seen merely as minor refurbishments.

Even more recently, Galli *et al.* have suggested that the early concrete structures in the east trench (designated α and γ in this paper), should be dated to the Caesarean period.[109] Regardless of whether this date is correct or not, these structures definitely represent a separate building phase (henceforth referred to as the Intermediate Basilica), between the Sempronian and the Augustan ones, and they offer a new perspective on the development of the basilica. By going back once more to the remains that Carettoni and Fabbrini uncovered in 1960 and discussing them in detail, we hope to throw some light on this issue.

Analysis of the architectural evidence

THE ASYMMETRY OF THE FOUNDATION WALLS

The two main elements associated with the Basilica Sempronia, walls F_1 and F_2, are usually interpreted as the foundations for the central nave in a three-aisled building. No argument in

[100] See e.g. Carettoni 1979, 211.
[101] See e.g. Coarelli 1975, 81; Liverani 2008, 43; Bartz 2014, 28 September; Davies 2017, 261, fig. 7.10. Regarding the date of the fire, see note 10 above.
[102] Filippi 2017, 167.
[103] Carandini 2017, vol. 2, tab. 24.
[104] A passage from Cicero (*Acad. post.* 2.70) is often seen as an indication that the shops still existed in the mid-1st century BC (see e.g. *LTUR* V [1999], s.v. Tabernae Veteres, 15 [E. Papi]). Lauter (1982, 449 n. 11) states that it cannot be determined whether the Tabernae Veteres were relocated to the back of the basilica by Caesar or Augustus. In their present form, however, the rear shops should probably be attributed to the late Imperial phase.
[105] Gjerstad 1953, 79.
[106] Freyberger 2016a.
[107] Freyberger 2016a, 64f.
[108] Cf. Filippi (2020, 116), who discusses a small channel running parallel to this wall.
[109] Galli *et al.* 2019a, 15 fig. 7, 17; 2019b, 667. Carettoni does not mention this phase, neither in the original report (Carettoni & Fabbrini 1961), nor in a later summary (Carettoni 1979).

support of this interpretation has been advanced, other than the implicit fact that they are centrally placed in relation to the Augustan Basilica Julia. Thus, in theory the foundations could also belong to a lateral structure—a side aisle or a portico (cf. the reconstruction of Freyberger above). Even if the two foundation walls had a central position in the building, we cannot know for certain whether they carried columns or walls, or whether the intermediate space was open or roofed. Undeniably, there is very little to go on when trying to reconstruct the layout and design of the Basilica Sempronia. Still, we would like to argue that all available information has not yet been considered (*Figs. 15–16*).

First, it should be noted that there is a significant difference between the widths of the two foundation walls, *c.* 1.80 and 1.62 m respectively. They were both built of custom-made and carefully dressed ashlar blocks, and there is no reason to believe that the difference was unintentional. This suggests that the two foundations carried different kinds of architectural elements, or at least elements of different dimension, and implies a local asymmetry in the superstructure. For this reason, the possibility that the two foundation walls define a central aisle or a central open courtyard seems to be less likely. There might be several reasons for the asymmetry, though. In a colonnaded building, the diameter of the columns is usually larger than the width of the corresponding walls, and they therefore have a wider footing. An exterior colonnade with a stepped *krepis* would require an even wider foundation. Furthermore, in a building divided into several equal bays, the interior supports often carry a heavier load than the exterior ones, since they support a larger roof area. This is sometimes mirrored by differences in the width of the walls and foundations.[110] Considering the present context, the most likely interpretation seems to be that F_1 carried a row of columns, whereas F_2 carried a wall. This wall may well have been an exterior wall.

Second, whereas wall F_1 shows irregularities in the lateral placement of headers and has rough surfaces on both sides, the blocks of wall F_2 are more carefully laid and only exhibit quarry-faced blocks on the south side.[111] As far as we can tell, the north side was perfectly flat. There are rough surfaces on the north side too, but these are bulging inwards, rather than outwards, and should be interpreted as damage caused when the foundation trench for the Imperial Basilica Julia was dug. A flat surface on the north side would have facilitated the construction of drainage channel c_4, which abutted the wall. However, it is also conceivable that the foundation wall continued above ground level as a visible podium wall.

Finally, the two foundation walls are carried to different depths. Wall F_1 was constructed directly on top of the floor of the previous building (the "House of Scipio"), indicating that a substantial raise of the floor level was intended. Wall F_2, on the other hand, appears to extend about 2 m further down; the exact level cannot be established without further excavation. The difference in depth might be explained by differing ground conditions, although it seems unlikely. The entire area has the same natural geology (crowned by a series of landfills). Rather, the solution is connected to the above-mentioned asymmetry. For example, an exterior wall would have to go deeper than an interior one if there is a significant difference between the interior floor level and exterior ground level. More specifically, we would like to argue that foundation wall F_2 was taken to a considerable depth to allow for the construction of drainage channel c_4. This channel, which ran parallel to the wall, sloped downwards from the west to the east, where it probably emptied into the Cloaca Maxima. To allow for the collection and transportation of the water, the channel had to be situated at a certain depth in relation to the exterior ground level. In order for the channel not to undermine the foundations of the Basilica Sempronia, these would have had to reach an even lower level. This also indicates that the two structures were built in conjunction, and that the channel was closely related to the basilica.[112]

THE PURPOSE OF THE DRAINAGE CHANNELS

Assuming that wall F_2 corresponds to the external north side of the Basilica Sempronia, channel c_4 would have been well placed to collect rainwater running off the roof, as well as water accumulating in the street that separated the basilica from the Tabernae Veteres. This street probably existed before the basilica was built and there might have been some kind of drainage channel along the back of the *tabernae*, unless the street itself functioned as an open drain. However, the monumentalization of the area, the raising of the street level, and the large catchment area of the basilica roof would have motivated the construction of a new channel. Apart from rainwater, the channel may also have funnelled water from a spring or fountain (Lacus Servilius), situated by the Vicus Jugarius, close to where it entered the Forum.[113] If the channel was covered by horizontal slabs, similar to the ones used for the floor, the top of the channel, on the east side of the trench, would have been

[110] The shipsheds in Naxos in Sicily provide a pertinent example (Gerding 2013, 161f.).
[111] The small irregularities in the courses of wall F_1 are noted by Filippi (2020, 119).
[112] The contemporaneity of foundation wall F_2 and channel c_4 was also recognized by Filippi (2020, 118).
[113] *LTUR* III (1996), 172–173 s.v. Lacus Servilia (A. La Regina). However, the date suggested by La Regina does not allow such an interpretation.

