

# ROMAN URBANISM — IN ITALY —

*Recent Discoveries and New Directions*

*Edited by Alessandro Launaro*





# Roman Urbanism in Italy

Recent discoveries and new directions

*Edited by*  
Alessandro Launaro

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*Front cover:* Aerial view of the theatre of Interamna Lirenas (Alessandro Launaro)

*Back cover:* The Porta di Giove at Falerii Novi (Alessandro Launaro)

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## Part III

Not your standard Roman town



# Chapter 8

## From sanctuary to settlement: mapping the development of Lucus Feroniae through geophysical prospection

*Stephen Kay, Sophie Hay & Christopher Smith*

### 8.1 Introduction

This paper presents the results of a new study of the site of Lucus Feroniae (Capena, Lazio) through geophysical prospection. The research builds on a long-term study of Roman urbanism in central Italy through non-invasive survey techniques led by the British School at Rome which commenced with the investigation of Falerii Novi (Keay *et al.* 2000) and Otricoli (Hay *et al.* 2013) as part of the Roman Towns Project. Subsequently, the research extended to include earlier Etruscan centres including Vulci (Sabatini *et al.* 2021), Acquarossa and Spina (Kay *et al.* 2020). On the left bank of the River Tiber, centres were investigated in the Sabina (Forum Novum) as well as in the Abruzzo, with an extensive survey of Iuvanum and smaller-scale investigations of Peltuinum (Hay 2015) and Alba Fucens (Hay 2014). The surveys used a variety of non-destructive techniques, principally geophysical prospection, as a means to examine and develop an understanding of a wide range of urban sites, aiming to investigate and challenge some of the traditional models of ancient urban planning.

The fieldwork at Lucus Feroniae was undertaken over the course of three seasons (June 2013, May 2015, and March 2017), comprising an extensive magnetometry survey of areas within the modern archaeological park and immediately to its south and west (Fig. 8.1). These results were then used to direct more detailed Ground-Penetrating Radar (GPR) surveys, initially with two test areas within the modern park and subsequently a large area to the south.

Situated within the modern-day *Provincia di Roma*, approximately 28 km to the north of Rome, the town of Lucus Feroniae falls within the *ager Capenas*. The site was first discovered in 1953 and subsequently investigated by the *Soprintendenza Archeologia, Belle Arti e Paesaggio per l'area metropolitana di Roma, la Provincia di Viterbo e l'Etruria Meridionale*. The site lies in an open area which gradually slopes east towards



