Northamptonshire Archaeology

Archaeological Geophysical Survey of the Wilderness and Tiltyard Gardens at Hampton Court Palace Richmond, Surrey November 2011

Northamptonshire Archaeology
2 Bolton House
Wootton Hall Park
Northampton NN4 8BE
t. 01604 700493 f. 01604 702822
e. sparry@northamptonshire.gov.uk
w. www.northantsarchaeology.co.uk

Northamptonshire County Council

Adrian Butler and Brian Dix

Report 11/270

December 2011

STAFF

Project Manager:	Adrian Butler MA BSc AIfA
Fieldwork:	Adrian Butler Ian Fisher BSc
Text and Illustrations:	Adrian Butler Brian Dix FSA

QUALITY CONTROL

	Print name	Signed	Date
Checked by	Pat Chapman	*PC*	21/12/2011
Verified by	Andy Chapman	*AC*	21/12/2011
Approved by	Steve Parry	*SP*	22/12/2011

OASIS REPORT FORM

PROJECT DETAILS		
Project name	Archaeological Geophysical Survey of the Wilderness and Tiltyard Gardens at Hampton Court Palace, Richmond, Surrey	
Short description	Northamptonshire Archaeology was commissioned to carry out earth resistance survey in the Wilderness and Tiltyard Gardens at Hampton Court Palace. This succeeded in recovering the geometric pattern of paths set out in the 17th century in the Wilderness, and part of the layout of former kitchen gardens in the Tiltyard.	
Project type	Geophysical survey	
Site status	Scheduled Ancient Monument No: LO83	
Previous work	PCA Geophysics 2008	
Current Land use	Gardens	
Future work	Unknown	
Monument type/ period	Post-Medieval Gardens	
Significant finds	Layout of geometric paths	
PROJECT LOCATION		
County	Greater London / Surrey	
Site address	Hampton Court Palace Road	
Study area	*c* 4000 m^2	
OS Easting & Northing	TQ 157 687	
Height OD	*c* 12-14 m AOD	
PROJECT CREATORS		
Organisation	Northamptonshire Archaeology (NA)	
Project brief originator	Brian Dix	
Project Design originator	NA	
Director/Supervisor	Adrian Butler	
Project Manager	Adrian Butler	
Sponsor or funding body	Historic Royal Palaces	
PROJECT DATE		
Start date	21 November 2011	
End date	21 December 2011	
ARCHIVES	Location	Content
Physical	N/A	
Paper	NA	Site survey records
Digital	NA	Geophysical survey & GIS data
BIBLIOGRAPHY	Journal/monograph, published or forthcoming, or unpublished client report	
Title	Archaeological Geophysical Survey of the Wilderness and Tiltyard Gardens at Hampton Court Palace, Richmond, Surrey	
Serial title & volume	Northamptonshire Archaeology Reports 11/270	
Author(s)	Adrian Butler & Brian Dix	
Page numbers	6	
Date	2011	

Contents

Figures

ARCHAEOLOGICAL GEOPHYSICAL SURVEY OF THE WILDERNESS AND TILTYARD GARDENS AT HAMPTON COURT PALACE RICHMOND, SURREY NOVEMBER 2011

ABSTRACT

Northamptonshire Archaeology was commissioned to carry out earth resistance survey in the Wilderness and Tiltyard Gardens at Hampton Court Palace. This succeeded in recovering the geometric pattern of paths set out in the 17th century in the Wilderness, and part of the layout of former kitchen gardens in the Tiltyard.

1 INTRODUCTION

Northamptonshire Archaeology (NA) was commissioned by Brian Dix, on behalf of Historic Royal Palaces (HRP), to conduct archaeological geophysical survey within the Wilderness Garden and Tiltyard area at Hampton Court Palace, as part of a continuing programme of historical investigation for re-interpreting the property. The work was carried out between 21 – 23 November 2011, in accordance with a licence issued under Section 42 of the Ancient Monuments and Archaeological Areas Act 1979 (No. SL00018813).

