

HISTORIC BUILDINGS REPORT

THE ROYAL ARSENAL, WOOLWICH

VOL I

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INTRODUCTION

The Royal Arsenal, Woolwich, is one of the nation's most important historic military establishments. The withdrawal of the Ministry of Defence from the Arsenal in 1994 ends more than 300 years of continuous use as a State defence facility. Yet, or perhaps accordingly, its buildings are little known.

In 1993 the Royal Commission on the Historical Monuments of England in consultation with other interested parties undertook to carry out a series of surveys to promote the understanding of the historic environment in the area then referred to as the East Thames Corridor. The making of this record of the buildings of the Royal Arsenal, Woolwich, was an important part of that initiative. The Arsenal is a site of great importance to the development potential of what has recently been redesignated Thames Gateway. Information about its past will inform its future.

The core of this record is a 'rapid survey' or general assessment of all of the 53 surviving buildings on the Ministry of Defence site known as Royal Arsenal (West). This comprises photography (aerial cover, exterior views of all buildings and internal views of 19 buildings) with brief descriptive reports based on interpretation of building fabric and some documentary sources. These are not definitive records; further research and recording will allow them to be expanded or refined. The information presented relates directly to the historic character of the buildings. It is ordered chronologically by primary build date. The record is intended to complement other current studies on the condition of the buildings, the archaeology of the site and its documented history. The general history of the Arsenal is not rehearsed here, though appropriate references are cited. Other supporting references include the negative numbers of the 1994 photography, as well as negative numbers relating to earlier photography held in RCHME's archive, the National Monuments Record. An appendix lists NMR holdings on other Woolwich Arsenal buildings, notably some of those demolished prior to 1994. Access to this and other material on the Arsenal can be gained via the London office of the NMR at Fortress House, 23 Savile Row, London W1X 2JQ (071) 973 3500 (from 1 January 1995 at 55 Blandford Street, London W1H 3AS (071) 208 8200/1).

The 'rapid survey' underpins more thorough records of six of the site's most important historic buildings - the Royal Brass Foundry, the Royal Carriage Factory, the Grand Store, New Laboratory Square, the Paper Cartridge Factory and the 'Armstrong' Gun Factory. Separately bound reports on these buildings present further research and analysis with new drawings based on measured survey, as well as further photography.

RCHME's Woolwich Arsenal fieldwork was carried out in May and June 1994 by the following staff: photography - Derek Kendall; aerial photography - Roger Featherstone; measured survey and drawings - Andrew Donald; building interpretation, research and reports - Charlotte Bradbeer, Anthony Calladine, Peter Guillery and Joanna Smith.

The Royal Commission is grateful to the Ministry of Defence and its agents at Hillier Parker for their co-operation and help, particularly in facilitating access to the buildings. Others who have assisted include English Heritage, the London Borough of Greenwich and the National Maritime Museum.

THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

National Monuments Record Buildings Index No: 92394

National Grid Reference: TQ 440 793

THE HISTORICAL DEVELOPMENT OF THE ARSENAL: A BRIEF SUMMARY

An ordnance storage depot was established on the site known as Woolwich Warren in 1671. The earliest surviving buildings are two pavilions from a laboratory erected in 1694-6 to manufacture ammunition. This marks the beginning of the site's use as a munitions factory. In 1717 large-scale gun-making came to Woolwich with the erection of the Royal Brass Foundry, which survives as a National Maritime Museum store. Gun carriages were also made, from 1728 on the site of the Royal Carriage Factory, which was subsequently rebuilt. The storage of ordnance materials remained another main function. These distinct Board of Ordnance functions developed into separate departments - the Royal Laboratory, the Royal Gun Factory, the Royal Carriage Department and the Storekeeper's Department. In 1805 the growing establishment was renamed the Royal Arsenal. The period of the Napoleonic Wars witnessed much new building, notably the complex of riverside warehouses known as the Grand Store. Another period of intense building activity commenced in the 1850s, in large measure stimulated by the Crimean War. Intensive modernization was undertaken with steamdriven machinery and facilities and premises for the manufacture of ever-larger guns. Subsequent development expanded further and further eastwards onto lands that have latterly not been a part of the Arsenal. The perpetuation of separate departments caused inefficiencies, reformed through the Morley Report of 1887-8. Later development was concentrated in areas to the east, particularly during the 1914-18 war. However, to the west the huge Central Offices complex of 1903-11 reflects the vast size (1285 acres) of the Arsenal at this time. After a period of decline what had become the Royal Ordnance Factory, Woolwich, closed in 1967. Most of the land was given up, much of it redeveloped by the Greater London Council as Thamesmead. The western enclave remained in Ministry of Defence use until 1994. The general history of the Arsenal has been well established through Brigadier O.F.G. Hogg's two-volume history, The Royal Arsenal: its Background, Origin and Subsequent History, published in 1963.

LIST OF ILLUSTRATIONS

1 - Woolwich Warren in 1749 (John Barker, 'An Exact Survey of the Warren at Woolwich...1749', as reproduced in O. F. G. Hogg, <u>The Royal Arsenal</u>, 1963)

- 2 The Royal Arsenal in 1810 (Public Record Office, WORK 43/492)
- 3 The Royal Arsenal in 1858 (PRO, WORK 43/499)
- 4 The Royal Arsenal (part) in 1931 (PRO, WORK 43/515)
- 5 Royal Arsenal West in 1994 (Ministry of Defence site plan)
- 6 Aerial view of Royal Arsenal West from the west in 1994 (RCHME 1994, 15176/34)
- 7 Aerial view of Royal Arsenal West from the east in 1994 (RCHME 1994, 15177/1)
- 8 West Pavilion, Royal Laboratory top - view from northwest in 1972 (PSA, G18618/3) bottom - view from east in 1994 (AA94/3203)
- 9 East Pavilion, Royal Laboratory top - view from southeast in 1972 (PSA, G18618/5) bottom - view from southwest in 1994 (AA94/3161)
- 10 The Royal Brass Foundry, view from north in 1994 (BB94/13988)
- 11 The Royal Brass Foundry, view from east in 1994 (BB94/13987)
- 12 Dial Arch Block top - view from southwest in 1994 (AA94/3164) bottom - detail of gateway in 1994 (AA94/3165)
- 13 Building 40 (the Royal Arsenal Officers' Mess) top - view from southeast in 1994 (AA94/3172) bottom - interior, ground floor, former Board Room for Officers of the Ordnance in 1964 (BB64/1467)
- 14 Building 40 (the Royal Arsenal Officers' Mess) top - view from southeast in 1969 (PSA, G13544/27) bottom - view from northwest in 1969 (PSA, G13544/28)
- 15 Building 11 (Officers' Quarters) top - view from east in 1994 (AA94/3238) bottom - view from southwest in 1994 (AA94/3239)
- 16 Verbruggen's House, view from southwest in 1994 (AA94/3166)
- 17 The Main Guard House, view from east in 1994 (AA94/3168)

 18 - Building 10 (the Royal Carriage Factory) top - north elevation in 1994 (AA94/3211) bottom - west elevation in 1994 (AA94/3212)

19 - Building 10A (Royal Carriage Department Stores), view from southeast in 1994 (AA94/3236)

20 - Buildings 41/41A (New Laboratory Square) top - view from northeast in 1994 (AA94/3182) bottom - south range from yard in 1994 (AA94/3176)

21 - Building 36 (the Grand Store), view from northwest in 1994 (BB94/11629)

22 - Building 49 (the Grand Store), view from northwest in 1994 (AA94/3193)

 23 - Building 45 (British Library Store, formerly West Quadrangle, Grand Store) top - view from northeast in 1994 (AA94/3188) bottom - view from northwest in 1994 (AA94/3185)

24 - Building 2 (Middle Gate House, formerly Storekeeper's House) top - view from southwest in 1994 (AA94/3248) bottom - view from northwest in 1994 (AA94/3250)

25 - Buildings 54 and 55 (Riverside Guard Houses), view from southwest in 1994 (AA94/3180)

 26 - Middle (formerly Plumstead) Gate and South Boundary Wall top - view from northeast in 1994 (AA94/3249) bottom - telephone exchange junction box in boundary wall (AA94/3245)

27 - The Duke of Wellington Statue, view from south in 1994 (AA94/3220)

28 - Building 17 (former Royal Laboratory Paper Cartridge Factory), view from southwest in 1994 (AA94/3204)

29 - Building 18 (former Royal Laboratory Department Offices), view from northwest in 1994 (AA94/3183)

30 - Building 23 (Shell Foundry Gatehouse), view from southwest in 1994 (AA94/3222)

31 - Building 23 (Shell Foundry Gatehouse), detail of gates (AA94/3223)

32 - Building 25 (Armstrong Gun Factory), view from northwest in 1994 (AA94/3196)

33 - Building 4 (former Timber Shed), view from southeast in 1994 (AA94/3244)

34 - Building 4 (former Timber Shed), interior, view from southwest in 1994 (BB94/13999)

35 - Building 5 (former Royal Carriage Department Timber Seasoning Sheds and Woodworkers' Factory)

top - view from south in 1994 (AA94/3243)

bottom - west elevation in 1994 (AA94/3242)

36 - Building 7 (former Royal Carriage Department Completing Shops, Forgers' Shops and Turnery)

top - east elevation in 1994 (AA94/3252) bottom - north elevation in 1994 (AA94/3230)

37 - Building 7, interior of former turnery in 1994 (BB94/14028)

38 - Building 53 (former West Shipping Shed)

top - north elevation from northwest in 1994 (AA94/3186) bottom - part of south elevation in 1994 (AA94/3187)

39 - Building 53 (former West Shipping Shed), east section, first-floor interior, view from east in 1994 (BB94/14042)

40 - Building 52 (River Viewing Platform, formerly part of East Shipping Shed) top - river viewing platform, view from southwest in 1994 (AA94/3190) bottom - drawing for raising west end of East Shipping Shed, 1889 (PRO, WORK 43/1627)

41 - Building 20 (former Chemical Laboratory), view from southwest in 1994 (AA94/3213)

42 - Building 20 (former Chemical Laboratory), interior of former laboratory in west wing, view from northeast in 1994 (BB94/11654)

43 - Building 33 (former Royal Gun Factory Rolling Mill) top - view from southwest in 1994 (AA94/3258) bottom - east elevation in 1994 (AA94/3261)

44 - Building 33 (former Royal Gun Factory Rolling Mill) top - west bay interior, view from northeast in 1994 (BB94/11666) bottom - drawing for cladding of elevations, 1889 (PRO, WORK 43/1215)

45 - Building 19 (former Royal Carriage Department Mounting Ground) top - view from southwest in 1994 (AA94/3205) bottom - drawing of elevations, 1887 (PRO, WORK 43/1639)

46 - Building 19 (former Royal Carriage Department Mounting Ground) top - interior, centre range, view from west in 1994 (BB94/14005) bottom - drawn sections, 1887 (PRO, WORK 43/1640)

47 - Building 48 (British Library Store, former Sea Store), view from northwest in 1994 (AA94/3191)

48 - Building 47 (British Library Store, former Storehouse), view from southeast in 1994 (AA94/3263)

49 - Building 21 (Telephone Exchange, former Naval Offices), view from southeast in 1994 (AA94/3215)

50 - Building 22 (Central Offices)

top - west elevation in 1994 (AA94/3217) bottom - north elevation in 1994 (AA94/3214)

51 - Building 22 (Central Offices)

top - east elevation in 1994 (AA94/3225) bottom - south elevation in 1994 (AA94/3219)

52 - Building 22 (Central Offices), service yard with link bridge from south in 1994 (BB94/11659)

53 - Building 42 (Ministry of Defence Police Section House), view from west in 1994 (AA94/3184)

54 - Building 24 (Workshops), view from southeast in 1994 (AA94/3221)

55 - Building 50 (Boiler House), view from northwest in 1994 (AA94/3195)

56 - Building 34 (RASRA Social Centre), view from southeast in 1994 (AA94/3254)

57 - Building 9 (Photographic Laboratory), view from southeast in 1994 (AA94/3232)

58 - Vehicle Test Ramps, view from north in 1994 (AA94/3247)

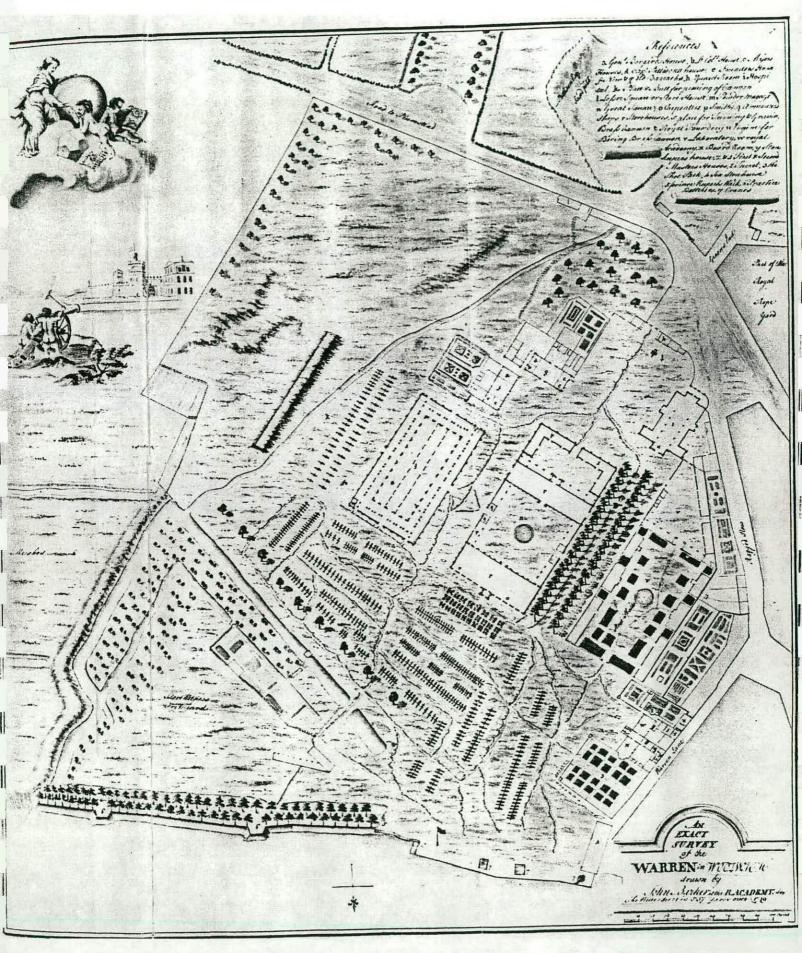
59 - Building 61 and Iron Pier, view from west in 1994 (AA94/3192)

