

FORMER
BOARD OF ORDNANCE
GUNPOWDER MAGAZINES

Magazine Lane, Marchwood, Hampshire

by

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SUMMARY

Marchwood Gunpowder Magazines were built at the end of the Napoleonic Wars by the Board of Ordnance. The first phase, consisting of three magazines, a barracks and related buildings, was completed in 1816. Each magazine could hold almost 7,000 barrels of gunpowder. The site on the west shore of Southampton Water was chosen for its remoteness, its security and its proximity to Portsmouth. The magazines consisted of ventilated brick walls and roofs of slate and tile: they did not follow the conventional design of magazines, which had heavy vaulted roofs of brick which rendered them bomb-proof. Only one magazine, several perimeter walls and a number of depot buildings remain from this phase.

The Magazines declined in use until the outbreak of the Crimean War. A second phase of magazine construction took place in the mid-1850s, which added an extra four magazines to the existing three. One of these survives almost intact. Marchwood thus became the largest gunpowder storage depot in the country.

With the decline of gunpowder, Marchwood came to be used for the storage of small calibre ammunition. A bombing raid in 1940 led to the destruction of five of the seven magazines. These were rebuilt in 1941-2. The depot finally closed in 1961, when the more recent magazines were demolished. A scheme to widen Southampton Water, which would have led to the loss of many of the structures, was averted. Several buildings were scheduled in 1968. The site was sold off by the Ministry of Defence in the mid-1980s, by which most of the surviving buildings were in poor condition.

The depot is of considerable interest as a rare purpose-built gunpowder storage facility. The layout of the depot and the construction of the only partly-surviving magazine were both innovatory in their day. Marchwood is an important site as a reminder of Hampshire's contribution to the nation's defences.

FORMER BOARD OF ORDNANCE GUNPOWDER MAGAZINES
MAGAZINE LANE, MARCHWOOD
HAMPSHIRE

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1 THE IMPORTANCE OF GUNPOWDER

'Gunpowder is to the gun what the soul is to the body'¹. Modern warfare was impossible without gunpowder: it fired muskets, cannon and mortars, the newly developed rockets and siege works; armies could not fight nor navies operate without it. It consisted of a mixture of saltpetre, sulphur and charcoal, mixed in the ratio of 80:20:10, the saltpetre being one of the principal imports of the East India Company which, under its Royal Charter, was obliged to supply the crown with a regular supply at a fixed price²; most of the sulphur came from Southern Italy. The bulk of government powder was produced at its gunpowder mills at Faversham (established in the 16th century and acquired by the Crown in 1760) and at Waltham Abbey (of a similar date and acquired in 1787); private contractors also supplied considerable quantities. All powder was tested for quality at the Royal Laboratories attached to the Arsenal at Woolwich.

The gunpowder charge was generally a third of the weight of the projectile: thus for a twelve pound shot, some four pounds of powder were required. Improvements in the potency of gunpowder in the late 18th century had reduced the quantity of powder required from half the projectile's weight to a third, and English gunpowder, which had previously been of inferior quality to French powder, had been significantly improved in potency³. Powder was kept in wooden barrels, each of which contained 90 lbs of powder and which weighed about 100 lbs each. A First Rate hundred-gun ship of the line carried about 480 barrels. Gunpowder was bagged up to make cartridges for firing on board: all issues from magazines on land were thus in barrels. Two distinct sorts of gunpowder were employed: regular powder and 'cylinder' or 'red' powder. This latter type contained charcoal that had undergone a different charring process and thus produced better results that were particularly useful for long-range firing. All barrels were marked to show the type of powder within⁴.

The quality and condition of gunpowder made a considerable difference to the performance of ordnance. An inspection of the gunpowder held at Plymouth in 1799 revealed that a mere four barrels of it were of acceptable condition⁵; Storage in ships' holds was likely to lead to deterioration, so constant replacement of the nation's stock was

¹F.W. Lloyd & A.G. Hadcock, *Artillery: its progress and present position* (1893), 207.

²R. Wilkinson-Latham, *British Artillery on Land and Sea 1790-1820* (1973), 21.

³General William Congreve, *A statement of Facts, Relative to the Savings which have Arisen from Manufacturing Gunpowder at the Royal Mills...* (1811), 10-11.

⁴Brian Lavery, *The Arming and Fitting of English Ships of War 1600-1815* (1987), 134-44.

⁵Idem., 23.

essential⁶. Prior to 1790 all old powder was sold off at low rates to private contractors for use in quarrying, but in that year Colonel Congreve introduced a method of reactivating such powder through 'dusting and re-stoving' which greatly extended gunpowder's life and thereby cut down expense to the Board of Ordnance dramatically⁷.

The Napoleonic Wars saw the dramatic reform and improvement of gunpowder storage and issue across the country. This formed part of the marked increase in efficiency and effectiveness of Britain's armed forces that took place during the Napoleonic Wars, which not only led to the defeat of France but also to the subsequent era of imperial pre-eminence. One part of this vast programme was the construction of a series of new gunpowder magazines of which the largest, and longest-serving was to be at Marchwood, on Southampton Water.

2 ORIGINS OF THE MARCHWOOD MAGAZINES

During the Napoleonic period the nation's store of gunpowder was concentrated in a small number of principal depots. The two government manufactories in England were located either side of the Thames Estuary at Waltham Abbey and Faversham; from there, gunpowder was taken to eight magazines sited around South England which, in turn, issued smaller quantities of gunpowder to the numerous forts, depots and fleets which demanded it. Of these magazines in 1811, Purfleet was by far the largest⁸. The others were located at Tilbury, Gravesend, Upnor Castle (close to Chatham), Priddy's Hard, Tipner Point (both within Portsmouth Harbour), Keyham Point (adjacent to Devonport) and Picket Field, Hungerford in Berkshire. A magazine within Hyde Park supplied the capital⁹.

The provision of gunpowder was one of the responsibilities of the Board of Ordnance. This was a very large department which had no fewer than 54 depots across the country in 1796¹⁰, a number which was to increase over the next two decades of warfare (see Appendix 1 for a list of gunpowder magazines in 1817). During 1811 the decision was taken to embark on a programme of magazine building, and in the Ordnance Estimates submitted to Parliament for 1812-13 the sum of £50,000 was sought 'towards completing an Arrangement for building Land Magazines for Gunpowder, as well to increase the

⁶Between 1785 and 1810 327,750 barrels, constituting over half of all official powder manufacture, were returned to the Board of Ordnance by the Royal Navy as unfit: J.G. Coad, *Historic Architecture of the Royal Navy* (1983), 131.