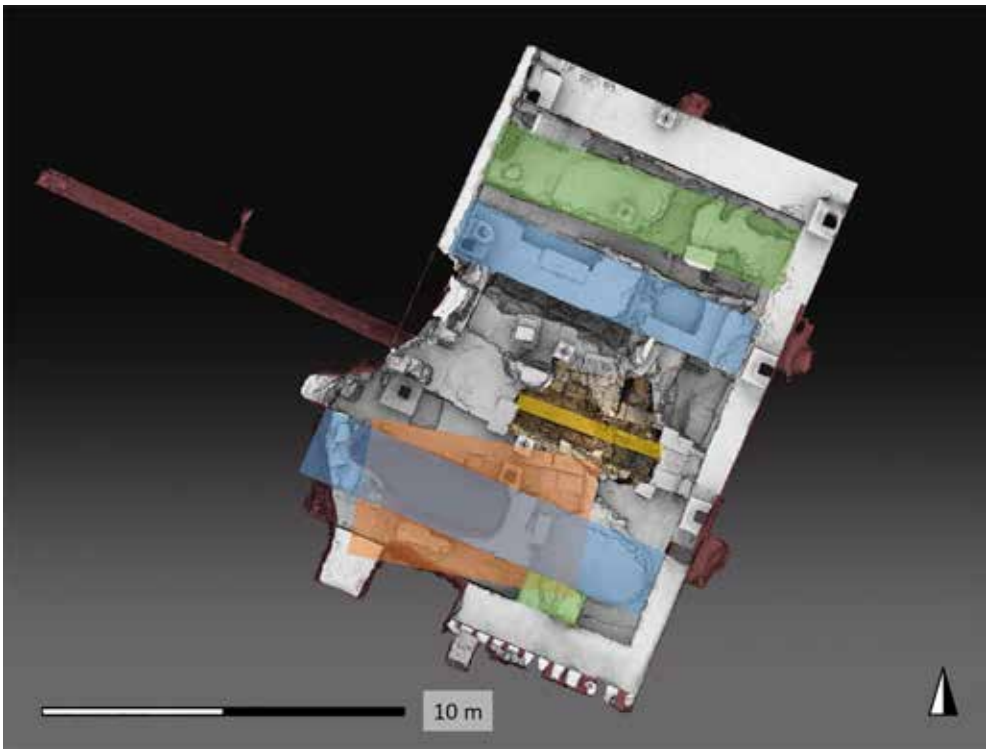


Fig. 15. Digital model of the east trench in the central nave of the Basilica Julia (current state). Orthogonal top view. The position and orientation of some main features are highlighted: Archaic wall in the deep section (yellow); impluvium *(orange); foundation walls of the Basilica Sempronia (blue); concrete foundations of Intermediate Basilica (green). Illustration by Nicolò Dell'Unto, Stefan Lindgren, Danilo Campanaro and Henrik Gerding.*

situated at about 11.80 m masl. This would also have been the approximate level of the street pavement.[114]

To understand the purpose of the drainage system represented by CL, c_1, c_2, c_3 is more difficult. The channels clearly postdate the destruction of the "House of Scipio", and they would only have made sense after the considerable raise of the floor level that is associated with the construction of walls F_1 and F_2. The main channel may have had the general purpose of carrying excess water from the slopes of the Capitoline and the fountain by the Vicus Jugarius, but the tributary channels appear to be closely connected to the Basilica Sempronia. In fact, the preserved parts of channels c_1 and c_2 would have abutted wall F_2, had the latter still been intact. There are three possible interpretations: 1) the channels stopped at the wall and connected to vertical shafts, inserted into the walls (this corresponds to the interpretation of Carettoni and Fabbrini); 2) the channels passed through the wall and continued on the other side, perhaps beyond the basilica (this is the interpretation of Freyberger); 3) the channels were built after the wall had been destroyed/robbed and passed on top of the remains. Let us examine the three alternatives:

As already mentioned above, Carettoni's interpretation implies that the channels drained the interior of the basilica. This would only have made sense if the basilica had a courtyard or a hypaethral roof. The size of the drainage channels is considerable and we know of no comparable interior drainage system of a roofed building. The small conduits found in the central nave of the Basilica in Pompeii were not intended to drain away water from the building but have been convincingly interpreted as part of a water distribution system, perhaps for cleaning the basilica.[115]

Freyberger's reconstruction suggests that the tributary channels drained the south branch of the Via Sacra, along the front of the Tabernae Veteres. However, given the slope of the channels (at least 15%) and the distance (at least 20 m), this is hardly possible. Even if they only extended to a street behind the *tabernae*, the inlets would have been situated above street level.

[114] The trench, in which the concrete wall α was cast, was dug from this level. Furthermore, a pavement made of reused *cappellaccio* blocks and dated to the first half of the 2nd century BC was found on the west side of the Temple of Castor and Pollux at 11.30 masl (Nielsen 1990, 99f.; Nielsen & Poulsen 1992, 75, pl. 11; Slej & Cullhed 2008, 368f.). Even if the street behind the *tabernae* was sloping upwards from Vicus Tuscus, the increase in level over a distance less than 30 m would hardly exceed 0.50 m. A *cappellaccio* pavement found on Vicus Tuscus at 10.85 masl may have been in use until it was replaced by the above-mentioned one (Slej & Cullhed 2008, 368). It may therefore be associated with Republican pavement 3.

[115] Ohr 1991, 20f., pls. 22.4–5, 54–56. The reconstruction of the Basilica in Pompeii with a hypaethral roof was advocated by A. Sogliano but later rejected by A. Maiuri.