60 - Buildings D73 and D79 (Royal Gun Factory Radial Crane and South Forge), view from southeast in 1967 (PSA, G11414/9)

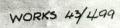
61 - Cadets' Quarters, view from north in 1969 (PSA, G13544/20)

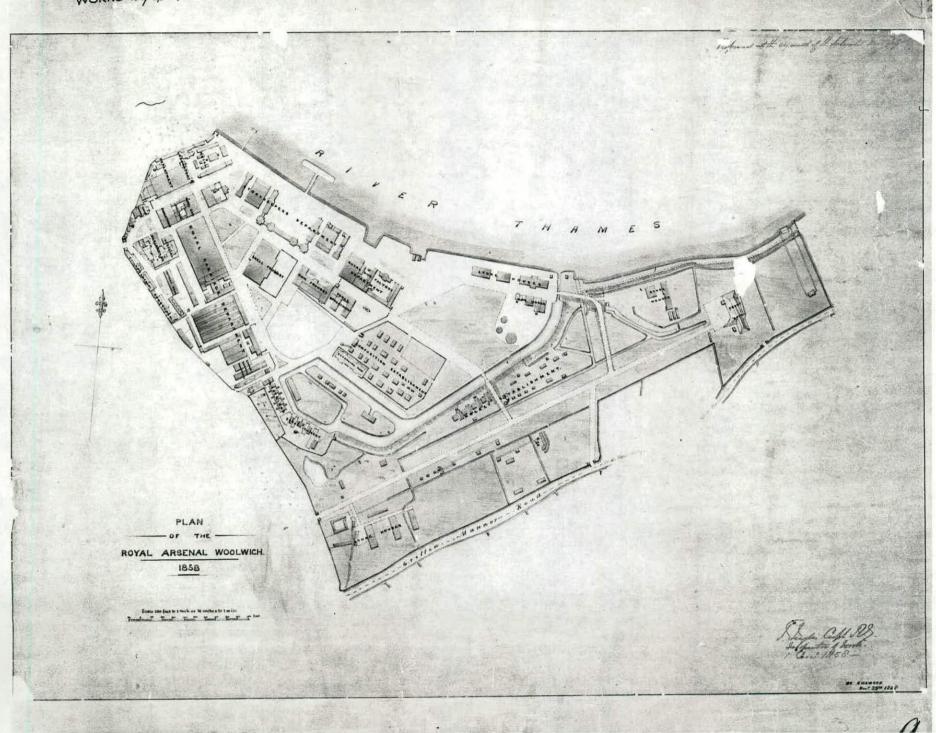
62 - Beresford Gate, view from south in 1969 (PSA, G13544/25)

63 - Royal Arsenal Canal entrance lock with hydraulic swing bridge, view from southeast in 1994 (BB94/10686)



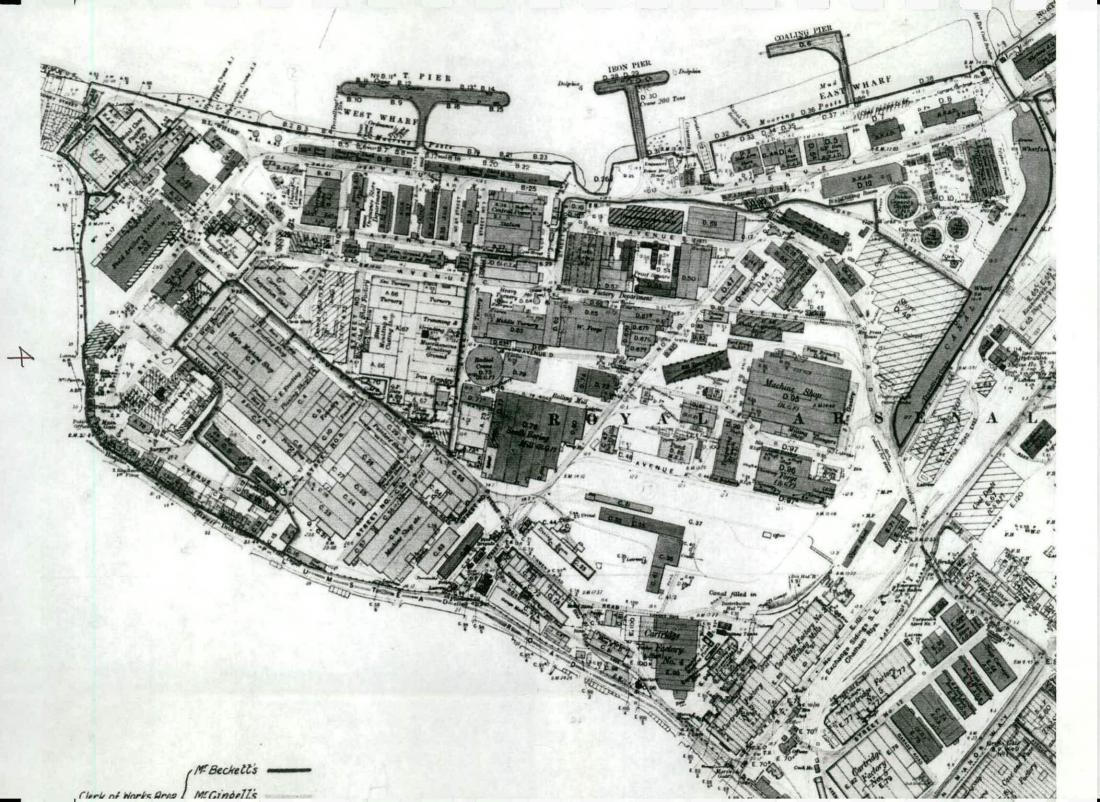


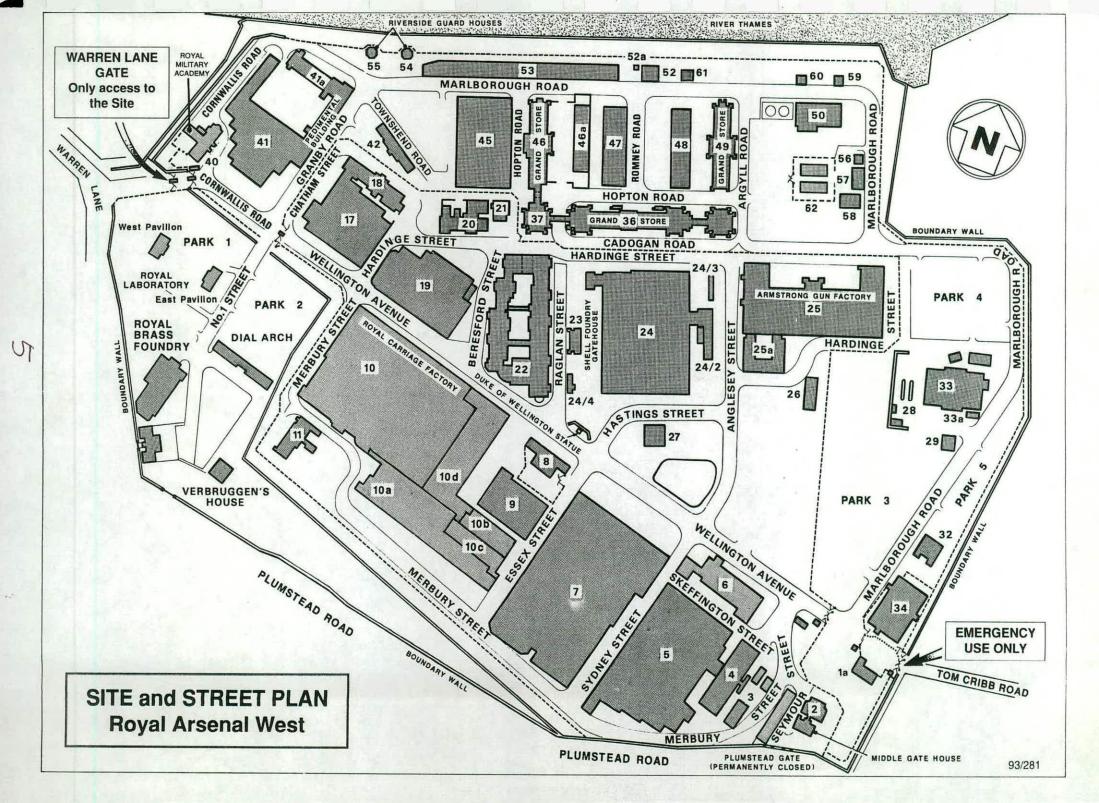




5

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THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no:

Old Series no: A23

Name/function: West Pavilion, Royal Laboratory

BUILDING DESCRIPTION

This building and its pair to the east are the oldest surviving buildings at the Arsenal. They were put up in 1694-6 for the move of the Royal Laboratory to Woolwich Warren from Greenwich and were the centrepieces of groups of three buildings forming the long sides of an open yard, all used for the manufacture of shot. The yard was covered in 1853-4 with an iron-framed north-lit structure to form a vast ammunition factory. The pavilions are simple two-storey five-bay brick and stone-dressed structures of a domestic character. The central bays project with bracketed doorcases and upper openings with scrolled architraves. To the west the Royal Cypher of William III endures in a remaking of a pediment. Recesses next to the doorcase may reflect the presence of drive shafting in the Victorian machine shop. The walling is much repaired and rebuilt, particularly to the sides and rear. The steeply-pitched hipped roof has been remade with metal trusses. There is no other internal structure. The associated buildings were demolished in the 1960s and 1970s; the now isolated pavilions are in poor condition.

RAPID SURVEY NEGATIVE NOS AA94/3203 BB94/14038-9

<u>NMR HOLDINGS</u> BB64/1476-7 PSA Collection - G18618/3-4 (1972)

<u>REFERENCES</u> W. Harry, <u>The Royal Arsenal, Woolwich</u>, 1987, pp. 12-13. O.F.G. Hogg, <u>The Royal Arsenal</u>, 1963, passim. PRO, WORK 43/1302 (plan, 1854)



THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no:

Old Series no: A19 (part)

Name/function: East Pavilion, Royal Laboratory

BUILDING DESCRIPTION

This building of 1694-6 is a pair to the West Pavilion (see above) and in general terms is an identical structure. The brackets to the doorcase cornice have been replaced by iron brackets of similar design, but pierced, presumably to allow the passage of drive shafting for machinery installed when the yard was covered in 1853-4. Most of the window openings on the west elevation have been altered and walling above the first-floor windows has been rebuilt with the original pediment removed. The east elevation appears to have been rebuilt in the 19th century, and still retains some sash windows. The north and south elevations have large openings to the first floor, now bricked in on the north side, made when the flanking one-storey ranges were raised, probably in the mid 19th century.

RAPID SURVEY NEGATIVE NOS AA94/3160-1 BB94/14040-1

<u>NMR HOLDINGS</u> BB64/1478 PSA Collection - G11435/1-3 (1967); G13544/34 (1969); G18618/5 (1972)

<u>REFERENCES</u> W. Harry, <u>The Royal Arsenal, Woolwich</u>, 1987, pp. 12-13. O.F.G. Hogg, <u>The Royal Arsenal</u>, passim. PRO, WORK 43/1302 (plan, 1854)



THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no:

Old Series no: A4-5

Name/function: The Royal Brass Foundry

BUILDING DESCRIPTION

This building of 1716-17 is an early industrial monument of outstanding importance. It is a rare surviving example of a purpose-built, large-scale machine shop from the very early stages of the industrial revolution. Traditionally attributed to Sir John Vanbrugh, it is more probable that it was designed within the Board of Ordnance. It was originally a barn-like timber-framed structure enveloped in red brick. The core of the building was a long and tall nave with clerestorey lighting. Towards the south end there were furnaces for the founding of brass cannon in each of two single-storey aisles. A vertical boring mill was in the tower to the north. The building was substantially reconstructed in 1771-4 under the direction of Jan and Pieter Verbruggen, master founders. Much of the timber frame was then replaced in brick. The original roof trusses survive and are a fascinating example of inventive carpentry to meet special demands.

SEE SEPARATE DETAILED REPORT

<u>RAPID SURVEY NEGATIVE NOS</u> AA94/3163, 3169-70 BB94/13987-98

<u>NMR HOLDINGS</u> AA51/10948 BB64/1442, 1446-7 PSA Collection - G13544/32 (1969); B1317/1-20 (1975); G22998/1-11 (1977)

<u>REFERENCES</u> SEE SEPARATE DETAILED REPORT



BB94/13988



THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no:

Old Series no: A57

Name/function: Dial Arch Block

Former names: The Great Pile, later Dial Square

BUILDING DESCRIPTION

This block is the only surviving part of the complex of buildings erected between 1717 and 1720 as the 'Great Pile' to house turning, washing and engraving workshops and stores relating to gun-making in the Royal Brass Foundry. It has recently been suggested that Nicholas Hawksmoor may have provided designs for the building, traditionally attributed to Sir John Vanbrugh. The sundial that surmounts the central archway and gives the block its name was added in 1764. As Dial Square the buildings remained part of the Royal Gun Factory through the 19th century. The existing brown-brick building is composed of two nine-bay wings, cross-gabled at the ends, linked by a gable-headed central archway. These originally returned at their ends to give the whole a half-H plan. The detailing of the south elevation is vigorous, with a military influence detectable in the pseudo-machicolation to the gabled end bays and battered pylons flanking the gateway. The brickwork is of a high quality, notably to the archway which is finely gauged with blocked jambs and voussoirs. To the north the walling has been rebuilt and then made good following the demolition of the north ranges in 1969. Most of the window and door openings are bricked up and all other openings have been closed off, one incorporating three late-19th-century cast-iron columns. A cast-iron arch to a gutter, decorated by pierced spandrels dated 1780, but cast with the names Blomfield, Dickson, Millar, Maclean, Dundas and Chalmer (Inspectors of Artillery and of the Royal Brass Foundry between 1797-1855), crosses the south end of the gateway. There are similarly decorated late-19th-century arches in the Royal Brass Foundry. The building was refurbished in the 1980s. Within the last few years the cannon balls that surmount the gateway pylons have been added, an echo of the original design.

RAPID SURVEY NEGATIVE NOS AA94/3162, 3164-5

<u>NMR HOLDINGS</u> AA51/10952-3 BB64/1480-3 PSA Collection - G11435/4-8 (1967); G12194/16-17 (1968); G13536/12, G13544/31 (1969)

<u>REFERENCES</u> W. Harry, <u>The Royal Arsenal. Woolwich</u>, 1987, p. 11. O.F.G. Hogg, <u>The Royal Arsenal</u>, 1963, pp. 252-73, 1108. R. Hewlings, 'Hawksmoor's "Brave Designs for the Police"', in J. Bold and E. Chaney, <u>English Architecture:</u> <u>Public and Private</u>, 1993, pp. 215-229.



THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 40

Old Series no: A2

Name/function: The Royal Arsenal Officers' Mess

Former names: The Royal Military Academy, later Royal Laboratory Model Rooms

BUILDING DESCRIPTION

This two-storey brown-brick building stands on the site of Tower Place, the early-to-mid-16th-century mansion that was acquired by the Crown in 1671 when an ordnance storage depot was established on Woolwich Warren. The main range of the existing building was erected in 1718-20, apparently reusing existing foundations. The powerful and idiosyncratic elevational designs, if not the plans as such, may have been prepared for the Board of Ordnance by Nicholas Hawksmoor. The two principal rooms on the ground floor were originally a Board Room for Officers of the Ordnance, to the north, and an Academy for training cadets, to the south. The three-storey-and-attic six-bay rear wing, beyond a staircase bay, may have been added <u>c</u>1741 when the Royal Military Academy was established and the house was altered and extended to accommodate masters and a storekeeper. In 1806 the Royal Military Academy moved to Woolwich Common and the building became part of the Royal Laboratory Department, passing into use as ammunition model or pattern rooms. In the early 20th century it became an officers' mess. Other rear wings with early-18th-century origins were demolished <u>c</u>1970 and somewhat earlier. There is a gauge of indeterminate function attached to the rear wall. Internally there are simple early-18th-century fireplaces, a dog-leg staircase, some plain panelling and other joinery.

RAPID SURVEY NEGATIVE NOS AA94/3172

<u>NMR HOLDINGS</u> AA51/10949-51 Measured Drawings - 58/00074-7 (1958) BB64/1458-75 PSA Collection - G12674/12 (1968); G13441/1, G13536/12, G13544/27-8 (1969)

REFERENCES

W. Harry, <u>The Royal Arsenal, Woolwich</u>, 1987, p.16.
O.F.G. Hogg, <u>The Royal Arsenal</u>, 1963, pp. 252-73, 901.
R. Hewlings, 'Hawksmoor's "Brave Designs for the Police" in ed. J. Bold and E. Chaney, <u>English</u> <u>Architecture Public and Private</u>, 1993, pp. 215-29.



BB64/1467



14

THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 11

Old Series no: A77

Name/function: Officers' Quarters

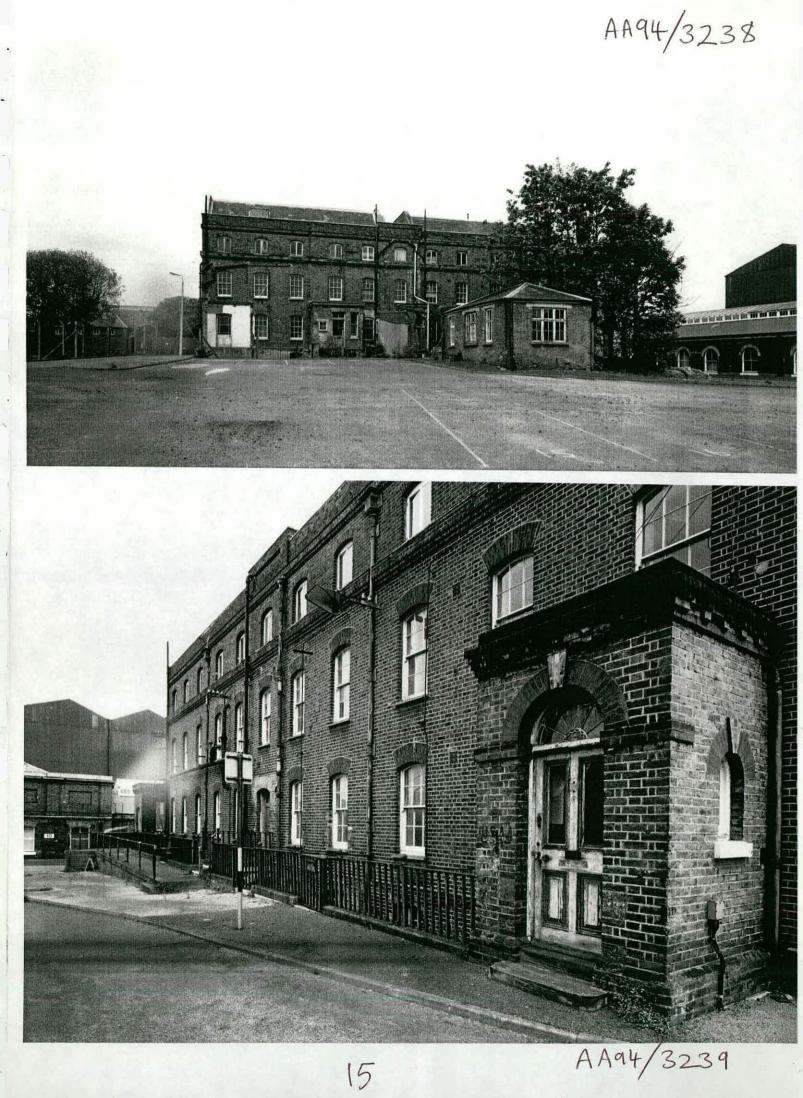
BUILDING DESCRIPTION

This terrace of houses was Officers' Quarters built in 1718 that from 1741 were a part of the Royal Military Academy. However, externally the building appears to be a 19th-century rebuild incorporating elements of the layout and possibly the fabric of the earlier buildings. To the south a further range of officers' quarters built in 1739 (known as the 'New Barracks' to distinguish them form the earlier range), also had a 19thcentury appearance. The Military Academy moved from the Arsenal to Woolwich Common from 1806 onwards, the last cadets leaving in 1882. Some time prior to 1851 the Officers' Quarters were taken over by the Royal Laboratory as official residences for that Department's senior staff. A rebuilding may have been linked to this change of occupancy. The building was then known as Nos 1-4 Dial Square, the southern range as Nos 5-8 Dial Square. The building has three storeys with basements and is constructed of stock brick with red-brick dressings to the window heads. Both the eastern and western elevations are treated in a unified manner, with a first-floor string course and a high parapet, raised over the central bay. The west elevation has a two-bay wing stepped back to the north end, with a one-storey porch. There is a similar porch to the south which retains a decorative fanlight over a four-panel door. The central bay of the symmetrical eleven bay elevation has a single door opening to both houses; a later sign indicates that this was the servants' entrance. The basement areas have iron railings with square-section balusters and ball finials. The elevation, now disfigured by heating pipes and telephone junctions, appears to have mid-19th-century brickwork and windows, although the proportions of the window openings and the line of the mansard roof indicate a reworking of an earlier building. The east elevation has one-storey extensions of various sizes to the ground floor, some of which have subsequently been demolished or reduced. Originally the houses had gardens with a row of coachhouses, stables and servants' quarters to the east side. All traces of this arrangement have been obliterated by the tarmac carpark. The interiors of the buildings appear to retain some mid-19th-century fireplaces and other fittings. In 1718 the building had barracks in the middle houses with officers accomodated at the ends. This arrangement is similar to the present layout. The building may therefore incorporate 18th-century features.

RAPID SURVEY NEGATIVE NOS AA94/3238-3240

<u>NMR HOLDINGS</u> BB69/1487-9 PSA Collection - G13536/13,27,28 (1969); G14271/9 (1970)

<u>REFERENCES</u> Maps - PRO, WORK 43/492 (1810), WORK 43/499 (1858), WORK 43/501(1864) PRO, WORK 43/1651 (plan, 1885) O.F.G. Hogg, <u>The Royal Arsenal</u>, 1963, p. 254.



THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no:

Old Series no: A77

Name/function: Verbruggen's House

BUILDING DESCRIPTION

This house was built in 1772-3 for the brothers Jan and Pieter Verbruggen, appointed master founders at Woolwich in 1770. It was built by James Morris at a cost of £1200. The previous founder's house was said to have been too small. However, this is not a large house, with two rooms each on two storeys, a basement and an attic. It has an unorthodox and somewhat cramped plan; the original front entrance was to the north and opened directly into the stair hall. The brown-brick elevations are articulated as four by three bays with sash windows, ground-floor blind arcading and a stone cornice to a parapetted mansard roof with pedimented dormers. The house has been stripped of internal fittings. In the 19th century it was extended to the west and to the north and adapted to use as offices. The extensions have been demolished.

RAPID SURVEY NEGATIVE NOS AA94/3166-7

NMR HOLDINGS BB64/1488

<u>REFERENCES</u> W. Harry, <u>The Royal Arsenal, Woolwich</u>, 1987, pp. 9 and 14. O.F.G. Hogg, <u>The Royal Arsenal</u>, 1963, pp. 432, 439.



THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no:

Old Series no: A83

Name/function: The Main Guard House

BUILDING DESCRIPTION

This two-storey guard house, of stock brick with stone dressings, was put up for the Board of Ordnance in 1788 by Isaac Ashton, builder. It was originally for the use of the Army, who guarded the Arsenal until the 1880s. The Metropolitan Police then the War Department Constabulary and finally the MoD Police took over this responsibility. The main east elevation has a tetrastyle Doric portico, with a vaulted ceiling, leading to a double door flanked by two round windows. Outer tripartite ground-floor windows have segmental heads. The shallow hipped roof has a timber eaves cornice. The building appears to have undergone a recent restoration, including a rebuilding of the south elevation. On the ground floor the interiors appear to have been heavily altered. There are numerous closely-spaced slender plain columns, presumably of cast iron. Southeast of the guard house was the main gate, the Beresford Gate. After this closed in 1984 for the redevelopment of the southern edge of the site for a realignment of the Plumstead Road, the guard house became the Arsenal's main pedestrian access point. It has subsequently been closed.

RAPID SURVEY NEGATIVE NO. AA94/3168

<u>NMR HOLDINGS</u> BB64/1500 PSA Collection - G13544/26 (1969)

<u>REFERENCES</u> W. Harry, <u>The Royal Arsenal, Woolwich</u>, 1987, p. 10. PRO, WORK 43/571-572 (plans, 1896)



THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 10 and 10D

Old Series no: C2

Name/function: Royal Carriage Factory

BUILDING DESCRIPTION

This is a large workshop complex of 1802-5. The heart of the Royal Carriage Department's facilities, it replaced carriage works of 1728 that had been rebuilt and enlarged in 1775-8. It originally comprised a low one- and two-storey quadrangle of stores and workshops with pavilions at the corners and a pedimented centre with a clock turret to the north enclosing open avenues around three parallel smitheries, each flanked by wheelers' shops. A steam engine was in operation here from 1805, supplied by Joseph Bramah. The outer brick elevations survive with relatively little alteration, except to the easts, and the north and south perimeter buildings largely survive. However, the core of the building has been rebuilt. In the late 1850s the inner blocks were linked by new workshops and the eastern perimeter buildings were removed to make space for a machine shop (10D). In the 1870s and 1880s the avenues were covered in stages with composite iron roofs. The inner and western perimeter buildings were entirely replaced with a tall steel-framed and corrugated-sheet clad central workshop in 1937. This central structure was reconstructed in 1967-8.

SEE SEPARATE DETAILED REPORT

RAPID SURVEY NEGATIVE NOS AA94/3211-12, 3218, 3234-5, 3237 BB94/11645-7, 11650-2

<u>NMR HOLDINGS</u> BB64/1505-6 PSA Collection - G11939/1,2,5, G12049/11-12 (1967); G12115/1, G12194/19, G12250/1, G12588/1,5, G12674/3-8,11,19 (1968); G14494/6, G14658/10 (1970); G15056/10,12 (1971)

<u>REFERENCES</u> SEE SEPARATE DETAILED REPORT



AA94/3212



THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 10A-C

Old Series no: C3, C6-8

Name/function: Royal Carriage Department Stores and South Erecting Shop

BUILDING DESCRIPTION

This group of buildings is attached to the Royal Carriage Factory (Building 10) to the south. Its origins appear to be as a long single-storey range of stores (10A) of $\underline{c}1805$, contemporary with the main factory building and originally free-standing. This 27 by 3 bay stock-brick range has round-headed window openings in relieving arches, with segmental heads to former doorways. It is comparable with the contemporary single-storey store ranges of the outer quadrangles of the Grand Store (see Building 45). It was raised a storey in the late 19th century and has since been partitioned as offices. Between this range and the factory the South Erecting Shop was inserted in 1884. This has a metal-framed roof and formerly had a large gantry crane, presumably for carriage assembly. This range was extended eastwards with a fitters' shop (10C) $\underline{c}1890$. To the north of the latter there is a small mid-20th-century workshop (10B) that replaces an earlier structure.

RAPID SURVEY NEGATIVE NOS AA94/3233, 3236 BB94/11643-4, 11648-9

REFERENCES

Maps - PRO, WORK 43/492 (1810), WORK 43/501 (1864), WORK 43/506 (1888), WORK 43/515 (1931) O.F.G. Hogg, <u>The Royal Arsenal</u>, 1963, p. 817. <u>The Engineer</u>, 2 Oct. 1891, p. 269.



THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building nos: 41 and 41A

Old Series nos: A22,25-9,32,35

Name/function: Pedimental Building

Former name: New Laboratory Square

BUILDING DESCRIPTION

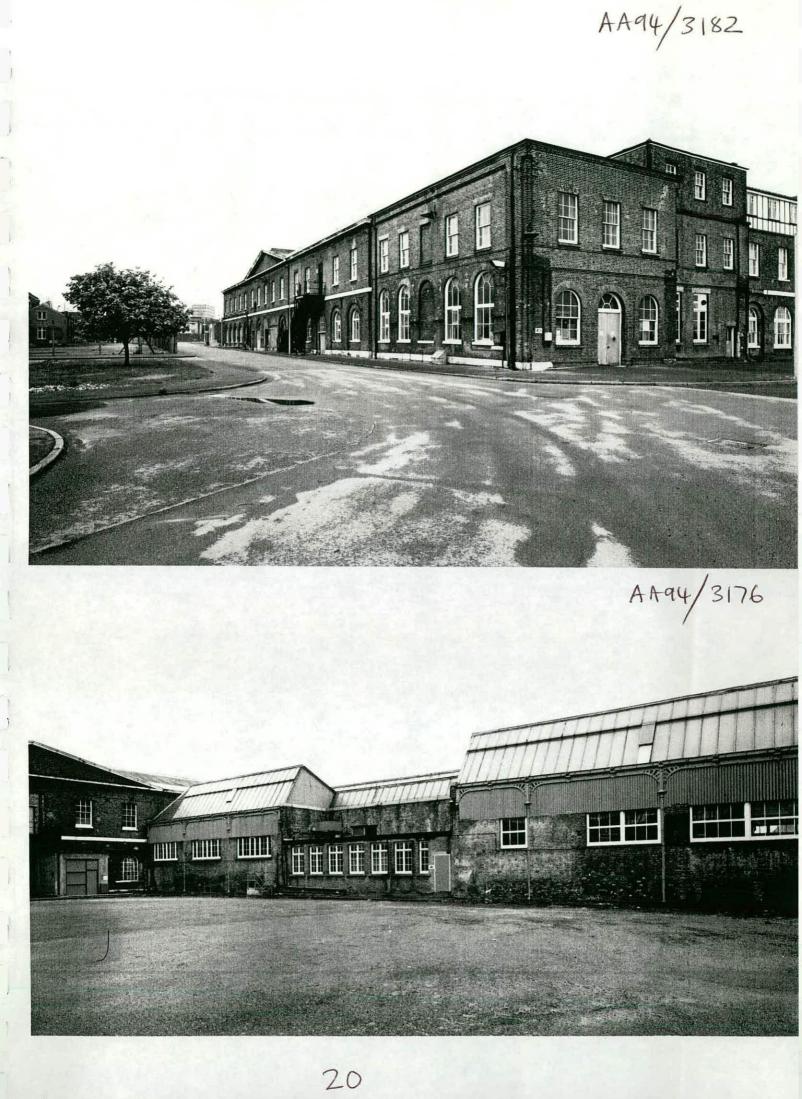
This group of buildings forms an all but entirely closed quadrangle developed in several phases. It formed part of the Royal Laboratory and, in so much as it was an extension northwards from the original laboratory, it was designated New Laboratory Square. The long two-storey brick west range of 1805 is the earliest build. This was mirrored by the east range c1810 and the resulting yard was closed to the north at about the same time, in both cases with two-storey brick ranges. The east range was converted to be a temporary ammunition factory in 1854 in an emergency arising from the outbreak of the Crimean War coinciding with the rebuilding of the main laboratory quadrangle to the south. Steam engines were put up at either end of the range into which cast-iron columns were inserted. These columns survive with other evidence of drive shafting. Thereafter the quadrangle became a factory for boxes and barrels to pack ammunition. The east range was converted to use as a sawmill and cooperage. The west range was carpenters' shops. In 1878 the previously open south side of the yard was closed with a carpenters' workshop, initially a two-bay deep, north-lit, iron-framed structure. This was extended, first to the north c1890, then to the south early in the 20th century. The west range was rebuilt internally with a reinforced-concrete frame and the north range was raised a storey in mock-Tudor style and converted to office use.

SEE SEPARATE DETAILED REPORT

<u>RAPID SURVEY NEGATIVE NOS</u> AA94/3171,3173-9,3182 BB94/14006-14016

<u>NMR HOLDINGS</u> BB64/1462,1509-13 Photographs by Rex Wailes - 94/66/23-4 (1966) PSA Collection - G13190/5, G13441/1, G13536/9 (1969)

<u>REFERENCES</u> SEE SEPARATE DETAILED REPORT



THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building nos: 36, 37, 46 and 49

Old Series nos: B34,38,38B,40,45

Name/function: The Grand Store

BUILDING DESCRIPTION

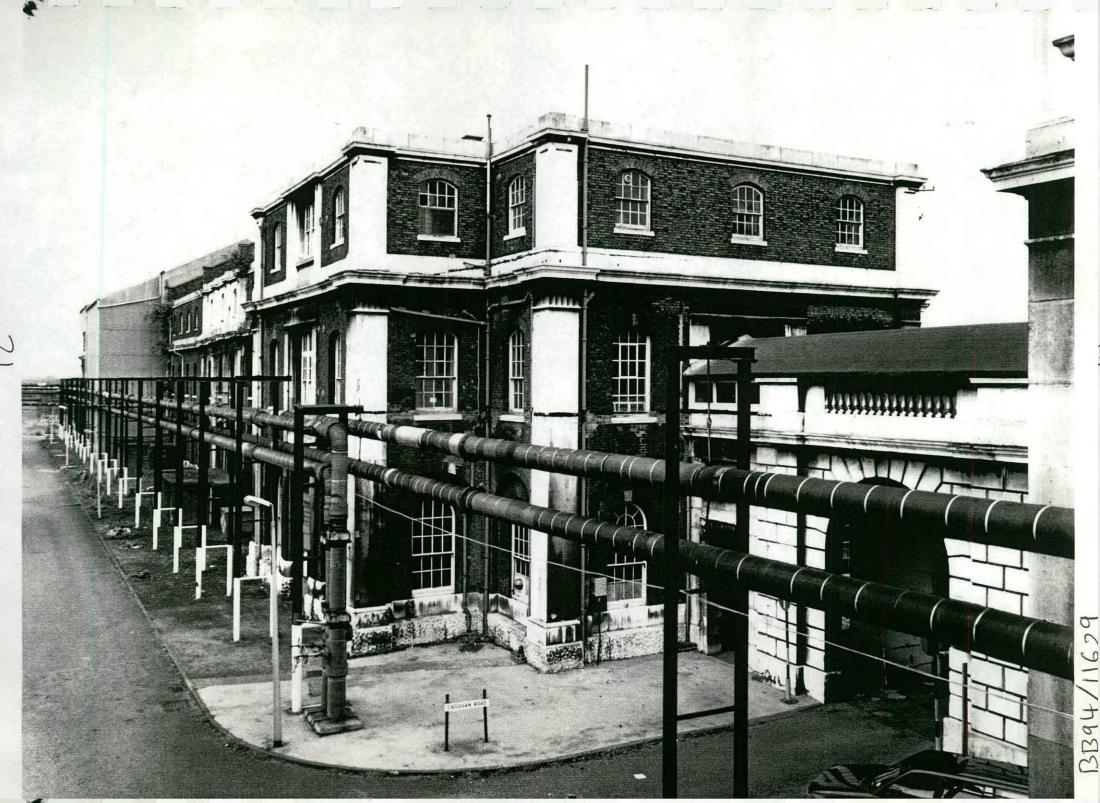
The Grand Store is an imposing complex of warehouses overlooking the river Thames. Originally it ranged around three quadrangles, of which the great central group survives in much its original form with relatively little alteration. The complex was built by the Board of Ordnance for the Arsenal's Storekeeper's Department in stages from 1806 to 1813. The architectural design has been attributed to James Wyatt, Surveyor of the Ordnance, and his brother Lewis. The warehouses were expensively built with brick elevations lavishly dressed with Purbeck stone. Architecturally the buildings are conservative, looking back to Naval storehouses of a century earlier. Constructionally they are also traditional, with entirely timber internal structures eschewing the use of structural iron, for fireproofing or otherwise. In this and their overall scale they are comparable with the great rows of warehouses put up in London's commercial docks in 1800-05. The Grand Store has suffered from serious subsidence all its life and, excepting sections designed or converted for office use, has fallen into dereliction. Nonetheless the surviving buildings of the Grand Store are the most complete survival of any of the Arsenal's departments. They are of wider significance as one of the most important and least altered of the few surviving groups of warehouse buildings from a period notable in England for its ambitious commercial and military architecture.

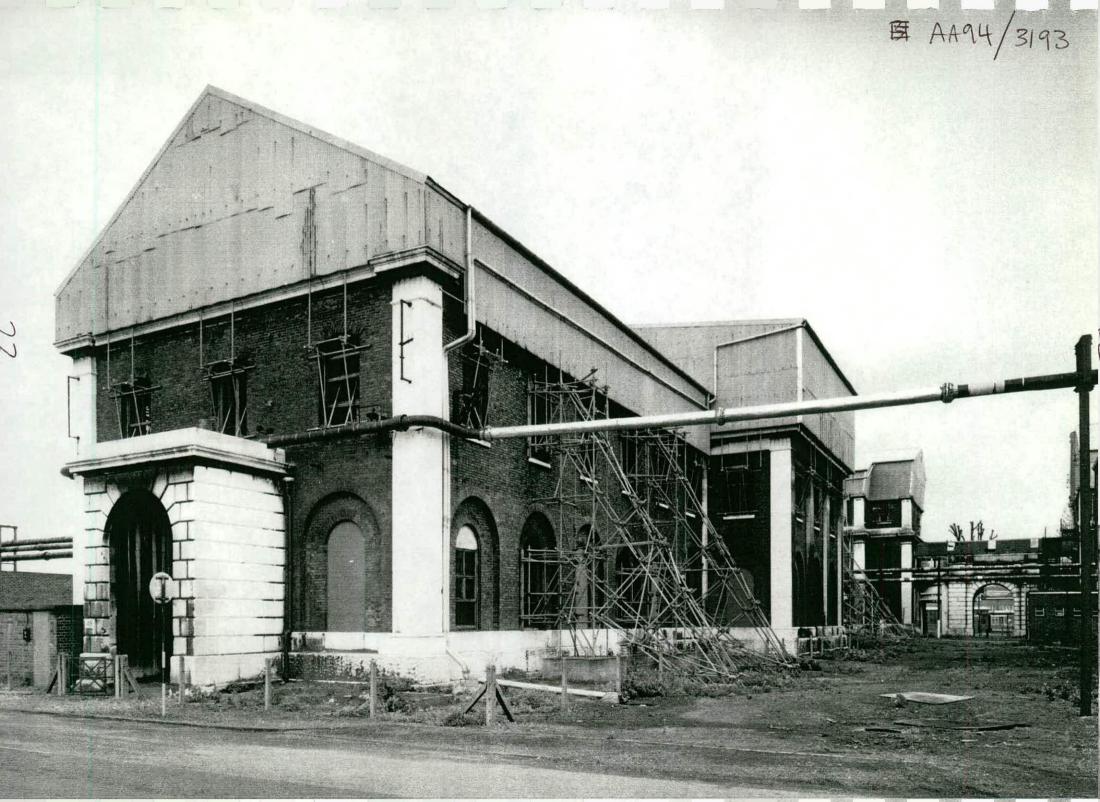
SEE SEPARATE DETAILED REPORT

<u>RAPID SURVEY NEGATIVE NOS</u> AA94/3189,3193-4,3197-9, 3201-2,3262,3264 BB94/11630-42

<u>NMR HOLDINGS</u> BB64/1448-51,1453,1455-7 PSA Collection - G15056/2,7,15, G16070/1,4 (1971); G23311/1-46 (1975); G25102/1-5 (1981); G26731/1-20, G26764/1-8 (1984)

<u>REFERENCES</u> SEE SEPARATE DETAILED REPORT





THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 45

Old Series no: B41-2

Name/function: British Library Store

Former names: West Quadrangle, Grand Store

BUILDING DESCRIPTION

This large rectangular three-storey warehouse has grown to assume its present shape in four main phases. At its north and south ends it incorporates parts of the West Quadrangle of the Grand Store, erected with the other blocks of this complex in 1806-13 (see Buildings 36, 37, 46 and 49). The West Quadrangle comprised north, south and east blocks, the fourth side of which was the present Building 46. The twostorey north and south blocks were linked by infill in 1855-6, probably made by Fox and Henderson as a castiron frame with corrugated-iron cladding. This provided covered shot and shell storage; the north block was then in use as a transit store. The whole of this structure appears then to have been internally rebuilt, raised and partially refaced c1890. Nothing appears to survive from the 1855-6 link. It was further altered in 1970-2 in a conversion to its present use as a book store. Stock-brick walling and stone plinths from the originally single-storey early blocks survive to north and south. The 11-bay north and south elevations have groundfloor round-headed windows in relieving arches and central loopholes, latterly blocked. The first-floor walling and the east and west walls linking the early blocks are from the c1890 rebuilding, with modern infilling of loophole bays. Later areas of walling have concrete lintels. The upper-storey has board cladding of 1970-2 under six skylit hipped roofs. To centre-east there is a brick tower rising in five stages. This was probably part of the c1890 rebuilding, either a water tower or a remote accumulator tower for the Arsenal's hydraulic power system. Internally there is an 11 by 18 bay grid with hollow-cylindrical cast-iron columns supporting timber floors on I-section girders, possibly steel. The inner walls of the early-19th-century buildings appear to survive. The metal-framed roofs have flat and T-section members, the latter perhaps steel.

RAPID SURVEY NEGATIVE NOS AA94/3185, 3188, 3210 BB94/14033-7

<u>NMR HOLDINGS</u> PSA Collection - G14528/1-16 (1970); G14824/3-5, G15015/1-3, G15056/8, G16070 (1971); G17868/1, G18006/1-3 (1972)

<u>REFERENCES</u> Maps - PRO, WORK 43/492 (1810), WORK 43/499 (1858), WORK 43/501 (1864) O.F.G. Hogg, <u>The Royal Arsenal</u>, 1963, p. 772. <u>The Engineer</u>, 4 Jan. 1856, p.4.



THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 2

Old Series no: C95

Name/function: Middle Gate House

Former name: Storekeeper's House

BUILDING DESCRIPTION

This substantial double-fronted house was built in 1809 for the Arsenal's Storekeeper, previously resident in the Royal Military Academy. It was then near timber yards at the far southeast corner of the site. It is a yellow stock-brick building of three storeys and a basement. The upper storey is in darker brick, suggesting that it may be a later 19th century addition. There is a Greek Doric porch, now enclosed. The openings to the front are unaltered with gauged-brick flat-arched heads, wide on the ground floor and basement for tripartite windows. The windows all appear to be secondary, as do ground-floor iron balconies. The current name of the house derives from the proximity of a disused entrance to the Arsenal, opened in 1843 as the Plumstead Gate, later renamed Middle Gate as the Arsenal expanded eastwards. Its stone piers are still in place. Attached to the rear of the house is a large polychrome-brick office block, four storeys and six by four bays, with a parapet datestone from 1938. This extension probably followed on from the conversion of the house in 1920 to use as offices for the Naval Ordnance Inspection Department. The interior of the house was not inspected.

RAPID SURVEY NEGATIVE NOS AA94/3248, 3250

<u>NMR HOLDINGS</u> BB64/1498 PSA Collection - G13536/3, G13544/16-17,22 (1969)

<u>REFERENCES</u> Maps - PRO, WORK 43/492 (1810) W. Harry, <u>The Royal Arsenal</u>, Woolwich, 1987, p. 23. O.F.G. Hogg, <u>The Royal Arsenal</u>, 1963, p. 673.

