LAVATORY REFURBISHMENT (PHASE I) Old Royal Naval College Greenwich SEI0

London Borough of Greenwich

An archaeological watching brief report

November 2005





MUSEUM OF LONDON

Archaeology Service

LAVATORY REFURBISHMENT (PHASE I) Old Royal Naval College Greenwich SE10

London Borough of Greenwich

An archaeological watching brief report

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Summary (non-technical)

This report has been commissioned by the Greenwich Foundation in order to record and assess the results of a watching brief carried out in the lavatories of the King William and the Queen Mary Quarters of the Old Royal Naval College, Greenwich.

The works were monitored intermittently between June and August 2005.

Brick foundations revealed below the modern floor surfaces were part of the original late 17th century construction. There was also evidence of later alterations and additions.

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1 Introduction

1.1 Site background

The watching brief took place within one room in the King William Quarter and in two rooms in the Queen Mary Quarter. These comprise the two southernmost buildings that form the Old Royal Naval College, Greenwich. The site is bounded by the River Thames to the north and Romney Road to the south. The centre of the site lies at National Grid Reference 538569 177921. Modern ground level immediately adjacent to the sites lies at an average of 5m OD. The site code is RNB 05.

1.2 Origin and scope of the report

This report was commissioned by the Greenwich Foundation and produced by the Museum of London Archaeology Service (MoLAS). The report has been prepared within the terms of the relevant Standard specified by the Institute of Field Archaeologists (IFA, 2001).

The refurbishment of three lavatories in the King William (one) and in the Queen Mary Quarters (two) forms Phase 1 of a refurbishment programme. The works were undertaken as a Scheduled Monument Consent (no HSD9/2/5896).

The purpose of the watching brief was to record archaeological / architectural remains revealed during the refurbishment work.

The purpose of the present report is to describe and analyse the results of the watching brief.

1.3 Aims and objectives

The purpose of the watching brief was to determine whether archaeological remains or features would be revealed by the refurbishment work and, if so, to record the nature and extent of such remains. No specific research aims had been identified beforehand.

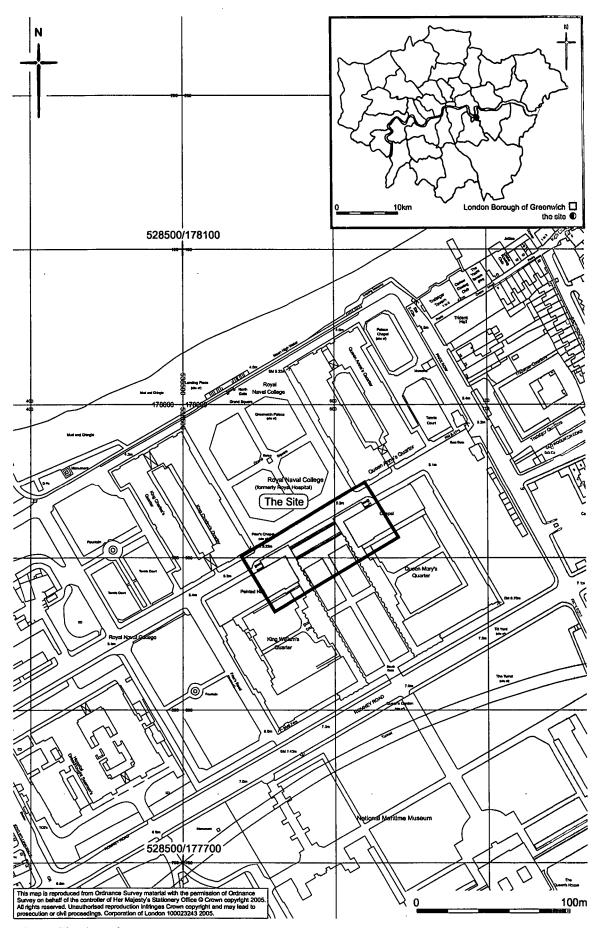


Fig 1 Site location

2 The watching brief

2.1 Methodology

The three rooms under discussion are being refurbished by contractors. This has involved the removal of the floor surfaces and much of the wall and ceiling surfaces. Foundations revealed below the floor surfaces were cleaned and recorded by MoLAS archaeologists. All archaeological observations and recording during the watching brief was done in accordance with the MoLAS Archaeological Site Manual (MoLAS, 1994).

Since this watching brief examined similar foundations it uses the same site code as an earlier evaluation on the Queen Mary Quarter. The evaluation comprised one trench so the present watching brief designated the three rooms as Trenches 2, 3, and 4.