2 TOPOGRAPHY AND GEOLOGY

The British Geological Survey maps the solid geology of the site as Thames Group clays, silts, sands and gravels, and the drift as River terrace sands and gravels (BGS 2011). The ground is relatively flat, mown grass with abundant trees, some of up to several centuries of growth. The Wilderness Garden (NGR TQ 157 687; Fig 1) lies on the north side of the Palace between the Glasshouse Nursery and Hampton Court Road. The Tiltyard Garden (TQ 155 687; Fig 1) is situated to the west of the Wilderness, part of a range of walled gardens on the western wall of the Palace grounds.

3 ARCHAEOLOGICAL BACKGROUND

3.1 The Wilderness Garden

The Wilderness lies on the north side of the palace between the Glasshouse Nursery and Hampton Court Road. A fashionable woodland garden had been created here by 1686, replacing an earlier orchard (Thurley 2003, 227-29). Its geometrical layout is recorded in a series of historical maps, surveys and other views which depict how its character changed as the planting grew out and alterations were made. The formal arrangement of paths became overgrown by the middle of the 19th century and was subsequently restored, followed by other re-ordering in which trees were thinned or felled and new features introduced in the early 20th century, culminating in the present appearance (Longstaffe-Gowan 2005, 122-33). Limited geophysical survey of the Wilderness was carried out by Pre-Construct Geophysics in 2008.

3.2 The Tiltyard Garden

The Tiltyard forming the north-western part of the palace grounds was originally used for grand tournaments but this function had declined by the beginning of the 17th century and despite various later usages the ground gradually fell vacant. Early in their reign, King William III and Queen Mary divided the area into six compartments to create a series of individual kitchen gardens, each containing a perimeter path around rows of cultivated beds. The gardens continued to supply food for the royal household until the mid-18th century but only intermittently thereafter, following the lease of the ground to local market gardeners. This rental arrangement continued until the 1920s when the ground was converted into recreational and flower garden areas for visitors to enjoy (Longstaffe-Gowan 2005, 136-45; Gregory 2011, 22-29).

4 METHODOLOGY

The earth resistance survey in the north-east and south-west corners of the Wilderness Garden was designed to complement the results obtained by Pre-Construct Geophysics during previous investigation in 2008. By taking readings at more closely spaced intervals, the position and alignment of former the radial and concentric paths can be precisely fixed, when compared to historic mapping. Geophysical survey was carried out in the middle compartment along the western side of the Tiltyard Gardens in order to

determine if remains might survive from previous use as a kitchen and nursery garden, particularly a path that ran north-west to south-east along the centre of the garden.

The survey was conducted using Geoscan Instruments RM15 resistance meters, set in 0.5m 'twin-probe' electrode array. These are standard instruments for archaeological earth resistance survey. A tape measure and optical square were used to divide each survey area into a grid of 10m squares, and this grid was tied into the Ordnance Survey National Grid with a Leica Systems 1200 dGPS. Survey then progressed through each grid square, collecting data along 0.5m spaced traverse lines at 0.5m intervals (Wilderness Garden) and 1.0m spaced lines at 1.0m intervals (Tiltyard Garden).

All fieldwork methods complied with the guidelines issued by English Heritage and by the Institute for Archaeologists (EH 2008; IfA 2011).

The survey data was processed using Geoplot 3.00v software. Where necessary the background levels of adjacent grids were balanced arithmetically.

The processed data is presented in this report in the form of a grey-tone plot, at a scale in ohms (of +/-2.0 standard deviations, black/white). The plot has been scaled, rotated and resampled (georectified) for display against the Ordnance Survey base mapping (Fig 2, 3, 5 & 7). Interpretative diagrams have been produced and are shown in Figures 4, 6 and 8.

5 SURVEY RESULTS

5.1 General Notes

Trees were present in great profusion throughout the Wilderness Garden, and to a lesser extent the Tiltyard Garden. As a result, high resistance area anomalies were often detected in the vicinity of these, due to the denuding of soil moisture by expansive root growth.

5.2 The Wilderness Garden

Area 1 (1,300m^2, Figs 3 & 4)

Minor errors, resulting in a slight positive and negative data striping effect along the traverses, were introduced into the easternmost grids of this area by a fault in data

download not visible in the field. These were compensated for by arithmetic addition and subtraction in data processing.

