Trial Geophysical Surveys at the Port Arthur Historic Site, Tasmania

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The Port Arthur Historic Site is the most visited tourist attraction in Tasmania and Australia's premier convict heritage site. It is located on the Tasman Peninsula in southeast Tasmania approximately 70km east of Hobart. The site covers an area in excess of 50 Ha and is managed by the Port Arthur Historic Site Management Authority (PAHSMA). The Port Arthur Penal station at Mason Cove and its satellite juvenile establishment at Point Puer operated during the period 1830-1877. During these 47 years, approximately 13,000 convict men and boys spent time at the Port Arthur settlement, which at its peak supported a population of up to 3500 people.

Trial geophysical surveys have recently been conducted at Port Arthur to assist archaeological investigations and to systematically assess the potential of geophysical methods for delineating subsurface cultural heritage. Geophysical surveys have been carried out over a wide range of archaeological features using a variety of techniques including magnetometry, resistivity, frequency-domain electromagnetics and ground penetrating radar. In many cases, geophysical interpretations have been directly tested by archaeological investigations. Some subsurface features and structures are well delineated by the geophysical techniques but others have little geophysical expression.

This paper presents geophysical data from a number of sites at Port Arthur, an assessment of the suitability of the techniques trialled together with recommended survey geometries and acquisition parameters. Geophysical investigations at Port Arthur are ongoing.