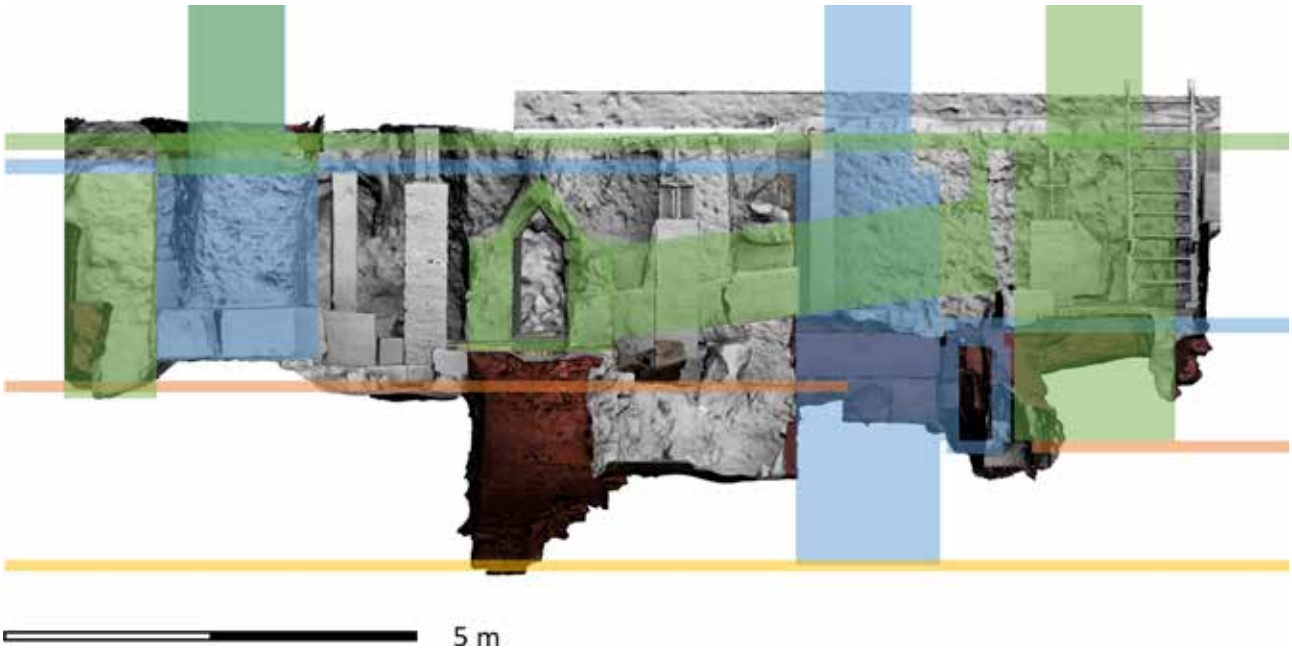


Fig. 16. North–south section of the digital model, viewed from the east. Interpretations: approximate level of Forum area in late 6th century BC (yellow); floor level of the house with an impluvium *and the approximate level of the street outside in the 3rd century BC (orange); the Basilica Sempronia, contemporary channel and approximate street level (blue); the Intermediate Basilica (green). Illustration by Nicolò Dell'Unto, Stefan Lindgren, Danilo Campanaro and Henrik Gerding.*

The third alternative implies that the drainage system did not belong to the original phase of the Basilica Sempronia. Still, we know that the system was destroyed with the construction of the Imperial Basilica Julia. As it happens, the excavation of Carettoni and Fabbrini revealed evidence for an intermediate building phase, represented by structures α, β, γ. As already noted, the tributary channels c_1 and c_2 appear to have abutted wall F_2, when this was intact, which may have strengthened Carettoni's conviction that these structures were contemporary. However, there are good reasons to believe that wall F_2 was robbed on several occasions.[116] Thus, we can hypothesize an intermediate phase where channels were built on either side of a partly robbed wall F_2 and connected by a cut groove through the wall. The position and top level of structure β fit perfectly for supporting the projected continuation of channel c_1.

Regardless of whether the tributary channels passed the wall or not, it is very difficult to explain the drainage system if it coexisted with channel c_4, since the latter would have easily filled the same purpose. Rather they must be seen as belonging to consecutive phases, where one substituted the other.[117] Carettoni's intuition, that the *cloaca* (CL) served the interior drainage of a building, is probably correct, but it should not be attributed to the original Basilica Sempronia but rather to a subsequent phase. The displacement of the channel to the south was a result of a change in the layout of the building that involved the destruction of channel c_4 and probably also the disappearance of the street behind the *tabernae*.

THE INTERMEDIATE BASILICA

Concrete wall α must have converged with and possibly crossed wall F_2 at an oblique angle, thereby rendering it obsolete. At the same time, channel c_4 would have been cut off and partly destroyed. It is reasonable to assume that the blocks of wall F_2 were partly robbed and reused in the new construction. Structure β is a likely example of such reuse, but the ashlar blocks used for the drainage system (CL, c_1, c_2, c_3) could also originate from wall F_2. However, the imprints made by the ashlars of wall F_1 in concrete structure γ suggest that this foundation wall was left intact and reused in the new build-

[116] The concrete foundation wall α was cast in a trench. This gives an indication of the level to which the site was excavated before construction, that is, one or two courses above the present remains of wall F_2. That the foundation walls of the Basilica Sempronia were robbed again, at a later stage, is also indicated by the imprints on structure γ and the use of *Grotta Oscura tufo* for *opus reticulatum* in the foundation walls of the Augustan basilica (see Falzone *et al.* 2019, 3).

[117] This conclusion coincides with that of Filippi (2020, 118f.).

ing.[118] Incidentally, the imprint also gives us the minimum (or perhaps even the absolute) original height of walls F_1 and F_2 at about 13.45 masl. Whereas concrete structure γ may have been a buttress or a support for some part of the superstructure, concrete wall α constituted the footing for a foundation wall. It must have carried several courses of ashlar blocks (similar to the ones in F_1 and F_2) to reach the intended floor level.[119] Furthermore, the width of the wall (1.80 m) suggests that it was intended to serve the same purpose as the reused wall F_1, that is, as a support for a colonnade.

Reusing one foundation wall but replacing the other with a new wall, situated at a slight angle, may seem perplexing. The only reasonable explanation would be that the building was extended towards the north and had to adjust to the deviating orientation of another building. That building has to be the Tabernae Veteres. This way the *tabernae* could be incorporated in the new complex with a minimal effort and without affecting the adjacent streets to the north and south.[120] However, it would eliminate the street that once separated the two buildings. The resulting wedge-shaped space between wall F_1 and wall α could possibly have been a roofed aisle but more likely it constituted an open peristyle courtyard, which explains the need for a new drainage system in this area.[121] Nothing of this layout was retained in the Augustan Basilica Julia, which would have reverted to the approximate orientation of the Basilica Sempronia and thereby changed the shape of the Forum square.