A broad (*c* 4 metre) arc of anomalously low resistance was detected, extending from the south-east to north-west of Area 1. This was crossed, in the north of the area, by a low resistance linear anomaly aligned south-west to north-east. A short curving, low resistance anomaly was located to the south, terminating at the main arc.

The three features are likely to represent the paths which were the subject of the investigation. The low resistance character may have been a result of the paths continued existence as slight hollows, filled with moist humic (acidic) earth that is more electrically conductive than the surrounding earth.

Area 2 (2,000m^2, Figs 5 & 6)

As with Area 1, a pattern of broad low resistance linear anomalies likely to indicate the location of former paths, were detected. A straight feature was located, aligned south-west to north-east, from the south-west corner of the area to the middle of the eastern side. Intersecting this was an arc, extending from the north-west corner of the area, to the eastern side of the area. A short linear anomaly aligned north-west to south-east, was located across the north-east corner of Area 2, and an arc anomaly extended from the northern edge of the area, south-west to Moat Lane.

5.3 The Tiltyard Garden (900m^2, Figs 7 & 8)

This area was surveyed between a pair of parch-marks that indicated the former 1920s flowerbeds (above). Low resistance anomalies mark where the survey carried over the flowerbed. A linear high resistance anomaly was detected, on a north-east to south-west alignment along the central axis of the garden. It is assumed that this indicates the path that was the target of the survey, presumably with the raised levels of earth resistance indicating that it comprises a hard. or dense, surface.

A low resistance linear anomaly was located perpendicular to and crossing, the path feature. This may reflect a break-line denoting the edge of a block or row of cultivation when the plot was last dug. Nothing of note was revealed in southern area of survey within the Tiltyard.

6 CONCLUSION

Earth resistance survey of the Wilderness Garden has succeeded in recovering the position of former paths in the north-east and south-west of the garden. Using these data (Figs 3-6) the position and alignment of former paths can be precisely fixed in relation to historical mapping and thereby re-located on the surface lawn to enable accurate marking out for representation by differential mowing of the grass. The 1897 2nd Edition Ordnance Survey map of the Garden has been digitised and rectified to modern Ordnance Survey mapping to allow the interpretative diagram of the survey results to be overlaid on the historic map (Fig 9). This shows that survey has mapped the location of the paths, allowing for errors in 19th century mapping and the subsequent rectification.

Survey of the Tiltyard Garden identified a likely path aligned north-east to south-west along the centre of the walled area. However, no crossing path was detected at the centre of the garden. A possible cultivation plot boundary was located in the northern half of the garden, although this feature could equally be of a later period, eg part of the tennis court foundation.

The original installation of the tennis courts that were removed in 2003 from the adjacent compartment to the north may similarly have destroyed much of the preceding layout, although the alignment of a buried perimeter path has been observed previously as a parchmark along the southern side. In these circumstances archaeological trial excavation is the best way to investigate the nature and extent of any surviving remains. In addition to the mixing of soil, which will have combined and confused the evidence of different periods together with destroying features, the disturbed nature of the ground means that reconstruction is likely to be more accurately based upon interpretation of historic map evidence. An archaeological watching brief carried out during any future groundworks may help to clarify details as well as provide a record of soil depth, etc.

BIBLIOGRAPHY

BGS 2011 *Online Geology Mapping* www.bgs.ac.uk/geoindex.htm ; British Geological Survey accessed 20/11/11

