

GEOPHYSICAL SURVEY PROJECTS 2020–2021: INVESTIGATIONS IN THE SABINA

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Geophysical prospection continues to be at the heart of the BSR's archaeological research programme, forming a major part of the current ERC funded Rome Transformed project (see Haynes et al., this volume) which is using non-invasive methods to investigate the urban changes between the 1st and 8th centuries AD of the Eastern Caelian. Considerable investment over the past year, both through private donations and the BSR, has seen a further increase in capacity and expertise with the addition of a laser scanner, Ground-Penetrating Radar (GPR) antennas and a robotic Total Station.

The sudden outbreak of the COVID-19 pandemic in Italy in mid-March 2020 had an impact on the geophysical research programme with several surveys postponed until 2021; however, fieldwork was able to resume following strict guidelines from early June onward. Alongside the ongoing research on the BSR's two major projects at Portus and Rome, geophysical survey was conducted at two sites in the Sabina (Lazio).

The repercussions of the devastating earthquake in central Italy in August 2016 continue today. As part of the reconstruction efforts in the Lazio region, the BSR undertook a magnetometry survey in the area of Grisciano on behalf of the Comune di Accumoli. Initial investigations, led by the Soprintendenza Archeologia, Belle Arti e Paesaggio per l'area Metropolitana di Roma e per la Provincia di Rieti, had discovered a Roman villa or road station in an area identified for development. The geophysical survey was able to reveal the full extent of the site and assist in the replanning of the development.

Further south on the via Salaria, in the area of Terme di Cotilia, a survey using both GPR and magnetometry was conducted at the so-called Baths of Vespasian. The site is first mentioned in literature in 1809 and later in the century the landowner Augusto Bonafaccia undertook the first excavations. Yet despite subsequent research its precise function remains uncertain. In 2020 the British School at Rome undertook the first geophysical prospection at the site, using a combination of magnetometry and GPR survey. The aim of the survey, undertaken on behalf of Saint Mary's University Halifax and McMaster University (Canada), was to investigate unexcavated areas around the complex as well as to understand its relationship with the adjacent ancient consular road.

The previous discovery of a large pool (measuring 60 m by 24 m with four sets of double staircases) at the centre of the complex has led scholars to believe that the site was once a vast bath complex, constructed towards the end of the second century BC (Coarelli, 1982). The presence of an imperial villa a few kilometres to the northeast above Lake Paterno, identified as belonging to the Flavian dynasty, has led to the association of the site to the emperor Vespasian who died at the villa in AD 79. Excavations in the mid-2000s led by the Soprintendenza Archeologia sought to contextualise previously discovered architectural terracottas, which, together with the long association of the site with water, led to the hypothesis of the site perhaps being a federal sanctuary of the Sabines dedicated to Vacuna.

The site was initially examined with a magnetometer survey using a Bartington Fluxgate Gradiometer, with data collected at a sample interval of 0.25 m and with parallel traverses at a distance of 0.5 m. Whilst the survey recorded a number of linear negative features on the upper terrace to the south of the pool, the lower terrace revealed a range of both positive and negative anomalies that appeared associated to

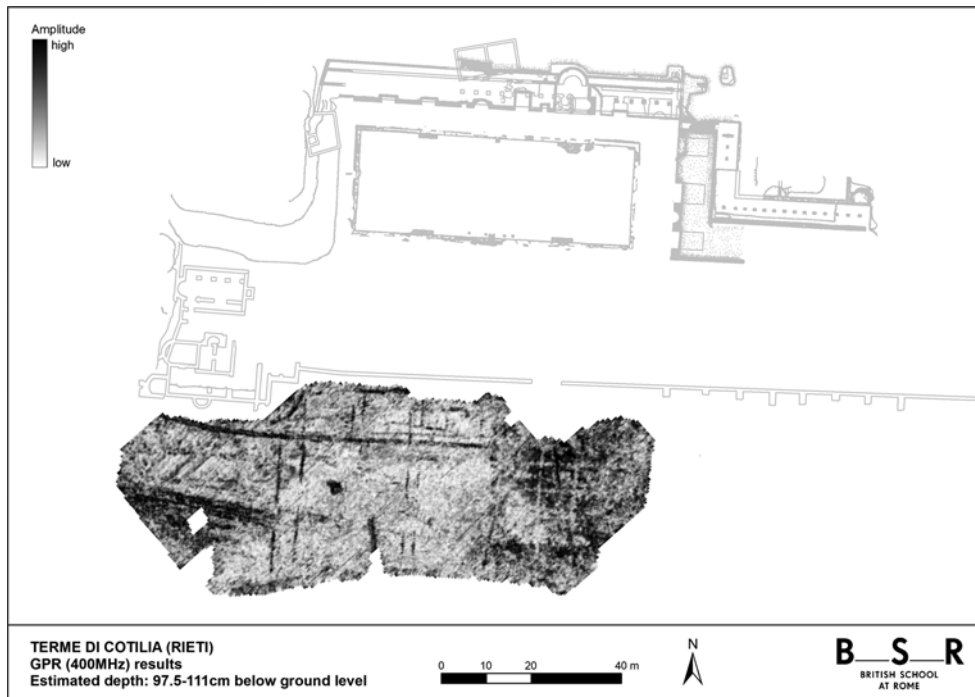


Fig. 1. Terme di Cotilia. GPR survey results.