⁷Congreve, op. cit., 17-8.

⁸See Peter Guillery & Paul Pattison, 'The Powder Magazines at Purfleet', *Georgian Group Journal* VI (1996), 37-52.

⁹Parliamentary Papers 1810-11, X, 51.

¹⁰A. Forbes, *A History of the Army Ordnance Services* (1929), I, 175.

present means of storing Gunpowder as to replace the Floating Magazines now in the River Medway, at Portsmouth and at Plymouth - Nine in number'. A note added that 'the rough Estimate on the whole of this Plan may be stated to amount to £250,000, of which £50,000 has already been voted in 1811'¹¹. It is thus apparent that the principal factor behind this ambitious building programme was to discontinue the practice of storing gunpowder on board hulks: not only were wooden vessels vulnerable to attack from enemy ships, but their storage conditions were less than ideal for so sensitive a commodity as gunpowder.

This sum of £250,000 was a considerable one but it needs to be set against the vast overall expenditure of the Board of Ordnance during the later years of the Napoleonic Wars. The 1812 Estimate called for £4,046,824; that of 1815, prepared after Napoleon's abdication, was £3,459,600. The new magazine programme was but one aspect of the vast expansion in public expenditure that the prolonged conflict brought about.

The original plan called for five new magazines located across the south of England and Wales. Four appear to have been built, judging by the list contained within the 1816 Estimate¹²: at Dorchester¹³, Carmarthen, North Hyde (close to Heston, Middlesex) and at Marchwood. Of these, Marchwood was the largest and remained in service for the longest time. Its particular role was the supply of His Majesty's fleet off Spithead¹⁴.

3 SELECTING THE MARCHWOOD SITE

The Board of Ordnance had decided, on April 5th 1811, that in considering the subject of forming within the kingdom stone magazines for gunpowder, [they] are of the opinion that one of these magazines might be placed with great advantage up the Southampton Water in some eligible situation which might probably be found in the neighbourhood of Netley Abbey, where, while the Powder would be secure as a Depot, the facilities of water carriage would be obtained, either to Portsmouth, from whence the great issues are chiefly made, or inland... the Board are of the opinion that this Magazine should be of the scale to contain 20,000 barrels; that it should be considered a Store Depot only, of the nature of Tipnor Point¹⁵.

General Morse of the Portsmouth District was requested by the Board of Ordnance to undertake a survey of Southampton Water. The magazine was 'to serve as a depot to which Recourse may be had when necessary from Priddy's Hard, the which might also on

¹¹P.P. 1812-13, XII, 123.

¹²P.P. 1816, XII, 71.

¹³A magazine was built at Whitfield, outside Dorchester, at this time.

¹⁴WO 55/787, Letter from R.H. Crewe to General Mann, 5th August 1812.

¹⁵PRO, WO 44/243, extract from the Minutes of the Board of Ordnance.

occasion afford Supplies for the upper Part of Hampshire and the contiguous Counties'¹⁶. This latter remark is interesting: the new depot was to supply not only the fleet at Portsmouth, but would also serve inland areas using -as an Ordnance memorandum made clear- canals for transporting the barrels of gunpowder. Such was the enduring fear of invasion (and of domestic unrest too) even in 1811 that the provisioning of inland areas, as well as the supply of the Spithead fleet, was a leading consideration behind the construction of the new depot. No mention needed to be made of the area's obvious advantages: its proximity to Portsmouth, and the security provided at the mouth of Southampton Water by Calshot Castle and the other Solent defences.

The initial concept was for a depot on the east side of estuary, perhaps close to Netley, which could take advantage of the River Itchen for water communications. Major-General Evelegh of the Portsmouth depot of Royal Engineers embarked upon a survey of the area, and reported back to General Mann on 1st September 1811 that the foreshore or 'mud land' off Netley was too broad for a depot to be practicable, but one possibility was between Netley and Hamble, close to Sydney Lodge (the Soane-designed seat of Sir Joseph Yorke, Bt.). Evelegh also arranged for the west shore of Southampton Water to be surveyed, and offered a second choice: Marchwood. He pointed out this site's advantages thus:

This spot is clear of mud, possesses a hard, firm Beach, so that vessels of 12 or 13 feet draft of water can load and unload at every tide, and it is well situated for communicating with either the Andover or Winchester Canals, which might occasionally furnish a supply of powder to the upper part of Hampshire and the contiguous counties¹⁷.

Moreover, 'this land is at a considerable distance from any respectable House, and is also of an inferior quality': objectors to a powder magazine would possess little influence, and the land would be cheap to buy. The ground landlord, Sir Charles Mills, Bt., agreed to sell the twenty-acre site, which formed part of Cock's Farm, for £1,235 in July 1812 and official approval for the purchase was granted in the following month. The site was surveyed and drawn¹⁸ in January 1813, but, despite the fact that bricks had been arriving at the site since August 1812¹⁹, a protracted dispute between the Board and Mills' agent as to whether the timber had been included within the purchase price further delayed the start of construction: so much for the pressures of war. A plan of the site prior to the construction of the depot was made by Captain Hassard of the Royal Engineers in January

¹⁶Idem., letter from Board of Ordnance to General Morse, 11th April 1811.

¹⁷Idem., letter to Mann from Evelegh, 1st September 1811. This letter has an accompanying plan showing the potential sites for a magazine on Southampton Water.

¹⁸Plan showing field boundaries and trees by Captain Hassard RE is contained within WO 44/243.

¹⁹WO 55/787, letter from Crewe to Mann, 5th August 1812.

1813, which shows the location of trees and field boundaries²⁰ (see **fig. 2**). The year 1814 finally saw the commencement of building work, as is borne out by the plaque inscribed G III R 1814 on the front of the former office building. An exchange of letters concerning the repair of the road (then called Faggots Lane, now Magazine Lane: faggots, or bundles of firewood seem to have been the principal commodity of the area) from the Spring of 1815 describes the magazines as ‘now erected’²¹, but most of the ancillary buildings were not completed until 1816²². The depot was thus ready just as the French war came to an end.

4 ORIGINAL LAYOUT OF THE MAGAZINE COMPLEX

As built, the first phase of the depot consisted of three magazines located in each corner of the triangular site, with the majority of residential and guard buildings sited along the longest side formed by Magazine Lane and with the centre of the site being chosen for the storekeeper’s residence. Initially, however, the plan was to store the 20,000 barrels of gunpowder in one single and enormous magazine. General Gother Mann, Inspector-General of Fortifications for the Board of Ordnance, suggested in June 1812 that the magazine at Upnor be taken as the model for the Marchwood site; no magazine had ever been built to house so large a store of powder but he did not see why the Upnor design could not simply be doubled in size. Significantly, Mann also saw no need to replicate the Upnor magazine’s massive vaulted roof of ‘bomb-proof Arches’: ‘with respect to the Bomb-proof, it is not necessary when the Magazine is not intended for a fortified place, or liable to be exposed to bombardment’²³.