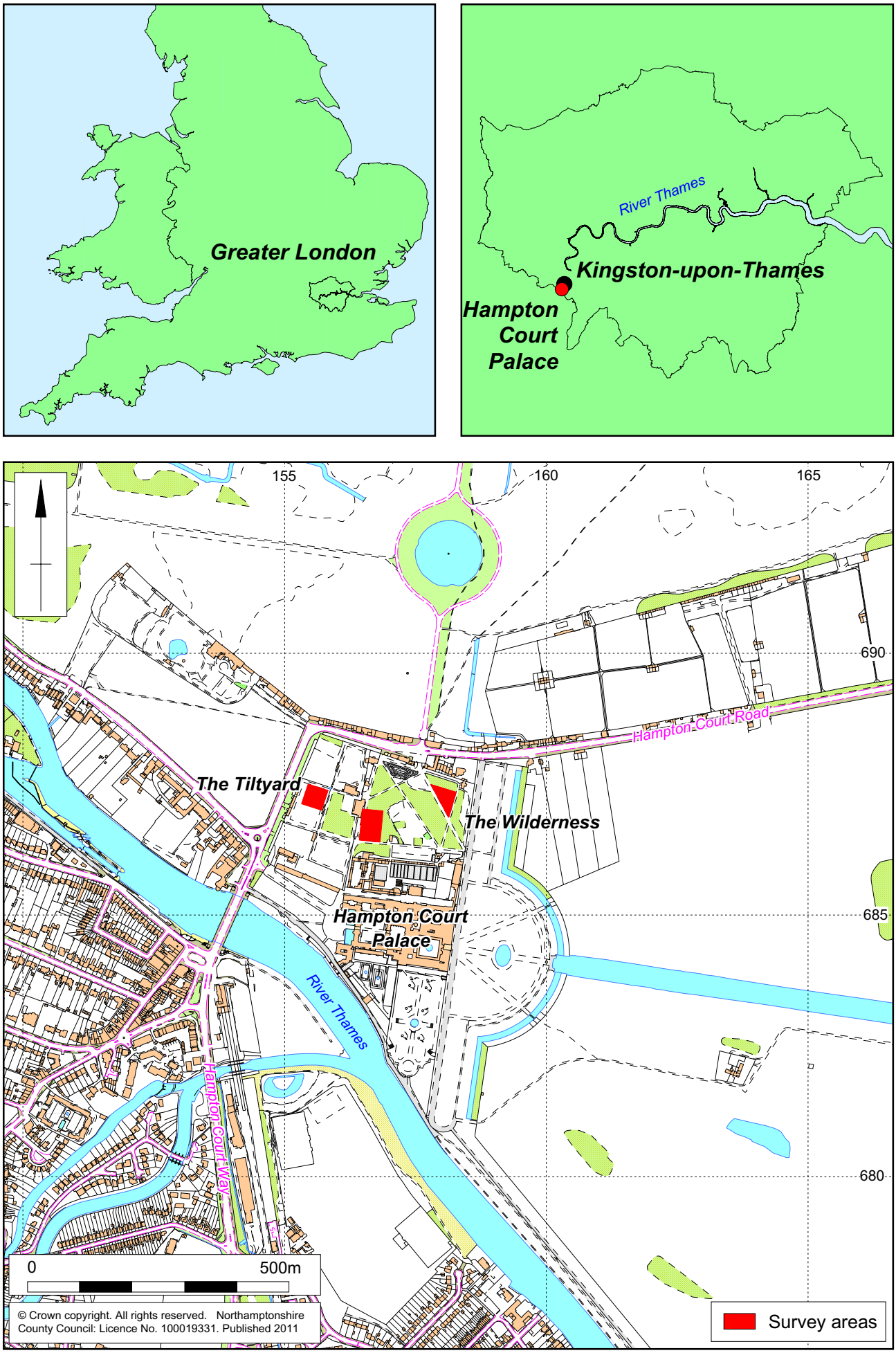
EH 2008 *Geophysical Survey in Archaeological Field Evaluation*, English Heritage

IfA 2011 *The Use of Geophysical Techniques in Archaeological Evaluations, 2nd Edition*, Institute for Archaeologists Technical Paper

Gregory A, 2011 *Hampton Court Palace, The Tiltyard and Wilderness: Desk Based Assessment Report and Statement of Significance*, Historic Royal Palaces

Longstaffe-Gowan T, 2005 *The Gardens and Parks at Hampton Court Palace*, Frances Lincoln Ltd (London)

Thurley S, 2003 *Hampton Court, A Social and Architectural History*, Yale University Press (New Haven and London)



Scale 1:10,000 (A4)