Plans were made of remains within the three rooms by MoLAS archaeologists which were then identified on a site plan. This information was then plotted onto the OS grid by MoLAS Geomatics.

The heights of observations were recorded relative to Ordnance Datum benchmark on the south-east corner of the King Charles Building which has a value of 5.33m OD. East-west precedes north-south in all measurements.

The site has produced three trench plans and two elevations at 1:20 and one finds drawing. There was only limited artefactual material from backfills in Trench 3, which have been kept under the designation Context [2]. The site records can be found under the site code RNB 05 in the MoL archive.

The rooms are listed as Trenches but described under names used before the present refurbishments. They are also recorded by the Room numbers as defined by the Purcell Miller Tritton & Partners surveys of January 1992. However, dimensions and floor heights are those recorded before and during refurbishment.

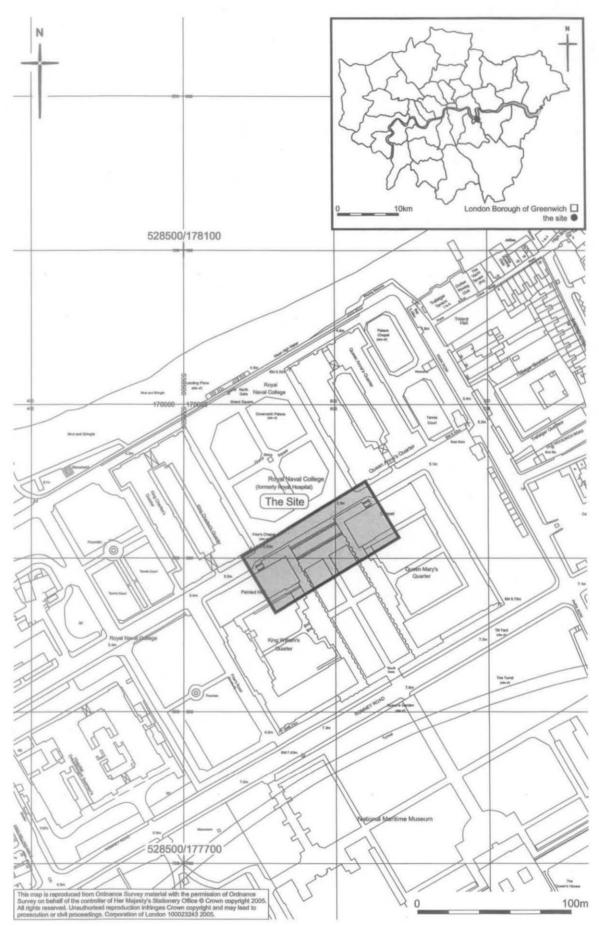


Fig 1 Site location

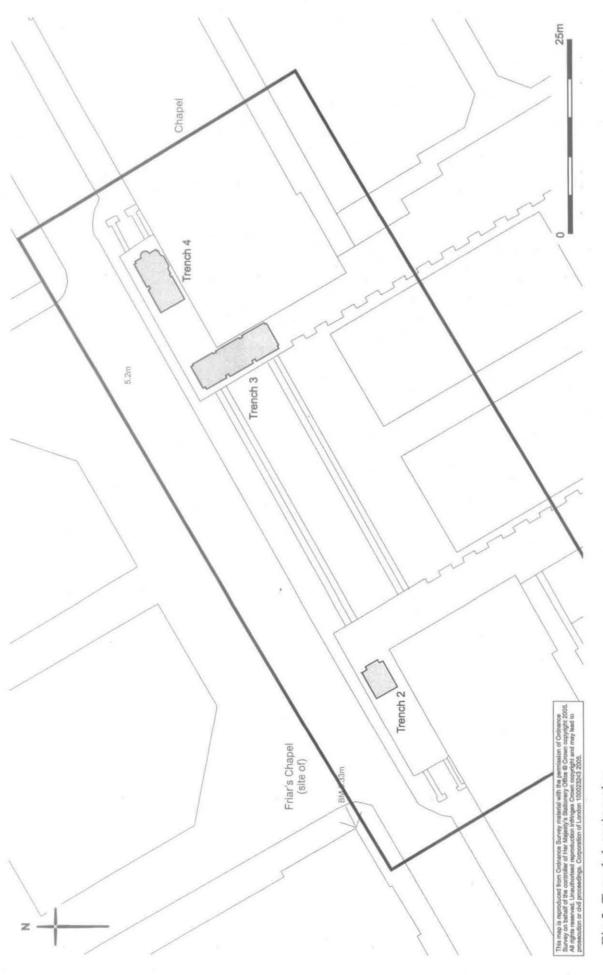


Fig 2 Trench location plan

2.2 Results of the watching brief

2.2.1 Trench 2 (Room KW B386).

This room, defined as the 'Royal Lavatory', lies immediately west of the 'King's Entrance' into the undercroft (below the Painted Hall) of the King William Quarter. It measures 3.70m by 3.02m with a (modern) floor level at 4.51m OD. There is a 1.80m wide rectangular recess at the eastern end of the room adding 0.46m to its length. The ceiling is cross vaulted. There is one window in the north wall.

