

SURVEY RESULTS**2003 / 37 Syon House 2003****1. Survey Area**

- 1.1 Resistance survey was carried out in the area east of Syon House, extending the area originally surveyed in 1999. Both areas are shown in Figure 1 at a scale of 1:1000. In addition the two small blocks of GPR investigation are also depicted on the same diagram, while specific details of individual radargrams is shown in Figure 2.
- 1.2 The survey grid was set out by *GSB Prospection* and tied-in by Dr Henry Chapman for *Time Team*.

2. Display

- 2.1 The results of the two resistance surveys (1999 and 2003) are displayed as a greyscale images at a scale of 1:1000 in Figure 3 and a simplified, composite interpretation of the overall results is presented in Figure 4, at the same scale. Figure 5 is a conjectural interpretation of the resistance anomalies thought to be associated with the monastic phase of the site.
- 2.2 The results from the resistance survey are shown in Figure 6 as a greyscale of the raw and processed data at a scale of 1:625.
- 2.3 Figures 7 and 9 show the GPR data from the two survey areas as a series of time slices, while Figures 8 and 10 depict selected radargrams.
- 2.4 The display formats referred to above are discussed in the *Technical Information* section, at the end of the text. Letters / numbers in parentheses in the text refer to anomalies highlighted on GPR figures.

3. General Considerations - Complicating factors

- 3.1 Ground conditions were ideal for survey; the areas were lawned and level.
- 3.2 It has not proved possible to seamlessly match the two resistance data sets from 1999 and 2003 due to the differing moisture levels in the ground. However, there is broad correlation between the two sets of results.

4. Results of Resistance Survey (Figures 3 - 6)

- 4.1 The 1999 survey had identified a complex of anomalies to the east of Syon House. A number were highlighted as being possibly associated with the monastic remains, simply because they did not correlate with known garden features. However, it was not believed that they were associated with a church building as this would imply a structure of major proportions. Analysis of the results by Dr Jonathan Foyle suggested that such a structure would not be out of

proportion with the monastic records, thus the survey was extended to the east – something that was beyond the original scope of the first project.

- 4.2 The extended survey revealed almost immediately high resistance responses that are aligned north-south and which tie in exactly with the earlier (1999) survey results. Although the detail is a bit obscured in the north-east corner, a large buttress is apparent in the south-east. Viewed as a whole, the results clearly indicate the foundations of a substantial structure. Follow-up excavation indicated that this is indeed the ‘lost’ church of Syon Abbey.
- 4.3 High resistance responses close to the eastern wall of the postulated apse of the church are still thought to be associated with a garden feature aligned with the centre of Syon House. Time did not permit their investigation by excavation. However, one of the excavation trenches did reveal the foundations of a large pier base that does not appear on the geophysics. The reasons for this are that the remains were unearthed at a depth of more than 1.0m below the ground surface – a depth too great for conventional 0.5m twin probe survey. In the light of these results it is possible to re-assess the 1999 results and identify 4 possible pier bases, as marked on the interpretation. The assumption in this instance though is that they are preserved to a higher level, or there is less of a masking overburden.
- 4.4 To the north and north-east of the new identified church are a series of high resistance responses that old plans suggested were likely to be garden features and limited excavation proved this to be true. The results correspond with brick built paths, culverts and drains associated with formal gardens in the grounds.

5. Results of GPR Survey – (Figures 2 and 7-10)

East Lawn

- 5.1 Although surface conditions were ideal for survey, being a flat short-cropped lawn, the sub-surface conditions were less favourable. In all of the radargrams, at a depth of almost 1.2m, is a distinct horizontal layer (R1) below which no features are visible other than uniform ‘ringing’. This may represent either a level at which the volume of groundwater has increased dramatically, or a layer of clay rich deposits from a time when the site was perhaps subjected to flooding or water logging for some period of time.
- 5.2 As excavations found the more substantial abbey remains to be at a similar or slightly greater depth, the likelihood is that any features that are visible within the time slices are attributable to later features.
- 5.3 The shallow time slices show little of interest, though from around 0.3m depth there is a concentration (R2) of energy to the north. Deeper through the section the energy becomes more confined, reducing to four main centres (R3a, b, c & d). Given that these responses are seen to be at a depth above that of the abbey remains these should be considered archaeological in origin, despite bearing little relation to the resistance data.
- 5.4 The linear anomaly R4 is of interest as the response is relatively broad and, in the radargrams, is not a distinct hyperbolic shape suggesting that this is not merely a pipe. However, there are no related features within the resistance data, and so rather than substantial remains this may represent a conduit of some description. There is a similar amplitude response (R4a) alongside part of (R4) which maybe related though this is purely conjectural.