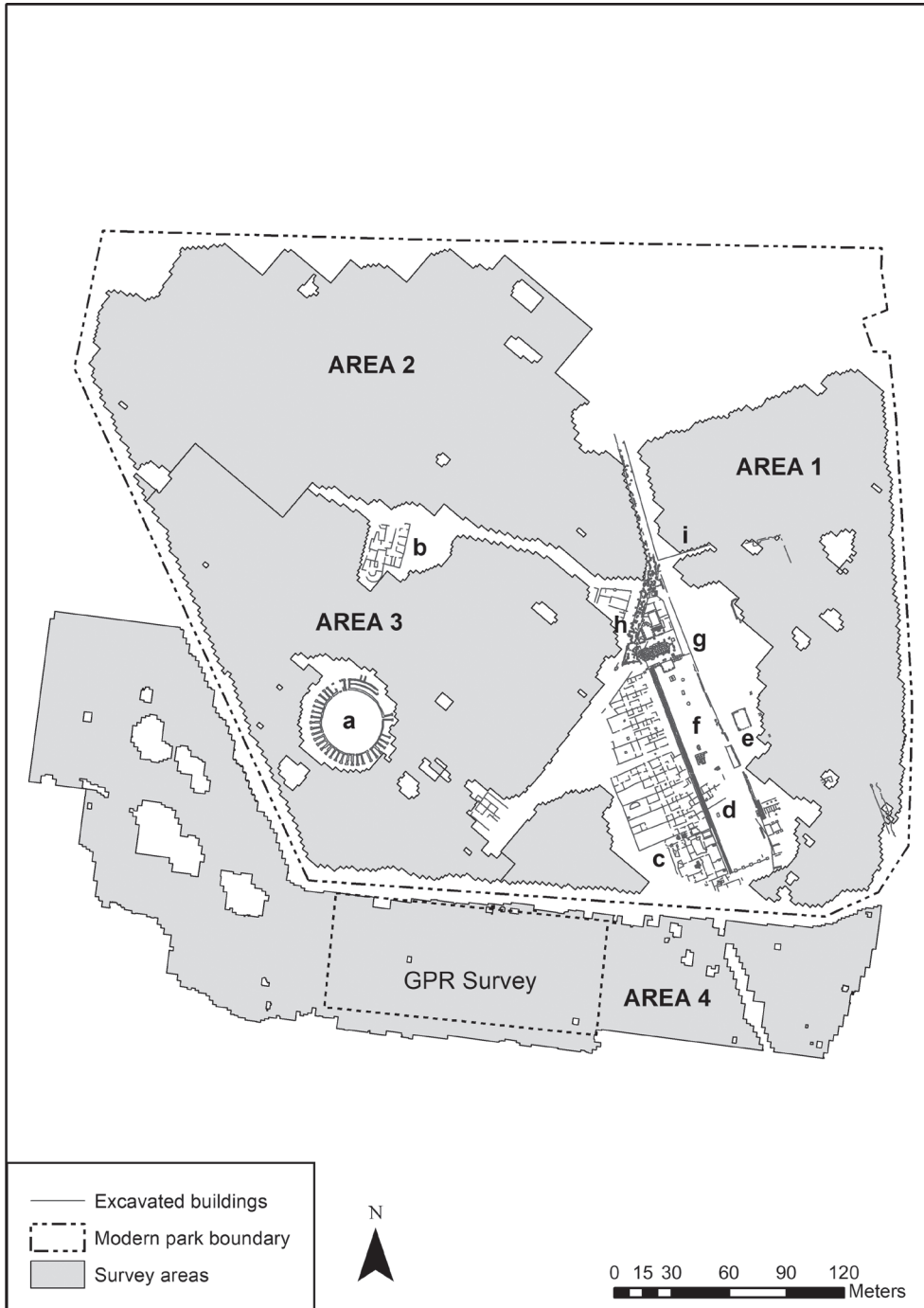


Figure 8.1. The survey areas at Lucus Feroniae and the known monuments: A. Amphitheatre; B. 'Via Capenate baths'; C. 'forum baths'; D. Hellenistic structures; E. Altar to Feronia; F. forum; G. basilica; H. Augusteum and Republican temple; I. temenos.

the Tiber flood plain and the river beyond. A series of hills rise to the northwest (Mt S. Lorenzo, Mt Ruzzola, Mt Belvedere), with access to the north limited by a complex of ridges that lie beyond modern day Fiano Romano (Jones 1962, 189). Approximately 8 km to its north runs the Fosso Pantanelle, flowing from the base of Mt Belvedere southeastwards onto the Tiber flood plain, and to the south flows the Fosso di Gramiccia. The town itself lies at an important intersection between the 'Via Capenate' and 'Via Tiberina'. Today a large portion of the land surrounding the site is agricultural, with most of those areas surveyed now open grassland, although to the east much was lost during the construction of the *Autostrada del Sole*.

## 8.2. Historical background

Lucus Feroniae has a deep but interrupted history (Russo Tagliente *et al.* 2016; Benedettini & Moretti Sgubini 2019; also Gazzetti 1992; Torelli *et al.* 2018). The discovery of the earliest cremation necropolis in southern Etruria, with 12 individuals for the 13th and 12th centuries BC, raises important questions about the way this site operated in the economy of the late Bronze Age (Trucco *et al.* 2014; also Fuminante 2014), and the extent to which any notion of the importance of the site may have survived into the next phase of activity which is visible in the archaeological record, from the 6th to 4th centuries BC.

Unfortunately, all this material is found in disturbed contexts, so detail is missing. Small fragments of architectural terracottas suggest the possibility of the built environment. Standard and miniature pottery, especially relating to food and perfume, including imports from western Greece, Attica and Etruria, terracotta figures, and bronze figurines from northern and southern Etruria, Umbria, and Latium, all suggest a sanctuary site, and one which attracted worshippers from some distance, or at the least, attracted those who had the capacity to acquire goods from a distance. The bronzes included a deer, a haruspex, a warrior, individuals in the pose of offering, and *kouros* and *kore* figures. There were also personal ornaments including ones produced as far afield as the Balkans and Near East. Similar finds have been made in Falerii Veteres. There are numerous connections also with the Abruzzo and Adriatic coast (Russo Tagliente *et al.* 2016, 23–26).

Both architectural and votive evidence, again scattered, shows an increase in activity in the 3rd century BC. It would appear that the sanctuary was significantly wealthy (see Torelli *et al.* 2018). This may have attracted one of the most famous incidents in the history of the sanctuary, a sack by Hannibal's troops in 211 BC. Livy (26.11.8–10) tells us that the sanctuary contained much gold and silver, dedicated by the people of nearby Capena and surrounding peoples, who offered their first-fruits. The importance of the sanctuary is also indicated in a passage of Dionysius of Halicarnassus (3.32.1–3). Although perhaps anachronistically placed in the reign of Tullus Hostilius, Dionysius claims that the sanctuary was a meeting point for Romans and Sabines, that it gathered merchants, artisans and farmers, and its fairs were the

most celebrated in Italy. Epigraphical attestations also survive on bases of dedications, and it seems clear that pottery (especially *vernice nera*) was being produced on the site for dedication and export, as well as arriving from further afield. Also visible on site is coinage, especially from Campania, along with rings and seals, some dating back to early phases of the site (Russo Tagliente *et al.* 2016, 29–70).

The sack was highly profitable, but seems to have elicited some religious concerns. Livy (13.83–91) says that out of religious concern, the soldiers left heaps of bronze behind; Silius Italicus (*Pun.* 13.81–93) reports that Hannibal forced the soldiers to despoil the site (the story was clearly told by Coelius Antipater: FRHist 15 F25). A bronze *brocca*, found in a tomb in Capena, dedicated to Numisius Martius, has been thought to be an example of such abandoned booty (Ferrante 2008). As an omen of the following year showed, the sanctuary cannot have been totally destroyed, since Livy (27.4.14–15) reports the portent of statues sweating blood. Early 2nd-century BC architectural terracottas provide evidence for the rebuilding or restoration of the temple, which was struck by lightning in 196 BC (Livy 33.26.8).