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24

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THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 54 and 55

Old Series no: A41/2

Name/function: Riverside Guard Houses

BUILDING DESCRIPTION

This pair of single-storey octagonal guard houses was built in 1814-15, perhaps to designs by James or Lewis Wyatt. They flanked river stairs that were an important point of access to the Arsenal. They are of stock brick with segmental-headed sash windows and relieving arches, stone cornices and blocking courses. Entrances have been altered and the east guardhouse has had its slate roof removed. The west guardhouse was used as an armoury by 1864. A plaque commemorates its temporary use as a mortuary chapel for the Prince Imperial's body in 1879. Latterly the buildings have been stores.

RAPID SURVEY NEGATIVE NOS AA94/3180-1

NMR HOLDINGS BB64/1501

REFERENCES W. Harry, <u>The Royal Arsenal</u>, 1987, p. 15. Map - PRO, WORK 43/501 (1864)



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AA94/3180

THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no:

Old Series no:

Name/function: Middle Gate and South Boundary Wall

Former name: Plumstead Gate

DESCRIPTION

The gateway off the Plumstead Road was created in 1843 as a secondary entrance to the Main Gate in Beresford Square. It appears to have been inserted in a section of earlier boundary wall, perhaps <u>c</u>1800 in its origins. The gate is no longer in use. Subsequent eastwards expansion of the Arsenal led to its being renamed the Middle Gate. The gateway, which comprises a wide central double gate flanked by two narrower gates, has four large vermiculate-rusticated stone piers with plinths and bracketted cornices. The wrought-iron gates survive behind protective hoardings. A secondary clock that was placed on the second pier from the west has lately been removed. A length of the earlier tall boundary wall extends westwards from the gate. In this wall on its north side to the south of Building 3 there is a red telephone exchange junction box. This was part of an internal emergency telephone network, for use if the main system failed. It is reputedly <u>c</u>1930s in date and still in working order in 1994.

RAPID SURVEY NEGATIVE NOS AA94/3245, 3249

<u>REFERENCES</u> Maps - PRO, WORK 43/492 (1810), Work 43/499 (1858) O.F.G. Hogg, <u>The Royal Arsenal</u>, 1963, p. 673.



THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no:

Old Series no:

Name/function: The Duke of Wellington Statue

DESCRIPTION

This marble statue of the Duke of Wellington by Thomas Milnes was presented to the Board of Ordnance in 1848 and put up at the Tower of London. It was moved to the Royal Arsenal in 1863 when it was erected to the south of the southwest corner block of the Grand Store (Building 37). In 1974 it was moved to its present location in front of a low brick wall with raised flowerbeds incorporating ironwork of 1854 from the then recently demolished buildings of the Royal Laboratory. Four cannons of early- and mid-19th-century date that were positioned around the statue have been removed.

RAPID SURVEY NEGATIVE NO. AA94/3220

NMR HOLDINGS BB64/1449

<u>REFERENCES</u> W. Harry, <u>The Royal Arsenal Woolwich</u>, 1987, p.20.



AA94/3249 3220

THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 17

Old Series no: A46

Name/function:

Former name: Paper Cartridge Factory

BUILDING DESCRIPTION

This building was erected in 1855-6 as a paper cartridge factory for the Royal Laboratory, part of a great campaign of improvements to that Department. It was designed by Lt. Col. Roger Steward Beatson, RE. It is a two-storey rectangular brick block with ancillary structures to the rear. Internally there is a cast-iron frame that, despite alterations, remains a good example of the robust iron construction of this period, formerly much more widespread in the Arsenal. The factory was converted to metal cartridge production c1884.

SEE SEPARATE DETAILED REPORT

<u>RAPID SURVEY NEGATIVE NOS</u> AA94/3204 BB94/11670, 13984-6

<u>NMR HOLDINGS</u> BB64/1519 PSA Collection - G12049/4-7 (1967); G12115/4, G12588/4 (1968); G17868/4-5 (1972)

<u>REFERENCES</u> SEE SEPARATE DETAILED REPORT



THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 18

Old Series no: A44

Name/function:

Former name: Royal Laboratory Department Offices

BUILDING DESCRIPTION

These offices were built in 1855-6 to designs by Lt. Col. Roger Steward Beatson, Superintending Royal Engineer to the Ordnance Manufacturing Departments. They were part of a large campaign of improvement in the Royal Laboratory initiated in 1852 and part of the same development as Building 17, the former Paper Cartridge Factory. The building is a two-storey yellow-stock-brick structure with stone dressings. Originally it was seven bays wide, the central three bays under a pediment. The pilastered stone entrance porch is an original feature. The offices were extended to the west by eight bays before 1888, then again, somewhat later, to the east by six bays. The extensions are externally in keeping with the first build. Internally the 1855-6 building is relatively little altered retaining a dog-leg staircase with stone treads and cast-iron balusters, some fireplaces and much original joinery.

RAPID SURVEY NEGATIVE NOS. AA94/3183, 3207

NMR HOLDINGS BB64/1518

REFERENCES

Maps - PRO, WORK 43/501 (1864), WORK 43/506 (1888), WORK 43/515 (1931) PRO, WORK 43/1510-16, 1612-15 (plans, sections and elevations of offices and paper factory, 1855-6)



THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 23

Old Series no: A66/7

Name/function: Shell Foundry Gatehouse

BUILDING DESCRIPTION

This gatehouse is all that survives of the large Shot and Shell Foundry built in 1855-6 for the Royal Laboratory as a major part of a broader campaign of improvements. The building was designed by David Murray, an engineer. Its other parts, a group of iron-framed sheds, were demolished in 1967. Despite its fragmentary nature the gatehouse is perhaps the best surviving witness to the ambition and grandeur of the 1850s expansion of the Arsenal. It is red brick, richly ornamented with Portland stone dressings, two storeys and three bays with superimposed Classical Orders, Doric below Ionic, the engaged columns paired. The ground-floor arched openings have the original magnificent iron gates and grilles, as renovated in 1977-81. The gates to the centre, dated 1856, were designed by Charles Bailey and cast by Henry Grissell's Regent's Canal Iron Works. To the rear there are cast-iron plinths, with moulded shot and shells on the returns to the central arch. The internal spaces of the gatehouse were used as offices and stores.

RAPID SURVEY NEGATIVE NOS AA94/3222-4

<u>NMR HOLDINGS</u> BB64/1441, 1443-4 Photographs by Rex Wailes - 94/66/32,34 PSA Collection - G11414/1-3, G11547/4-5, G11644/8-9 (1967); G18618/1-2,6-7 (1972)

<u>REFERENCES</u> <u>Quarterly Review</u>, Jan-April 1858, pp. 259-60. W. Harry, <u>The Royal Arsenal</u>, Woolwich, 1987, p. 21. O.F.G. Hogg, <u>The Royal Arsenal</u>, 1963, pp. 772-3, 782-3.





THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 25

Old Series no: D62-3

Name/function: Armstrong Gun Factory

Former names: Gun Foundry, later Heavy Turnery

BUILDING DESCRIPTION

This building was erected in 1856 as a foundry for iron ordnance for the Royal Gun Factory Department, to designs by David Murray, engineer. It was temporarily occupied by W. G. Armstrong from 1858 in connection with the adoption by the Government of his designs for rifled ordnance. The building is a tall single-storey polychrome-brick structure in an Italianate style reminiscent of early railway architecture. It was originally laid out on an H plan, the structure serving essentially as a frame for six gantry cranes. The three ranges were each bisected by cast-iron piers. These and the outside walls supported girders for the overhead travelling cranes, two in parallel to each range. The upper part of the internal framework was longitudinal colonnades of cast-iron columns and open-spandrel arched girders to composite iron-frame roofs with lanterns. Guns forged in an adjoining building to the east, now demolished, were finished here, with the east range a turnery to the east and the west range a sighting room. The south yard of the H was enclosed and covered as an open-air shrinking department. This area, which also became a boring mill, was altered and raised in 1875. The main range, which had become a heavy turnery, was raised and rebuilt internally in 1911. Further internal alterations were carried out in 1967-8 when a three-storey steel and glass office block (25A) was added to the south. The original iron frame survives in both outer wings.

SEE SEPARATE DETAILED REPORT

RAPID SURVEY NEGATIVE NOS AA94/3196, 3227-8 BB94/11616-28

<u>NMR HOLDINGS</u> BB64/1494 Photographs by Rex Wailes - 95/66/1-2 (1966) PSA Collection - G11939/3-4, G12049/2,10,16 (1967); G12115/10, G12194/7-8, G12250/2, G12588/6,9 (1968); G13190/2,4,9, G13441/11, G13536/11,20,24-5 (1969); G14275/6, G14453/6,14 (1970)

<u>REFERENCES</u> SEE SEPARATE DETAILED REPORT



AA94/3196

THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 4

Old Series no: C63

Name/function: Training Block

Former name: Timber Shed

BUILDING DESCRIPTION

This single-storey iron-framed shed was erected <u>c</u>1856 as a timber storage shed for the Ordnance Store Department. The seven northern bays are the original building, the bays articulated by octagon-section castiron columns. These are partially encased by modern brick walling with windows and corrugated-iron sheeting above. The columns are cast with brackets to receive four rails, possibly relating to racking for storing or seasoning timber. The building may well have been open sided originally. Open-spandrel arch girders span between the columns and the original composite iron roof trusses survive, wrought iron with cast-iron struts and principals. The three southern bays are an early-20th-century extension framed with steel stanchions. There are modern brick extensions to the east and west. The south end of the building was last in use as a training block.

RAPID SURVEY NEGATIVE NOS AA94/3244 BB94/13999-14000

<u>REFERENCES</u> Maps - PRO, WORK 43/499 (1858), WORK 43/501 (1864)





34

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THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 5

Old Series no: C55-8

Name/function:

Former name: Timber Seasoning Sheds; later Woodworkers' Factory

BUILDING DESCRIPTION

This is a large workshop block, approximately rectangular on plan, that was the east end of the Royal Carriage Department's 19th-century establishment. It was built in 1856-7 as timber seasoning sheds, with one long range to the west and three shorter sheds to the east; the latter were extended to their present dimensions in 1860. A saw mill had been built to the north in 1854, on the site of Building 6. These buildings displaced early-19th-century Royal Carriage Department structures. Logs were lightered in along the Arsenal's canal and deposited on a timber field to the north of the saw mill. Once sawn the timber was stacked in the seasoning sheds. The four ranges of 1856-60 survive in varying degrees and are of unequal dimensions. To the west the long (about 120m) narrow range is relatively unaltered. It has an imposing yellow-stock-brick elevation to the west with a central gablet over an arched entrance and heavy corbelling over about 35 sash windows. Its composite iron roof has a lantern. To the north there is a two-storey office section. The other three ranges were an iron-framed structure, apparently made up of substantial cast-iron columns supporting arched open-spandrel cast-iron girders to composite roofs; there was a secondary sawmill in the northwest corner by 1864. These three ranges were rebuilt in the early/mid 20th century with brick and corrugated-sheet walling and internal steel framing. The whole building had been converted to workshop use by 1878, becoming a Woodworkers' Factory. The core of this was a wheelers' shop with other accommodation for carpenters, collar makers, forgers and fitters. A small (3 by 4 bay) open-sided shed was added to the southeast in c1880 as a Waterproofing Shop. This survives, latterly enclosed, with iron framing of a similar character to that described above.

RAPID SURVEY NEGATIVE NOS AA94/3242-3 BB94/14026-7

<u>NMR HOLDINGS</u> PSA Collection - G14453/7, G14658/5, G14724/6 (1970); G16070/5 (1971); G24304/1-47 (1979)

<u>REFERENCES</u> Maps - PRO, WORK 43/499 (1858); 43/501 (1864); 43/506 (1888); 43/515 (1931). O.F.G. Hogg, <u>The Royal Arsenal</u>, 1963, pp. 772, 814. <u>Quarterly Review</u>, Jan-April 1858, pp. 254-6. <u>The Engineer</u>, 23 Sept. 1881, p. 218. Album of Views of Woolwich Arsenal, pub. Gale and Polden, n.d.



THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 7

Old Series no: C23-8

Name/function:

Former name: Completing Shops, Forgers' Shops and Turnery

BUILDING DESCRIPTION

This is a large and complex composite group of workshops that are together approximately rectangular on plan. They were erected c1860 to c1885 for the Royal Carriage Department in four main builds, with smaller infill and extension blocks of slightly later dates. There are varied stock-brick elevations with roofs generally running east-west. This was the site of waggon sheds in the early 19th century, but nothing of these buildings appears to survive. The earliest part of the existing building seems to be a two-storey north-south block to the northwest, 14 by 2 bays. This may have been built c1860 as completing workshops and stores in an expansion of the carriage factory to the west. There are double pilasters to the north, ground-floor segmentalheaded openings with some tripartite glazing and, to the west, a brick buttress with heavy cast-iron reinforcement. The roof is iron framed. The next building phase of c1867 seems to have been the replacement of the southern parts of the waggon sheds with a large forgers' shop, an immense smithery. This is a double range with twin gables to east and west with large round-headed openings in double relieving arches. There are wide-span lightweight metal roofs. The single-bay blocks further south are additions of c1900 and later. A second forgers' shop was apparently built c1877 running eastwards from the south end of the c1860 range. It is another twin-gabled block, slightly lower with similar roofs and elevational treatment to the east. Its west end was a boiler house. A gap between the two forgers' shops was filled c1900 with a comparable block leaving the east side of the building with a deceptively regular five-gable facade. The west end of the infill block is a mid-20th-century extension. The last of the main phases seems to have been the replacement of the northern section of the waggon sheds with a turnery in 1883-5. The north elevation, not exposed to view when it was built, is plain brick. The former turnery is five bays deep with a cast-iron internal frame to north-lit saw-tooth roofs. There are octagon-section columns and perforated beams to composite roof trusses. The north-east corner of the complex is a north-south range that appears to be a c1900 rebuilding of earlier workshops. It has a pair of iron-framed roofs with lanterns.

RAPID SURVEY NEGATIVE NOS AA94/3230-1, 3241, 3252 BB94/14028-14032

NMR HOLDINGS

PSA Collection - G12049/9 (1967); G12115/2-3, G12194/10, G12674/2,7,18-19 (1968); G17113/2 (1971)

REFERENCES

Maps - PRO, WORK 43/492 (1810); 43/499 (1858); 43/501 (1864); 43/506 (1888); 43/515 (1931) O.F.G. Hogg, <u>The Royal Arsenal</u>, 1963, pp. 814-8, 906. <u>Quarterly Review</u>, Jan-April 1858, pp. 254-6.