The northern wall has a single projecting course of brickwork at 4.42m OD which appeared to be wider in the north-east corner. Within the eastern recess there is a brick footing at 4.39m OD. Although no similar courses were visible on the southern or western walls, they were probably associated with floor supports.

The northern brick course, and its corner widening, was cut by the insertion of a 0.50m wide brick buttress surviving to 4.38m OD. This presumably abuts the main build of the northern wall though its association with the southern wall could not be determined.

In the north-west corner there was a brick drain formed by two parallel walls, two bricks thick, 0.16m apart. This feature was greatly disturbed and its association with the north wall could not be determined. No cover to the drain remained and it had been filled with silt and rubble.

Redeposited subsoil silt was clearly used as an infill against the foundations. The surface of this material – as encountered after the contractors clearance – was at an average height of 4.25m OD.

Cutting and truncating all these structural features is a modern east-west drain culvert that extends beyond the confines of the room. It comprises two single course walls of yellow stock bricks 0.46m apart, with a brick floor at 3.72m OD. The culvert was covered with a series of limestone slabs; typically 0.60 by 0.85 by 0.8m thick. The undersides were tooled and their original use may have been as flagstone floor paviours.

No artefacts were found within this trench.

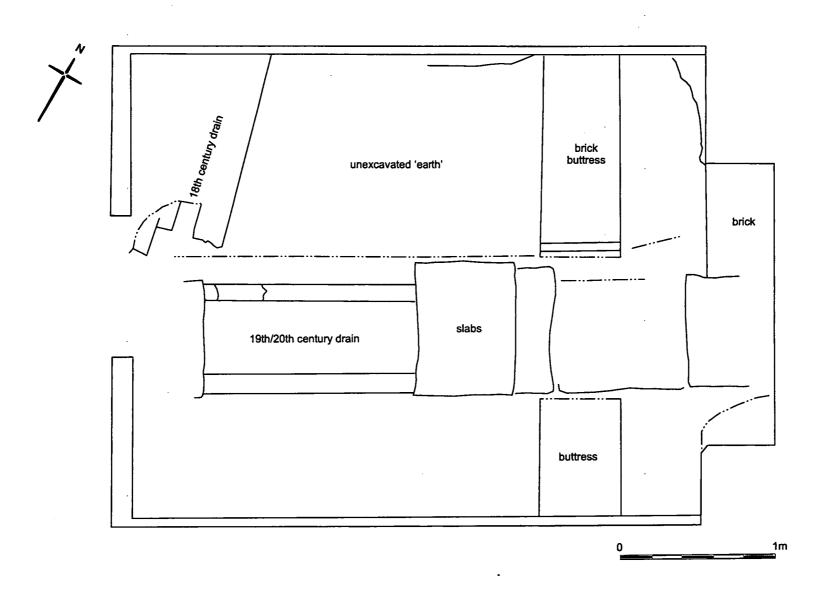


Fig 3 Trench 2, plan

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2.2.2 Trench 3 (Room QM B43)

This room, defined as the 'Gentlemen's Lavatory', occupies the north-west corner of the Queen Mary Quarter and is entered from the south. It measures a maximum of 3.81m by 11.33m, with a (modern) floor level at 4.64m OD. The room was divided into three compartments by pairs of pilasters supporting three chalk cross-vaults. The north-east and southern walls are both modern partitions. There is one window in the north wall and two in the southern two thirds of the west wall.

At the time of the inspection, the contractors had reduced the northern wall to its brickwork face. The northern part of the west wall retained a plaster coating but the original brick surface could be seen at its base, 0.08m behind. This wall appeared to be 1.21m thick.

Plasterwork on the southern half of the west wall appeared to be about 20mm thick. This wall appeared to be about 1.20m thick, almost certainly therefore, the same build as the north wall.

The northern part of the east wall is of modern brickwork with a tiled surface. The southern part of the east wall was plastered and the brickwork was not exposed during the time of recording. The south wall is of modern studwork with a doorway in its centre. There is a scar showing where there was a former partition across the two northernmost pilasters.