It is likely that much of the archaic structure of the site disappeared in a major restructuring in the 2nd century BC, which created a substantial area of regular building not far from the temple. Local stone was used in *opus incertum*. Who was living here? Food containers with inscribed individual names, all male, might suggest cult personnel, but this phase remains obscure (Russo Tagliente *et al.* 2016, 71–74).

Later in the 2nd century BC, Lucus Feroniae experienced another substantial transformative moment, with a major reconstruction which was funded by one Cnaeus Egnatius, who left a major inscription on the site, probably relating to the repaving of the area. This reconstruction produced a new temple on a substantial podium with an octastyle portico in the Corinthian order. This sits within a large piazza of three *actus* in size (3/8 of a hectare), which is set within the road network around the site, notably the *via Campana*, which also passes through the grove of Dea Dia (Scheid 1976).

The Egnatius who was the dedicator of this complex was styled praetor, and it is possible to identify him with Cn. Egnatius praetor in the mid-140s BC, who served in Macedonia, and was a signatory to a *senatus consultum* relating to Corcyra (SEG III 451). That inscription tells us that he belonged to the Stellatina tribe, which included nearby Capena (Taylor 1960, 275; Brennan 2000, 225).

However, the Egnatian complex appears to have been left unfinished and possibly spoliated, perhaps in the course of the battles between Marius and Sulla. A colony was placed here and has been most recently dated by Stanco to the early 1st century BC, although its name, Colonia Julia Felix Lucoferensis shows it also received a veteran colony of the triumviral period (Keppie 1983). Nearby centuriation will be associated with one or other phase of this colonial settlement. Its first magistrates may have been the *duoviri quinquennales* C. Didius and M. Vettius, whose inscription is found on a reused votive base (CIL I 3338b = AE 1983 401). In architectural terms we see a new *forum*, a *sacellum* of Salus Frugifera, and a *basilica*, which may have used columns from the temple of Feronia.

The Egnatian family's commitment to the sanctuary, whether or not this relates to an early 1st century BC putative colony, may also have been commemorated in coinage from 75 BC by C. Egnatius Maximus. Crawford identified a female figure on the coins as Libertas with a *pileus*, but the recent interpretation would favour Feronia, who does appear, but named, on early Augustan coins by the low-born Turpilianus (Crawford 1975, 405–406; on Turpilianus see Wallace-Hadrill 1986, 78). The Egnatii survived the Sullan period, but were destroyed in Octavian's proscriptions, and it is very likely that at this stage the nearby villa passed from this family to the Volusii. Marzano suggests that one of the main operations of the Volusii may have been the production of lime, and a large lime production area was indeed found just 1 km away (Marzano 2007). Another aspect of the economy of the site is the port at Baciletti, probably the portus Curensis, which offered a connection to the Tiber.

That the triumviral or post-Actium colony provoked controversy is evident from a passage in the writings of the Roman land surveyors, where Julius Frontinus notes flaws in the maps (*Lib. Colon.* T 37–38).

The Augustan period sees another restructuring of the area, with a new pavement, walkways, honorific statues, a small temple of Salus, and a *sacellum* to the *Genius Coloniae*. The Egnatian inscription is covered over. Stanco (2016) notes the decline in inscriptions to Feronia, and suggests that the cult was in terminal decline, replaced by Salus Frugifera and the imperial cult. Interestingly, the road system remains core to the urban layout. A dam and aqueduct ensured the supply of water.

After the death of Augustus, the Volusii marked their gratitude with a temple to the Divus Augustus on the site of the building which had possibly been the *basilica*. Their own villa was intimately connected to the larger site, but it was not the only one in the area, and all were clearly productive, starting in the later 2nd century BC, and renovated around the time of Actium (Russo Tagliente *et al.* 2016; doubts over the hypothesis of an *ergastulum* at the Villa of the Volusii have been raised by Marzano 2007, 140–148).

The complicated imperial history of the site sees various interventions, for instance under Caligula and Trajan, which can be traced in the significant remains of sculpture, largely of the imperial family. The site acquires two sets of baths which continue into Late Antiquity, and a Trajanic-Hadrianic amphitheatre. In the 3rd century AD, two ornamental entrances are created for *ludi iuvenum Romanorum Lucoferoniensium* (Stanco 2016). These games included ones associated with the birthday of Rome, 21 April. However, the inhabited area of the town which had flourished between the 1st and 2nd centuries AD, with some impressive mosaics and the enrichment of significant villas around the site, including the Villa of the Volusii, begins to decline, possibly as agricultural production is concentrated in the imperially owned *Fundus Flavianus* (Russo Tagliente *et al.* 2016). Restorations are scarce, and the area is gradually abandoned between the 4th and 6th centuries AD, although there was a short-lived Christian community there, who may have repurposed public buildings as churches, with nearby tombs. No bishopric was ever founded, and the community seems to have moved to the nearby *Castellum Scoranum* (Gazzetti 1992).