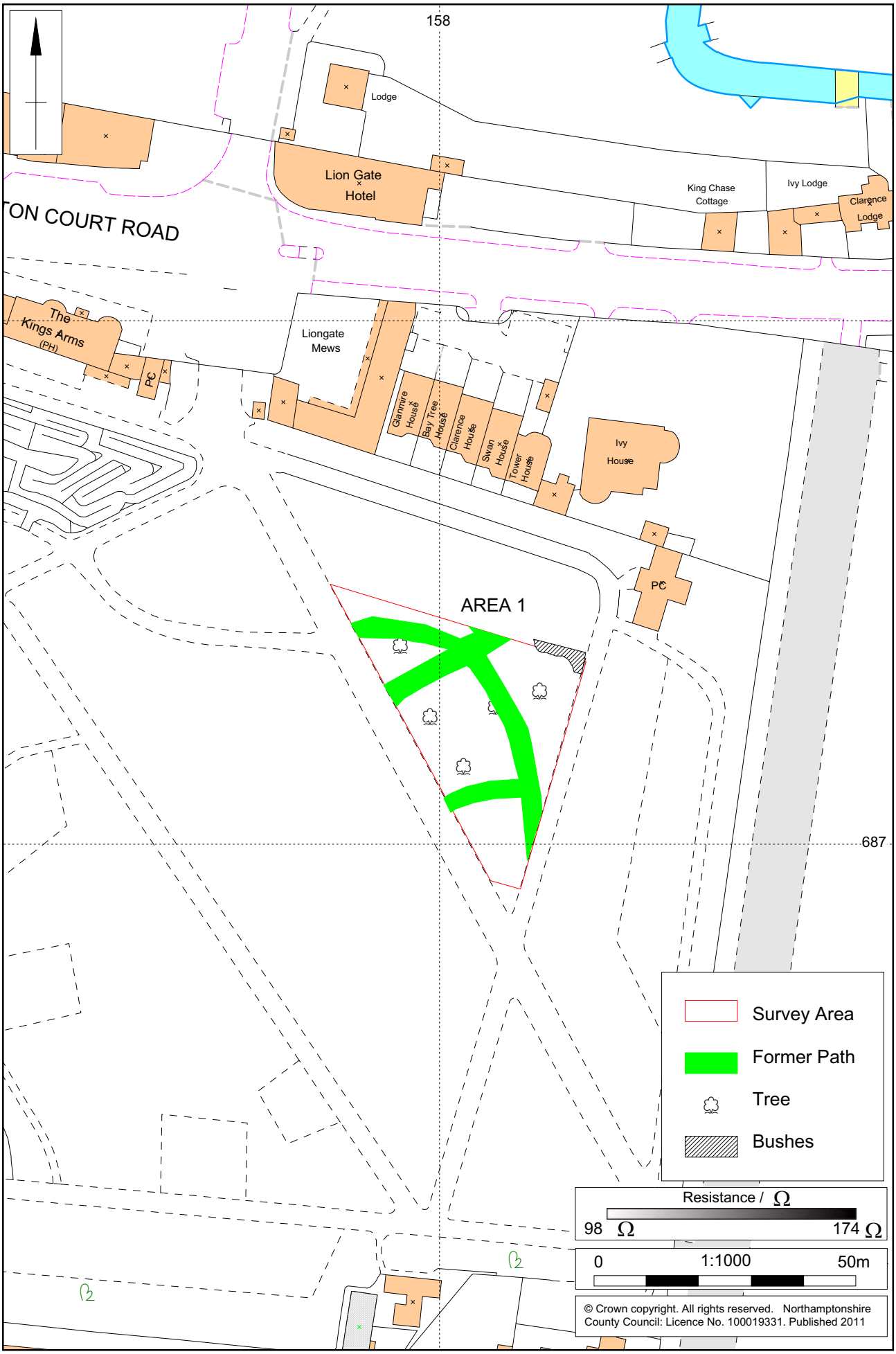
Site Location Fig 1

Scale 1:1250 (A4)

