Old Sarum and its Environs. New Field Research in an Ancient Landscape
Site Background

The monument, number 1015675, includes a univallate Iron Age hillfort with evidence of Romano-British occupation and documentary evidence of a Saxon burh and mint. The hillfort is roughly oval in shape, enclosing an area of c.12ha, with entrances at the east and west ends.

The site was rebuilt as a royal motte and bailey castle including a cathedral and bishop's palace and extra-mural settlement.

The site is the focus for a number of major Roman roads and the Roman town of Sorviodunum has been suggested as lying within the hillfort.

The first cathedral was built in 1078, and consisted of a nave separated from two side aisles by eight great arches on each side. At the apsidal east end, the main altar and two side chapels in the transepts were also enclosed by semicircular apses.

Rebuilding in the Norman style commenced in 1130 under Bishop Roger and involved the large scale levelling of this part of the hillfort interior.

Images: English Heritage
Previous Excavation and Survey

- Excavation has been conducted at the site in the 20th century, including Hope’s work in the earlier part of the century (Hope 1911; 1914; 1916; 1917) and a number of trial excavations and archaeological mitigations prior to development in the area (for instance excavations on the trunk main replacement).

- Previous geophysical survey has been conducted at the site, with a survey of the supposed chapel site being conducted in 2003 (http://archaeologydataservice.ac.uk/archives/view/ehgsdb_eh_2011/fullrecord.cfm?id=2664), and resistivity survey of part of the monument in 2005 (http://archaeologydataservice.ac.uk/archives/view/ehgsdb_eh_2011/fullrecord.cfm?id=2804).
Old Sarum
Then and Now

Photos: English Heritage
Areas of Interest

• The scheduled area of Old Sarum Castle contains multi-period evidence that would benefit from geophysical investigation. The exact layout of the medieval castle plan, and the Saxon Burg would merit attention.

• The area immediately to the south of Old Sarum contains the remains of a Romano-British settlement, and medieval remains, that require investigation.

• The north-west contains the medieval settlement associated with the castle.
Some General Themes

• Visibility of archaeology
• Nature and depth of deposits
• Types and forms of archaeology/geology
• Scale or extent of deposits across the site
Survey Methodology

- Total station building survey
- GPS survey and gridding out
- Magnetometer (fluxgate gradiometer) survey
- Earth resistance survey
- Ground Penetrating Radar (GPR) survey
- Electrical Resistivity Tomography (ERT) survey

Photo: D. Barker
Topographic survey was limited to detail on buildings and standing building survey because good quality LiDAR data was available free from the Environment Agency.
ERT Survey Profile
Magnetometer Survey

Magnetic field of an archaeological feature

Clark 1996
Dipolar Anomaly - Kiln

Negative and Positive anomalies – walls/ditches

Magnetometry – Late Period and Roman Necropolis, Quesna, Egypt
Earth Resistance Twin Probe Array

Distance between A and B should be infinity but is worked out as 30 x probe spacing
Ground Penetrating Radar
Ground Penetrating Radar

- Ground Penetrating Radar emits an electromagnetic signal at a particular frequency 250Mhz, 500Mhz etc..
- The antenna measures the time in nanoseconds for the signal to travel through the earth, and to be reflected from different buried objects.
- The antenna passes along the line of a series of traverses, with the distance travelled measured either by a manual logger, or using an odometer.
- A continuous profile of data are collected by the antenna, and can be visualised on the display console as the data is collected.
- Lowering the frequency of the antenna will increase the range of propagation for the radar wave
The hyperbola effect of targets located in GPR results stems from the nature of the transmitted radar wave as the antenna moves towards and away from the object. As the antenna nears the target, the radar signal is reflected by the feature but takes a longer period of time to be received than when the antenna is positioned directly above the object. As the antenna moves away from the object, the effect is reversed.
Survey Results - Magnetometry
Survey Results - Magnetometry
Survey Results – Earth Resistance
Survey Results – Earth Resistance
Survey Results – Integrated Interpretation
Ground Truthing with David Algar’s plans
Survey Results
April 2016
Magnetometry
Ground Truthing with David Algar’s plans
Ground Truthing with David Algar’s plans
Ground Truing with David Algar’s plans
Survey Results
April 2016 Earth Resistance

- Buildings
- Roads
- Roman/Medieval Road
- Buildings
Survey Results
April 2016 Earth
Resistance

Musty and Rahtz 1964
Survey Results
April 2016 and
Musty and Rahtz
1964 Plan Overlay
Survey Results
April 2016
Magnetometry

Buildings

Roads

Roman/Medieval Road

Burgage Plots?