Against the north wall there were two integral buttresses, one in the north-west corner and another, smaller one 2.4m eastwards. These were both rather disturbed though the one against the west wall was stepped downwards and only abutted the wall, rather than being bonded in. It is likely that the northern ones also abutted. The footings of the west wall were seen to be corbelled (internally).

The southern two thirds of this room essentially comprised three massive brick foundations, abutting the footings of the west wall. Their relationship with the east wall was not recorded, though if abutting, they must have been tight. The northern such footing (marked A on Fig 4) was 2.;50m wide though with two corbelled courses to north and south. Its south-west edge appeared to comprise a solid relieving arch. This footing was not entirely parallel to Footing B, an average of 0.25m farther south.

Footing B was 1.90m wide with two corbels on its north side and one on its south-western side. In the centre of its southern edge there was a recess 1.04m by 1.12m by 0.24m deep, including two corbelled courses on its enstern side. This footing was 1.12m north of and almost parallel with Footing C to the south.

Footing C was only visible for a width of 1.48m and its extent beyond the southern partition wall is not known. Its north-western edge appeared to comprise a solid relieving arch and there were three corbelled courses along its north-eastern edge.

These footings were all laid at a level of 4.50m OD. The fill between A and B and B and C comprised silt rubble; more silt in the former and more rubble in the latter. The latter fill [2] produced one potsherd and a fragmentary stone baluster. The fill in between Footings B and C had a surface of white plaster at the same height as the

brickwork. There was a trace of the same material within the square recess of Footing B and it is most probable that a similar surface existed between Footings A and B. The brickwork itself had traces of plaster and it must be assumed that a uniform surface once existed within this southern area of the room.

These large footings appear to represent a finished building level. They are almost certainly contemporary with the wall foundations, though the height that the latter were left unfinished at remains uncertain (see below 3.3).

The next clear phase of construction must be the pilasters whose construction reveals a hiatus with the earlier brickwork. The bases of the southernmost pair and those against the western all are built up over the brick footings. The pilaster against the east wall on Footing B distinctly rests on secondary brickwork that brings this pilaster to a uniform height with the others. More telling is the north-east pilaster which extends a little to the north of the north edge of Footing A and therefore has a further brick support against the Footing to provide a secure base. The pilaster opposite this only projects very slightly beyond the Footing's edge and has no extra support.

A mixed fill of silt and rubble overlay the brick foundations and a floor of flagstone slabs formed a floor surface at 4.64m OD. Subsequent alterations involved the excavation and disturbance of the brickwork for the installation of plumbed pipework. A final floor surface of linoleum formed the surface of the lavatory.

