

46 HIGH STREET

EXETER



PAINT ANALYSIS REPORT

DECEMBER 2009

HUMPHRIES & JONES
SCULPTURE AND ARCHITECTURAL CONSERVATION

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1 SUMMARY

The façade of No. 46 High Street, Exeter has undergone extensive conservation and investigation. Previous analysis of the paint layers had been carried out by others however additional analysis was requested to further investigate the paint layers beneath the sun fire disc in order to establish the earliest surface finishes. Three samples were taken and analysed to build a better picture of the applications around the sun disc. The findings were then compared to the previous analysis.

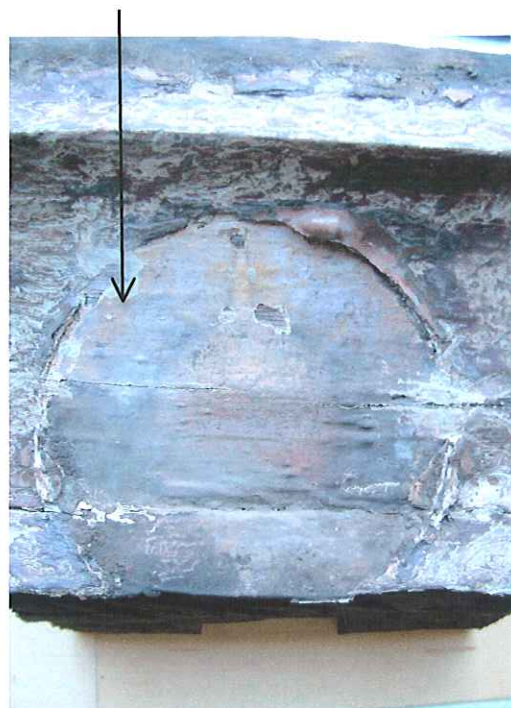
2 LOCATION

No. 46 & 47 High Street, Exeter, are thought to have been built as a pair possibly between 1520 and 1550. The samples were taken by Lynne Humphries from the section of timber carrying the embossed sun disc. The timber section was from the façade of No. 46 beneath the first floor level. The location of the samples were:



Sample 1 The face of the embossed sun disc

Sample 2 The timber behind where the sun disc was fixed



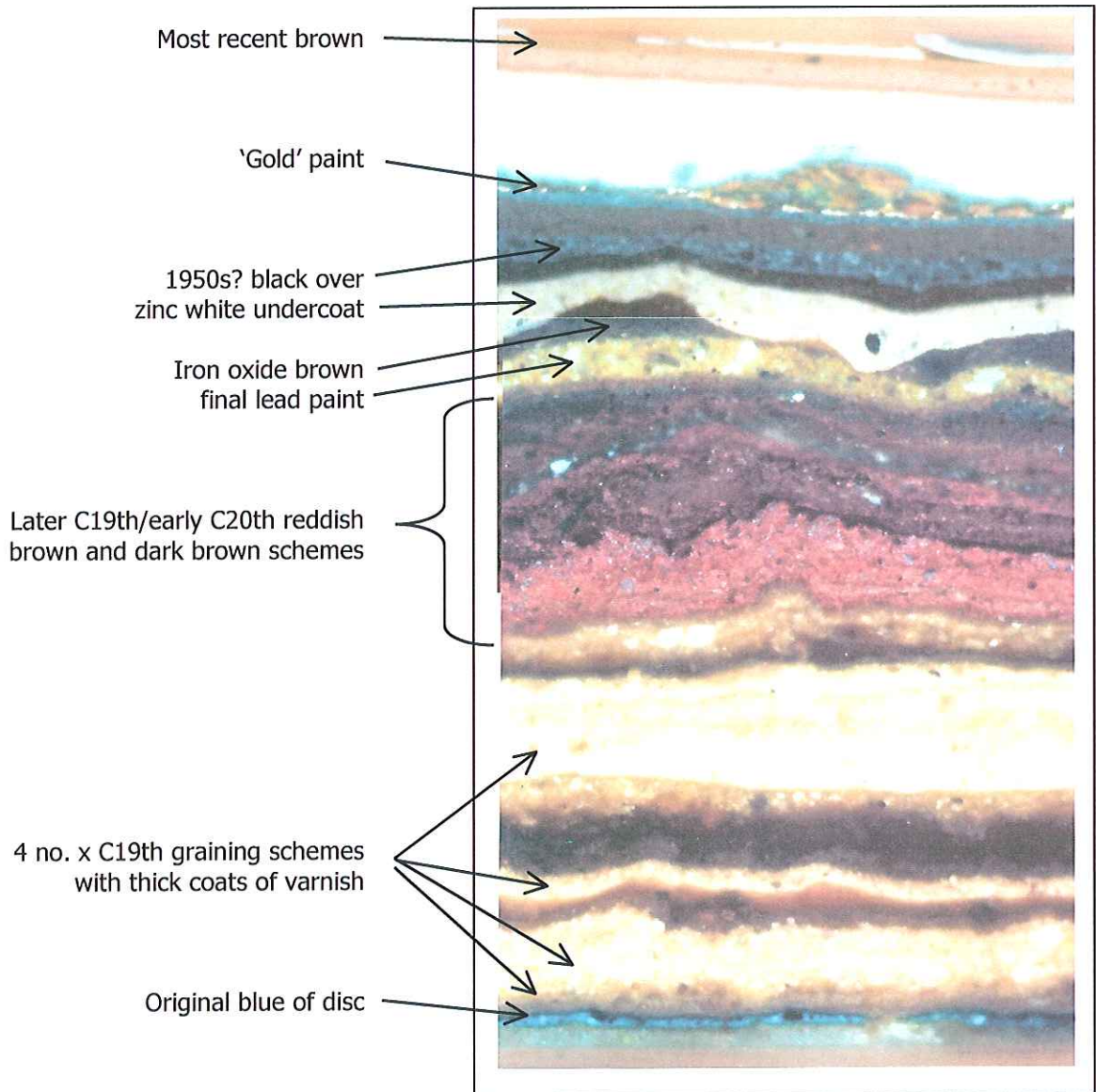
Sample 3 The timber immediately adjacent to the sun disc