The preparations for the Imperial foundations were extensive.[122] Much of the earlier foundations were dug away and/or robbed. Curiously, it seems as if the remains of channel c_4 were emptied and reused for draining the building site, at least temporarily.[123] The furrow across wall α was probably cut at this stage to let out water into this channel. The cutting into wall F_2 on the opposite side could have had a similar function. Eventually, the excavated site was backfilled for the laying of a new floor. It can be noted that the Imperial basilica did not require any interior drainage. Instead a new drain was constructed along the front of the building to collect the huge runoff.[124]

THE TRAVERTINE FLOOR

As mentioned above, the travertine floor (p) was associated with the Basilica Sempronia by Carettoni and Fabbrini. The only thing that can be stated with certainty is that the travertine pavement cannot be earlier than the drainage system (CL, c_1, c_2, c_3). If these channels belong to the intermediate phase, then the floor must also be later than 169 BC.[125] There is some circumstantial evidence in support of such a hypothesis. First, it has been argued that "Due to the possibility of collapse, Romans only rarely built major structures over *cloacae*; instead, they built new ducts to circumvent new structures."[126] A possible example of this would be the Cloaca Maxima, assuming that it was redirected along the Argiletum to allow for a new basilica on the north side of the Forum.[127] When we reach the Augustan period, however, this no longer seems to have posed a problem.[128] Second, if we assume that the traditional date is correct, pavement p suddenly becomes the earliest known example of the use of travertine in Rome.[129] Usually, the introduction of this material is placed much later, particularly for use in outdoor pavements.[130] Third, the huge difference in floor level between the "House of Scipio" and pavement p (*c*. 11.11 and 13.95 masl respectively) is remarkable, and does not correspond to a similar raise of the Forum pavement.[131] The elevated position of floor p is more likely to be the result of several interventions.

[118] Filippi (2020, 119) suggests that wall F_1 was constructed contemporaneously with the early concrete foundation α, with reused ashlar blocks. However, the fact that these two walls have different orientations speaks against this interpretation.

[119] This level would have been situated somewhere between the top of structure γ and the Imperial floor.

[120] By the early 1st century BC, the accumulated raise of the Forum floor must have necessitated a renewal of the Tabernae Veteres, if not before.

[121] The fact that the tributary channels were directed to the north side rather than the south, which would have been closer, possibly indicates that a larger roof area was drained on the north side.

[122] Cf. Falzone *et al*. 2019, 3.

[123] The channel seems to continue under the Imperial foundation (m). It is also indicated by the presence of Augustan or later material in the channel (see above).

[124] Edoardo Santini (pers. comm. 13 May 2022).

[125] Again, this coincides with the interpretation of Filippi (2020, 119).

[126] Hopkins 2007, 2.

[127] Richardson argues that this was the case but Bauer's observations indicate that the *braccio morto* remained in use or was revived in the Caesarean or early Augustan period (Richardson 1992, 172; *LTUR* I [1993], 288 s.v. Cloaca, Cloaca Maxima [H. Bauer]).

[128] Cf. the Basilica Julia overlaying the Cloaca Maxima.

[129] Bernard (2018, 210, 225) notes this, and accepts it without further comment. However, he does make a connection between this pavement and the travertine floor associated with the second phase of the Basilica Fulvia (see below). Fuchs (1956, 17) rejected the idea of such an early travertine pavement.

[130] It is generally believed that travertine was first used in a public building in 121 BC (Temple of Concordia: *LTUR* I [1993], 320 s.v. Concordia, Aedes [A.M. Ferroni]; Filippi 2017, 163). In Ostia travertine was first used about 100 BC (Temple of Hercules: Van der Meer & Stevens 2000, 172; Van der Meer 2002, 575). The first travertine pavement in the Forum square (Gjerstad's sixth Republican pavement) is possibly Sullan (Giuliani & Verducchi 1987, 52–61) but usually attributed to Caesar (Gjerstad 1953, 82; Coarelli 1985, 211–233; Filippi 2017, 167). The same goes for the first travertine pavement on the Comitium (Carafa 1998, 151–155).

[131] In the reconstruction presented by *Digitales Forum Romanum*, the difference is accounted for by a high stepped podium, but no discussion is offered. It should be added that the Forum pavement, as well as many adjacent streets were sloping. Thus, the levels measured at the so-called Equus Domitiani are not applicable to the entire area. However, we argue that the street levels in front of and behind the Tabernae Veteres would not have been that different. Furthermore, the "Equus Domitiani" and the east trench of Carettoni and Fabbrini are located at the same distance from the Cloaca Maxima, which, due to its gentle slope, can be considered almost as an isoline.

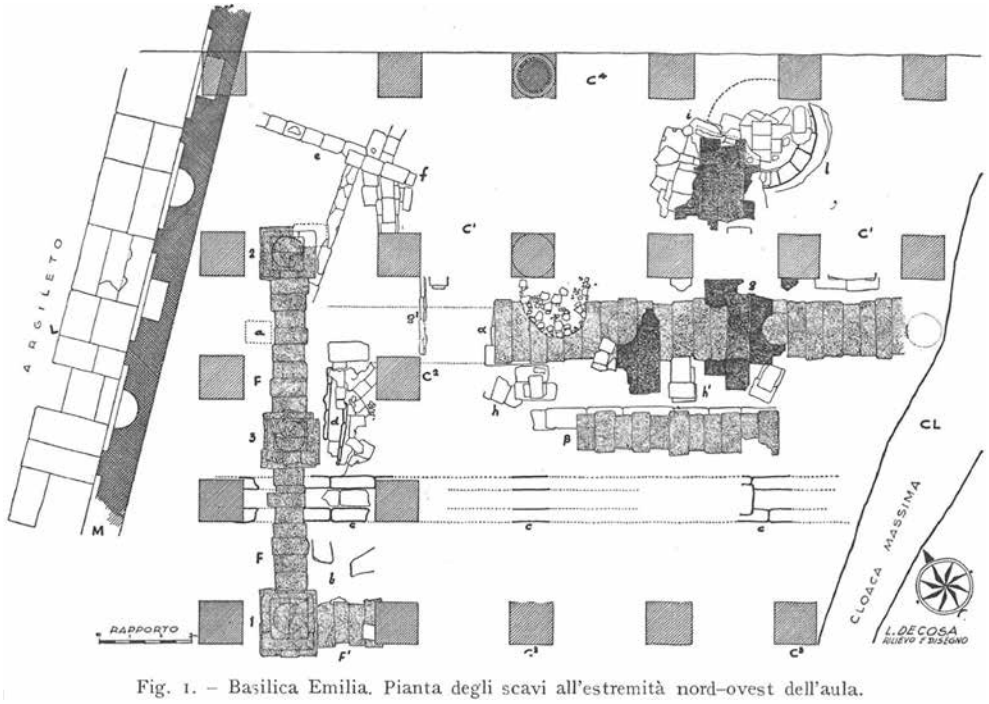


Fig. 17. Plan of the remains excavated under the Imperial Basilica Aemilia in 1946–1948. After Carettoni 1948, 111 fig. 1.