### 8.3. The Cult of Feronia

Varro clearly attributes Feronia to a group of Sabine deities (Varro *Ling.* 5.74; Di Fazio 2012, 2013). Schulze insisted on the Etruscan aspect of the cult, but this was part of his over-emphasis on the Etruscans throughout (Schulze 1904). However, it was also an ancient idea; Cato the Elder (FRHist 5 F69) claimed the cult was founded by young men sent to Capena from Veii (even though his name, Propertius, is Umbrian). In fact, the cult is widely spread across a wide swathe of central Italy up to the head of the Adriatic in one direction and across to Sardinia in the other. Feronia was also celebrated in the Campus Martius at Rome, where she was adopted by the later 3rd century BC (even though the cult of Feronia may have been ‘evoked’, some effective doubts have been raised by Stek 2009, 31; see also Di Fazio 2013, 20–23). Her cult outside Rome is said to be as old as the Roman kings, but certainly continues well into the empire. Her characteristics are highly varied. She is often found paired with a male deity, and it is possible we see a divine couple, Jupiter Feretrius and Juno Feronia. At some point, Feronia is associated with slaves and freedom – slaves were set free in her shrine near Terracina (Serv. *Aen.* 8.564). This has led to the identification of female figures with the *pileus* as Feronia, critically on coinage (par. 8.2).

Aside from these considerations, it appears that Feronia tended to be worshipped in groves and associated with sanctuaries with wide audiences. If this is correct, we can think about the possibility of Feronia having roles related to commerce and boundaries, at any rate, to general principles which allow this divinity to be assimilated to cults across the marketplaces of Italy. At this point the argument becomes somewhat speculative and theological.

For our purposes the most significant issue perhaps is to ask what kind of settlement *Lucus Feroniae* was. Its function as a meeting place, and the accumulation of wealth in the sanctuary seems directly related to the worship of Feronia, though we perhaps should see this as a symbiotic relationship. We cannot trace elite appropriation of the sanctuary before the Egnatian phase in the later 2nd century BC, but from this point onwards, the singular importance of Feronia to the site seems to be at least diluted and possibly in rapid decline. Conversely, the space becomes open for other display, both religious and secular. The role of *Lucus Feroniae* as a centre for games associated closely with Rome may be taken to track deeper shifts in the expression of how a node of interaction might work.

### 8.4. The geophysical surveys

Over the course of the three field seasons, magnetometry and GPR survey were carried out covering those areas accessible both within the archaeological park and directly surrounding it to the south and southwest. A local grid system was established using a Total Station and GPS, delineating a series of 30 × 30 m grids orientated at an approximate 45° angle to the excavated structures. The magnetometry survey was conducted using two Bartington Grad601 dual probe fluxgate gradiometers, with data

collected at a sample interval of 0.25 m along 0.5 m traverse intervals. A GPS was used to record local topography and to accurately map the excavated roads and structures. The GPR survey was used to target areas where the results of the magnetometry were either unclear or where they suggested a deeper, more complex stratigraphy. It was undertaken using a GSSI SIR 3000 with a single channel 400 MHz antenna, with data collected at traverse intervals of 0.25 m. Two small test areas within the archaeological park were initially surveyed followed by a larger area outside of the park to the south, covering approximately 1 ha.

#### 8.4.1. Magnetometry survey

The magnetometry survey at *Lucus Feroniae* covered an area of 12.5 ha (Fig. 8.2). The features are described by area (Fig. 8.1) in the section below, as a range of subsurface anomalies were recorded across the study area.

##### 8.4.1.1. Eastern area (Area 1)

Situated along the eastern limits of the modern archaeological park, directly to the east of the forum and the 'Via Tiberina', Area 1 covered approximately one fifth of the total area surveyed (Fig. 8.1). Despite several areas of localised magnetic disturbance to the north and east, the results of the magnetometry were generally clear, with a series of archaeological features identified across the area (Fig. 8.2).

Starting in the north of Area 1, of particular interest are two groups of strong, parallel positive anomalies within fairly distinct regions, each displaying a series of regular and evenly distributed circular positive anomalies between them. The first area, situated directly to the east of the 'Via Tiberina' and appearing to respect the northern limits of the sanctuary, contains a series of 15 positive linear anomalies running approximately northeast–southwest (Fig. 8.3: 1). Each of these anomalies is approximately 0.9 m in width, occurring at regular intervals of c. 5 m. Given their signal strength and nature, these anomalies almost certainly represent filled cuts in the underlying shallow bedrock. The circular positive anomalies, measuring approximately 1 m in diameter and occurring at regular intervals of c. 6 m between these linear features, probably also represent cuts in the bedrock. The second region, separated from the first by an area of c. 5 m devoid of features (possibly a trackway), has a similar arrangement of linear and circular positive anomalies. The linear features, orientated northwest–southeast and at intervals of approximately 2.7 m, measure c. 0.6 m in width. The positive circular anomalies measuring approximately 0.8 m in diameter and occurring at intervals of c. 1.5 m between these linear anomalies, may again represent filled circular cuts.