The idea of a single monster magazine was soon dropped, and replaced by a plan to construct four identical store-houses, each for 5,000 barrels, in line abreast, within an enclosure²⁴ (see **fig. 1**). The idea to do without a bomb-proof roof remained, however. General Fisher, the newly-appointed commander of the Portsmouth Engineers’ Department, confirmed Mann’s conclusion in seeing no reason why the depot should be bomb-proof: ‘the Magazine is intended only to be fire-proof, as the... situation in which it will be placed, can scarcely be imagined to expose it to bombardment’. Hollow wall construction would reduce the risk of damp penetration (which would do serious harm to the gunpowder). As for the design of the roofs, Fisher acknowledged receipt of drawings

²⁰WO 44/243, attached to Col. Fenwick’s letter to the Board of Ordnance, 17 January 1816.

²¹WO 44/241.

²²WO 55/1594, ‘Marchwood. Ordnance Freehold Buildings’, not dated but on paper with an 1820 watermark, which gives a detailed summary of the buildings on the site, including dates of erection, dimensions and costs.

²³Idem., letter from Mann to R.H. Crewe of the Board of Ordnance, 10th June 1812.

²⁴Ibid.

of those of the saltpetre stores at the Waltham Abbey and Faversham gunpowder manufactories which would provide a model²⁵. Nonetheless, he persevered in his attempt to have conventional vaulted (or bomb-proof) magazines constructed at Marchwood. Fisher's initial designs for the depot were sent to Mann in September 1812²⁶.

They met with a frosty reception. The Board had not purchased a twenty acre site for all the magazines to be bunched together, and thus greatly increase the risk of all magazines going up in the event of one catching light, declared a letter to General Mann of 26th February 1813, which went on to say that the magazines must be built 'with the utmost despatch'²⁷. This letter contained the first reference in this context of the involvement of one of the most senior figures of British artillery of the Napoleonic wars: Lieutenant-General Sir William Congreve, Bt., Colonel Commandant of the Royal Artillery and Comptroller of the Royal Laboratory at Woolwich²⁸. Congreve (who died in 1812) had drawn up plans in August 1811, and in a decisive letter from Crewe to Mann dated 26 April 1814²⁹, Fisher's plans were dismissed as too expensive and of too small a capacity: overall, his scheme would cost over £9,000 more than Congreve's, and it was therefore decided that 'the magazines at Marchwood should be erected on Lieutenant General Sir William Congreve's Plan' and that the Board would duly furnish working drawings based on this proposal.

Fisher's suggestion for an internal canal or 'water communication between the magazines' met with more favour. This three foot-deep L-shaped canal enabled barrels of powder to be punted from magazine to magazine as required, rather than carried in barrows, thereby reducing the chances of accident through dropping. It was filled by rainwater collected from the ample roofs of the magazines and fed into the canal via brick drains, which was augmented by water diverted from an open stream along Magazine Lane, or which was raised by wind pump³⁰. Water power and canal communications formed central elements of the major Ordnance factories and depots such as Waltham Abbey, Weedon Bec, Purfleet, the Royal Gunpowder Mills at Ballincoig, outside Cork, but Fisher's scheme for a small internal channel for moving barrels by barge seems to be unique among gunpowder magazines. Another letter from Crewe to Mann dated 18 June 1813, besides referring to the canal idea, finally stated that the complex was to consist of three

²⁵Idem., letter from Fisher to Rowley of the Board of Ordnance, 25th October 1812.

²⁶Fisher submitted a ground plan and eight sheets of plans and elevations for various structures: PRO, MPH 272. This is by far the fullest set of surviving drawings relating to the site. None of the major structures were erected as per these designs.

²⁷Ibid..

²⁸ See the DNB entry on his eponymous son (1772-1828), the rocket pioneer and associate of the Prince Regent.

²⁹WO 55/787.

³⁰WO 44/241: 1816 Correspondence concerning water supply for the canal. this bundle contains a detailed plan of the site dated October 1816.

magazines, placed as far apart as possible, each with a capacity of 6,800 barrels³¹. This was the final configuration (see fig. 3).

5 THE SIGNIFICANCE OF THE MARCHWOOD MAGAZINES' DESIGN

The Marchwood magazines are very early -if not the very earliest- examples of what are known as 'soft top' magazines: ones that had expendable roofs, roofs which did not pretend to offer any substantial protection against missiles unlike the massively vaulted 'hard top' magazines that were thought of a bomb-proof. Congreve appears to have been the originator of the 'soft top' magazine, and was thus responsible for an important development in magazine design. Hitherto, the standard form of magazine design, as evolved by the high priest of military architecture, Vauban, had treated the building type as a front-line bunker that required massive outer protection to withstand assault and limit damage. Captain Ralph Willett Adye's manual *The Bombardier, and Pocket Gunner* (5th ed. 1806) was one of the leading works on gunnery of the day. It contained a detailed description of this standard form of magazine design which is worth quoting at length because of the differences with the Marchwood examples it points to:

According to Vauban's plan, powder magazines are commonly made 10 fathoms long, and 25 feet wide, in the clear.- The foundation of the longest sides, is 9 or 10 feet thick, and 6 feet or more deep, according to the nature of the ground.- The side walls raised upon these are 8 or 9 feet thick; and if there is not to be an upper storey, 8 feet will be sufficient height above the foundation. By this means the flooring may be raised above the ground, free from damp, and there will remain 6 feet from the floor to the spring of the arch.- The arch is formed of layers of bricks, arched one over the other, and ought to be 3 feet thick at the top.- The exterior surface of the arch terminates with an angle at the top, like a roof; which angle must be of such magnitude as to make a thickness of 8 feet over the key-stone of the arch... The magazine is lighted by a window in each end, high up, which are opened and shut by means of a ladder... The entrance to the magazine is closed by two doors, one of which closes inwards, the other outwards; the outward one is covered with sheet iron.- The entrance to the magazine should, if possible, be placed towards the south.- A wall of 1 1/2 feet thick, and 10 feet high, is built around the magazine at 12 feet distance.- A magazine of the above dimensions will contain about 94,800 lbs of powder, in piles of 3 barrels each; for a greater number piled above each other destroys the barrels, damages the powder, and occasions accidents³².