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37

THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 53

Old Series no: B39

Name/function:

Former name: Shipping Shed

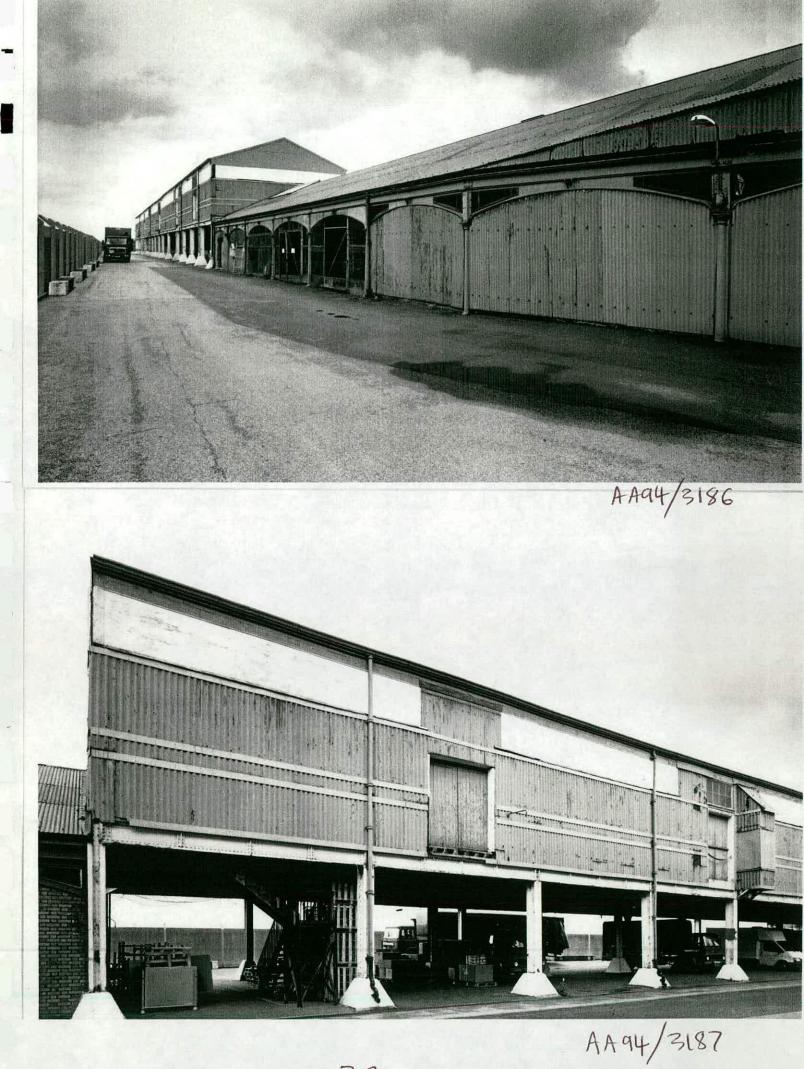
BUILDING DESCRIPTION

This is a wharfside transit shed erected between the Grand Store and the River Thames for the Stores Department in 1860. It was one of a pair; the other shed to the east was all but entirely demolished <u>c</u>1970 (see Building 52). Early this century the west shed was used for exports, the east shed for imports. The shed has two sections - eight bays to the west that are single-storeyed, and seventeen bays to the east that are double height. It is likely that this difference is the result of a rebuilding of the eastern section <u>c</u>1890. The western bays were built to be open sided with cast-iron framing of hollow-cylindrical columns linked by shallow arched girders with open spandrels. The roof appears to be secondary. The north-west corner has been rebuilt to accommodate a railway line. There is corrugated-sheet and brick cladding enclosing these bays. The two-storey western bays have a metal frame (wrought-iron possibly incorporating steel members) with I-section stanchions and girders. The lower storey, which has a central row of stanchions, was formerly enclosed but it is now largely open-sided. The upper storey is clad with corrugated sheeting. Window openings below eaves level are largely blocked. There are six loopholes on each side and three projecting crane housings to the south. Internally the upper level of the two-storey western section retains many windows and a number of hydraulic jiggers inside crane positions. The roof has composite trusses with T-section principals and struts (perhaps of steel), and wrought-iron ties.

RAPID SURVEY NEGATIVE NOS AA94/3186-7 BB94/14042-7

<u>NMR HOLDINGS</u> Photographs by Rex Wailes - 94/66/26-7 (1966) PSA Collection - G13190/7, G13441/7 (1969)

<u>REFERENCES</u> Maps - PRO, WORK 43/501 (1864), WORK 43/515 (1931) O.F.G. Hogg, <u>The Royal Arsenal</u>, 1963, p. 814.





29

BB94/14042

THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 52

Old Series no: B33

Name/function: River Viewing Platform

Former name: Shipping Shed

BUILDING DESCRIPTION

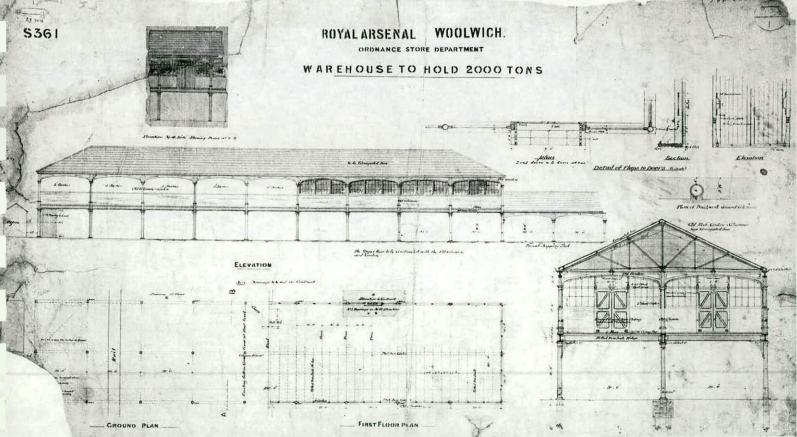
This is a remnant of a wharfside transit shed erected between the Grand Store and the River Thames for the Stores Department. The original single-storey structure of 1860 was a pair to a west shed (Building 53). The western nine bays of the east shed were raised onto a new lower storey in 1889-90. What survives is the western bay of this later lower storey. It is made up of cast-iron hollow-cylindrical columns supporting what appear to be steel girders. The rest of the building was demolished c1970. The upper floor has been railed to serve as a viewing platform and the lower level was filled with a brick sanitary block.

RAPID SURVEY NEGATIVE NOS AA94/3190

<u>NMR HOLDINGS</u> BB64/1502 Photograph by Rex Wailes - 94/66/30 (1966)

<u>REFERENCES</u> Maps - PRO, WORK 43/501 (1864), WORK 43/515 (1931) PRO, WORK 43/1627 (drawing for raising shed, 1889) O.F.G. Hogg, <u>The Royal Arsenal</u>, 1963, p. 814.





THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 20

Old Series no: B47

Name/function:

Former name: Chemical Laboratory

BUILDING DESCRIPTION

The earliest part of this two storey building was built in 1864 as a chemical laboratory for the War Department and was designed in accordance with the views of the the first Ordnance Chemist, Sir Frederick Abel. It had a U-shaped plan, extended to the east and the south in 1885, 1903 and 1913. It is of stock brick with red-brick dressings including the window heads, string course and the ornate cornice, the later parts being of identical treatment. This style is in the same tradition as the polychromatic brickwork that is characteristic of the Arsenal in the 1850s (see Building 25). The originally symmetrical southern elevation, now the western bays, was made up of the central block of five bays with the three end bays slightly stepped forward. As built, both end bays had cast-iron balconies, returning on both ends, giving a somewhat colonial appearance. The eastern balcony was removed at an early date, the western balcony was extant in 1964 but has since gone. The remaining three bays of the south elevation are part of the south extension. The large enclosed courtyard to the northwest corner is part of the original structure, now partially infilled with modern one-storey sheds. To the northeast corner are two ranges, possibly of two different builds, with a narrow stair passage between. The western of these ranges has a lantern rooflight. The interior of the western wing of the original building has a single room rising through both storeys, with an internal ornamental iron gallery that led to the exterior balcony. The roof has an ornamental frame apparently made up of wrought iron and timber. This room appears to have been custom built as a chemical laboratory. Also housed in the building, apparently in the east wing of the original structure was the photographic section of the War Department. This part of the building also retains an elegant wooden stair with cast-iron balusters. The two later northeast ranges have large rooms on the first floor with unusual metal framing to the roof. The Department (later renamed the Chemical Inspectorate) moved out of the building in 1936. It was then occupied by the Armament Inspection Division. The building appears to have undergone piecemeal alterations, its use as offices ceasing in 1994.

RAPID SURVEY NEGATIVE NOS AA94/3208-9, 3213, 3216 BB94/11653-BB94/11658

NMR HOLDINGS BB64/1517

<u>REFERENCES</u> O.F.G. Hogg, <u>The Royal Arsenal</u>, 1963, pp. 818, 902. W. Harry, <u>The Royal Arsenal Woolwich</u>, 1987, p. 19.





BB914/11654

THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 33

Old Series no: D72

Name/function:

Former name: Rolling Mill

BUILDING DESCRIPTION

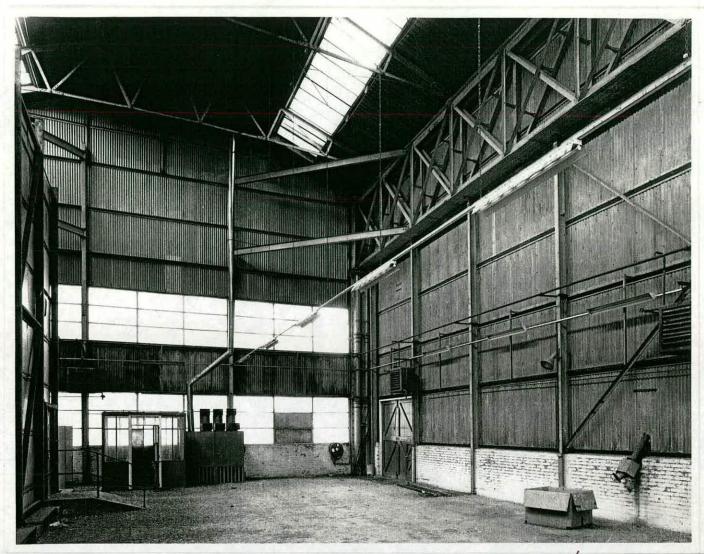
This building is two-thirds of a rolling mill erected c1868 as a part of the Royal Gun Factory. It was one of a group of three buildings (the others a boiler house and a forge) of similar dimensions that stood to the south of the forge attached to Building 25 (the 'Armstrong' Gun Factory). The rolling mill would originally have been used in the making of large guns from coiled wrought-iron bars. From the 1880s new guns were made from steel. Scrap from the boring and turning operations was reprocessed. The building is an iron structure that was originally simply a tripartite roof on an open-sided frame about 30m by 45m. The elevations comprised octagon-section cast-iron columns linked by arcading of cast-iron girders with open spandrels, bolted at the head of each round arch. The north and south sides were originally nine bays long with three gable ends - a tall central section and flanking lower sections, each of three bays. The west section was demolished c1970. The east and west sides are six bays deep. In 1889-90 the frame was clad with corrugated-iron sheeting and 'Acme' glazing. Some of this cladding survives, behind surviving cast-iron arcading to the east. Elsewhere there is much more recent cladding and fenestration. Internally there are no traces of a furnace or other plant. A sealed testing chamber is a recent insertion, latterly converted to use as a badminton court. The interior was a large open floor. The taller (formerly central) roof rests on massive (about 10ft deep and 100ft long) wrought-iron lattice girders (incorporating cast-iron spacers) that removed the need for intermediate supports between the building's three sections. The roof trusses are of flat-section wrought iron with blocked or composite struts. There are trussed purlins and cross-braces.

<u>RAPID SURVEY NEGATIVE NOS</u> AA94/3258, 3260-1 BB94/11666-9

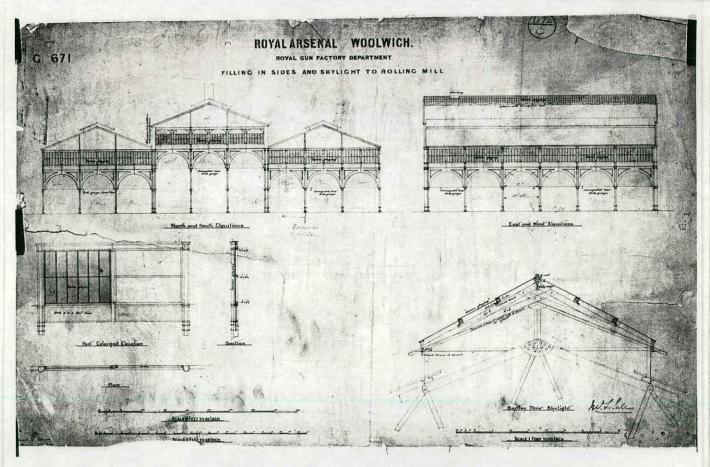
<u>NMR HOLDINGS</u> PSA Collection, G13536/26 (1969), G14271/7 and G14494/1, 9 (1970)

REFERENCES Maps - PRO, WORK 43/501 (1864), WORK 43/506 (1888) PRO, WORK 43/1196 and 1215 (plans, sections and elevations, 1889) O.F.G. Hogg, <u>The Royal Arsenal</u>, p. 815. <u>The Engineer</u>, 2 Oct. 1891, p. 270. D.H.P. Braid, 'The Armament of Naval Ships in the Nineteenth Century', <u>Transactions of the Newcomen</u> <u>Society</u>, lvi, 1984-5, pp. 116-8.