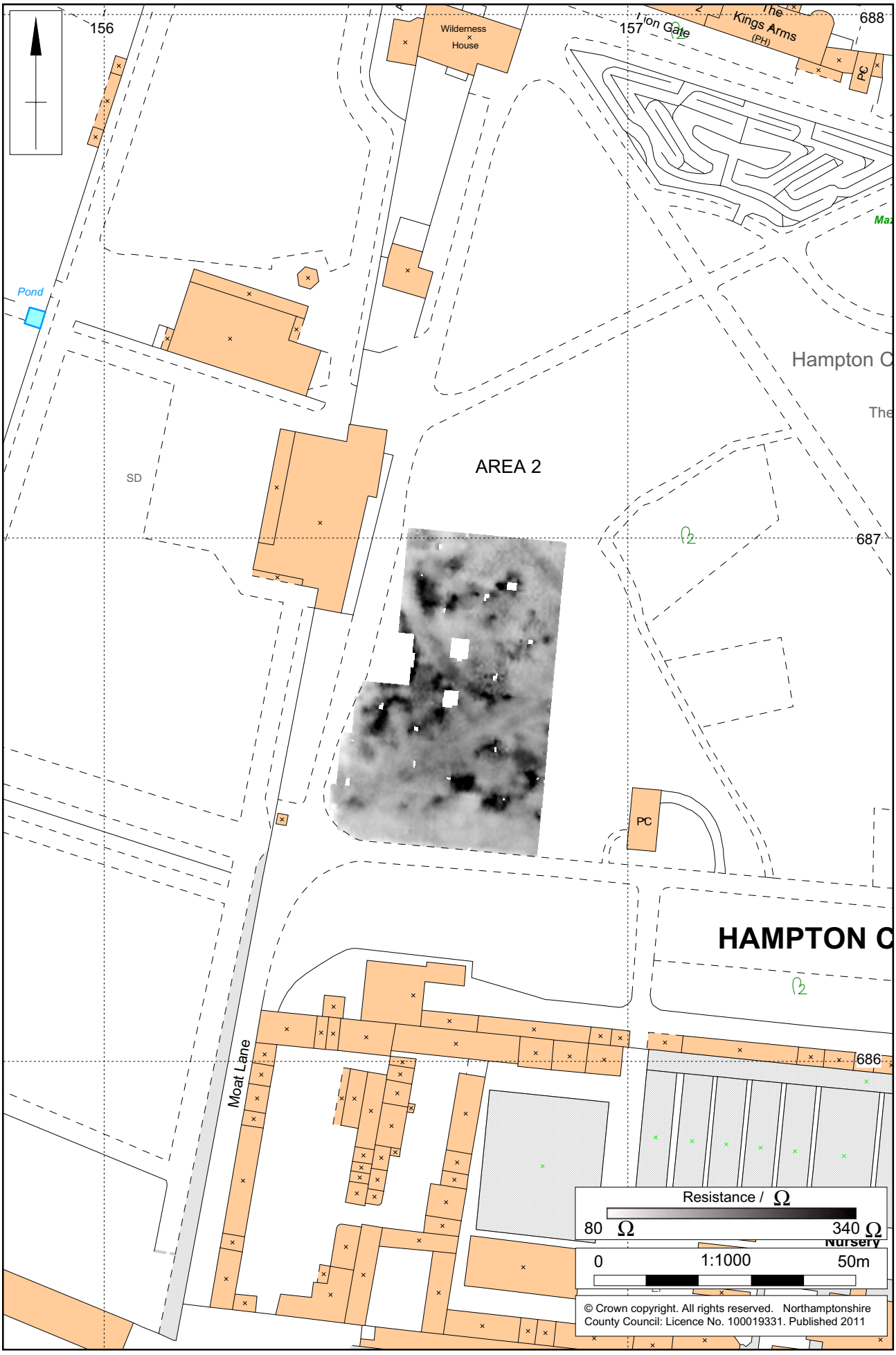
Earth Resistance Survey Results: The Wilderness Fig 2

Scale 1:1000 (A4)