Such a description could, more or less, have applied to any of the surviving 18th century magazines such as that at Berwick-upon-Tweed, or the magnificent example at Priddy's Hard of the 1770s. The small magazine of c1800 at Dover Castle, which held just 320

³¹Idem..

³²Op. cit., 175-7. This description was repeated almost verbatim in Captain J. Morton Spearman's *The British Gunner* (2nd ed. 1828), 269-71.

barrels, is an adapted version which has been compromised by the addition of an abutting earth bank³³. These magazines are massive and redoubtable structures, like vaulted cellars made to stand above ground level: all were located in the middle of densely manned forts or ports, in which the detonation of a gunpowder store could have catastrophic results.

The Marchwood magazines lack such sublimity: are they not simply utilitarian storage buildings? The Marchwood approach placed the emphasis on outer protection, and sought to protect the vast gunpowder stocks by ensuring that hostile ships never got within range of them; few parts of the coast were better defended than the Solent, which made this approach possible. They stood at the start of a new approach to powder storage that was no longer preoccupied with bombardment. 'Hard top' magazines continued to be built where their location put other strategic buildings at risk, as was the case within dockyards and forts, but they were no longer the only way of designing magazines. By separating magazines as far as possible from each other and by providing adequately reinforced blast walls, the massive cost of solid brick vaults could be avoided.

6 THE FUNCTIONING OF A GUNPOWDER MAGAZINE

Marchwood's purpose was straightforward: to house a very large store of gunpowder, principally for the Navy's use, in conditions of maximum security and of optimum climate and humidity in order to preserve its full explosive potential³⁴. The depot received consignments of new powder from the Board of Ordnance's factories by ship, and issued equally large quantities primarily to the smaller Portsmouth magazines at Priddy's Hard and Tipner Point, which then made smaller issues to individual ships and batteries. The ledgers detailing the receipts and issues of gunpowder at Marchwood are not known to have survived.

Ordnance vessels carrying powder sailed up Southampton Water and berthed at the depot's long wooden jetty, which ran out into the channel beyond the low water mark. Barrels were hoisted up onto the jetty, which supported a 'rolling stage', along which they passed, three at a time upon barrows with wheels of gun metal, until they entered the depot proper through the gate between the examining rooms. Normal footwear was removed in the shoe stores located in front of each magazine or shifting room and felt footwear put on instead, to cut down the risk of causing sparks. Barrels were checked for condition and any found to have iron hoops or nails were immediately rejected on fire safety grounds; their contents were then assessed for condition also. Those that passed both tests were despatched straightaway to one of the magazines: initially all barrels were transported on shallow barges that were punted along the canal to each magazine's

³³Jonathan Coad, *Dover Castle* (1995), 75-76.

³⁴The following account is based on the description of the depot in *The Times* for 3 November 1864, p.10 and on a reading of the many relevant PRO documents. Jonathan Coad's *The Royal Dockyards 1690-1850* (1989), ch. 10 provides the best overview of magazines and the activities of the Board of Ordnance.

entrance but from the mid-19th century on a wooden rolling stage ran alongside the canal along which chest-like barrows were wheeled instead. All barrels were marked to show what sort of powder they contained, and their date of arrival carefully noted in order that the oldest powder could be issued first.

The magazine had to ensure that the powder it stored was in good condition for immediate despatch. Gunpowder had to be tested for potency after a lengthy period in storage within a dank ship's hold (or after a long spell within the magazines); powder that had lost its required level of explosive power would be sold to private contractors for civilian use, such as well-sinking or quarrying. Barrels that showed any sign of wear or weakness would be replaced (hence the importance of the cooper and his assistants here), and the powder transferred from old barrel to new in the Shifting House: this was a potentially dangerous operation, so the Shifting House, like the magazines, had its own blast walls to reduce the impact of an explosion. Barrels had to be absolutely tight in order to prevent moisture getting in or powder spilling out; all floors throughout the depot were scrupulously swept lest any gunpowder ever did escape.

The original instructions for the running of the depot, issued to the first storekeeper in 1815, survive in the Hampshire Record Office. A typescript is appended to this report as Appendix 2.

7 CONSTRUCTION OF THE MAGAZINES

The magazines, along with the perimeter wall, barracks, storekeeper's house and other ancillary buildings, were constructed in 1814-16. Many of the locally-made red bricks, particularly those of the wall between the barracks and guard house, bear the pheon (or broad arrow) stamp of the Board of Ordnance. Each of the magazines measured 89'6" by 58'6" and together they cost £12,299/13/1, almost a third of the £39,252/2/7 that the magazine's buildings cost to erect³⁵. A photograph taken in c.1871 shows the original appearance of these magazines (see fig. 8) Only one of the original three magazines survives, and that in part, and in sorry condition: 'A' (originally No. 1) magazine. Its fellows, 'D' (or No. 2) and 'G' (No. 3) were both destroyed in 1940, and only their partially surviving blast walls serve to indicate their positions.

Yet what remains of this magazine is still of considerable interest. For one thing, the brickwork survives in surprisingly good condition, and reveals the original quality of construction: quality that contrasts dispiritingly with the new brickwork of recent housing developments here. For another, the surviving walls reflect closely the need to control the storage conditions of this highly sensitive material. As an American naval officer was to write in 1862,

In the storage of gunpowder especial pains should be taken to secure it against the effects of moisture and dangers of explosion. Powder magazines are generally built of brick or stone, in a very substantial manner, and in places free from moisture and remote from danger... They should be so

³⁵WO 55/1594, 'Marchwood. Ordnance Freehold Buildings' (1821).

constructed that the air may circulate freely through them, and the powder casks should be so arranged as to rest neither upon the ground nor against the wall³⁶.

The Marchwood magazines conformed to these needs and were constructed employing an 1809 patented system of brick wall construction. This was John Groves' 'Improved Mode of Constructing Buildings, by which Great Expence, Labour, and Time is Saved, and the Buildings secured from Dry Rot, with other Advantages'³⁷. The system contained voids within the wall, some of which connected with the open air, others of which were surrounded entirely by brickwork.

The system was promoted by Groves as a way of ventilating floors, thereby reducing the risk of dry rot: an important consideration, of course, for any building but of particular importance for a gunpowder magazine since the powder barrels needed to be kept dry if the powder was to retain its potency. The Board of Ordnance insisted on the use of this patent system, and sanctioned the employment of a specialist from Bristol to supervise the construction work in this unfamiliar technique³⁸. The surviving walls of A magazine contain small ventilation openings, their wooden doors set within neatly dressed Portland stone surrounds. Unfortunately only the walls, together with these openings, survive: otherwise, A magazine has suffered grievously from the loss of its roof and the theft of its copper fittings. It is a measure of the efficacy of Groves' system that the standing walls remain remarkably dry and in good condition.

