

New evidence for a Roman military camp at Virunum (Noricum)

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The epigraphic evidence for the presence of the Roman military at the site of Roman Virunum north of Klagenfurt in Austria was known for a long time. Confirmation came during a balloon flight in the summer of 2001: distinct crop marks were discovered on the ridge to the east of the ancient town center and were interpreted as traces of a military camp, including a civilian suburb, *vicus*, to the south. The presence of a Roman military camp was further substantiated by an aerial photograph taken in 2010 and topographic data derived from Airborne Laser Scanning (ALS) (Gugl and Jernej 2013; Doneus *et al.* 2003).

The interpretation of the aerials did not answer all the questions vital to the interpretation of the facility, regarding the construction of the enclosing wall and the nature of the buildings inside it. Therefore, the Ludwig Boltzmann Institute for Archaeological Prospection and Virtual Archaeology (LBI ArchPro) conducted a geophysical prospection survey in 2013. An area of about 2.56 ha was examined with a motorized high-resolution ground penetrating radar system MIRA from MALÅ Geoscience. The surveyed area was scanned at very high resolution of 10 x 5 cm within approximately three hours, focusing on the location of the military camp.

GPR data collected in the northern part of the surveyed area revealed numerous Roman buildings situated within a walled area (Fig. 1). The survey data clearly indicates that the south-eastern corner of the enclosing wall formed a sharp, right-angle and was not rounded, which is unusual for military installations of the Principate. In contrast, the corresponding south-western corner of the wall was rounded. At the same time, this preserved corner proves that the complex followed the edge of the terrace towards the north, confirming the extent of the enclosure reconstructed from ALS data, measuring 165 m by 141 m. No towers could be observed along the entire length of the enclosing wall. The only disruption is the south gate (Figs 2, 3) consisting of a simple gated passage formed by two approximately 5 m long side walls extending into the interior. An eastern gate could not be located and likely never existed. The remnants of a threshold in line with the enclosing wall and two massive foundations at the ends of the side walls were traced.

Several buildings in the south-eastern part of the enclosure support its interpretation as a military complex (Figs 2, 3), as they can be identified easily as military barracks. The building (Fig. 1: 2) that was most clearly visible in the aerials from 2010 is also the one that is the most distinct in the GPR data. The outer walls are more massive than the interior dividing walls. The total length of the building is 56.50 m; the width is 11.50 m, including a portico along the northern side. The officer's accommodation, clearly divided into several rooms, is situated on the eastern side and measures roughly 11 m by 9 m. The accommodations for the soldiers are attached on the west and comprise a 2.50 m wide portico

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Fig. 1. Interpretation of high-resolution GPR measurements conducted in 2013: 1–3 – barracks with end buildings for officers; 4–5 – barracks without end buildings; 7 – central building (?); 6, 9 – cliff with quarry; 10 – south gate; 11 – latrine; 12 – baths; 15 – channel; 16–19 – streets (© LBI ArchPro)

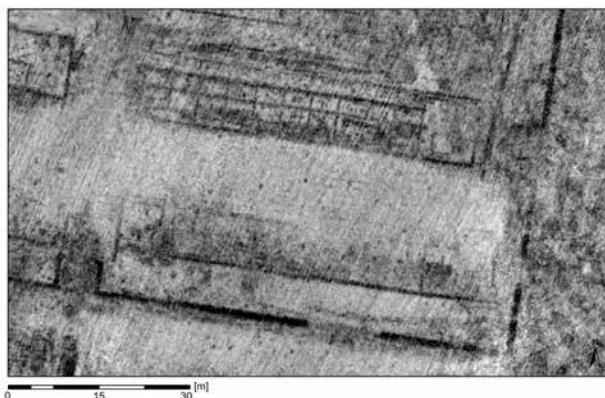


Fig. 2. Ground penetrating radar measurements of 2013, in the south-east of the walled area. Accumulated GPR depth-slices from 50 cm to 100 cm below surface level (© LBI ArchPro)

at the front, small anterooms measuring 4.30 m by 2.40 m outside and larger main rooms, approximately 4.30 m by 4.90 m on the inside. Ten *contubernia* could be reconstructed, each composed of an anteroom and a main room. Inside three of the main rooms were stone structures visible alongside the center of the dividing wall; they are interpreted as hearths or fire pits. Notably five of the anterooms show longitudinal central pits arranged parallel to the side walls. In two cases, the pits appear in pairs. These are most likely cesspits that excavations in barracks have often attributed to the cavalry.