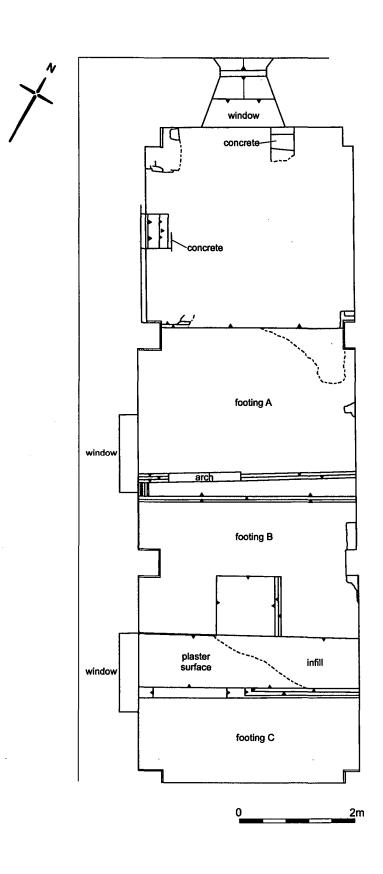


Fig 4 Trench 3, plan

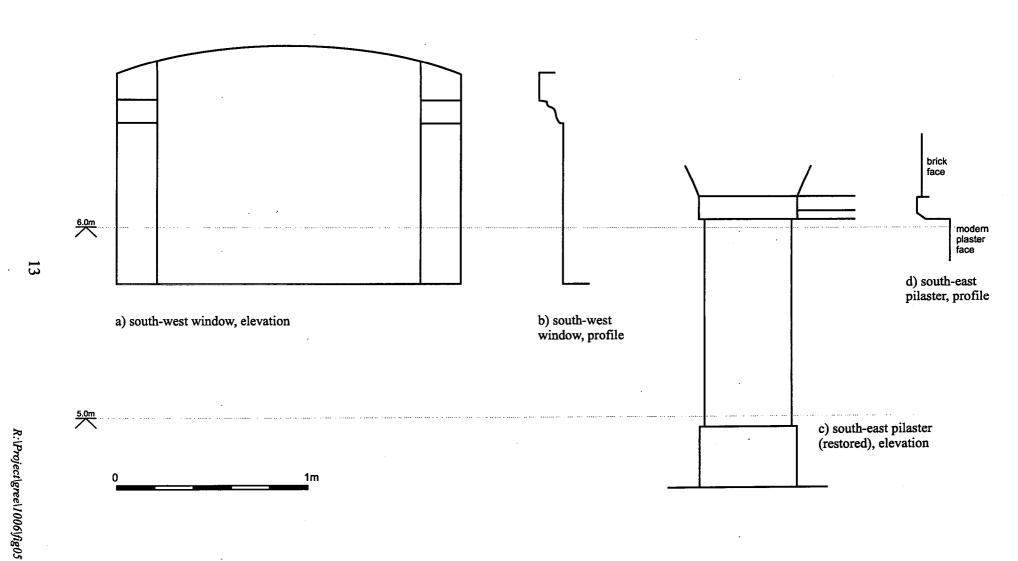
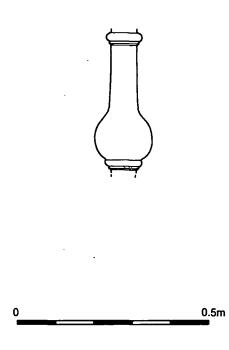


Fig 5 Trench 3, window and pilaster details.



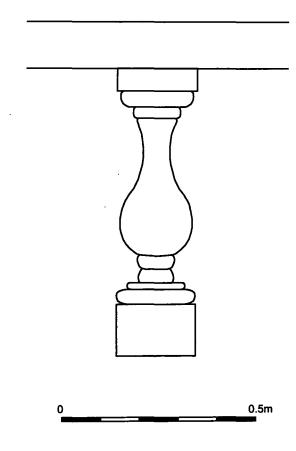


Fig 6 Trench 3, baluster fragments

Fig 7 Queen Mary Quarter, east façade, parapet, baluster profile

2.2.3 Trench 4 (Room QM B46)

This room, defined as the 'Powder Room', lies immediately east of the 'Queen's Entrance' into the undercroft (below the Chapel) of the Queen Mary Quarter. It measures a maximum of 9.04 (including apse) by 3.40m, with a (modern) floor level at 4.39m OD. The room is divided into two compartments of cross vaults supported on pilasters. There are two windows in the north wall, though their cill heights differ. There is a door in the west wall and one at the eastern end of the south wall. There was some indication that the western part of the south wall had been repaired or rebuilt; modern stock bricks overlay a course of original red bricks at 4.09mOD.

It should be noted that the plan of this room is indicative only. The length and breadth of the room is accurate but internal elements revealed during the refurbishment were only sketched in. Levels however, were recorded separately later on and are accurate.

The walls remained plastered and little detail of the brickwork could be seen. The lower part of the eastern section of the north wall, however, appeared to include a chamfered stone course and may reflect a different build. There are buttresses in each corner. They are all of different dimensions and that in the south-east corner appears to extend westwards, probably because it was associated with the threshold of a doorway into the larger room to the south. There are also buttresses below each window and brick supports beneath each pilaster.

What appears to be redeposited natural subsoil silt formed the 'surface' of the room, at a height of 4m OD. There had been considerable alterations to the room involving service pipes throughout, including a sink in the south-west corner. There were also some yellow stock dwarf walls at the east end that may have been joist support walls.

