

# Geophysical Survey

As the site of Portus is so large, excavating all of it would be time consuming and expensive. A better way of investigating large areas of remains that are buried or underwater is to do geophysical survey. Over 250 hectares have been surveyed using a variety of techniques including Ground Penetrating Radar (GPR) and side scan sonar.

GPR creates a 3D view of the buried remains. The machine sends pulses of electromagnetic radiation which are reflected off the interfaces between different deposits underground. It can distinguish between sand and building materials, revealing where structures once stood and how deep they are in the ground.

Nothing is known about what lies underwater at the bottom of the hexagonal Trajanic harbour, so a side scan sonar and sub-bottom profiler survey has been undertaken. This will determine the shape of the bottom of the basin, identify the thickness of sediments and create a map of the current harbour bed to identify any archaeological material.

1 Results from the geophysical survey highlighted areas to be excavated.

2 This view of the GPR results shows the different layers of materials underground.

3 Unprocessed results from the underwater survey showing the route of the side scan sonar around the hexagonal Trajanic basin.

4 The sub-bottom profiler and side scan sonar.  
5 A plan view of the GPR results around the main area of excavation. The red areas indicate buried structures.

