Data Acquisition and Integration Protocol on the Ahuahu/Great Mercury Island Archaeological Project

Patricia Pillay, Matthew Barrett, Joshua Emmitt, Tim Mackrell, and Rebecca Phillipps

Anthropology, School of Social Sciences, University of Auckland

Introduction

On the Ahuahu/Great Mercury Island Project a diverse range of technology is used to record large quantities of data. A rigid protocol is followed to ensure consistent recording standards to a) maintain inter- and intra-season comparability of data; b) reduce inter-operator variability; and c) minimise data loss. Following a rigid workflow also reduces disruption to the excavation process. The data generated are joined to a master relational database with a hierarchical schema that combines the various data types from multiple sites across multiple field seasons.

Laser Scanner

Obtain 3D model of landscape or sites, for example mapping development of erosion fronts, recording site pre- and post-excavation

Drone and Cameras

Aerial photography for landscape context and top-downs of excavation. Digital cameras for deposits, features, people at work. All photo metadata organised according to set schema.

GPS

Record points during pedestrian survey such as a raw material source or surface feature

Total Station

Record 3D location of artefacts, deposits, features and surface points for the creation of Terrain Irregular Networks (TINs)

Tablet

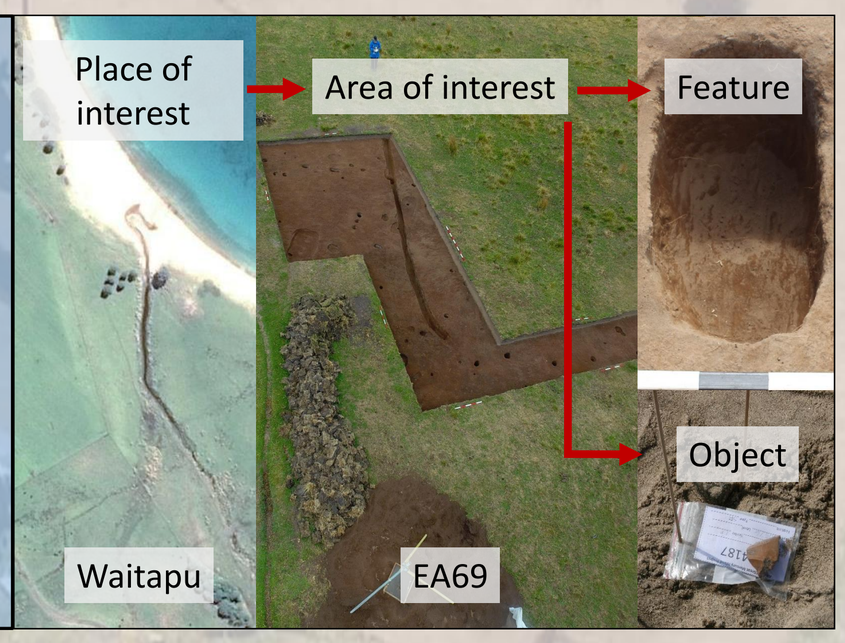
In-field registry of finds and analysis of artefacts, display excavation GIS

GIS

All recorded objects, features, digitised paper forms, and analysis data joined to a master GIS and tidied. Using a hierarchical schema means the GIS ultimately includes only **three** shapefiles – points, lines and polygons.

Hierarchical Schema

All data appended to a master relational database following a set schema, allowing comparison of data across multiple sites and seasons.



Significance for Archaeological Data Management and Analysis

The range of technology used on the Ahuahu/Great Mercury Island Project in combination with standardized recording protocols produce high quality and high resolution data for use in detailed archaeological analysis. The spatial hierarchical schema combined with the relational database allows the manipulation and querying of the data in any way a user requires. This data management creates a flexible but robust database that can be compared with other databases past, present, and future.