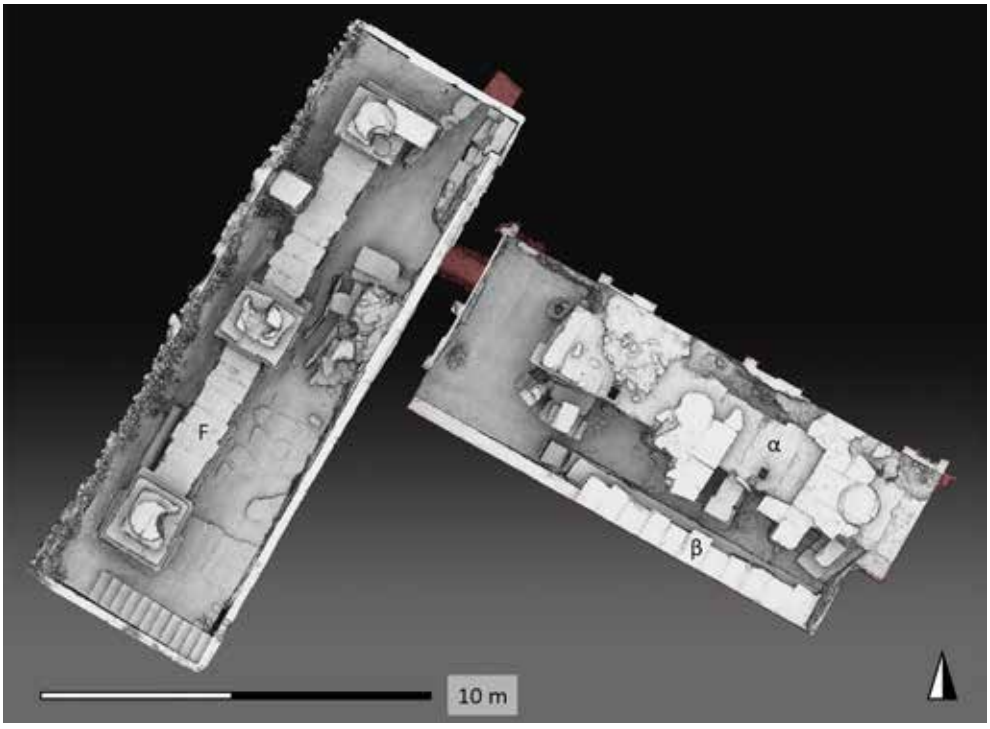


Fig. 18. Digital model of the visible remains under the Basilica Aemilia (current state). Orthogonal top view. To explore the model, see https://models.darklab.lu.se/dig_excav/Forum_Romanum/Forum_Romanum.html. Image by Nicolò Dell'Unto, Stefan Lindgren, Danilo Campanaro and Henrik Gerding.

COMPARISON WITH THE BASILICA FULVIA

If we briefly turn to the north side of the Forum, we only have a slightly better understanding of the development. Carettoni excavated two sets of monumental foundations (walls α and β, and wall F) under the Augustan Basilica Aemilia (*Figs. 17–18*).[132] They were immediately identified as belonging to two successive Republican predeces-

[132] Carettoni 1948. For alternative theories on the Basilica Aemilia, see note 7 above.

sors (henceforth referred to as Basilica I and Basilica II) and Freyberger has recently presented plausible reconstructions for their general layout.[133] However, the chronology remains unclear. Carettoni pointed to the lack of reliable stratigraphic evidence and hesitated to date the two foundations.[134] Still, he was inclined to attribute the earlier remains to 179 BC, which means that Basilica I would correspond to the Basilica Fulvia.[135] This deduction was accepted by some scholars but rejected by others.[136] Freyberger does not introduce any new arguments but chooses instead to follow Günter Fuchs, who maintained that the use of *Grotta Oscura tufo* in foundation F (Basilica II) makes it more likely that it dates from 179 than 80 BC, which are two construction phases indicated by literary sources.[137] This would by necessity place walls α and β (Basilica I) before 179 BC. A passage from Livius (26.27.2–4), which states that there existed no basilicas in Rome before the great fire in 210 BC, prompted Fuchs to regard this date as a *terminus post quem* for this earlier phase.[138] However, since Freyberger finds it difficult to believe that the first building would have had a lifespan of only a few decades, he pushes back the date to before the mid-3rd century BC.[139]

The question of the absolute dates of the early phases of the Basilica Aemilia is not likely to be solved in the near future. Instead, we would like to highlight the correspondence between these structures (Basilica I and II), on the one hand, and the Basilica Sempronia and the Intermediate Basilica, on the other. It is not only the similarities between the buildings that are interesting but also the changes from one phase to the next.

1. Wall α (in Basilica I) is a continuous solid foundation wall that carried a row of columns. Wall F, on the other hand, consists of separate pillar-like foundations, one for each column, which were connected by narrower and lower walls, filling the gaps and adding lateral stability. Wall F_1 (on the south side), which supposedly also carried a row of columns, is constructed along the same principles as wall α and has the same exact width. Thus, in this regard there is a greater correspondence between the Basilica Sempronia and Basilica I.

2. The different sets of foundation walls vary in bonding pattern and ashlar dimensions, also internally. However, wall F shows a greater consistency in block dimensions than the others, setting Basilica II apart from the Basilica Sempronia and Basilica I.

3. Mason's marks visible on the walls of Basilica I correspond closely to the ones found on the foundations of the Basilica Sempronia, whereas the ones found on wall F are completely different (see *Appendix*).

4. The remains of both the Basilica Sempronia and Basilica I entail the combination of a relatively wide but shallow foundation wall with a narrower but deeper one, which probably carried an external wall. In both cases, this indicates a building that was raised above the surrounding ground level.

5. Both the Basilica Sempronia and Basilica I appear to have been freestanding buildings separated from an adjacent row of *tabernae* by a street. In both cases there are remains of a drainage channel running parallel to the basilica under the street.

6. Basilica II was expanded and joined/incorporated the *tabernae* in one direction but preserved the extent of the previous basilica in the other, just as has been suggested for the Intermediate Basilica by the present authors.