A possible interpretation for the series of trenches and pits visible in the data across these two regions is agricultural activity. In terms of chronology, it would appear that the features respect a large rectilinear feature directly to the south and west. Measuring approximately 23 × 127 m and running parallel to the *forum*, this feature perhaps represents a part of the sanctuary. Similarly, to the south of these, two



Figure 8.2. Magnetometry survey of Lucus Feroniae.



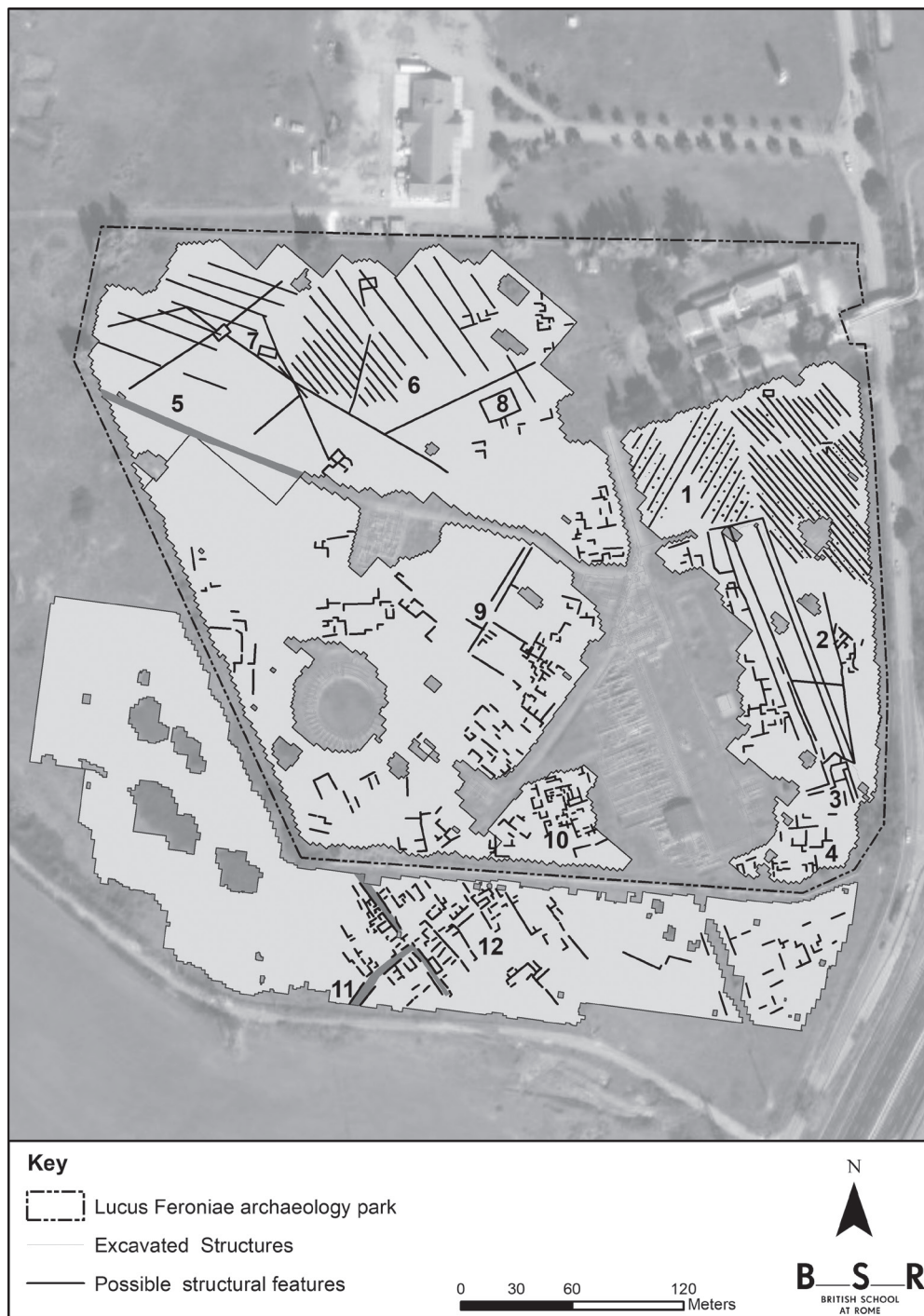


Figure 8.3. Schematic interpretation of the Magnetometry survey.



parallel linear anomalies (Fig. 8.3: 2) have a north–south alignment and are associated with an area of magnetic disturbance. From a study of archival photographs and documentation, these appear to relate to a pathway or railway line installed during the 20th century excavations at the site, leading to a spoil heap. At the southern end of this feature, a cistern, also recorded during 20th-century excavations, is visible in the results (Fig 8.3: 3), possibly connected to a wider network of water channels which extends to the north and west. A series of structures were recorded immediately to the east of the temple and altar, even though the disturbance from the excavations and the dumping of spoil has masked some of the features (a fence around the area prevented the extension of the survey). Finally, at the very southern extent of the survey, the magnetometry recorded a series of buildings clustered around the southeast corner of the forum (Fig. 8.3: 4).