Originally, however, the three magazines were each covered over with gently sloped triple-pitched roofs, outwardly of slate but with an inner layer of pantiles; as the 1820 survey of Ordnance Freehold Buildings described them, 'these magazines are not fire-proof but only a common slated roof with plain tiling between the Rafters'³⁹. The purpose of this double roof was almost certainly to do with temperature control, which needed to be kept within a restricted range. The striking aspect of these magazines was their lightness: unlike the heavy brick vaulted roofs of the more conventional bomb-proof powder stores, the coverings of the Marchwood magazines were never intended to prevent missiles penetrating the building. Rather, in the unlikely event of an explosion, the blast was meant to travel upwards but not outwards, thereby limiting the chances of the damage affecting either of the other magazines. Prominent lightning conductors were located at each apex of the roof ridges: The few windows, three per end, were provided for the purposes of illuminating the interior on the few occasions when access to the barrels was required; they were normally firmly shut. Since the walls of the magazines were surrounded by a sunken trench which ventilated the footings, small stone ledges were

³⁶Lieut. Edward Simpson, *A Treatise on Ordnance and Naval Gunnery* (New York 1862), 204.

³⁷Patent no. 3324, granted 1 May 1809.

³⁸WO 55/787, letter from R.H. Crewe of the Board of Ordnance to Lt. Gen. Mann, 13 August 1813.

³⁹WO 55/1594.

placed under each window which enabled the depot personnel to open the shutters. The magazines' timber floors lay over a sizeable void which sought to minimise damp penetration; an 1839 inspection found the floors of two magazines, Nos. 2 and 3 (subsequently D and G) to be 'much sunk from settlement'; they required complete renewal in the early 1840s⁴⁰.

8 THE DEPOT'S ANCILLARY BUILDINGS

The three magazines formed the *raison d'être* of the depot but nonetheless required a number of other supporting buildings. The site was overseen by a superintendent, known as the storekeeper: he occupied a sizeable detached house, known in early plans as the **Storekeeper's House**, in the centre of the site, known until its recent demolition, as **Ordnance House**. This substantial residence reflected both the status of the superintendent, who had overall responsibility for the whole depot, and the fact that this responsibility required his constant presence there. It was built in 1815⁴¹. The electricity sub-station which stands in the centre of the site stands on the site of Ordnance House's out-buildings. All that remains to indicate the presence of the Storekeeper's House are the gate piers located between the depot office and guard house buildings, the stone caps of which are inscribed **ORDNANCE HOSE**.

The other residential buildings at the depot were divided between civilian employees of the Board of Ordnance who were engaged as labourers, and military personnel who were stationed as a garrison to guard the magazines.

The **Barracks** constituted the largest single structure at the depot after the magazines themselves. This two-storey building was constructed in 1816 and cost over £5,000, a sum exceeded only by the magazines themselves. It contained four barrack rooms, eight officers' rooms (plus four servants' rooms) and had attached to it a cook and wash house, a whiting shed, straw store and stable; behind it lay the officers' gardens. The building was later called **Police House**.

The principal entrance to the depot was flanked by the **Watch House and Office** on one side and the **Guard House and Engine House** on the other; these single storey buildings still survive in good condition, although both now sport verandas carried on cast iron columns that are of a later 19th century date, probably as part of the 1850s programme: they are shown in the c1871 photograph (see **fig. 7**).

⁴⁰WO 44/644, 'Plan of the Ordnance Establishments. Marchwood', letter from Col. J.R. Arnold, commanding officer of RE detachment at Portsmouth, to the Inspector-General of Fortifications, 6 December 1839. £666 was to be spent on No. 2 Magazine in 1841 and a similar sum was required for No. 3 magazine the year following.

⁴¹WO 55/1594, 'Marchwood. Ordnance Freehold Buildings' (1821). This printed questionnaire contains much detailed information about the date, cost and size of each of the buildings at the depot and is the source for the following references.

All of the original **Labourers' Cottages** located to the west of the barracks have been demolished and have been replaced with 1890s versions. Elevations and photographs⁴² reveal these to have been single storey and extremely simple in design. Slightly larger cottages stood at each end of the terrace which housed foremen, and the clerk had a detached house too, which formerly stood along Magazine Lane, just outside the **Gate Piers** which survive, in part: these are first shown on a plan of 1841⁴³. The clerk's house was let to a retired naval captain from 1830. A 1978 photograph (Hampshire CC) shows there to have been three gate piers, possibly reconstructed, and one braced with steel, each of which was capped with a ball finial. A pair of semi-detached houses stood further along Magazine Lane which also accommodated labourers; these two have gone. To feed the garrison and Ordnance workers a two-storey **canteen** (now demolished) was constructed, with kitchen attached, in 1816 at the southern extremity of the site, close to a large **Engineer's Shed** (also gone). Like the Clerk's House, the canteen stood on a triangular piece of land that was subsequently acquired by the Board for the completion of the depot in 1816⁴⁴; a pub was to have been built on the site, no doubt intending to exploit a captive and thirsty workforce, but concerns over the sobriety of the depot's personnel put paid to that scheme but as early as 1818 it was being leased out to a civilian.

The **Boundary Wall and fencing** appears to date from different periods. The north side was effectively protected by Southampton Water, but other sides required walls or fences to keep marauders out. The precise dates of these are not known. At some point around 1890 the whole enclosure was 'surrounded by an unclimbable iron fence, with three gates' which were located at the pier, at the main entrance on Magazine Lane and one at the southern tip of the site, near G Magazine⁴⁵.

9 MARCHWOOD AT THE CLOSE OF THE NAPOLEONIC WARS

The successful prosecution of war requires immense investment and total commitment to short-term aims: it is therefore almost inevitable that large projects will still be in hand at the outbreak of peace. Marchwood was not ready for use either in the closing phases of the defeat of Napoleon in 1814, or for the Hundred Days of March-June 1815. However, so great was the investment made in this and other depots by the Board of Ordnance, that it was decided to complete the magazine building programme and thus ensure that the nation would, in future, have an adequate supply of armaments in case another conflict broke out.

⁴²MPH 273, 1812 plans and elevations; WO 78/2751, c1871 photographs.

⁴³WO 44/644, 'Plan of the Ordnance Establishments. Marchwood'.