- 5.5 The short (approximately 5.0m) linear anomaly (R5) is coincident with a high resistance anomaly however they are unlikely to be related, as in section (R5) would appear to be a cut feature.
- 5.6 A number of other features can be seen within the data set, of these (R6) appears to have similar depth extent to the (R3) group of responses and may be related. The increased amplitudes (R7a, b & c) also can be considered to have archaeological potential and, in the case of (R7b & c) appear to be coincident with areas of anomalously high resistance. The significance of this correlation cannot be fully understood without further investigation.

South Lawn

- 5.7 The aim of this survey was to map both the depth and western extent of the high resistance anomaly, subsequently excavated and found to be a brick culvert. The position of the tunnel is obvious within the data set (R8) and can be seen to extend 5m west of the edge of the trench (situated just east of the survey area).
- 5.8 The external form of the culvert is rectangular/cuboidal; however the interior void is arched. This can be seen in the data as the reflections from the walls-void interface (8a & b) slowly separate as the arch widens down through the section. These responses are haloed throughout by the energy reflected from the material forming the external walls (8c). [The 'leading' (southern) edge of the culvert produces a far more distinct response than the trailing edge in the radargrams due to the operating principle of GPR.]
- 5.9 Below the main body of the culvert, on the southern side is what appears to be a second tunnel or pipe (R9). From the radargrams it is clear that this is a real feature and not 'ringing' from the wall above.
- 5.10 Terminating at the western limit of the culvert is a linear anomaly (R10) running from the southwest corner of the survey area. This sizeable feature (giving a fairly broad response in the radargrams) may be a later feature as it is far higher in the section, but it seems more likely that it is part of the same drainage system and is emptying in the larger chamber of (R8). This anomaly is also visible within the resistance data.
- 5.11 Another anomaly that is just visible in the resistance data is (R11). It seems likely that this linear anomaly is associated with the culvert, as it too appears to terminate there. Anomalies (R12) and (R13) are only partially within the survey area and as such are difficult to interpret. However, they are certainly of archaeological interest, being clearly visible as real features within the radargrams.

6. Conclusions

- 6.1 Resistance survey to the east of the 1999 survey identified the eastern wall foundations of a large structure that on excavation proved to be the apse of the 'lost' medieval abbey church. Other features detected included paths, culverts and drains associated with the formal gardens attached to Syon House.
- 6.2 Although GPR survey over part of the church proved disappointing because of the failure to penetrate to any great depths, the results from the presumed reredorter were far more successful. Excellent correlation was achieved between the predicted results and the excavate evidence.

Project Co-ordinators: J Adcock and J Gater
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Project Assistants: M Saunders and E Wood
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SITE SUMMARY SHEET

2003 / 37 Syon House 2003

NGR: TQ 170 760

Location, topography and geology

Syon Park and House lie to the west of London in Isleworth, Middlesex. The River Thames lies to the south and east of the estate while London Road marks the northern and western boundary. The areas under investigation cover lawned gardens immediately to the east and south of Syon House.

Archaeology

The site of Syon House was previously that of the abbey of the Order of the Most Holy Saviour, the English Bridgettines. The Bridgettines are known to have cultivated 12 hectares of walled orchards and gardens in the fifteenth century but little survives of the original monastic buildings. The present house was constructed in 1547 for the Duke of Somerset and was substantially remodelled between 1762 and 1769 by Robert Adam for the First Duke of Northumberland. Previous geophysical surveys (GSB Report No: 98/131 and 99/30) provided a detailed map of surviving remains below the lawn to the north, south and east of the house comprising earlier garden features and possible monastic remains.

Aims of Survey

Resistance survey was undertaken on the lawn to the east of Syon House with the aim of extending the earlier survey and investigating the possibility that some of the anomalies originally interpreted as possibly being monastic, might in fact be the church building. Radar (GPR) survey was also carried out for the first time in an attempt to gain more information about the nature and the depth of the surviving remains. The work forms part of a **Time Team** investigation into the site for Channel 4 television.

Summary of Results *

The extended resistance survey succeeded in identifying the eastern end of a large building that on excavation proved to be the lost church associated with the monastic remains. Although the results are in places confused by later rubble on the site, it is still possible to identify the corner buttresses of the building. In addition a number of later garden features were identified. While a central pier was found at the east end of the church this was surviving at a depth of over 1m below the ground surface – beyond the detection capabilities of a standard 0.5m twin probe resistance survey. While it has been possible to re-interpret some of the earlier results – for example potentially 4 additional piers are now visible in the 1999 data – the complexity of the result is still too great to allow a definitive interpretation of all the responses.

While the GPR survey encountered problems on the lawn east of Syon House perhaps due to a high water table of clay layer, very clear results were obtained from the southern lawn. The definition provided by the GPR correlates extremely well with the excavated culvert, possible reredorter feature.

*** It is essential that this summary is read in conjunction with the detailed results of the survey.**