#### 8.4.1.2. Northern area (Area 2)

Situated to the north of the ‘Via Capenate’ the area comprises approximately 3 ha and lies between the northern edge of the modern archaeological park and the partially excavated road (Figs 8.1 and 8.2). The continuation of the ‘Via Capenate’ is clearly visible running east–west across the western part of the survey area (Fig. 8.3: 5), continuing beyond the archaeological park as evidenced by aerial photographs of the site. As in Area 1, an area of probable agricultural activity can be identified, taking the form of a series of parallel positive linear anomalies likely again representing trenches dug into the bedrock (Fig. 8.3: 6).

Of particular interest in relation to these areas of agricultural activity are a series of possible cisterns located across Area 2 (Fig. 8.3: 7). Several features appear to be directly connected to a series of negative linear anomalies radiating outwards at approximate right angles to the features, similar to those seen in Area 1. It is possible that these anomalies relate to an irrigation system linked to the agricultural activity, although since they appear to cut across the area of cultivation activity this may indicate that they post-date the agricultural trenches.

The majority of this area appears devoid of any distinct structures, with just a grouping of features at the junction of the ‘Via Capenate’ and ‘Via Tiberina’, close to the Augusteum. The final anomaly of interest (Fig. 8.3: 8) is recorded as a strong, rectangular positive anomaly. It may represent a cistern or a large solid foundation; the internal area has a lower magnetic field at the centre, perhaps indicating a change in construction material.

#### 8.4.1.3. Central area (Area 3)

Situated to the south of the ‘Via Capenate’ between the *forum* and the southern and southwestern limits of the archaeological park, Area 3 constitutes approximately 25% of the total area surveyed. The results in Area 3 display a higher degree of disturbance caused by modern activity – most notably to the south of the ‘Capenate baths’ and to the west of the amphitheatre, most likely related to spoil from excavations. Multiple

dipolar striations are also visible running approximately northwest–southeast across this area, again most likely linked to modern agricultural activity at the site. The most significant features in the results from this area are the predominantly negative linear anomalies identified in the eastern part of Area 3. Extending south from the ‘Via Capenate’ is a strong double negative anomaly (Fig. 8.3: 9), probably walls, which appear to delineate a series of divided open spaces backing onto an area of intense building activity identified in the magnetometry results flanking the ‘Via Tiberina’. Within this area of activity, various positive and negative linear anomalies have been identified, probably representing the continuation of domestic structures that radiate out from the *forum*. Of particular interest are two dipolar anomalies in two of these open spaces, similar in form and signal strength to kilns. It may also be possible, therefore, that these open spaces were used for production.

The southeastern corner of Area 3 was less affected by modern activity at the site and is dominated by a large rectilinear structure (Fig. 8.3: 10) measuring approximately 22 × 12m. The structures appear to continue beyond the eastern limit of the survey expanding outwards from the *forum* area.

#### 8.4.1.4. Southern area (Area 4)

Area 4 covers approximately one quarter of the total area surveyed. Large parts of this area were inaccessible during data collection due to thick vegetation and high levels of surface water. There was also a substantial quantity of modern interference in this area, relating to abandoned construction work, archaeological excavations, and refuse disposal.

The central section of Area 4 contains a wealth of previously unknown archaeological features, revealing the continuation of the ‘Via Tiberina’ (Fig. 8.3: 11) and a further two possible roads branching off the ‘Via Tiberina’. A large number of rectilinear features are visible along both roadsides, and given their form most likely represent domestic structures, suggesting a reasonably dense occupation through the central part of this area. In general, the strong negative linear anomalies appear to represent walls whilst the positive anomalies within the groups of these negative linear features may represent floor surfaces or accumulation of fired material such as roof tiles.

From an interpretation of the anomalies, it is possible to identify a number of potential separate structures which extend away from the central road. Several groups of individual rooms are identifiable through a number of interconnecting features (Fig. 8.3: 12). Of further interest, however, are a series of four, parallel, negative linear anomalies to the east of the ‘Via Tiberina’, measuring 11 to 29 m in length and orientated approximately northwest–southeast. The appearance of these anomalies and the relatively quiet nature of the open areas between them, are similar to the anomalies identified in the eastern part of Area 3. It is possible, therefore, that these linear features represent similar dividing structures designed to demarcate individual open spaces such as gardens, courtyards or areas utilised for some form of production.

#### 8.4.2. Ground-penetrating radar survey

Following the initial magnetometry survey in 2013, two small test areas of targeted GPR survey were conducted within the park in 2015 to compare with the results of the magnetometry as well as to apply GPR in an area where there was significant magnetic disturbance. The technique offers an increased resolution, as well as being less affected by ambient noise, and the possibility to assess anomalies at a range of depths. The data were collected in a regular series of parallel traverses at a distance of 0.25 m with varying lengths. The test grids provided useful additional detail to the magnetometry, in particular in the area towards the *forum* where spoil had been deposited from previous excavations.

The magnetometry survey immediately to the south of the archaeological park indicated a dense occupation alongside the 'Via Tiberina' leading south from the *forum*. Following the tests within the park, a central area of 143 × 60 m was therefore investigated with GPR. The results indicate a complex range of interlocking features that appear to define elements of an urban settlement focused around an area approximately 80 m wide that runs in a northeast–southwest direction. The results of the GPR survey indicate an approximate depth of features ranging 0.3 to 1 m, after which there is the underlying bedrock.

