BRICK ANALYSIS BY DR. G. GIBBONS: INSTITUTE OF TECHNOLOGY

APPENDIX

BRICKS AND MORTARS FROM ULTIMO HOUSE

BRICKS

Ten sandstock bricks from Ultimo House were examined, ranging in colour from pale orange-pink to moderate orange to pale yellowish orange. For initial comments, see our Third Report (p. [indecipherable]).

Body texture of all bricks was biscuity, with deformed clay clasts visible, showing that the clay was unpugged, and indeed only poorly puddled.

Degree of firing was variable, but bricks were adequately vitrified. Two have been analysed by x-ray diffraction. In one, most clay has been altered to glass while quartz is undhanged; in the other, the glass has passed into mullite while a proportion of quartz has changed to cristobalite. Both of these changes indicate a higher firing temperature, which is also indicated by a deeper colour in the mullite-cristobalite brick. The two bricks may well be from the same kiln: the better fired one was found in-situ in the building footings, and it is likely that well-burnt bricks would have been used both for strength and for resistance to rising damp.

The dimensions of the bricks, where measurable, average out at 218 by 104 by 64 mm; ranges are respectively at 214-222, 102-106, and 63-69. These correspond essentially to the standard English size of the time.

Average weight of the five whole bricks is 2.3 (?) kg, which is normal for Sydney in that period. Specific gravity of all bricks averages at 1.67, which is actually rather higher than normal; it indicates that the clay did not have excess moisture (?) when moulded, and that the moulder had a strong right arm! Generally, such specific gravities were not achieved until the 1820s, when pugmills were introduced.

Absorption capacity (porosity) is in the range 14- [indecipherable], which is normal; but absorption rates range from 0.5 to 4.0 kg [indecipherable]. These are normal values, but the range is rather wide; it may be that some clogging of pores may have occurred over the long period during which the bricks may have been buried.

Most Ultimo House bricks have no mark or frog, but a few have a shallow, irregular, rectangular frog, and one has finger-marks: six on the side, and three on one end. The position of the fingers can be identified by the impression of the finger-nails (?), and it is clear that the marks were not made accidentally in lifting or turning the moulded brick. They are almost certainly tally-marks to record the number of bricks in the racks (?); Mr. K. Gollan has recorded such finger tallied bricks in St. Thomas’ Church at Port Macquarie.

This is a typewritten copy of the original document by Dr. G. Gibbons who analysed the bricks sourced from Ultimo House. This document is the Appendix to:

Powell, Carol (198-) Report on the archaeological investigation of Ultimo House. The Author, Sydney.

TheThird Report mentioned in the first paragraph of the Appendix is missing from the archaeological report.

The copy of the Brick Analysis is hard to read in places and includes a number of indecipherable sections.