



## WREST PARK, SILSOE, BEDFORDSHIRE: BUILDING SURVEY OF AN 18<sup>TH</sup> CENTURY HYDRAULICS SYSTEM

PROJECT CODE: SOU-07/57

Date of survey: 23-24 April 2007

### Context of the survey

A garden feature conservation and restoration project commenced at Wrest Park shortly after the stately home and garden was acquired by English Heritage in 2006.

The formal gardens which lie south of Wrest Park House, are encircled by informal canals which are understood to have originated in the later 17th century, though their characteristic curved banks are considered to be the work of Lancelot Brown and may be dated from 1758.

An important initial phase of the conservation programme focused on flood control and restoration of the park's ancient hydraulic design, an essential part of which is a dam, sluice and weir complex situated on the perimeter canal to the south west of Wrest Park House and west of the formal gardens.

### English Heritage requirements:

A detailed and accurate 'as found' record of the water management structures to required English Heritage standard prior to dismantling and reconstruction.

### Technique of digital data acquisition:

- Leica Total Station TCR 805
- Leica GPS Dual Frequency SR530 with Real Time Kinematic capabilities
- Rectified digital photography

### Survey strategy and methodology:

#### Plan

- A dual frequency GPS system was used to establish OS co-ordinate system control points at the site, following which a plan of all visible (i.e. above water level) features of the dam was made using a Leica Total Station.

#### Elevations

- An outline survey of the structure was first obtained by Total Station, following which elevations were recorded by computer-rectified photography (selected as a fast and effective means of recording). Target points were arranged to give total coverage of the structure and points were surveyed using reflector-less Total Station.
- Digital photographs were taken of each elevation, computer-rectified, and the stonework detail was digitised in AutoCAD.
- Due to limited visibility of the structure due to water level the elevation recording work was carried out in two stages, the lower levels were recorded in a limited window of opportunity during repair work when water levels were artificially controlled.

### Digital data handling and presentation:

Survey data was downloaded from the Total Station using LISCAD and then exported to AutoCAD Map<sup>®</sup> for editing.

A technical report summary was prepared for integration to the excavation report and drawings produced to publication standard.