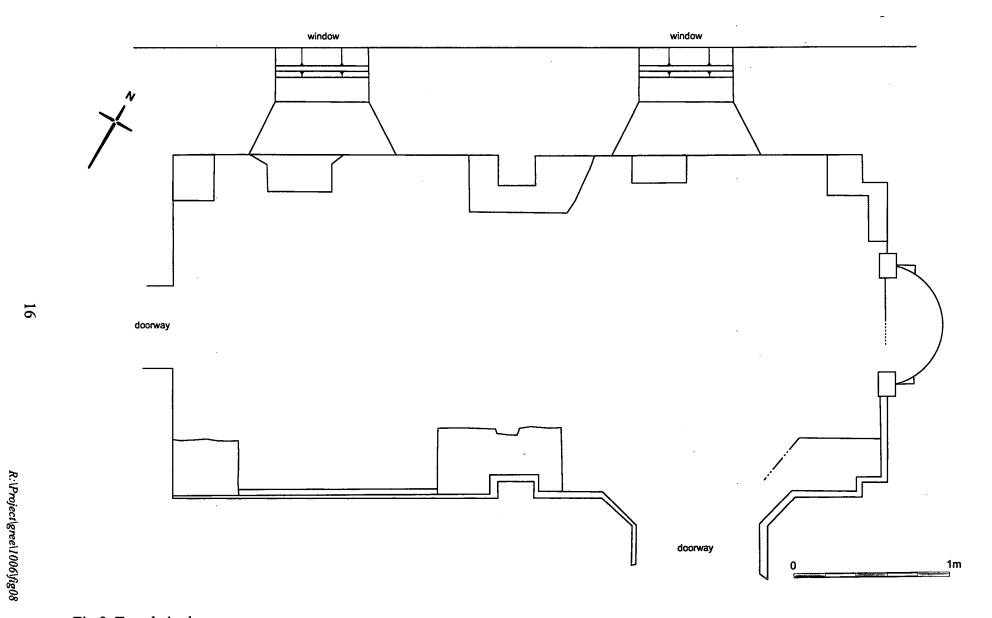


Fig 8 Trench 4, plan

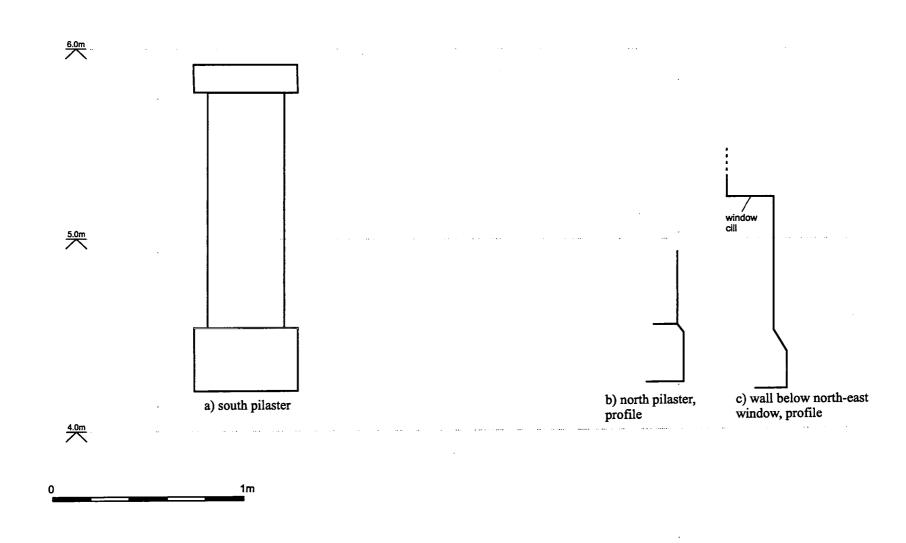


Fig 9 Trench 4, pilaster and window details

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3 Potential of archaeology

3.1 Original research aims

There were no specific research aims for the watching brief, other than to record and analyse structural elements revealed during the refurbishment programme.

3.2 New research aims

The extent and nature of the features recorded in the watching brief revealed evidence for the development and alteration of Sir Christopher Wren's original Greenwich designs. Such evidence has not, hitherto been revealed in physical form, and perhaps requires some consideration.

3.3 Significance of the data

The brick footings revealed in this watching brief form a significant part of the architecture of the Greenwich Hospital. Hitherto most attention has been given to the architectural superstructure but it is clear that a study of the foundations can provide an important contribution to the architectural development of the complex. Documentary study has provided the chronological development of the site.

After completing a uniform design for the complex, Wren was particularly successful in getting funds to start the building of the foundations for all three blocks (King William, Queen Mary and Queen Anne). The foundations were started in 1696 and completed in all cases by 1710. Indeed, the superstructure of the King William and the Queen Anne were largely finished also. However, the superstructure of the Queen Mary Quarter was not started until the 1730s by Thomas Ripley, and was not to be completed until the 1750s. Its plan was of course determined by Wren and by its physical footings, though there were some departures in detail. Hawksmoor's 1728 plan (for the completion) of the 'Queen Mary Court: Cellar Floor' does not provide any detail for the rooms beneath the colonnade, but in other respects it mirrors that of the King William Cellars.²

The small room in the King William Quarter (Trench 2) was part of the original build whose construction continued upwards into the superstructure. The room lay beneath the north colonnade outside the main building that housed the Painted Hall. Its foundations therefore would not have been as heavy as the main block and it is likely that the buttress recorded running north-south across the room was an original, if not

¹ NMM ART/1/43

² ibid /32

integral feature. It is not certain what use as made of the room originally but the insertion of a drain in its corner may also have been an addition. Nevertheless, the brick and mortar are clearly of the same type as that of the walls – a type that could date to almost any period within the first half of the 18th century. The insertion of a larger brick duct in the late 19th or early 20th century may have been associated with its lavatorial function.