⁴⁴WO 44/243, letter from R. Ady, Storekeeper at Marchwood, to the Board 27 April 1816.

⁴⁵Undated historical note on the depot, Hants CRO, COL 17/5, n.p..

The Ordnance Estimates for 1817 listed the vast quantities of arms and ammunition held by the Board at the end of the French wars in 1814: over 818,282 muskets as well as over a quarter of a million musket barrels were in store, as well as 194,000 barrels of gunpowder⁴⁶. During the entire Battle of Waterloo, a huge engagement by British standards, the allied side had used a mere 569 barrels of gunpowder (Marchwood alone had an initial capacity for 20,000 barrels). Huge stocks of gunpowder were required for sieges in particular: nearly a quarter of a million pounds of gunpowder, or 2,288 barrels, were used at the siege of Badajoz in 1812⁴⁷. The Board justified retention of the armaments infrastructure to Parliament thus:

To command a supply of these most important articles, on such an enormous scale, it is obvious that large manufactories must have been established... and capacious magazines and storehouses erected for preserving the materials in a state fit for immediate service, and in situations adjacent to the spot where they might be wanted for exportation or for internal use. Several of these will probably become nearly useless during peace; but the great expense of building having already been incurred, Your Committee consider the economical support of such of them as are substantially constructed of durable materials, and appear most likely to be again wanted in the event of any future war, as being far preferable to taking them down⁴⁸.

Thus was Marchwood reprieved from instant decommissioning. Instead, it was to become one of the country's principal gunpowder repositories, and be used for munitions storage for almost 150 more years.

10 MARCHWOOD'S PERSONNEL

The magazine was occupied by two distinct groups: a small garrison of regular soldiers, and civilian employees of the Board of Ordnance. Each required permanent accommodation within the complex because of the need for constant vigilance over so explosive a store. The garrison changed at regular intervals, depending on which regiments were stationed in the Portsmouth area; the first garrison was provided by a detachment of the 5th Foot⁴⁹. This detachment was quite sizeable, consisting of a captain, a subaltern and 58 NCOs and men in 1857⁵⁰.

⁴⁶*Parliamentary Papers* (1817) IV, 87-8.

⁴⁷R. Wilkinson-Latham, *British Artillery on Land and Sea 1790-1820* (1973), 21.

⁴⁸*Idem.*, 89.

⁴⁹WO 44/243, letter from Capt. Edward Drury, 'Commanding Officer at Marchwood Barracks', 10 April 1816.

⁵⁰WO 55/2996, 'A Statement of the Whole Extent of the Lands of the Department at Marchwood... August 1857'.

The rank of storekeeper was a responsible one within the Board of Ordnance. Their salaries⁵¹ were determined by the importance and prestige of the establishment under their supervision: thus, in 1821, the Purfleet storekeeper was paid £400, a sum followed by the salaries of the storekeepers of the Marchwood and North Hyde magazines, at £300, and by a larger number (including Priddy's Hard opposite Portsmouth and Keyham Point near Devonport) who earned £250. The smallest magazine, that in Hyde Park, was the responsibility of a storekeeper who was paid only £100. Judging by salary, therefore, the Marchwood position was among the most responsible in the country: this was only fair, given the enormity of looking after the kingdom's largest stock of gunpowder. Careers within the Ordnance tended to be for life. The storekeeper at Marchwood in 1847, for instance, one John Lamprey, had joined the Board in 1807 as a clerk at the Malta depot and held a similar post at Kingston, Ontario before becoming inspector of accounts for the West Indies depots in 1823⁵² and then moving to Marchwood. He earned £300 p.a. plus his house. The first Marchwood storekeeper, one R.D. Ady, styled himself Esquire in his letters to the Board: this, together with the imposing nature of his residence, indicates the station that this post was felt to confer.

The labourers too were often long-serving, and it was common to find sons succeeding fathers in such positions. The foreman of the coopers in 1847 had been at Marchwood since it opened in 1815, and earned £99 p.a.; the other staff in that year consisted of a foreman of labourers, a coxswain, an office keeper and three labourers. This represented the staff at a low-point in the magazine's history. Several of the ancillary buildings were let out to civilians, and in 1847 the depot contained the lowest ever number of powder barrels: a still considerable 66,498⁵³, out of a national reserve that had been fixed in 1837 at 170,000 barrels⁵⁴. A garrison of one officer and 34 men had only been present at Marchwood for three months of the year 1846-7⁵⁵, a clear indication of the declining importance attached to the depot. This was the nadir of the magazine's fortunes, and reflected the winding down of Britain's armed forces towards the close of The Long Peace of the 1840s.

⁵¹'Return of Establishments of Office of Ordnance at Gunpowder Magazines', *Parl. Papers* (1821) XV, 323.

⁵²WO 54/677, 'Return of Persons in Pay and Employ of Ordnance at Marchwood 1st September 1847'.

⁵³Wo 44/644, 'Reports on the State of the Store of Gunpowder' (1854).

⁵⁴WO 44/644, 'Reports on the State of the Store of Gunpowder, the Consumption, and the Reserve considered necessary' (1854).

⁵⁵*Parliamentary Papers* (1847-8) XLI, 487.

11 1850s EXPANSION

With the heightening of Anglo-French tensions during the 1850s and the startling realisation of Britain's military unpreparedness brought about by the Crimean War, change was about to affect Marchwood. Considerable quantities of gunpowder were withdrawn at the start of the Crimean War which resulted in Marchwood, Portsmouth and Devonport being completely stripped of all barrels. Purfleet still had 30,000 barrels and Weedon another 10,000 out of the national total in November 1854 of almost 78,000 barrels, and some 50,000 barrels were thought to be needed in the period up to the end of March 1855⁵⁶. The nation needed to increase its stock of gunpowder and replan the distribution of magazines.

Precise information concerning the new magazines and related works is far scantier than that for the initial phase. The Board of Ordnance was abolished in May 1855 and the ensuing period of administrative change, when the War Office assumed responsibility for the Board's activities, makes the pursuit of individual building campaigns complex. The whereabouts of drawings of the new magazines is unknown, and precise documentary references to this new phase are far fewer than for the earlier period. What can be stated is that the expansion of Marchwood corresponded with a dramatic increase in the size of Britain's armed forces during the early 1850s: Parliament voted £6,672,588 for the Navy in 1850, a figure which soared to £19,590,833 by 1855⁵⁷.