3 EXAMINATION

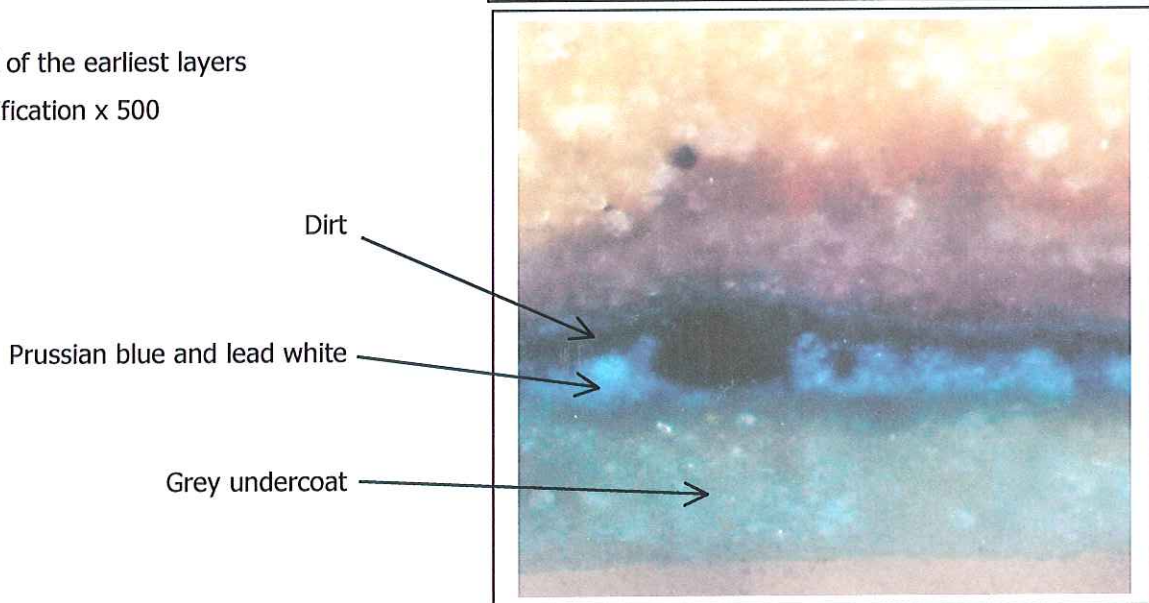
- 3.1 The samples were examined under a low powered binocular microscope, and then the best pieces were mounted in cold setting polyester resin to be cut as cross-sections.
- 3.2 The sections were examined in halogen and in UV fluorescent light, and the layers compared.
- 3.3 Material from the blue layer was dispersed on a glass slide, and the pigments identified using a polarising light.
- 3.4 A chemical test for lead was carried out on cross-section 3. The analysis was carried out by Catherine Hassall.