Trench 4 comprises the easternmost room below the north colonnade of the Queen Mary Quarter. In terms of its plan it conforms to the foundations as set out by Wren though there is some suggestion that the construction of the north wall may have been altered, possibly during completion of the building in the 1730s – 40s. The doorway between this room and the main undercroft hall does not appear in Hawksmoor's 1728 plan. Certainly the pilasters are of a simpler style associated with that date (cf Figs 5c, d; 9a,b).

Trench 3 occupies most of the north-west corner of the building. Originally it would have extended eastwards and also continued southwards forming the long passageway below the west colonnade (see Bold 2000,174-175 for the original layout – albeit including some later partitions). By the late 19th century it had been divided into two rooms, one formed from the present southern two-thirds of the room and another running eastwards. A later partition created the present shape of three bays.

The foundations in this room are those of the outer walls to the north and west. Traces of their corbelled footings were seen though their depth is not known. There is only limited evidence for the wall footings of the buildings at present. corbelling was recorded somewhere at the western end of the King William building in November 1997 but without, regrettably any details of location or height (Giffords January 1998 [RNA 97]). Corbelled wall foundations have also been recorded on the west front of the Queen Anne Building. The external ground surface was at 5.18m OD and the top of the corbelling was at 4.17m OD, though its base was not reached externally. Within the basement however, the stone floor slabs lay at 2.26m OD abutting a chalk block directly below the brick corbelling. (Bowsher April 1995 RNC) 93]). Recently, the exterior of the north Queen Mary wall was partially recorded and its levels appear to be almost uniform with the Queen Anne foundations suggesting that some landscaping had corrected the natural slope of the topography before construction. The ground surface was at 5.20m with the corbelling also at 4.17m OD. An exterior buttress in the same area was at 4.87m OD, only 0.33m below the present ground (pavement) level (RNB05, Trench 1).

It remains uncertain as to what level the foundations of the nascent Queen Mary Quarter were brought to. By 1699, it was reported that "two thirds of foundations of east hall [of the Queen Mary Quarter] are raised, level with ground" (ADM 67/1) which is presumed to be contemporary ground level. After the demolition of the Tudor palace 'the site was levelled up with up to 2 metres of building rubble' (Dixon 1971,9) though ancillary structures of the old palace complex were still standing, particularly to the east. Finite levels will remain unknown until the 1971 excavations in the Grand Square are published detail. However, the threshold of the entrance into the east doorway of the new King Charles Building laid in the 1660s, lies at a similar height to the Queen Anne building opposite.

The three larger brick footings in Trench 3 were placed against the outer wall foundations although they must be contemporary. One potsherd (Essex made redware) found in the infill dated to the period 1580-1700 which would confirm the construction date. These foundations are aligned with the northern edge of the main building (the overlying chapel), which certainly needed stronger heavier footings than the surrounding colonnade.

Construction details for the Queen Mary Quarter, gleaned from the Admiralty records provide a chronology of events. By August 1698, the "foundations under the colonnade of east hall so far as extends under cupola" had been laid (ADM 68/672). Work described as "digging foundations east end and part of north and south sides of chapel" was still going on in November 1701 (ADM 68/675), and in January 1702 there was need for "making good chapel foundations damaged by frost" (ADM 68/676). It is not certain why the centre, larger, footings needed a plaster surface, unless building work was thought to follow on immediately.

When building work on the Queen Mary quarter was to be resumed in May 1735 however, it was necessary to "open up the foundations ... to see how much is laid and how much was needed to carry up the foundations to a proper level" (ADM 67/9) which suggests that the original foundations had been partly buried, perhaps as a protection against frost. By August of that year, work had included "moving stones from foundations Queen Mary; cutting brickwork in foundations of cupola" (ADM 68/721) and in the period April to September 1737 the "Masonry in legs of vestibule or cupola [were brought] up to fascia level" (ADM 68/725).

Thus, some alterations appear to have been made to the footings at this stage. What is immediately apparent however, is that the plan as envisaged by Wren was subtly altered. A comparison with the finished colonnade subway at the King William Quarter reveals it to be narrower, with more substantial internal supports than that built at the Queen Mary (Bold 2000,174-175). It is probable that the heavier brick footings extend southward to the edge of the superstructure, rather than along the colonnade. What remains intriguing however, is why they extend so far west of the main façade of the superstructure, the east wall of the hapel. Although there would certainly need to be spread foundations for such a large building, the front of the superstructure is farther back than the opposite wall in the King William Quarter.