7. The *tufo* pavement of Basilica I was replaced by a travertine pavement in Basilica II.[140] On the south side, only one pavement is preserved, though. This is made of travertine and has been associated to the Intermediate Basilica by the present authors. The floor levels also appear to correspond well: Basilica I *c.* 13.34 (13.20–13.36) masl; Basilica II *c.* 13.84 (13.80–13.88) masl; Basilica Sempronia >13.45 masl; travertine pavement (p) *c.* 13.95 masl.

Together these observations suggest that Basilica I and the original Basilica Sempronia were roughly contemporary, and that Basilica II and the Intermediate Basilica represent later developments. It cannot be concluded that the latter two basilicas were built at the same time. However, one project probably inspired the other. We note that there is no general agreement on the date of Basilica II, but the ample use of *Grotta Oscura tufo* for the foundations makes it difficult to place it later than the Sullan period.[141] A date in the late 2nd century BC is perhaps more likely. Similarly, the Intermediate Basilica on the south side of the Forum fits better

[133] Freyberger 2016b, 34, 43–45. Maschek (2017) has expressed some doubts about Freyberger's reconstruction of Basilica I, pointing to the uncertainties involved, but it still remains the only comprehensive interpretation of the architectural remains.
[134] Carettoni 1948, 128.
[135] Carettoni 1960, 193.
[136] Cf. Gaggiotti 1985, 62–64.
[137] Fuchs 1956, 16f.
[138] This discussion ties into the issues of a possible unknown early basilica, mentioned by Plautus (see note 2 above) and the Atrium Regium (Liv. 27.11.16; Welin 1953; Gaggiotti 1985; Welch 2003).
[139] Freyberger 2016b, 35.
[140] Carettoni 1960, 193. The earlier pavement was identified as *Monteverde tufo* (Carettoni 1948, 115).
[141] Bernard 2018, *passim*. The relationship between the early basilicas on the north side of the Forum and the *braccio morto* is key to a better understanding of the development. For example, the heavy ashlar foundation walls of Basilica I (walls α and β) appear to have bridged the Cloaca Maxima. The *braccio morto* may therefore have been closed and filled in at this time, although it may have been revived later on. If so, this links Basilica I to the covering of the Cloaca Maxima and the fourth Republican pavement.

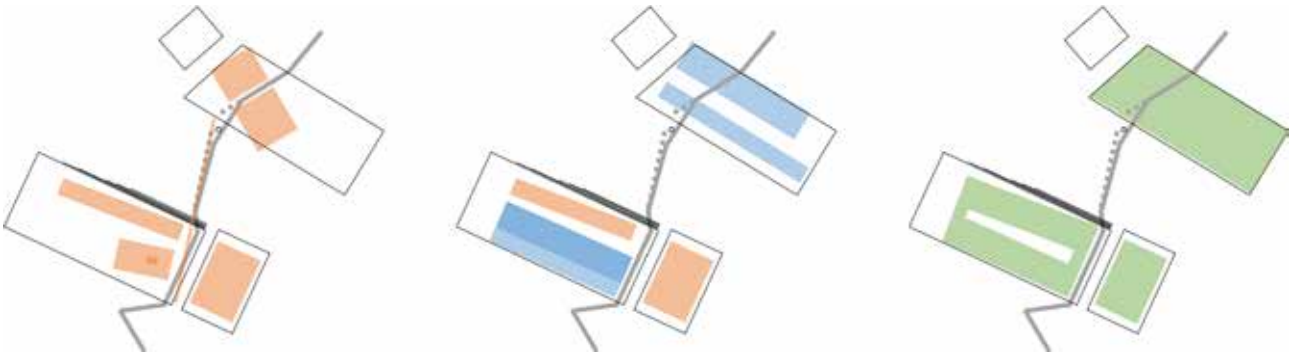


Fig. 19. Preliminary outline of the development of the Forum Romanum. Early Imperial buildings are shown in outline. Plan a (left) represents the mid-3rd century BC and shows the house with the impluvium *and the Tabernae Veteres on the south side of the Forum. Plan b (middle) represents the early 2nd century BC, after the addition of Basilica Fulvia and Basilica Sempronia. The latter is shown both as a two-aisled and three-aisled building. Plan c (right) represent the late 2nd or 1st century BC, after the merging of the basilicas and* tabernae*. It should be noted that the shape and dimensions of most buildings are uncertain or purely hypothetical. The available evidence mainly concerns the orientation of the different structures.*

in the Sullan (or pre-Sullan) period than in the Caesarean, considering that ashlar blocks were used for the upper part of foundation wall *α*.

Conclusions

Based on the evidence presented above, a tentative reconstruction of the Basilica Sempronia can be outlined (*Fig. 19*). Wall F_1 most likely constituted the foundation wall for an internal colonnade whereas foundation F_2 probably carried an exterior wall. A street separated the basilica from the Tabernae Veteres, which lined the south side of the Forum. This street, which would have had approximately the same slope as and only a slightly higher level than the Forum pavement, was drained by a channel (c_4), running along the north foundation wall (F_2) of the basilica. This foundation wall probably continued above ground to form a visible podium, higher at the eastern end than the western.

The basilica most likely presented closed walls on the north and south sides, rather than porticoes, but the walls may have had windows, as suggested in a previous reconstruction (*Fig. 14*). The east side, which probably represented the main façade, could have been colonnaded, as in Pompeii, but not necessarily. However, it must have had high frontal stairs, leading up to the entrance. The elevated position of the basilica floor, compared to the Vicus Tuscus, a difference of about 2 m, could be explained as a way of emphasizing the monumental aspect of the building, but it could also be a consequence of the sloping ground. As with the Imperial Basilica Julia, the west end of the building probably had to be aligned with the higher ground level by the Vicus Jugarius. The exact length of the Basilica Sempronia cannot been established, though.

Assuming that the basilica had a double row of interior columns, we can hypothesize that the width of the building was *c.* 25 m.[142] This means that the basilica just about fits within the footprint of the Augustan Basilica Julia, before the addition of a row of *tabernae* on the south side. However, this reconstruction entails rather wide side aisles (compared to the Basilica Fulvia, that is, Basilica I) and only a small difference between side aisles and central nave. Therefore, we should not exclude the possibility that the Basilica Sempronia had only one row of interior columns, making it a two-aisled building.[143] In a later phase, corresponding to the so-called Intermediate Basilica, the building was dismantled, extended to the north and joined with the, possibly reshaped, *tabernae* facing the Forum. This development closely mirrors that of the Basilica Fulvia (that is, the transformation from Basilica I to Basilica II). However, rather than a single hypostyle hall, the Intermediate Basilica seems to have entailed a combination of roofed spaces and an open paved area, perhaps a peristyle courtyard, which had to be drained.