In essence, the depot more than doubled in size. The three original magazines, numbered 1, 2 and 3, were joined by four new magazines and each was given a new letter identification. The following table⁵⁸ sets out the date, identification and capacity in barrels of each:

A	formerly No. 1	1814-6	7,200
B		1856-7	14,400
C		1856-7	14,400
D	formerly No. 2	1814-6	7,200
E		1856-7	9,600
F		1856-7	14,400
G	formerly No. 3	1814-6	7,200

These vast new storage capacities reflected the Board of Ordnance's need to respond to 'the high point of the Royal Navy's reliance on gun powder'⁵⁹. Marchwood's capacity

⁵⁶WO 44/644, 'Statement of Powder Store at 25 November 1854'.

⁵⁷Chris Cook and Brendan Keith, *British Historical Facts 1830-1900* (1975), 185.

⁵⁸Source: Hants CRO, COL 17/7, *Schedule of Buildings* (1900).

⁵⁹W.N. Mansfield, *Naval Ordnance Depot Priddy's Hard. The Site Impact of the Introduction of Modern Chemical Explosives and Naval Ordnance 1846-1906* (Bournemouth Univ. Thesis 1995), 26.

more than doubled, from 21,600 barrels to 52,800. Its protected estuarine setting once again marked it out as a site worth developing. And once again, work was completed too late for the depot to contribute to the waging of the war which had prompted the building campaign.

12 MARCHWOOD IN 1864: 'THE LARGEST MAGAZINE IN THE KINGDOM'

The fullest account of the depot ever to appear was a lengthy article in *The Times* for 3 November 1864⁶⁰. The dramatic explosion of a gunpowder mill at Belvedere, close to Erith on the Kentish shore of the Thames Estuary on October of that year had brought the issue of gunpowder manufacture and storage to the forefront of public attention: hence several articles in the paper on the subject of Government powder magazines.

The Marchwood magazine, 'the largest magazine in the kingdom', was 'the great receiving store from Purfleet, and has a storage capacity for 76,000 barrels of powder, each containing 100 lb'. A detailed description of the complex followed, which revealed (among other things) that the canal system of transporting barrels had been wholly superseded by a wooden roller way. The article seized on what was remarkable about Marchwood: the fact that its magazines were not bomb-proof.

The peculiar features in the Marchwood magazines, and one in which they differ from all others is their method of construction, which appears to reduce the chances of damage from an explosion to the *minimum* point attainable, and so to protect each magazine that its explosion shall not necessarily destroy its fellow. This is accomplished by building each magazine as a square of massive side walls, covered in with a light timber and slated roof, and, in addition to enclosing each magazine within its own independent outer wall and courtyard -the distance between the walls of the magazine and the wall of the courtyard being about 20 ft- each magazine is isolated from its next fellow by a traverse of earth 40 ft in breadth of base and 21 ft in height.

The article gave a detailed account of the depot's daily business, including detailed statistics concerning the quantity of powder then held: over 2,467 tons of it, including 52,372 barrels of loose powder, 2,602 barrels of cannon cartridges and almost 7,000 quarter-barrels of small arms ammunition. The description of the interior of F magazine (one of the recent additions to the depot) is of great interest:

We enter by the door in the courtyard wall from the rolling way, and immediately inside the doorway are ushered into the 'shoe and clothes rooms', which are attached to the court wall, and where we make the necessary alterations in clothing. A short planked roller way leads from the entrance-gate and shoe-house to the double copper-lined doors of the magazine, the latter a by no means gloomy, one-storied building, with large double-shuttered wired windows, standing in the midst of the courtyard, its slate-covered roof capped with the Government pattern

⁶⁰'Government Powder Magazines', *The Times*, 3 November 1864, col's a-d.

lightning conductor. Entering the building, it is found to be a well-lit and ventilated and beautifully clean pinewood cabinet of vast dimensions- walls, ceilings, and fittings gleaming in all the bright dry freshness of that wood, with not a speck of dust to be found on floor or fittings to soil a lady's cambric handkerchief, nor a sign of cobweb or stain of any kind to be discerned... Long narrow passages extend through this 'northern forest-plucked hall', from which branch off bays to each window filled up with its share of the 1,320,000 lb of powder, which is piled up in tier upon tier of barrels in every available space.

Only two issues or receipts of powder took place, on average, per week (Priddy's Hard was far busier, and the doors were seldom closed, the article declared). Marchwood was thus a quiet depot, but one of awesome potential destructive force.

The magazine was also mentioned in *Murray's Handbook for Travellers in Surrey, Hampshire and the Isle of Wight* (1876 ed.) as one of the region's notable sites; however, 'it need hardly be said that the approach of a stranger is regarded with most jealous suspicion'⁶¹. As the Solent developed as the smartest centre for yachting in the country, the magazines at Marchwood lurked high up Southampton Water, a solitary outpost of colossal combustible potential.

13 THE MAGAZINE DEPOT UP TO 1939

The total capacity of the magazine after the 1850s expansion was 76,000 barrels. Marchwood's maximum store was ordered to be reduced to 40,000 in October 1867, a total that was increased to 50,000 in August 1885⁶². Public concern at the risk of an explosion at the depot resulted in a petition from the citizens of Southampton in January 1876 for the removal of the magazines altogether: the Secretary of State for War refused 'under any circumstances' to accede to this demand on account of the strategic importance of Marchwood's location⁶³.

Changes in ballistics called for changes in the storage of ammunition. In 1877 G Magazine was dedicated to small arms ammunition storage and in 1892 A Magazine was filled with 3 pounder and 6 pounder quick-firing ammunition; increased demand for this type led to its transfer to the larger F magazine soon after⁶⁴. The former shoe rooms attached to each magazine were converted in 1908 to isolation magazines for cordite, which was inherently volatile, and which replaced gunpowder as the principal propellant

⁶¹Op. cit., 343.

⁶²Hants CRO, COL 17/8: Captain W. Smith Cox, *Precis on the History of Marchwood* (1891)

⁶³Ibid..

⁶⁴Hants CRO, COL 17/5: untitled historical report (c.1900 typescript).

from 1891 onwards⁶⁵. Patterns in ammunition requirements continued to affect the use of the magazines, and the days of vast piles of barrels of gunpowder at Marchwood were over.