Earth Resistance Survey Results: The Wilderness Area 1 Fig 3

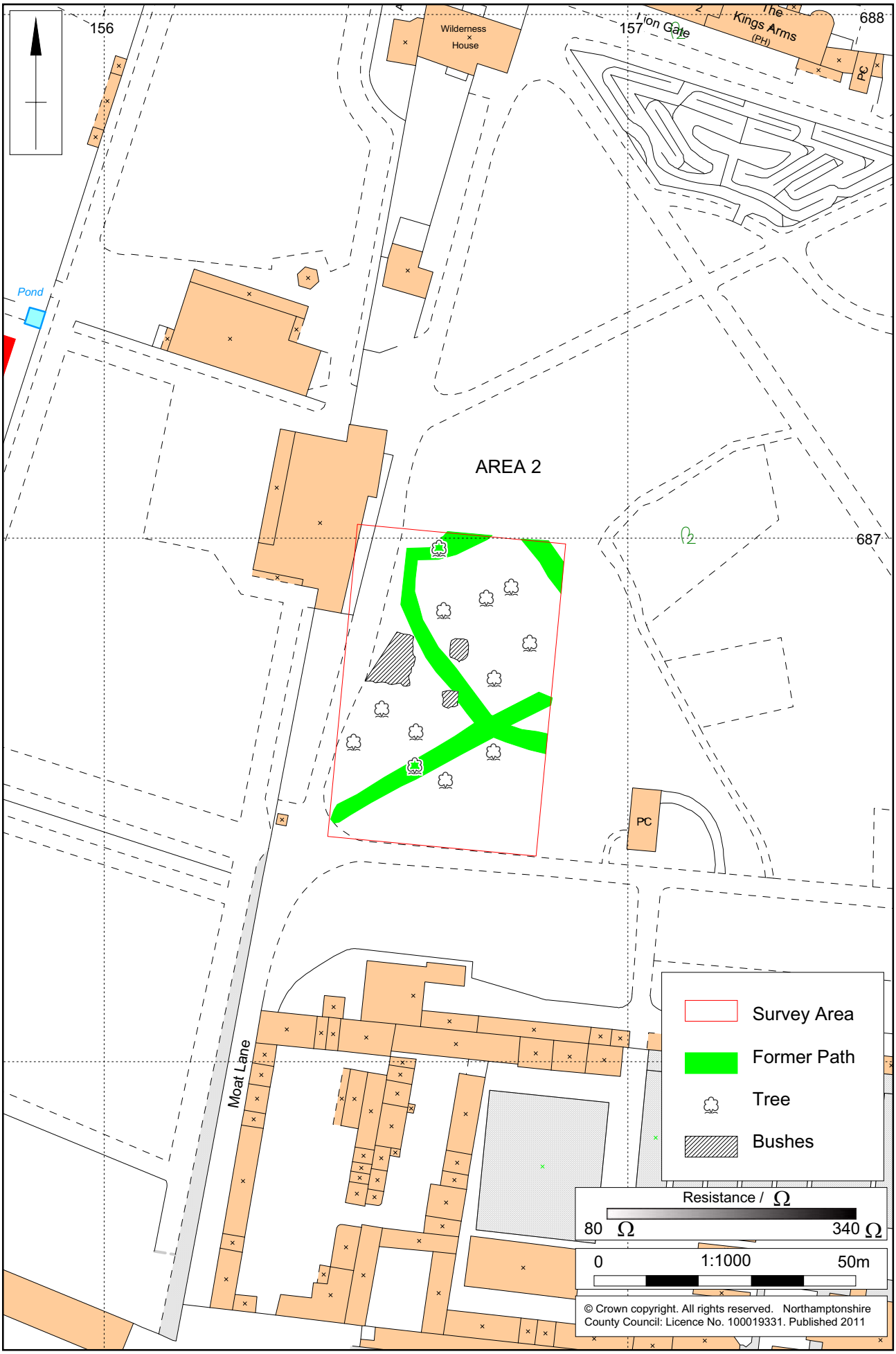


Scale 1:1000 (A4) Earth Resistance Survey Interpretation: The Wilderness Area 1 Fig 4



Scale 1:1000 (A4)