The majority of the high amplitude anomalies indicate brick or stone-built walls that suggest a substantial level of preservation. In a central area, a feature in the magnetometry results is shown in greater clarity and linearity (Fig. 8.4: 1), suggesting a square form, perhaps a central courtyard with a number of regular adjacent rooms.

Of particular interest are five long parallel features (Fig. 8.4: 2) aligned in a southeast direction away from the central concentration of features. These also coincided with features recorded by the magnetometry. The regularity and amplitude of these features suggests a solid construction, even though the features do not appear to join to the east. It is possible that these are some form of land division as noted elsewhere in the hinterland of *Lucus Feroniae* (Gazzetti 2016, 145). Other regular features were recorded by the GPR in the central eastern area indicating an orientation along a secondary road leading to the northwest (Fig. 8.4: 3).

The GPR anomalies that are described are in the central part of the survey area with relatively few features recorded either to the east or west, suggesting a concentration alongside the central road that traverses the survey area.

### 8.5. The sacred woodland

The combined geophysical surveys at *Lucus Feroniae* have revealed previously unknown large parts of the site, tracing a settlement that appears to stretch along the principal thoroughfares and which is centred around the sanctuary and *forum*.

An element of particular interest are the regularly spaced anomalies (Fig. 8.3: 1) to the immediate north of the excavated temple and altar. The proximity to the sacred

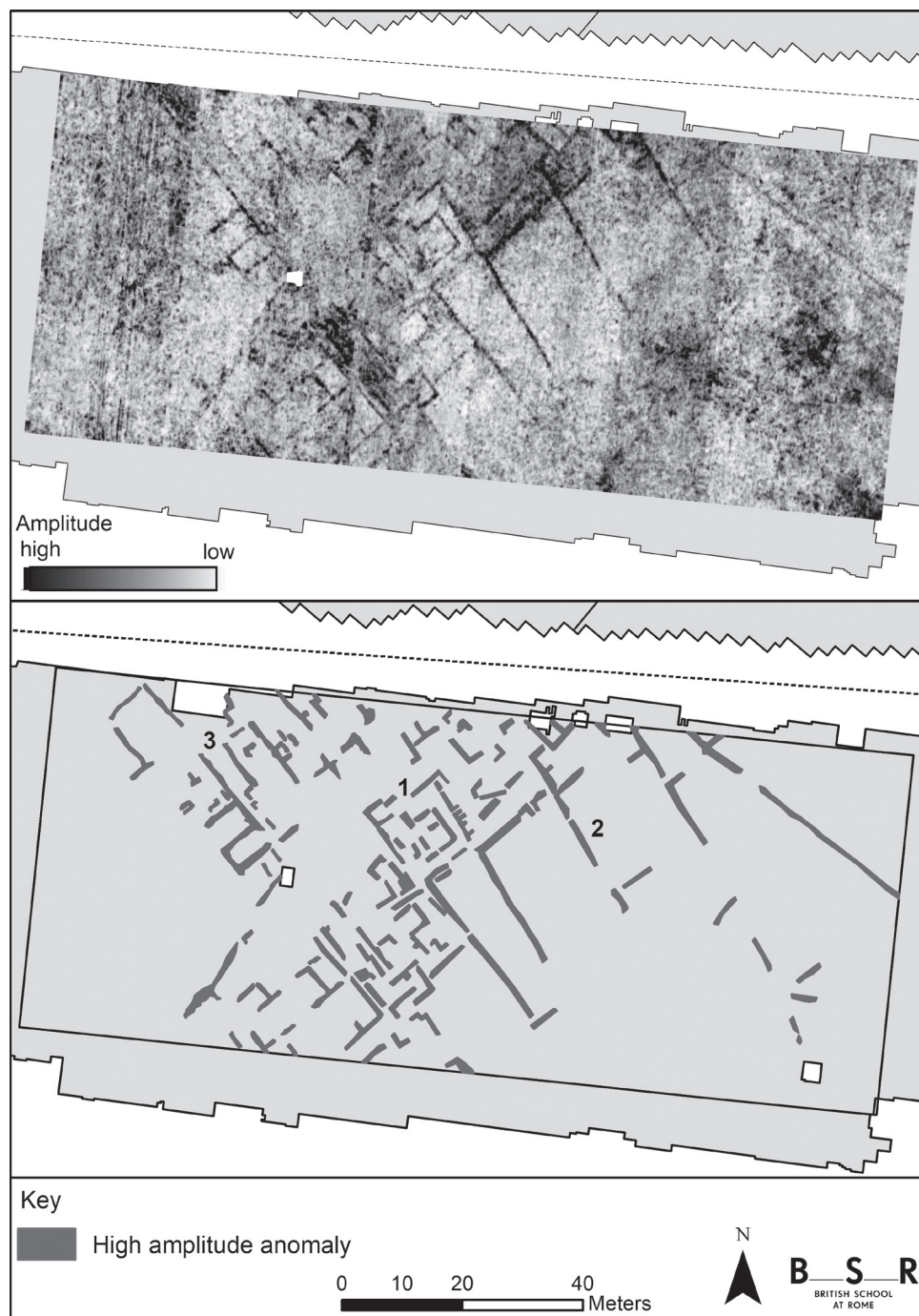


Figure 8.4. The Ground-Penetrating Radar survey to the south of the archaeological park: GPR data at an estimated depth of 0.5 m (top) and interpretation of high amplitude features (bottom).