4 SAMPLES

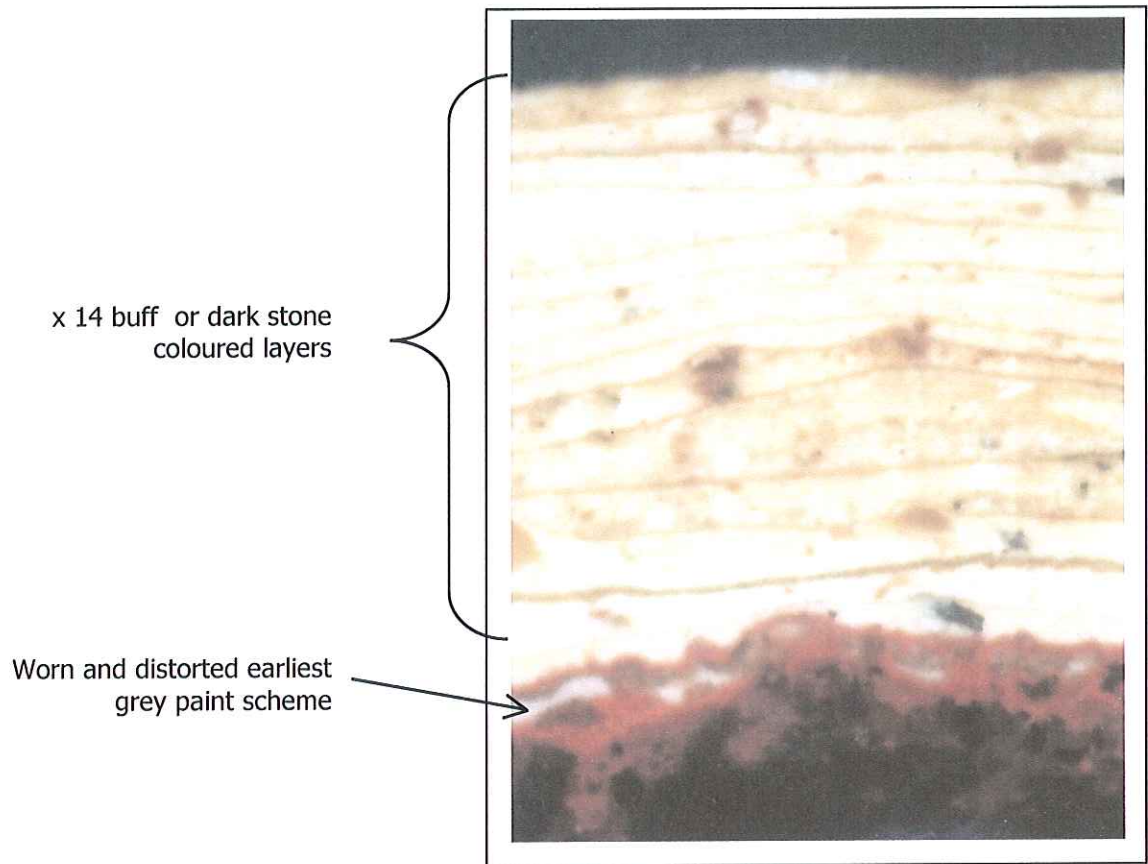
4.1 SAMPLE 1 - Face of the embossed sun disc - Magnification x 200