Records of the construction work note only its progress. In May 1739 it was proposed to carry up the carcase of the colonnade and tower at the west end of chapel under the dome to the foot of the first columns (ADM 67/10). By 1740, the roof of the colonnade was being constructed (ADM 68/730), its pavement by March 1742 (ADM 67/18) and the chalk groining of its vaults at some time the same year (ADM 68/733).

Within Trench 3, the most obvious evidence of secondary construction is the misalignment of the pilasters at the northern edge of the larger footings. Though this is slight, the (new) layout of the basements here would seem to confirm Ripley's desire for simplification, creating (slightly) more space for less cost (cf Bold 2000,159). Internal decoration, pilasters and window mouldings, revealed in both Trenches 3 and 4 are restrained and functional but – for a basement – mildly stylish.

The last element of architectural ornamentation, the baluster fragment from the infill between the larger footings in Trench 3 (Fig 6), would seem to reveal Wren's stamp on overall uniform decoration. The baluster is of a simple single bulb type that was a later development from the double bulb type (Wittkower 1974). Details of the ovolo and torus differ very slightly from those that adorn the attics of the main buildings on the site, from Webb's King Charles Building of the 1660s to the replacement attic on the western front of the Queen Mary dating to the 1770s (Fig 7). The sense of uniformity even led to the same design to be used in the balconies of the Hospital's buildings in Park Row dating to the 19th century.

4 Publication and archiving

These limited records of the foundations and alterations of the King William Quarter are a minor addition to data on the architecture of the building. The remains revealed in the Queen Mary Quarter, particularly the Trench 3, have provided important details concerning the architectural and structural development of that building. For the present a note in the annual round up of the *London Archaeologist* should suffice until a larger synthesis of the Greenwich remains is contemplated.

5 Acknowledgements

The Museum of London Archaeology Service (MoLAS) would like to thank the Greenwich Foundation for commissioning this report. In particular we should like to thank Messrs Duncan Wilson, David Harris and Neil Coe of the Foundation. We should also like to thank Drs Michael Turner (English Heritage), and Tanvir Hasan (Giles Quarme Associates) for their assistance. The author is indebted to Dr John Bold (Westminster University) for supplying much of the architectural history of the buildings. The cheerful cooperation of the contractors, Rattee & Kett, is gratefully acknowledged. Help with surveying the remains was provided by MoLAS archaeologists Jeremy Taylor, Riley Thorn and Bruce Watson. The site drawings were prepared by Mark Burch and Ken Lymer, the baluster fragments were drawn by Sandra Rowntree and the pottery was identified by Nigel Jeffries.

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7 NMR OASIS archaeological report form

' 7.1 OASIS ID: molas1-10885

Project details

Project name

Lavatory Refurbishment (Phase 1), Old Royal Naval College,

Greenwich, London SE10

Short description of the

project

watching brief in three rooms (lavatories). Below the modern floor, brickwork foundations to the buildings (1690s) were

recorded.

Project dates

Start: 28-06-2005 End: 10-08-2005

Previous/future work

Yes / Yes

Any associated project

reference codes

RNB05 - Sitecode

Type of project

Recording project

Site status

Scheduled Ancient Monument (SAM)

Site status

Listed Building

Current Land use

Other 2 - In use as a building

Monument type

FOUNDATIONS Post Medieval

Significant Finds

BALUSTER Post Medieval

Significant Finds

POT Post Medieval

Investigation type

'Watching Brief'

Prompt

Scheduled Monument Consent

Project location

Country

England

Lavatory refurbishment - Watching brief report © MOLAS

Site location

GREATER LONDON GREENWICH GREENWICH Lavatory Refurbishment (Phase 1), Old Royal Naval College,

Greenwich, London SE10

Postcode

SE10

Study area

100.00 Square metres

National grid reference

TQ 38569 77921 Point

Height OD

Min: 4.00m Max: 5.00m

Project creators

Name of Organisation

MoLAS

Project brief originator

English Heritage/Department of Environment

Project

originator

MoLAS

Project

director/manager

Robin Nielsen

Project supervisor

JMC Bowsher

Sponsor body

funding

design

The Greenwich Foundation for the Old Royal Naval College

Project archives

Physical recipient **Archive**

LAARC

Physical Archive ID

RNB05

Digital Archive recipient LAARC

Digital Archive ID

RNB05

Paper Archive recipient

LAARC

Paper Archive ID

RNB05

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Publication type

Grey literature (unpublished document/manuscript)

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