area and the lack of construction, especially in an area close to the 'Via Tiberina', are perhaps indicators that the area was respected in antiquity. The form of the geophysical anomalies has parallels with agricultural activity, with the long features potentially filled trenches and the circular cuts filled pits suggesting the possibility of vine trenches and tree holes. This hypothesis is supported by nearby excavations on the 'Via Tiberina' (at km 19.5), where, together with 10 burials, 21 pits and 9 channels were identified, interpreted as pits for fruit trees and channels for irrigation (Di Nardo & Iorio 2016).

The distribution of these anomalies has very strong similarities with those of vine trenches. To the southeast of Rome, in the area of Tor Pagnotta, a large number of parallel trenches were excavated on the same northeast-southwest alignment, measuring 0.7–0.8 m in width and at distance of 3.7 m (Santangeli Valenzani & Volpe 1980). The features at Lucus Feroniae are similar in width (approximately 0.9 m) with a row separation of 5 m, still, however, greater than that indicated by Columella (*De arboribus* 4.3). There are few parallels with magnetometry surveys of these forms of features in central Italy, even though one example from nearby Musarna (Viterbo) recorded channels 0.85–0.95 m in width and at an average spacing of 6.6 m (Broise & Jolivet 1995). Whilst the width and spacing of the anomalies would appear to fit the hypothesis of a vineyard, these are also interspersed with regular circular features, interpreted as pits, measuring approximately 1 m. A hypothesis is that these are pits for trees cut into the bedrock, as recorded elsewhere near Lucus Feroniae (Di Nardo & Iorio 2016, 154). The spacing of these in a vineyard may reflect the use of interplanted cultivation with the planting of fruit trees or the arbustum technique where vines are intercropped with other plants and encouraged to climb trees (Dodd 2022, 453). One argument against the possible interpretation of this as a vineyard is that this area on the right bank of the Tiber was less suitable for the cultivation of vines (Santangeli Valenzani & Volpe 2012, 62), even though this may also reflect patterns of modern urban development and these features being recognised in the archaeological record.

A further aspect to consider regarding these geophysical anomalies is the proximity to the sanctuary of Lucus Feroniae. As noted above, Feronia tends to be associated with sacred woodlands and, indeed, trees had a sacred character in ancient Italic religions (Coarelli 1987). The interpretation as these features forming part of a sacred woodland around the sanctuary has been put forward by Del Lungo (2019), interpreting these geophysical features as part of a woodland around the temple. A parallel can be drawn with the *lucus* identified at the sanctuary of Jupiter at Gabii. Excavations around the temple identified 70 pits measuring 1.2 to 1.3 m (compared with 1 m at Lucus Feroniae). These have been interpreted as pits for fruit trees that formed a sacred woodland, whereas the *templum* was considered a free area in the centre of the woodland itself (Coarelli 1987).



### 8.6. The settlement of Lucus Feroniae

The settlement of Lucus Feroniae went through several phases of restructuring and urban development over the course of its history. From the initial foundation of the sanctuary in the 6th century BC (Russo Tagliente *et al.* 2016, 4) archaeological evidence attests major rebuilding in the 2nd century BC, as well as other interventions such as the repaving paid by Cnaeus Egnatius (par. 8.2). Following its designation to colony status in the early 1st century BC, further transformation is recorded in the Augustan period as well as later in the Trajanic-Hadrianic period (such as the amphitheatre), and even later with the construction of a bath complex in the Late Antique period. Whilst many of these phases may be recorded in the geophysical survey, these can only be untangled through excavation. However, it is clear that the settlement had a change, perhaps in the 1st century BC, shifting from the site of a sanctuary to the role of small town, a change tied to the worship of Feronia. However, despite this transition, the settlement appears to have maintained its original concentration along the two principal roads and, on the basis of the visible archaeological record and geophysics, appears to be dominated by public buildings with less private space, a phenomenon of small towns seen elsewhere in central Italy (for example Forum Novum, Amiternum, Iuvanum). From its origins as an Italic sanctuary, Lucus Feroniae appears to have later taken on the role of administrative centre with public buildings grouped around the *forum* and which served the needs of a dispersed population in the immediate hinterland. The geophysical survey results appear to indicate that the settlement was less dense beyond the excavated baths to the west along the 'Via Capenate'. Furthermore, previous field walking to the west also confirmed a lack of pottery scatters (Jones 1962, 196–197). However, several villas have been recorded in its immediate hinterland, one of which (Volusii Saturnini), built around 50 BC, appears to have belonged to Q. Volusius who, as previously noted, financed a temple to the Divus Augustus (Marzano 2007, 371). It would seem apparent therefore, at least by the early Imperial period, that the role of Lucus Feroniae had changed, as it served an economy centred around agricultural production with a small population living within the actual town.

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