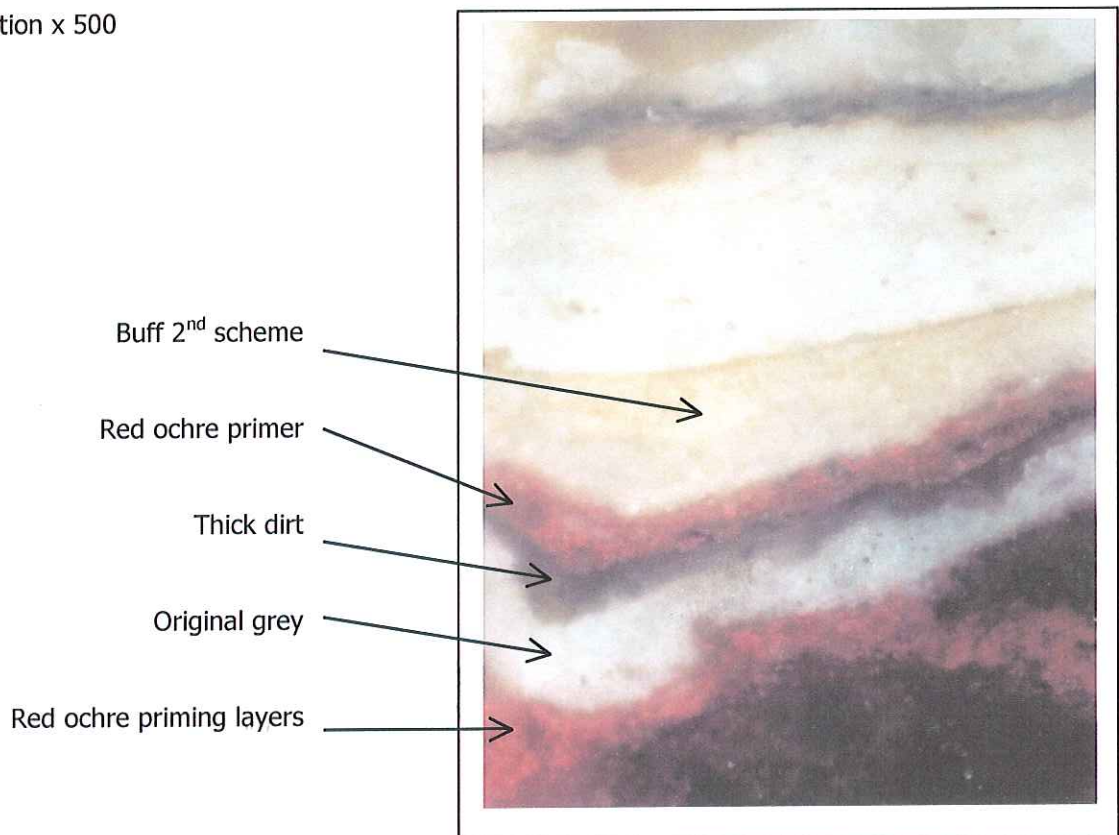
Detail of the earliest layers
Magnification x 500



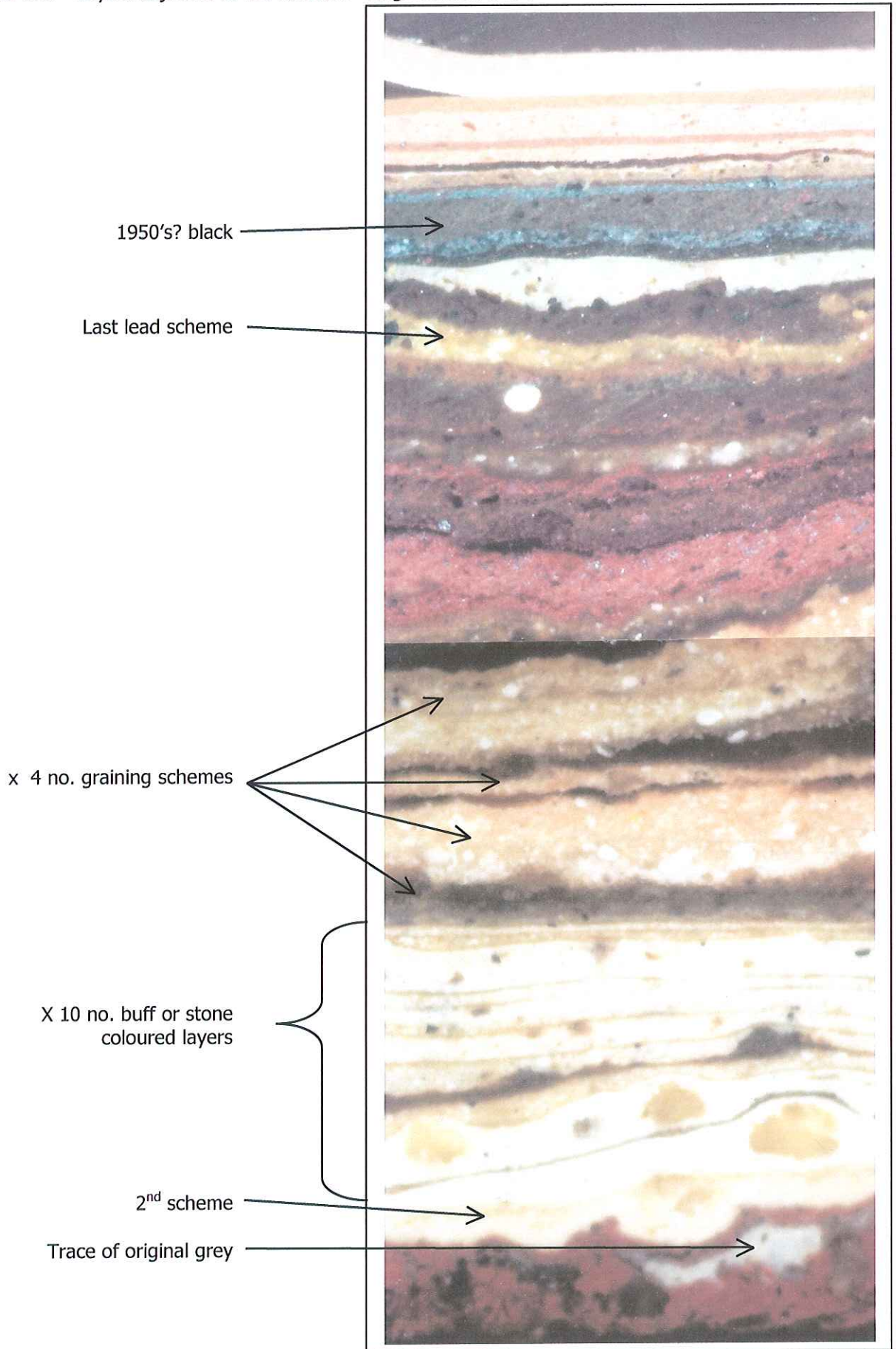
4.2 SAMPLE 2 – Layers beneath the sun disc - Magnification x 200