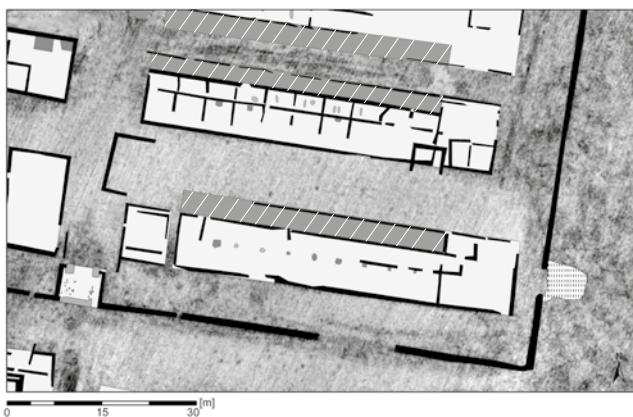


Fig. 3. Interpretation of the measurement data in the south-east of the walled area showing barracks, an earlier building, the south gate and the south-east corner (© LBI ArchPro)

Another barrack in the northern part (Fig. 1: 3) is located opposite the first one and is of the same size. It is separated from it by a 4.5–5.0 m wide courtyard, which gives access to both buildings. A third barrack of roughly the same size as the other barracks (approx. 54.50 m by 11.50 m) was identified next to the south-eastern corner of the camp enclosure (Fig. 1: 1). It is set 5.50 m further to the east, probably owing to an adjoining separate building of unknown function at the western end. The officer's dwelling is subdivided into several compartments. It was assumed that this barrack was constructed more or less in the same way as the northern barracks. Two rectangular buildings (Fig. 1: 4–5) are located north of and parallel to the three *io-contubernia* barracks (Fig. 1: 1–3). The GPR depth-slice images indicate for the southern building (Fig. 1: 4) a similar subdivision into anterooms and main rooms. With a length of 37 m, these two barracks without evidence of porticos are significantly shorter owing to the missing officer's billet. The south-western corner of a large central building (Fig. 1: 7) with massive walls or foundation platform is located within the survey area. The road, which ran northward from the southern camp gate, may have reached the southern front of this building. Assuming that the road reached the central building in its center, then its width could be reconstructed as 44–45 m. The continuation to the north in the forest could not be measured, but the terrain further north with its prominent rock formation (Fig. 1: 8) would have restricted the area available for construction.

Three buildings are visible in the south-western part of the enclosed area (Fig. 1: 12–14). The largest of these three is a tripartite complex measuring roughly 40 m by 16 m. A sewer runs from this building to the exterior of the enclosure wall via the supposed latrine. Because of the building layout, connection to the sewage system and close proximity to a possible latrine, it may have been a bath complex (Fig. 1: 12). A north–south oriented rectangular building (Fig. 1: 14) of unknown function and no apparent internal structures, measuring roughly 16 m by 9.5 m, is situated between the tripartite building and the road. To the north lies another east–west oriented building (Fig. 1: 13) of undetermined function, measuring roughly 18 m by 10 m. Within the enclosure, some remains of roads were detected together with evidence indicating earlier use of the site (Fig. 3).

The GPR survey also provided new evidence regarding the residential structures located outside the enclosure, starting at a distance of 8.5 m south of the enclosing wall (Fig. 1). A densely occupied residential area flanks both sides of the main road. The prospected and here described walled facility located on the eastern edge of Virunum is not a conventional imperial-era military camp. It has been suggested therefore that the military unit stationed here was attached to the governor of Noricum. *Singulares* and other military personnel assigned to the procurator, who had no strictly military duties, such as policing and surveillance, would have been billeted here.

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