BB94/11666



44

THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 19

Old Series no: C1

Name/function:

Former names: Mounting Ground, later Carriage Inspection Shed

BUILDING DESCRIPTION

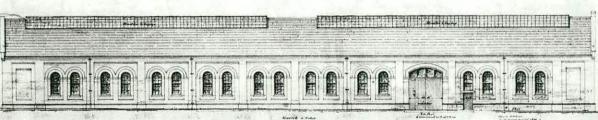
The Mounting Ground was built in 1887 for the Royal Carriage Department, probably following approval in 1886 of expenditure of £4,500 relating to an erecting shop. It replaced an iron-built mounting and painting shed of c1856-7 on the same site. This was the building within which guns were mounted onto their carriages. Drawings for the building bear the signatures of Col. H. Crozier, Inspector of Works, and George Munday and Sons, building contractors. The building has been very little altered. It is a single-storey shed in three separately roofed ranges, that to the north being shorter than the other two. The stock-brick exterior has round-headed timber sash windows in relieving arches, and is further articulated by pilaster strips, recessed panels and gable-end oculi. An off-centre entrance to the south is positioned to align with an entrance to Building 10 (the Royal Carriage Factory). The slated roofs have skylighting over their ridges. Internally the ranges are separated by tall hollow-cylindrical cast-iron columns, marked as made by John Lysacht Ltd of Bristol in 1887, with wrought-iron girder trabeation to the roof valleys. The two main ranges are about 110ft long and have clear floors served by overhead travelling cranes. These are on original gantrys made up of robust openwork cast-iron stanchions with wrought-iron girder rails. The cranes have been replaced. The composite roof trusses span about 53ft and have steel principals (marked 'Stockton MCE?') and struts, with wrought-iron tie rods. The smaller north range has been subdivided and may always have been a storage area. A low lean-to (19A), at one time a machine room, has been added to the west end.

RAPID SURVEY NEGATIVE NOS AA94/3205-6 BB94/14001-5

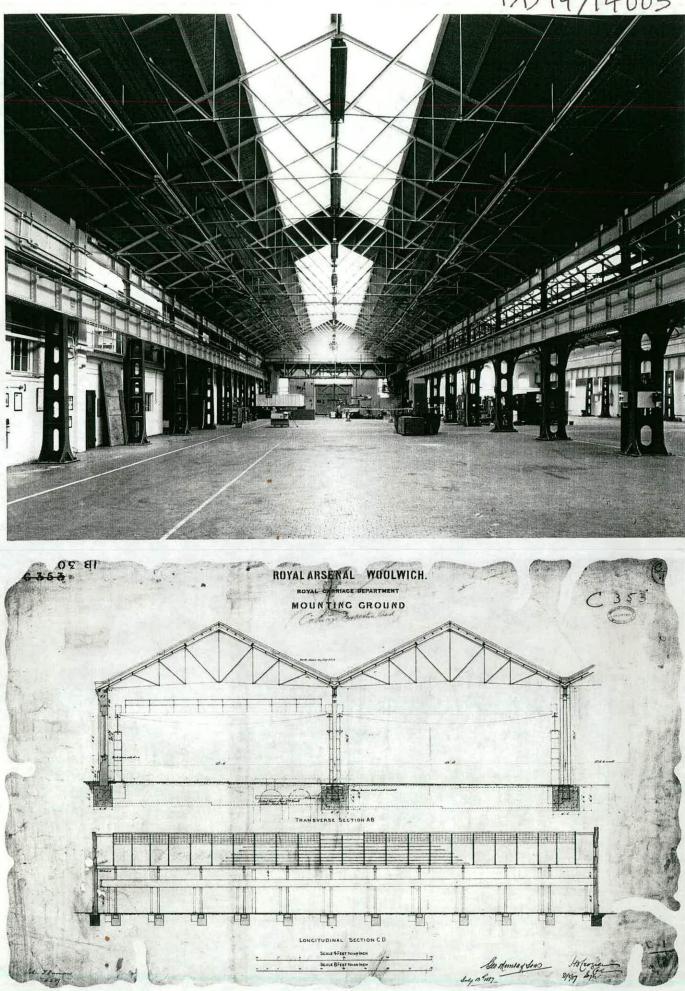
NMR HOLDINGS PSA Collection, G24304/8-13, 20-38, 45-6 (1979)

<u>REFERENCES</u> Maps - PRO, WORK 43/499 (1858), WORK 43/501 (1864), WORK 43/506 (1888), WORK 43/515 (1931) PRO, WORK 43/1639-40 (plans, sections and elevations of Mounting Ground, 1887) O.F.G. Hogg, <u>The Royal Arsenal</u>, pp. 772, 818. <u>The Engineer</u>, 2 Oct. 1891, p. 269.





BB94/14005



46

THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 48

Old Series no: B35

Name/function: British Library Store

Former name: Sea Store

BUILDING DESCRIPTION

This warehouse was built in 1889-90 as a 'Sea Store'. It was the first phase in the infilling of the Grand Store quadrangle, previously used as a Shot Yard (see Building 47). It is a three-storey yellow-stock-brick structure with a hipped slate roof. It is 17 by 3 bays, plain in its elevations with pilaster strips and cast-iron windows with large round-headed openings on the lower storeys. There were north and south entrances and appear to have been loophole openings in the centre bays of the long elevations. The internal structure, which has been altered, retains hollow-cylindrical cast-iron columns.

RAPID SURVEY NEGATIVE NO. AA94/3191

NMR HOLDINGS BB64/1454 Photographs by Rex Wailes - 94/66/24, 30 (1966)

<u>REFERENCES</u> Maps - PRO, WORK 43/506 (1888 - amended 1890) <u>The Engineer</u>, 2 Oct. 1891, p. 269. PRO, WORK 43/1629 (drawn sections, n.d.)



THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 47

Old Series no: B37

Name/function: British Library Store

Former name: Storehouse

BUILDING DESCRIPTION

This warehouse was built <u>c</u>1890 as one of a non-identical pair erected inside the main quadrangle of the Grand Store. It was converted into a book store in 1967. Brick-built, it has three storeys, 17 bays by 4 bays, with a pitched roof that has been recovered. The symmetrical elevations are articulated by pilasters. In the central three bays of the long elevations there are two-storey arched carriage openings, reduced in 1967 to leave small doors. The top of the archway is glazed on both sides, probably an original arrangement. The symmetrical elevations have two loophole bays evenly spaced to the sides. The loading doors have been replaced by windows and the hoists have been removed. Most of the windows, which are round headed to the ground and first floors, were replaced in 1967. The interior, which has three rows of cast-iron columns, has been altered.

RAPID SURVEY NEGATIVE NOS AA94/3200,3263

<u>NMR HOLDINGS</u> BB64/1452 Photograph by Rex Wailes - 94/66/28 (1966) PSA Collection - G12194/12 (1967); G14453/1-2 (1970); G14983/5 (1971)

<u>REFERENCES</u> PRO, WORK 43/1629 (sections, n.d.) O.F.G. Hogg, <u>The Royal Arsenal</u>, 1963, p. 898.



48

AA94/3263

THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 21

Old Series no: B46

Name/function: Telephone Exchange

Former name: Naval Offices

BUILDING DESCRIPTION

This is a three-storey polychrome brick building erected as Naval Offices in 1890; the upper storey is an addition of 1903. It has been converted to serve as the telephone exchange for the Arsenal. It is a four by four bay rectangular block with an entrance and stair bay projecting to the east. There are round-headed openings with margin-glazed sash windows. The detailing of the elevations is closely based on that of the adjoining Chemical Laboratory (Building 20) of 1864.

RAPID SURVEY NEGATIVE NOS AA94/3215 BB94/11664-5

<u>REFERENCES</u> Map - PRO, WORK 43/506 (1888 - amended 1890) O.F.G. Hogg, <u>The Royal Arsenal</u>, 1963, p. 818.



AA94/3215

THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 22

Old Series no: A75

Name/function: Central Offices

BUILDING DESCRIPTION

This massive office block was put up in 1903-1911 for £75,000 to serve as the administrative centre for the Arsenal which then covered an area about three miles long by one mile wide. It is a three-storey structure with attics and a basement disposed as an irregular but loosely rectangular aggregation of blocks around an internal service courtyard. Stock-brick elevations dressed with red-brick and stone are blockishly articulated in a heavy style between Neo-Georgian and Baroque. There is a symmetrical façade for the main entrance to the west with projecting stone centre and ends. The central entrance is in a large arch with the date 1908; above a pediment carries the Royal Cypher of King Edward VII. The north elevation has another stone entrance bay, here with triple arches leading into the service yard and a pediment with Royal Arms. Other elevations are more sparingly detailed; the 34-bay east elevation is relatively flat for a length of about 100m. The attics to all but the northern sections are steel-framed additions of 1967-8. The inner elevations to the service yard are cream-glazed brick; a lattice-steel-framed bridge links the east and west ranges at first-floor level. A stained-glass window depicting King Edward III inspecting his artillery that was in the fanlight over the main entrance had been removed and was being kept in store on site in 1994.

RAPID SURVEY NEGATIVE NOS AA94/3214, 3217, 3219, 3225 BB94/11659-63, 14048, 14050

NMR HOLDINGS

PSA Collection - G11547/7-12, G12049/3 (1967); G12194/9, G12674/9 (1968); G14453/12, G14658/1, G14724/12 (1970); G15015/8 (1971); G22886/1-8 (1977)

REFERENCES

PRO, WORK 43/1320, 1507-9 (drawings 1903-5) W. Harry, <u>The Royal Arsenal, Woolwich</u>, 1987, p. 22. O.F.G. Hogg, <u>The Royal Arsenal</u>, 1963, p. 945.



A A94/3214

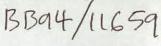




51

AA94/3219





THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 29

Old Series no: D78/3

Name/function: Toilet Block

BUILDING DESCRIPTION

This is a mid-20th-century brick toilet block. Its flat roof has a raised area to the centre surmounted by a small brick shed, creating a stepped profile to an otherwise plain building. It is on a site adjoining that of the Royal Gun Factory's demolished South Boring Mill (D78), to the south of Building 33. It is no longer in use.

RAPID SURVEY NEGATIVE NO. AA94/3257

THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 42

Old Series no:

Name/function: Ministry of Defence Police Section House

Former name: War Department Constabulary Section House

BUILDING DESCRIPTION

This two-storey brick building was built in 1963 as the section house of the War Department Constabulary, soon thereafter superseded by the Ministry of Defence Police. The seven central bays of the west elevation are stepped forward with a central entrance bay marked by a flat concrete canopy and raised brick flower beds. Above the entrance canopy there is a cement plaque, cast with the badge of the War Department Constabulary and incised with the date of construction. The elevation is broken up by simple brick pilasters and rendered panels that separate the ground and first-floor casement windows. The hipped roof has overhanging eaves. The east elevation has a small brick walled courtyard to the ground floor. At some time part of the ground floor of the building was in use as a bar.

RAPID SURVEY NEGATIVE NO. AA94/3184



53

AA94/3184

THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MOD building no: 24

Old series: A66, A67 (site of)

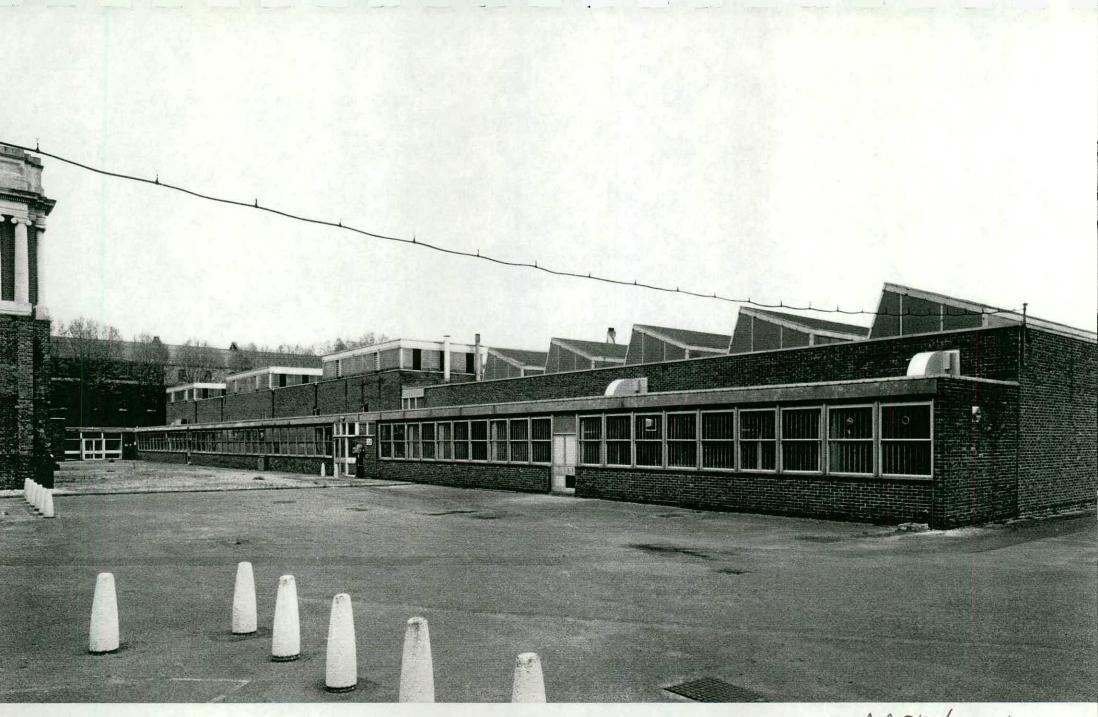
Name/function: Workshops

BUILDING DESCRIPTION

These one-storey, steel-framed, brick-clad workshops were built in 1967-8. The south end of the building has five bays of north-light roofs, the remainder being flat roofed with raised rectangular lights. To the north and west there are low office ranges. Several small ancillary buildings are of similar construction. The building occupies the site of the Shot and Shell Foundry, the gatehouse of which survives to the west (see Building 23).

RAPID SURVEY NEGATIVE NOS AA94/3221, 3226

<u>NMR HOLDINGS</u> PSA Collection - G12049/13,17 (1967); G12115/5 (1968); G13190/1-2, G13441/4-5, G13536/23 (1969)



AA94/3221

THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 50

Old Series no:

Name/function: Boiler House

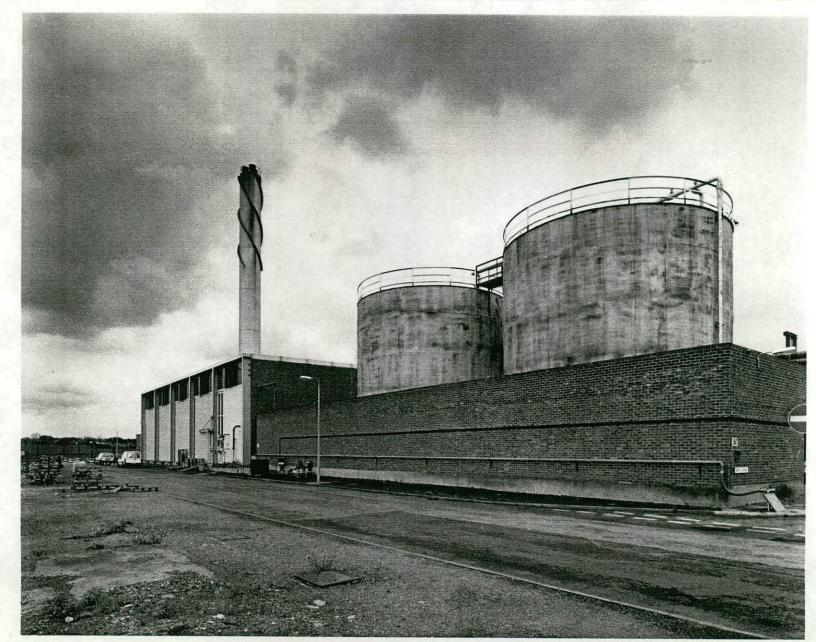
BUILDING DESCRIPTION

This oil-fired boiler house, with two large oil tanks to the west, was built in 1967-8 on the site of early-19th-century buildings (B1, B26 and B31) which had formed the East Quadrangle of the Grand Store. The boiler house powers the Arsenal's universal heating system that is piped above ground around the whole site.

