

ELMER AVENUE RAILINGS

Havering-atte-Bower

Installed in 1860

Part of the railing finials, and some loose fragments of paint from other areas, were sent by Nigel Oxley, Historic Buildings Officer, of the London Borough of Havering,

The paint is very degraded, but the surviving fragments show a thick build-up of layers.



Examination

Several pieces from the finials and some of the loose fragments, were mounted in cold-setting polyester resin, and cut as cross-sections.

The sections were examined at high magnification in halogen and in UV fluorescent light, and the layers compared.

Material from the early coloured layers was dispersed on glass slides and the pigments identified by polarised light microscopy.

A chemical test for lead was carried out on a representative cross-section.

Colour match

One of the larger fragments was mounted on card and the later layers removed to reveal the original dark green.

The green was exposed to sunlight for a week to bleach out the yellowing effect of linseed oil that has been covered over.

The colour was matched in daylight, using dry pigments and an acrylic medium.

RESULTS

The railings have been painted at least seventeen times.

The final paint surviving scheme in the sequence is still based on traditional lead white, a pigment not used since the Second World War. Seventeen paint schemes, over a period of eighty years means the ironwork was being painted approximately every five years.

There may have been more recent schemes that have since flaked off, but if not, the iron has remained un-painted since the mid twentieth century, and it explain why the surviving paint is in such poor condition.

Original decoration

The iron was first primed with a dark grey mixture of lead white and carbon black which was a common primer for iron in the eighteenth and nineteenth centuries. The dark grey was followed by a second preparatory coat; this one pure white.

The undercoat was a dull pink mixture of lead white and red iron oxide.

The dark 'bronze' green top coat was mixed from carbon black and yellow ochre. These pigments have been in common use since earliest times, and so are not useful for dating, but green was a very popular colour for exterior ironwork throughout the nineteenth century.

The green is certainly the original colour of the railings, because its undercoats are resting cleanly on the original primer. [The primer is not shown in the cross-section on p.4, but other fragments had the primer and undercoats attached].

[The 'Dark Bronze Green' in the Dulux Heritage Range is quite a close match. The actual colour of the railings was a little bit darker than the Dulux paint].

Later decorations

2-7 The railings were painted a similar very dark green a further six times, and so this colour must have spanned a period of at least thirty five years.

On each occasion the pigments were black and ochre, a combination which produces a tone described as 'bronze' green.

On the first, third and fourth of these occasions the green was given a coat of clear varnish which meant it had a glossy appearance. The original green was not varnished.

- 8 Eventually there was a change. The railings were given two coats of primer: the first a pink colour based on red ochre and lead white, the second pure red ochre, and then they were painted a greyish white.

White was an unusual colour for exterior ironwork unless it was in close proximity to a building.

- 9-10 Two further off-white schemes.

- 11-12 Two stone-coloured paint schemes, based on lead white, but tinted with small amount of iron oxides.

- 13-17 Five lots of white paint based on lead white complete the sequence.

Because of the use of lead white, the last of these whites must have been applied before the Second World War.

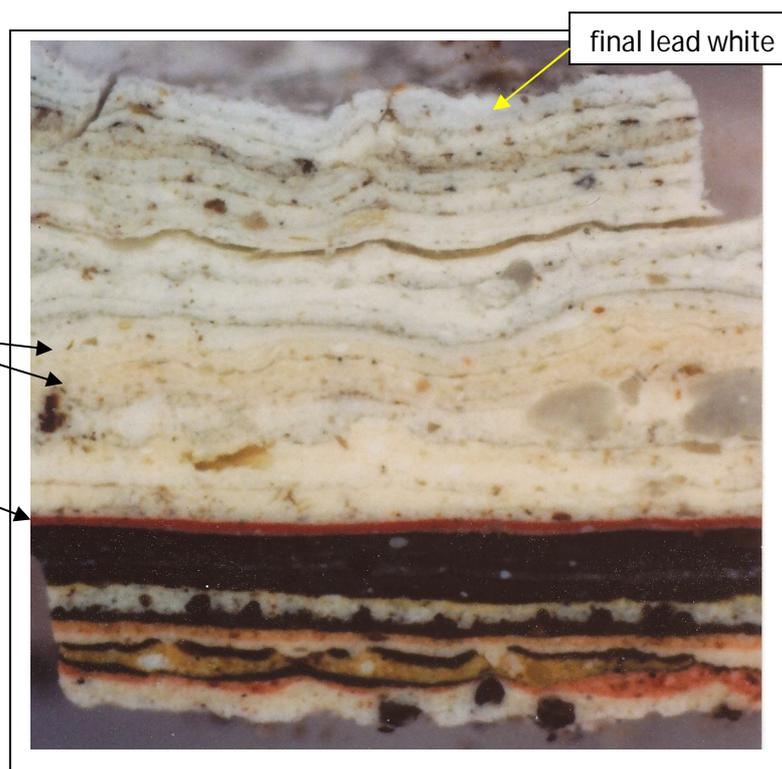
CROSS-SECTION

All layers
[x200]

x2 stone-coloured
schemes

red primer which preceded
the change to whites

early greens

**Detail of the earliest layers**

[x500]

3rd bronze green

varnish

2nd bronze green

yellow undercoat

original 'bronze' green

dull pink undercoat

lead white primer

[grey 1st primer missing in this
fragment]

