

Assessment of Plaster from Woburn Avenue, Lincoln (LIWA07)

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A fragment of plaster was the only find from a geotechnical test pit dug at Woburn Avenue, Lincoln and observed by Lindsey Archaeological Services PPL.

Description

Plaster

A single large fragment of plaster, with a flat surface and no evidence for a finer skim. The plaster is over 40mm thick and has an impression on the back which might be either from a wooden plank or lath. It presumably came from a wall or floor. The plaster contains abundant angular fragments of a red material, either an ironstone or ceramic building material, grey/white siltstone, coal, and gypsum. Of these inclusions, the coal is much finer in texture and it is likely that it was accidentally included through the use of coal as fuel in the production of the plaster. The other inclusions are coarser, ranging from c.2 mm to c.10mm. There is little or no quartzose sand or clay/silt aggregate and the groundmass is a fine cream plaster.

Assessment

This material is quite unlike most plasters and mortars examined by the author, including examples of *Opus Signinum*, a pozzolanic mortar used for the lining of baths, fountains and other structures where a waterproof mortar was required.

Although much lighter in colour than most Roman *Opus Signinum*, the presence of the red inclusions initially suggested a possible Roman origin. However, at x20 magnification their identity as Roman brick or tile fragments was doubtful and the presence of coal fragments suggests that the lime was produced in a coal-fired kiln, more likely to be of recent date (although coal is present in Roman deposits in Lincoln).

The gypsum fragments are unusual and not noted in Roman mortars or plasters (although they could have been present as fine-grained powder). Gypsum in powdered form was added to lime plaster to aid setting but these fragments are mainly between 2 and 10 mm across and would have had little, if any, effect except as filler.

Gypsum plasters were used from the 16th century for stuccos but these would have been inclusionless, being essentially Plaster of Paris and I know of no parallel for the use of gypsum aggregate. Similarly, standard mixtures for lime mortar, include aggregate but have

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a high sand fraction, probably necessary to allow carbon dioxide to react with the slaked lime.

To sum up, it is possible that the visible red inclusions are tile and that these, together with gypsum, were added to a lime mortar to produce a pozzolanic mortar (i.e. one which is both forms and is insoluble in water, through the binding of lime to silica rather than to carbon dioxide). However, the lack of sand-grand tile and gypsum fragments makes this unlikely and it is more likely that these materials were added to a lime or lime gauged with gypsum plaster used as a wall or floor finishing. Since the use of gypsum for this purpose appears to have started in the post-medieval period, a recent date for this piece is likely.

Further Work

No further work is recommended.

Retention

The fragment should be retained so that at some future date it can be compared with dated examples.