These tentative findings have potential architectural, spatial and historical consequences. The evidence for the layout of the early Roman basilicas is limited. The usual method for tackling this problem has been to retroject our knowledge of later basilicas in Rome and elsewhere onto the earlier examples. This is a valid and understandable approach, but reduces the possibility of recognizing an early experimental stage in the development of basilicas, characterized by diversity and

[142] Interaxial distance between exterior wall and colonnade: 7.25 m; hypothetical interaxial width of central aisle: *c.* 9 m; thickness of exterior (podium) walls: 1.60 m. 7.25 × 2 + 9 + 1.60 = 25.10 m.

[143] A possible model for this design can be found in Pergamon (Schrammen 1906, 88–90, pl. 21; Coulton 1976, 274 fig. 102). This closed two-aisled building, situated above the Altar Terrace, was the largest roofed hall in Pergamon (*c.* 100 × 13.5 m). It is dated to *c.* 200 BC, and would surely have been noticed by Tiberius Sempronius, if his diplomatic mission in 185 BC brought him to this city (Liv. 39.33.1).

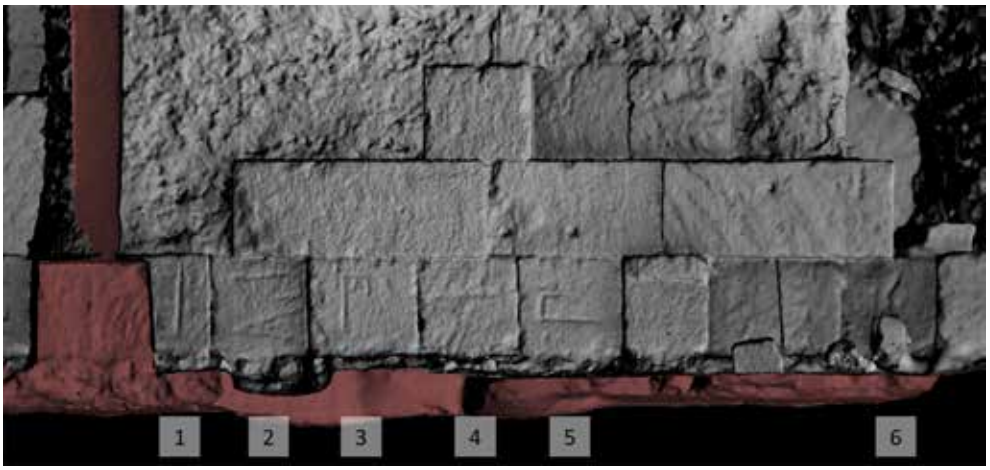


Fig. 20. Digital model of ashlar foundation wall F_1 under the Basilica Julia. View from the north. Mason's marks 1–6. Image by Nicolò Dell'Unto, Stefan Lindgren, Danilo Campanaro and Henrik Gerding.

unparalleled architectural forms. The great fire in 210 BC and the raising of the Forum floor would have constituted important impetuses for the renewal of the Forum in the early 2nd century BC. The ensuing period of intense building activity was stimulated by Greek influences, but not yet affected by the Roman concrete revolution.[144] We should be open to architectural solutions that may later have been abandoned. A hypothetical development of the Roman basilica from a closed and easily regulated hall to a permeable, porticoed or arcaded building that communicated freely with the surrounding space could have entailed transitory concepts, combining peristyle and hall within a unified and delimited complex. The clerestory roof and the colonnaded courtyard represent two alternative ways to bring light into such complexes, while still retaining a closed building. Extensive architectural complexes of roofed public space were thus created on both sides the Roman Forum at the expense of streets and alleyways,[145] transforming the character of the Forum area from an informal and uncontrolled space to a highly formalized and controlled space.[146] This transformation likely begun in the latter part of the 2nd century BC, but we should not exclude the possibility of a major reorganization of the Forum in the Sullan period, possibly entailing the Comitium and the so-called "Gallerie Cesaree", as well as the two basilicas.

To allow further investigations into these matters, the spatial and architectural relationship between the extant remains of the Republican Forum Romanum needs to be clearly defined. For this purpose, we propose that both visible remains and legacy data should be integrated in a comprehensive 3D visualization platform.

Appendix: Mason's marks

Eight blocks belonging to walls F_1 and F_2 under the Basilica Julia exhibit mason's marks, or possible mason's marks (*Fig. 20*). Some of them seem to be Greek letters, although archaicizing, whereas others may be ligatures or analphabetic signs.[147] They are all positioned on the visible end of header blocks.[148] Marks 1, 3 and 5 are all identical and correspond to the Greek letter *pi*.[149] Mark 2 is a combination of what might be a ligature (*pi* + *lambda*) and an *upsilon*. Mark 4 could also be a ligature (*gamma* + *lambda*) or an analphabetic sign, whereas mark 6 resembles a *kappa*. Mark 7 is either a combination of two letters (*lambda* and *upsilon*) or a *mu*. Mark 8 is a single straight line (*iota*?) and may not be a mason's mark. There are also mason's marks on the early foundations under the Basilica Aemilia (*Figs. 21–22*).[150] One, or possibly two, mason's marks can be found on foundation wall β, and four possible ones on foundation wall α.[151] On the former wall the first mark is a *pi*, identical to marks

[144] Welch 2003; Mogetta 2015; Davies 2017.
[145] Cf. Tombrägel 2021, 289.
[146] Cf. Russell 2016.

[147] The tradition of using alphabetic mason's marks in Republican Rome seems to be exclusive for blocks in *Grotta Oscura tufo* (Säflund 1932, 120). Therefore "quarry marks" would probably be a better designation.
[148] The total number of preserved header blocks with at least one visible end surface is 36.
[149] Cf. Säflund 1932, 105 fig. 48, pl. 27.
[150] The observations by the present authors differ somewhat from the ones made by Carettoni (1948, 126 fig. 12).
[151] These walls comprise 29 header blocks with at least one visible end surface. The four possible marks on wall α are located on blocks that appear to be trimmed down, thus, they may be incomplete.