RAPID SURVEY NEGATIVE NO. AA94/3195

NMR HOLDINGS

PSA Collection - G12049/1 (1967); G12588/2-3, G12674/13, G12730/1-2, G12194/5 (1968); G13190/6 (1969); G17113/6,8,11 (1971)



AA94/3195

THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 6

Old Series no:

BUILDING DESCRIPTION

This is a concrete and brick service building, of irregular plan, built in 1967-8. It is all of one-storey but with different parts of varying heights, apparently housing different facilities. It was built on the site of Buildings C53 and C54, the main saw mills of 1854 for the Royal Carriage Department.

RAPID SURVEY NEGATIVE NO. AA94/3251

<u>NMR HOLDINGS</u> PSA Collection - G12049/14-15 (1967); G12250/3, G12588/8 (1968); G13441/13 (1969); G17113/1-3 (1971)

THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 32

Old Series no:

Name/function: Occupational Health Building

BUILDING DESCRIPTION

This one-storey brick building was erected <u>c</u>1968 as a medical centre for the Royal Arsenal (a site ambulance was still in use at the time of closure in 1994). The functional U-shaped building has metal casement windows and a flat roof with roof lights. The building was put up as part of the reorganisation of the site following the closure of the Royal Ordnance Factory in 1967, replacing other medical facilities; previously a hospital and surgery had been located to the east of the Beresford Gate.

RAPID SURVEY NEGATIVE NO. AA94/3253

NMR HOLDINGS PSA Collection - G14658/8 (1970)

REFERENCES Map - PRO, WORK 43/515 (1931)

THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 1A

Old Series no:

Name/function: Gatehouse & Police Reception Lodge, Tom Cribb Road Entrance.

BUILDING DESCRIPTION

This one-storey concrete and brick building was opened in 1969 as the gatehouse for the then newly formed entrance off Tom Cribb Road. The L-shaped building has a flat roof with a large radio mast. This was the main entrance to the western enclosure of the Royal Arsenal until its closure in 1994. It is one of a group of buildings of similiar construction, including buildings 32 & 34, that appear to have been part of the internal reworking following the closure of the Royal Ordnance Factory in 1967.

RAPID SURVEY NEGATIVE NO. AA94/3255

<u>NMR HOLDINGS</u> PSA Collection - G13441/6, G13536 (1969)

THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 8

Old Series no:

BUILDING DESCRIPTION

This is a one-storey brick and concrete flat-roofed building of 1968-9, at least part of which was offices. It has two sections in a T plan, with a taller roof to the south. With Building 9 it is built on the site of Building C5, part of the sprawling complex of the Royal Carriage Department's factory.

RAPID SURVEY NEGATIVE NO. AA94/3229

<u>NMR HOLDINGS</u> PSA Collection - G12194/11,18 (1968); G13441/2 (1969); G 14494/5, G15056/9 (1971)

THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 34

Old Series no:

Name/function: R.A.S.R.A. Social Centre

BUILDING DESCRIPTION

This one-storey block was put up in 1969 to provide sport and recreational facilities for the employees of the Royal Arsenal, part of the remodelling associated with the forming of the new entrance off Tom Cribb Road (see Building 1A). It is a steel and glass structure clad in brick and concrete with a flat roof. In the 1980s it was used as a staff restaurant.

RAPID SURVEY NEGATIVE NO. AA94/3254

<u>NMR HOLDINGS</u> PSA collection - G14271/10, G14458/8 (1970); G25289/18 (1981)



56

AA94/3254

THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 9

Old Series no:

Name/function: Photographic Laboratory

BUILDING DESCRIPTION

This three-storey building, erected in 1970, has a reinforced-concrete frame with brick walls and narrow window lights in wooden frames, rendered to the short upper storey. It has a flat roof. The entrance bay, in the centre of the east elevation, is set back. Its functional style is characteristic of the Arsenal buildings of this date. It was built to house the photographic services, there having been a photographic laboratory in the Arsenal from as early as 1864, located in Building 20. Like the slightly earlier Building 8 to the south it was erected on the site of Building C5, one of the 19th-century ranges of the vast Royal Carriage Works.

RAPID SURVEY NEGATIVE NO. AA94/3232

<u>NMR HOLDINGS</u> PSA Collection - G14271/2, G14453/2,9, G14658/2, G14724/5, G14824/6, G14494/2,5, G15056/9 (1970)



THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 28

Old Series no:

Name/function: Petrol, Oil and Lubricant Point

DESCRIPTION

This area, which is made up of three small brick sheds, a linking wall and three fuel pumps, was constructed in 1970, although some of the fittings may be reused. The Petrol Oil and Lubricant Point, as it is known, was formed to supply the internal fuel requirements of the Arsenal. It is therefore, in a modest way, an successor to the Royal Arsenal railway, which was built to transport staff and materials and in use from its opening in 1873 until the closure of the Ordnance Factory in 1967. The fuel tanks were excavated on the site of a boiler house for the Royal Gun Factory, built circa 1870 on what had previously been the timber field of the Royal Carriage Works. When the P.O.L. point was opened most of the surrounding Gun Factory buildings were still standing but at the time of survey only a former rolling mill (Building 33) remained.

RAPID SURVEY NEGATIVE NO. AA94/3259

<u>NMR HOLDINGS</u> PSA Collection - G14494/7, G14658/9 (1970)

ROYAL COMMISSION ON THE HISTORICAL MONUMENTS OF ENGLAND

THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MOD building no: 3

Old series:

Name/function: Plant House

BUILDING DESCRIPTION

This is a brick and concrete one-storey building erected in 1970. It houses plant serving nearby buildings. It is flat roofed with two tall metal chimney stacks to the south.

RAPID SURVEY NEGATIVE NO. AA94/3246

<u>NMR HOLDINGS</u> PSA Collection - G14658/2, G14824/1 (1970)

ROYAL COMMISSION ON THE HISTORICAL MONUMENTS OF ENGLAND

THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MOD building no:

Old series:

Name/function: Vehicle Testing Ramps

DESCRIPTION

These concrete ramps were made in 1970 for use in the testing of tanks.

RAPID SURVEY NEGATIVE NO AA94/3247

<u>NMR HOLDINGS</u> PSA Collection - G14453/6, G14494/8, G14658/7, G14724/10, G14824/7 (1970)



ROYAL COMMISSION ON THE HISTORICAL MONUMENTS OF ENGLAND

THE ROYAL ARSENAL, WOOLWICH

LONDON BOROUGH OF GREENWICH

RAPID SURVEY

MoD building no: 61

Old Series no: (D28-30)

Name/function: (Iron Pier)

BUILDING DESCRIPTION

This one-storey brick store (Building 61) was built $\underline{c}1970$ on part of the site of the east shipping shed (Building 52). To the north was the T Pier of 1856, now demolished. To the east later Woolwich Arsenal piers survive, notably the Iron Pier, now beyond the boundary of the Arsenal site. This is a 1921-2 reconstruction of the original Iron Pier of 1868-72. It was named for the material handled, iron for the Royal Gun Factory, rather than for the material of which it was built, though this was iron. It accommodated a 200-ton crane.

RAPID SURVEY NEGATIVE NO. AA94/3192

NMR HOLDINGS PSA Collection - G13190/6 (1969)

<u>REFERENCES</u> Maps - PRO, WORK 43/506 (1888), WORK 43/515 (1931) <u>The Engineer</u>, 16 Sept. 1870, pp. 193-4. O.F.G. Hogg, <u>The Royal Arsenal</u>, 1963, pp. 814-5.



APPENDIX

THE ROYAL ARSENAL, WOOLWICH - OTHER NMR HOLDINGS

Further National Monuments Record holdings consist mainly of photographs of buildings now demolished. These derive from a limited photographic survey carried out by RCHME in 1964, supplemented by photographs taken by Rex Wailes in 1966, and a large number of unprinted PSA negatives that range in date from the early 1960s to the 1980s. The following list relating to these photographs is loosely arranged by department and relates only to the area known as Royal Arsenal (West). Most of the coverage is exteriors only. There are also many photographs of structures formerly part of the Royal Arsenal that are now outside the boundaries of Royal Arsenal (West). This is only listed in so far as it relates to surviving structures. Earlier aerial photography is extensive, including particularly useful coverage from 1946 and 1967.

Demolished Buildings within Royal Arsenal (West) Area

Royal Gun Factory

D58 (North Boring Mill)	G11435/11-12,14 (1967) BB64/1507-8 (RCHME)
D57 (Engine Repair Shop)	G11435/10 (1967)
D56 (West side, Proof Square)	G11644/3-4 (1967)
D53 (South side, Proof Square)	G11435/9 (1967)
D16 (Coal Store)	G11435/13 (1967)
D61 (including B29)	G13190/12 (1969) 94/66/36 (Rex Wailes)
D15 (Gun Inspection Shop)	95/66/5,7 (Rex Wailes)
D65 (West Forge)	G11547/3 (1967) 95/66/6 (Rex Wailes)
D67/A-E (including Field Gun Section & Browning Room)	G11547/1-2 (1967)) BB64/1496 (RCHME)
D63 (Middle Turnery)	94/66/35 (Rex Wailes)
D73 (Radial Crane)	G11414/4-9 (1967) with interiors
D78 (South Boring Mill)	G13441/4, G13536/22 (all 1969), G14658/9, G14453/3, G14271/3 (all 1970) G25289/1 (1981)
D75	G14271/1 (1970)
D8	BB64/1519 (RCHME)

Ordnance Store

'T' Pier

G13536/10,21 (1969)

B33 (East range Shipping Shed)	G13190/6, G13441/10 (1969)
B1 (Central Power Station)	G12194/13 (1968), G13536/17 (1970), G15056/5 & 11, G14983/12 (1971)
B26 (incorporating Corner Blocks of East Quadrangle)	G11644/5-6 (1967) BB64/1503-4 (RCHME) 95/66/4 (Rex Wailes)
B43 (1917 Office Block)	G13441/7 (1969) 94/66/25 (Rex Wailes)

Royal Carriage Department

C29 (Painters Shop)	G12194/8,15 (1967), G12115/6 (1968), G14271/1 (1970)
C53 (Saw Mills/Machine Shops)	G11569 (1967)
C72	BB64/1514 (RCHME)
C9 (Gauge Store)	95/66/10 (Rex Wailes)
Old Timber Shed	G13536/4 (1969)

Royal Laboratory

A55 & A57 (Dial Arch Square)	G11435/4,8 (1967)
A15 (Main Factory)	G11435/1-3 (1967), G18618/3-5 (1977) BB64/1483,1581 (RCHME)
A21	BB64/1461 (RCHME)
A66-8 (Shot & Shell Foundry)	G11644/7, G11546/4-5, G11547/6 (all 1967) 94/66/34 (Rex Wailes)

Other Buildings

E99 & E100 (Cartridge Factory No. 4)	G13536/6 (1969)
Building 31	G14453/4,10 (1970)
Cadets' Quarters	G13544/12-15,20,33 (1969) BB64/1490-1 (RCHME)
Officers' Quarters, 7-10 Dial Square	BB64/1487-89 (RCHME)
Mallet's Mortar	G13441/9 (1969), G14453/1 (1970)

Surviving Structures outside Royal Arsenal (West)

Beresford Gate

G13544/23-5 (1969) BB64/1495,1497 (RCHME)

Royal Arsenal Canal and Entrance Lock BB94/10684,10686-8

Aerial Photography (Select List)

2 April 1946

106G/UK/1356/7252-5,7299-7303

21 March 1967

MAL/67019/165-7,213-217 MAL/67020/25-29,37-40

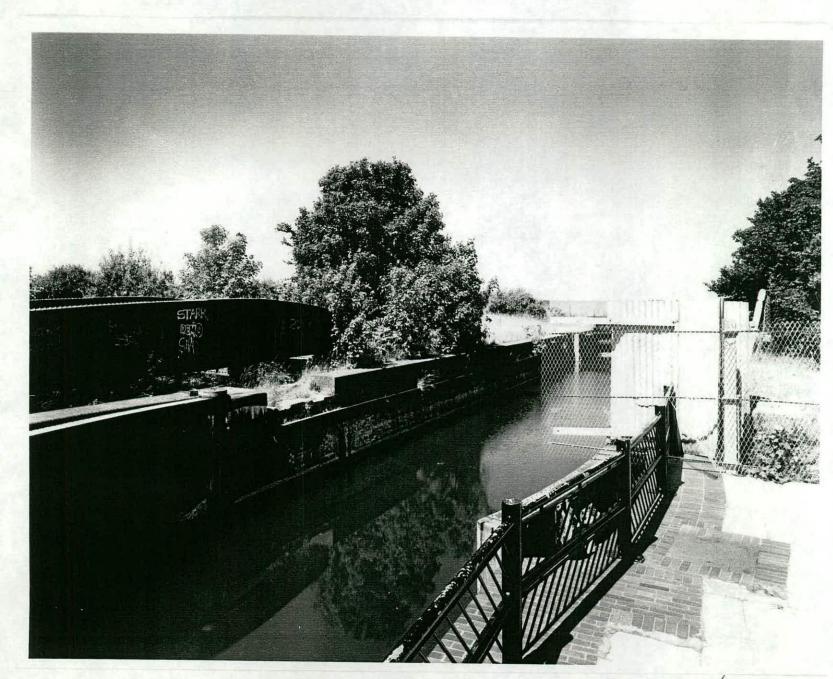






62

G13544/25 P.S.A.



63

BB 94/10686