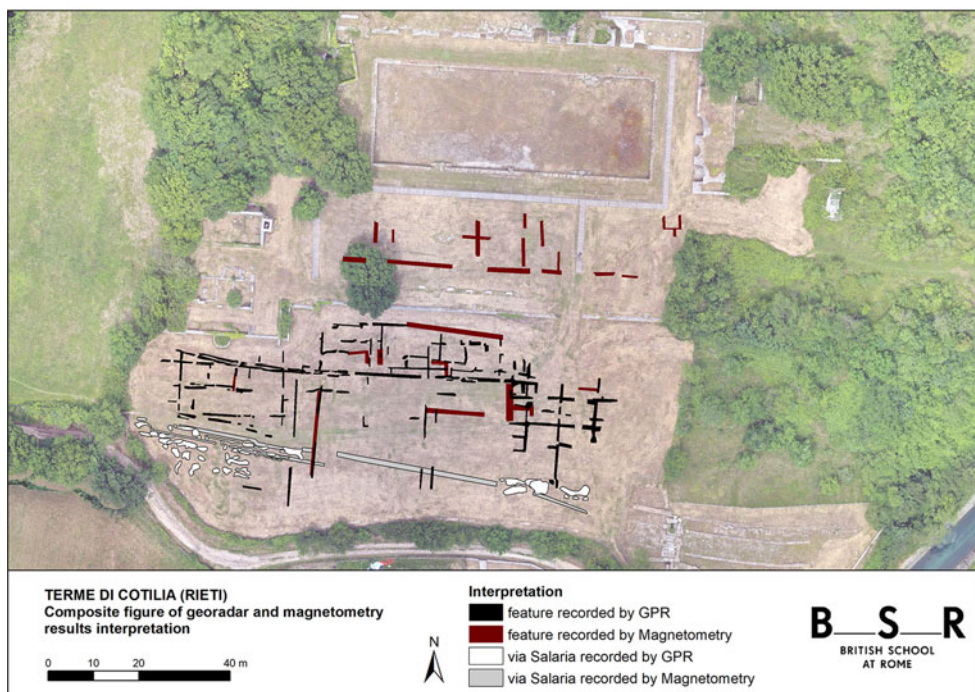


Fig. 2. Terme di Cotilia. Interpretation of geophysical survey results.

the complex. A continuation of the via Salaria, which had been excavated at the edge of the survey area to the east, was recorded traversing the terrace on an east-west alignment. Elsewhere, a series of regular linear negative anomalies relate to the presence of buried walls built in local limestone.

The area was also investigated using GPR with the aim of understanding the depth of the anomalies recorded by the magnetometer as well as of assessing them at a higher spatial resolution. The GPR survey was conducted using a GSSI 400 MHz antenna together with an SIR-3000 with regular parallel traverses at intervals of 0.25 m. The data recorded a complex range of structures between the road to the south and the middle terrace to the north (Fig. 1). The continuation of the via Salaria was mapped in the dataset towards the west, whilst a significant divisional wall was discovered on the same east-west alignment, behind which are a number of previously unrecorded buildings. The GPR also recorded a number of regular linear low amplitude features in the eastern area of the survey which were not recorded in the magnetometer data, presumably due to the type of construction material.

The composite image of the data interpretation of the major features recorded by both techniques illustrates the dense occupation of the lower terrace with structures recorded alongside the major Roman road (Fig. 2). The geophysical surveys have shown that the complex was significantly larger than the structures now visible, with buildings alongside the road. A further season of geophysical prospection is planned in 2021 exploring the areas to the southeast and west of the central pool, with the aim of collecting more data regarding the function of the complex.

Acknowledgements

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References

- Coarelli, F. (1982) *Lazio*. (Guide archeologiche Laterza) Rome / Bari: Laterza.
- Haynes, I., Liverani, P., Carboni, F., Ravasi, T., Kay, S., Piro, S. and Morelli, G. 2021. Rome Transformed: interdisciplinary analysis of the Eastern Caelian (Rome). *Papers of the British School at Rome* 89.

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