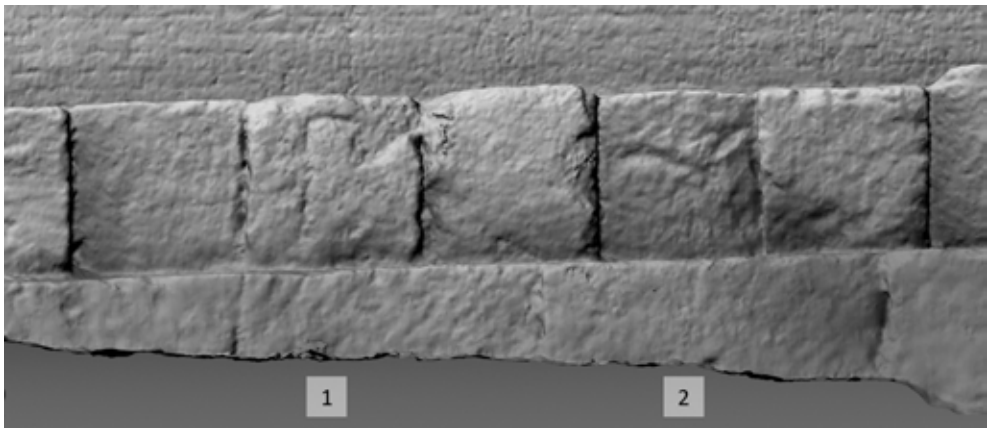


Fig. 21. Digital model of ashlar foundation wall β under the Basilica Aemilia. View from the north. Image by Nicolò Dell'Unto, Stefan Lindgren, Danilo Campanaro and Henrik Gerding.

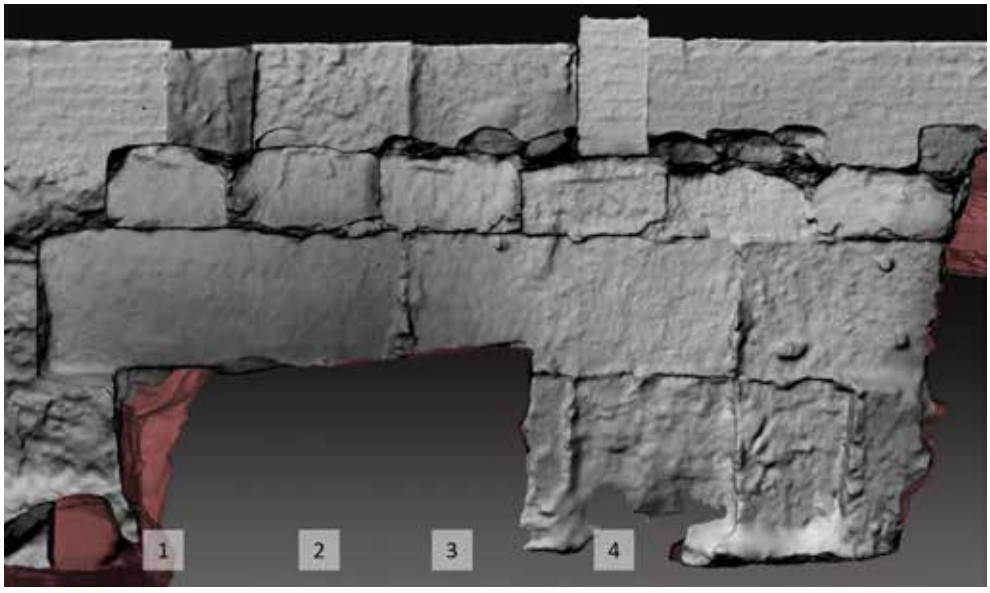


Fig. 22. Digital model of ashlar foundation wall α under the Basilica Aemilia. View from the south. Image by Nicolò Dell'Unto, Stefan Lindgren, Danilo Campanaro and Henrik Gerding.

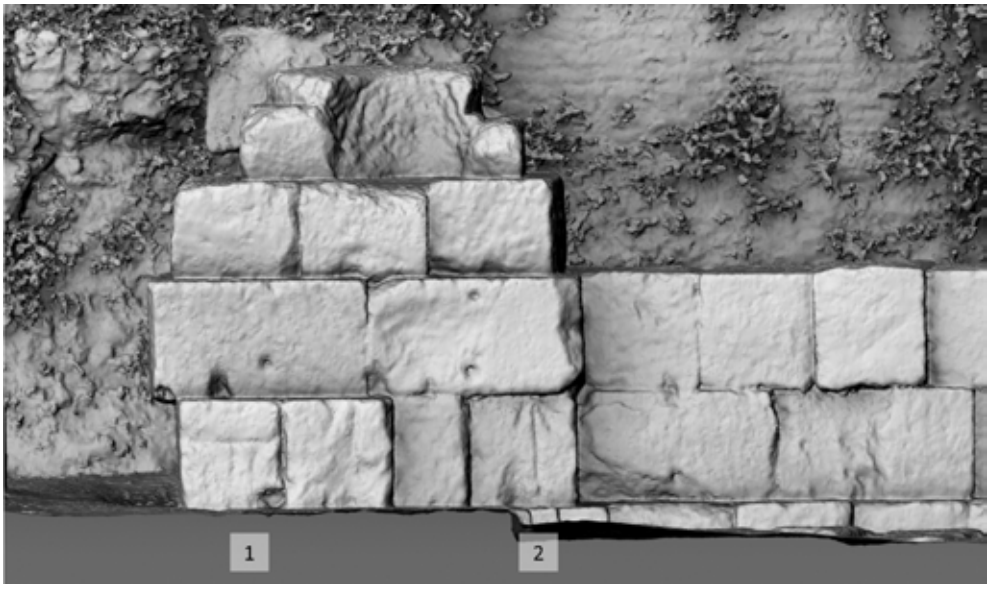


Fig. 23. Digital model of ashlar foundation wall F under the Basilica Aemilia, with two visible mason's marks. View from the east. Image by Nicolò Dell'Unto, Stefan Lindgren, Danilo Campanaro and Henrik Gerding.

1, 3, 5 on the Basilica Sempronia; the second one is possibly also a *pi* or a *gamma*. Another ten, or possibly twelve, mason's marks are visible on the blocks belonging to foundation wall F (*Fig. 23*).[152] None of them corresponds to the mason's marks of the Basilica Sempronia.

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[152] 35 header blocks have at least one visible end surface. Four marks consist of two parallel lines (a simplified *epsilon* or a double *iota*?); a single line (*iota*); a *zeta* or *nu*; a possible *digamma*; a *psi* (in the form of an arrow); a possible damaged *chi*; a possible *eta*; two possible marks consist of one long and one short stroke repeated twice.

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