Buildings
Survey Results Relating to Excavation Plans
Survey Results – Earth Resistance
Thermal Imaging Camera – Outer Bailey
GPR Survey Results 2015 – Outer Bailey
GPR Time Slices – Lower Portion
Old Sarum LiDAR Model
Old sarum LiDAR model with magnetometry
Old sarum LiDAR model with earth resistance
Old sarum LiDAR model with magnetometry
Fig 4.3: Findspots at the southern end of Stratford village. Green represents Medieval finds, with squares denoting structural remains and triangles isolated finds. Red site codes are undated.
Fig 4.4: The Medieval villages of Afene and Stratford.
Preliminary Conclusions

- It is apparent from the results that the entire outer bailey was heavily built up in the Middle Ages. Possible evidence of earlier settlement in GPR data.
- The plan of the settlement and the nature of some of the structures can be clearly identified. Among these is the presence of large structures abutting the defensive wall of the site, an open area in front of these structures with an urban residential plan surrounding the ditch to the inner bailey.
- A change is recognisable between the outer bailey in general and the area of the cathedral precinct.
- Several later structural features are visible, suggesting small scale settlement of the site in the late medieval period or post-medieval period.
- Outside of the monument curtilage evidence for Romano-British and medieval settlement, building platforms and orthogonal town planning near eastern entrance.
- Clearly there remains much more work to do in terms of non-intrusive survey within Old Sarum itself, and in the surrounding hinterland.
Future Work

- Plan to continue survey to extend over the hinterland of old Sarum and Stratford Sub-Castle, with geophysics, fieldwalking, laser scanning and possible excavation

- Phase of desk-based and archive assessment to incorporate material

- Project collaboration between Universities of Southampton, Swansea and local community

- Involvement of history department at University of Southampton for integration of historical records with the archaeological evidence
LIDAR data
Considerable advice and assistance was received from a number of sources in the completion of this survey. Primarily, thanks go to English Heritage and the inspector of ancient monuments, Mr Phil McMahon, for support in the drafting of the project document and application for Section 42 licence. Warm thanks are also extended to Dr Heather Sebire the Property Curator for English Heritage in supporting the fieldwork and offering advice and assistance, and to Ms Cameron Moffett the collections curator at English Heritage. The continued assistance and collaboration with Wiltshire County Council Archaeology Service is also recognised, and special thanks are owed to Ms Clare King the assistant county archaeologist.

The authors are also particularly grateful to Bill Moffett and the Friends of Old Sarum for their input and support for the geophysical research programme. Finally, whilst this survey was partly carried out by the authors, its successful completion would have been impossible without the hard work of the survey team. Warm thanks are extended to all of the students, both undergraduate and postgraduate, that attended the survey.
Thank you to everyone who has helped so far:

Naomi Matthews and her English Heritage staff at Old Sarum
Heather Sebire, Phil McMahon, Hugh Beamish
Clare King, Wiltshire County Council
Abigail Coppins at English Heritage
Adrian Green and Louise Tunnard at Salisbury Museum.
Heather & Jim Platt in Stratford Sub Castle
Alex Langlands and Bill Moffat.
All the tenant farmers and landowners who have allowed survey to be done on their land.
Staff and students in the Archaeology Department, University of Southampton.
The Old Sarum Landscapes Project:

On Facebook: https://www.facebook.com/SarumLandscapes/

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Website: http://generic.wordpress.soton.ac.uk/oldsarum/

(Due live soon)