Detail of the earliest layers
Magnification x 500



4.3 SAMPLE 3 – Layers adjacent to the sun disc - Magnification x 200



5 RESULTS

The sun disc is resting on top of fifteen paint schemes, and there are sixteen paint schemes on top of the disc.

5.1 EARLIEST DECORATION ON THE TIMBER

The wood was first primed with a dark red preparation based on pure red ochre, it was then painted a pale grey based on lead white and finely ground carbon black.

This paint scheme must have been in place many years as it had become worn, dirty and cracked by the time it was eventually painted over.

It may have been part of the original decoration of the building, or it could be a later scheme. There is nothing in the pigments to give a date to the scheme. A dark red priming of this type would be appropriate for a sixteenth-century oil-painted scheme, but one would also expect to find a red priming used in the seventeenth, or early eighteenth centuries.

5.2 SECOND DECORATION ON THE TIMBER

A fresh red ochre primer was applied, and then the building was painted buff or dark stone colour mixed from lead white and iron oxides.

It may be that fresh primer was applied because the previous decoration had deteriorated so much.

5.3 LATER DECORATIONS BEFORE THE APPLICATION OF THE SUN DISC.

The building was painted a further thirteen times with stone-coloured paints. Slightly fewer layers were found in Sample 3, taken from next to the disc, and layers must have flaked off.

5.4 THE SUN DISC

The metal of the disc was painted blue. The sample was taken from a flat background area, which may have been meant to represent sky. The sun itself may have been painted yellow or gold. A gilded layer is evident on the raised areas.

A grey undercoat/primer was applied first, mixed from lead white and carbon black, then a coat of Prussian blue and lead white was brushed over the top.

The use of Prussian blue means this paint scheme must be later than 1704 when that pigment was invented. The disc may be late eighteenth or early nineteenth-century as the paint layers which follow the blue are typical nineteenth-century grainings.

5.5 LAYERS OVER THE DISC

Four graining schemes were applied over the blue. They involved ochre-coloured ground layers, brown glazes for the 'graining' and thick coats of resin varnish. The timber imitated is likely to have been oak. This method of graining is typical of nineteenth-century technique.

After the fourth graining there was a change to plain, dark, reddish browns and the building was painted in shades of brown on the next ten occasions. Nine of these browns involved undercoats

containing some lead white, so they must have been applied to the facade before the Second World War.

The tenth brown was based on pure iron oxide. It was followed by a black scheme over an undercoat containing zinc white, which is likely to have been applied after the war, perhaps in the 1950s.

After the black there was a return to brown, and the disc was picked out in 'gold' paint based on copper filings. This appears to have been the only other time, apart from the most recent occasion, that the disc was painted differently from the surrounding timber.

The most recent four schemes, all mid browns, have been based on titanium dioxide white.

6 CONCLUSIONS

6.1 THE DATE OF THE DISC

Apart from the fact that the first scheme over the top of the disc was a nineteenth-century graining, there is another reason for thinking that it could be a nineteenth-century item.

It was followed by thirteen paint schemes based on lead white, and lead white was phased out of use in the 1930s/40s. If the building was painted every five years the disc could date to circa 1860, if it was painted every ten years, it could date to circa 1800.

6.2 THE PRE-SUN DISC LAYERS

The fourteen paint schemes on top of the earliest decoration have relatively little dirt between the layers so one would guess that ten or twelve years was the longest interval between repaintings.

They are unlikely to represent more than one and a half centuries, and it could be a lot less.

The earliest decoration was very worn by the time it was painted over so that scheme could have been in place for a very long time.

