



THE PLUNGE POOL

Cannon Hall Gardens, Barnsley,
South Yorkshire

HISTORIC FABRIC RECORDING

June 2021

I INTRODUCTION

BACKGROUND

This document presents the results of a scheme of emergency recording of the north wall of the plunge pool at Cannon Hall, Barnsley, South Yorkshire. The work was requested by Sharron Sutton (Project Manager – Parks for People at Cannon Hall) following discussions with Tony Wiles (Barnsley Senior Conservation Officer) and Andy Lines (South Yorkshire Archaeology Service) as there was concern that the structure of the plunge pool might be structurally unstable.

The purpose of this scheme of recording was to capture the existing condition of the walls, in particular the north-western section adjacent to the access bridge and steps down from the shrubberies above.

The site inspection and survey was undertaken by Oliver Jessop MCIfA of The JESSOP Consultancy on the 26th May 2021. Data processing was by Marcus Abbott MCIfA.

DESIGNATION(S)

The plunge pool forms an important element of the designed landscape and pleasure grounds to the south of Cannon Hall. The existing form and character of the garden is widely attributed to Richard Woods c.1760s in date, although the sequence of ponds, of which the plunge pool forms part, are shown on earlier plans and may pre-date Wood's redevelopment of the gardens (TJC Heritage, 2021). The gardens are designated Grade II on the Historic England Register of Parks and Gardens (NHLE:1001159).

The plunge pool was investigated as part of a community archaeology project in 2018 by CFA Archaeology which established that the base of the pool had been lined with concrete at an unknown date and that the access steps were most likely 19th Century in date.

2 ARCHAEOLOGICAL RECORDING

DESCRIPTION OF PLUNGE POOL

The plunge pool is a large structure measuring at its base c.4m x 6m, which widens out at the top to c.7.2m x 7.7m. The depth of the structure is c.3.3m deep. It has sloping walls of roughly laid and irregular coursed sandstone rocks and slabs of differing sizes, many of which are re-used architectural fragments (**Figures 3-5**). The structure is orientated west to east and there is an access bridge (**Figure 6**) to the west overlooking a series of ornamental ponds and traceries windows forming an area of the garden known as 'fairyland'.

METHODOLOGY

Due to the need to make a rapid record of the north wall of the structure no formal Written Scheme of Investigation (WSI) was prepared, however Tony Wiles and Andy Lines were in agreement that the most effective method to capture the current condition of the structure was to undertake archaeological photogrammetry. To accompany this a series of high resolution digital photographs were taken using metric ranging poles as a scale (see **Figures 4-6**).

Prior to the photography a limited amount of vegetation was removed to help expose the existing layout and position of stones that formed the north wall and bank above.

The photogrammetry was undertaken with a Sony DSC-HX60 digital camera with a resolution of 10MBs. A total of 718 images were taken in a sequential pattern to capture the full extent of the plunge pool. Photographs were taken from the banks of the structure, the base, the access bridge and via a metal ladder positioned against the side walls were needed.

The post-site processing used Agisoft Metashape to form a digital mesh and point cloud (**Figure 7**), which was then rendered to form a colour image (**Figure 8**). In addition a 3D pdf has been produced which can be rotated to assess the individual stones that form the Plunge Pool and there relative positions and stability.

LIMITATIONS

During the survey the weather consisted of intermittent showers which slightly impacted upon the photography, largely as a result of some of the stones becoming slippery wet. It was also anticipated that the stones could be numbered as part of the record, however due to the lichen growth and wet surface texture this was not possible as part of this scheme of work.



Figure 1:

West wall of plunge pool and steps looking north-west taken in 2018



Figure 2:

West wall of plunge pool and steps (area of potential ground movement) looking north-west taken in 2021

(1m/3m scale)



Figure 3:

West wall of plunge pool taken in 2021

(1m/3m scale)



Figure 4:

North wall of plunge pool taken in 2021

(1m/3m scale)



Figure 5:

East wall of plunge pool taken in 2021

(1m/2m scale)



Figure 6:

Detail of bridge looking south from base of plunge pool

(1m/2m scale)

3 DISCUSSION

SUMMARY

The emergency recording of the Plunge Pool using photogrammetry was successfully completed and an accurate record of the current condition of the structure has been achieved. Whilst it has not been possible to number each of the individual stones for future reference, direct comparison with a photograph of the north wall from 2018 (compare **Figures 1** and **2**) indicates that whilst some of the stones may have been partially dislodged the over condition of the structure appears to be stable, but that future structural movement cannot be ruled out.

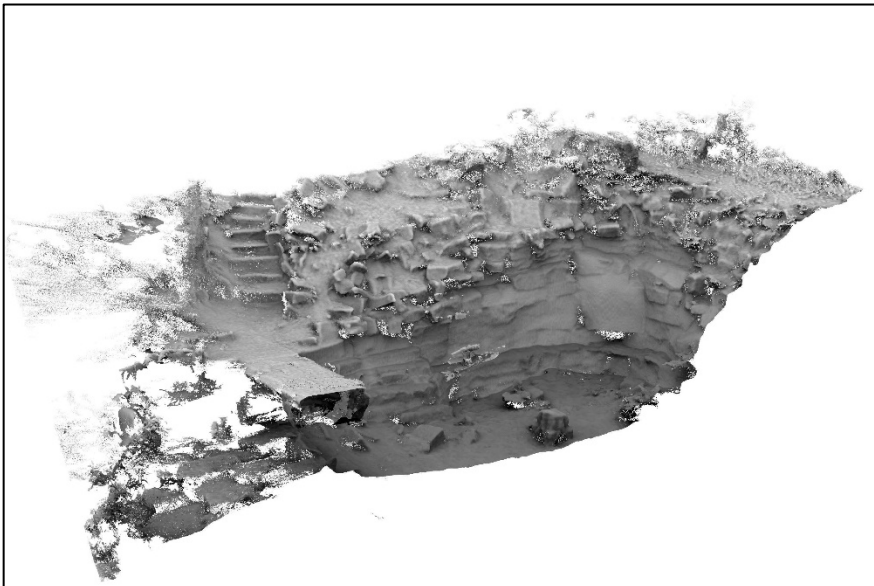


Figure 7:

North wall of
plunge pool
illustrated as
processed point
cloud data



Figure 8:

North wall of
plunge pool
illustrated as point
cloud data with a
surface texture
added

4 BIBLIOGRAPHY AND REFERENCES

GUIDANCE CONSULTED

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