Earth Resistance Survey Results: The Wilderness Area 2 Fig 5

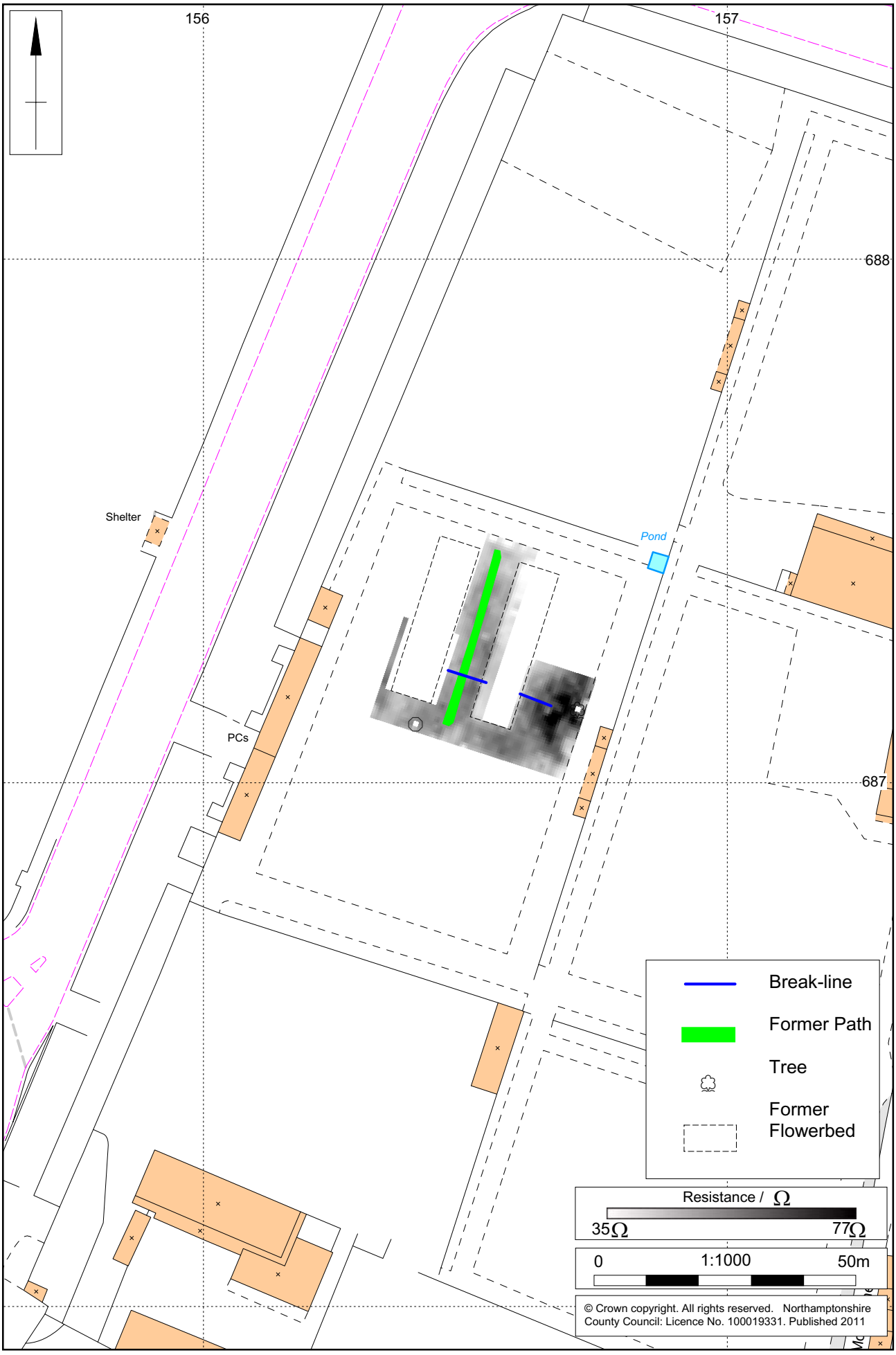


Scale 1:1000 (A4)

Earth Resistance Survey Interpretation: The Wilderness Area 2 Fig 6

Scale 1:1000 (A4)

Earth Resistance Survey Results: The Tiltyard Fig 7



Scale 1:1000 (A4)

Earth Resistance Survey Interpretation: The Tiltyard Fig 8

Scale 1:1250 (A4)

Wilderness Garden Resistance Survey with OS 2nd Ed. 1897 Fig 9

Northamptonshire County Council

Northamptonshire Archaeology

Northamptonshire Archaeology
2 Bolton House
Wootton Hall Park
Northampton NN4 8BE
t. 01604 700493 f. 01604 702822
e. sparry@northamptonshire.gov.uk
w. www.northantsarchaeology.co.uk