In October 1891 the depot passed from the responsibility of the War Office to that of the Admiralty's Naval Armament Supply Department. Marchwood's establishment in that year consisted of an officer in charge, a foreman, a cooper, six labourers and a garrison supplied by two officers and forty NCOs and men of the Royal Marines⁶⁶. Priddy's Hard, by comparison, employed no fewer than 240 hands in 1895⁶⁷. Soon after this transfer the garrison was replaced by a detachment of the Metropolitan Police consisting of an inspector, three sergeants and twenty four constables; they remained until 1923, when a detachment of the Royal Marines Police took charge. Numerous alterations took place in the 1890s (following the Admiralty's takeover) including the conversion of the original canteen (which had subsequently served as a hospital) into quarters for the police inspector and the construction of eight new cottages for the foreman and seven labourers and their families: these, the present buildings on Magazine Lane, were built by 1900⁶⁸. The total population at the Magazines stood in 1898 at 114 persons: 45 employed men, 20 women and 49 children⁶⁹.

An anonymous type-written account of the depot of c1890 emphasised Marchwood's remoteness: 'each one, having come to the conclusion that someone must be at Marchwood, has accepted his fate gladly or otherwise... our nearest town is Southampton, and we are thankful at times, to take a trip in the Depot launch back to the shores of civilization'⁷⁰. The west shore of Southampton Water had yet to become lined with huge utilitarian complexes -a power station, an oil refinery, a military depot, an incineration plant- that were to line it in later years.

14 MARCHWOOD UNDER ATTACK: JUNE 1940

During the Napoleonic Wars the Board of Ordnance had reckoned the chances of a French ship entering the Solent, getting past Calshot Castle and bombarding the depot to have been negligible. The Luftwaffe, however, had fewer difficulties, and managed to score a lucky direct hit on the magazines in the course of a pre-Battle of Britain bombing raid on the night of the 19th-20th June 1940. The damage, caused by incendiary bombs, consisted of the total destruction of B, E, F and G magazines which held almost a quarter

⁶⁵A.W. Wilson, *The Story of the Gun* (1968), 53.

⁶⁶Hants CRO, COL 17/3.

⁶⁷Hants CRO, COL 17/5, *History of Priddy's Hard* (1896 typescript).

⁶⁸Hants CRO, COL 17/7: *Schedule of Buildings* (1900).

⁶⁹Hants CRO, COL 17/5: *Return of Persons residing on the Premises* (1898).

⁷⁰Hants CRO, COL 17/4: *History of Marchwood* (c1890 typescript).

of a million rounds of ammunition for the quick-firing Oerlikon anti-aircraft gun. Considerable damage was done to the western part of the depot but no lives were lost, however⁷¹.

The Air Ministry and Ministry of Information ensured that press coverage of specific incidents was deliberately vague and superficial, official mention being restricted to the fact that over 100 enemy bombers had ranged over south and east England. No mention was made of the damage done to Marchwood. The *Southern Daily Echo* for 21 June (p.9) did however quote the German communique for the night raids, which stated that 'the German Air Force last night attacked dockyards and harbours in the vicinity of Bristol and Southampton. In many places great conflagrations were started and there were loud explosions'. It seems likely that the detonation at Marchwood would have been among the loudest.

A second raid on 1st December 1940 resulted in extensive damage being caused to D magazine: only A and C magazines therefore survived the war. The Admiralty swiftly arranged for the depot's reconstruction: B magazine was rebuilt and ready by April 1941 while the last to be rebuilt, F magazine, was finished early in 1942. They were low, squat ferro-concrete structures, with painted camouflage: a far cry from the redbrick 19th century magazines.

No photographs have been located of the magazine depot during the Second World War. A 1947 aerial photograph (Hampshire County Council) shows the depot to have been fairly heavily wooded, with trees already growing on the earthen traverses. The Imperial War Museum has a considerable number of official photographs of the depot's immediate neighbour, the No. 1 Port Construction Depot, taken in 1944-45. This was an enormous dock complex, dating from this century, and served with its own railway branch line; it is now one of the principal Royal Corps of Transport depot (which explains the presence in Marchwood of the monument to members of the Royal Fleet Auxiliary who were killed in the Falklands War). The Second World War was, predictably, Marchwood's busiest period. The magazines and the storage depot were responsible for turning the village from an agricultural backwater into a strategic and bustling area.

15 CLOSURE AND RECENT HISTORY

The Admiralty's use of the depot declined steeply after 1945. The building of Fawley Power Station (opened in November 1957) signalled the eclipse of the area's military character, which culminated in the depot's closure in November 1961. A number of buildings were demolished at this time. The first body to take advantage of the depot's closure was the Marchwood Yacht Club, which first occupied buildings here in 1962. It remained in MoD ownership, but plans by the Post Office to deepen the channel of Southampton Water and to build a wharf at Marchwood to receive cable-laying ships, or else to widen Southampton Water, effectively blighted the depot and placed its long-term survival in doubt. Meanwhile, the site was recommended for scheduling in 1968. The

⁷¹A.M. Ingram, *A History of Marchwood* (1979 typescript), n.p.

MoD, concerned at the theft of copper fittings, roofing materials (many taken by night anglers to stoke bonfires, apparently) and other fabric, applied to the IAM for permission to demolish the buildings, or at the very least to remove the rest of the roof covering; this was refused. The British Transport Docks Board, planning to develop the facilities, approached the IAM in 1971 with a request to de-schedule the site. This was not acceded to either⁷². The site was photographed in 1972 by the DoE. These photographs (see copies) make depressing viewing today, since they show the buildings to have been in reasonable -if neglected- condition, unlike their present desperate state.

The first buildings to be sold off by the MoD were A and C magazines and the examining rooms, which were sold to the British Transport Docks Board in 1979. In the following year, Marchwood Yacht Club purchased the guard house and depot office. Ordnance House was de-scheduled in 1982 and subsequently demolished, thereby freeing the large central area for redevelopment. Many trees were felled too. The MoD disposed of its interest in the site, which was bought by a number of different developers acting independently: the site was divided among six companies, organisations and individuals by late 1985. New Forest DC grew increasingly disturbed at the declining state of the magazines and other unoccupied buildings: C Magazine lost 80% of its slates between February and July 1985, by which time A Magazine was completely roofless. The earlier buildings on the site were first listed in 1985, and de-scheduled in the following year.

The Marchwood depot was declared a Conservation Area by New Forest DC in June 1997. The whole of the site included, plus a strip running either side of Magazine Lane. Future residential developments are earmarked for the site, and new roads -Ordnance Way and Maritime Avenue- have already been laid out across its centre.

16 ASSESSMENT: OTHER LISTED GUNPOWDER MAGAZINES

At present, according to an interrogation of the LBS system, some 34 sites in England (including a battery on the Isles of Scilly) possess listed gunpowder magazines: that is, detached buildings dedicated to the safe storage of gunpowder. Three of these are civil (connected with the Manchester Ship Canal of 1888, the Snailbeach lead mine in Shropshire of c.1850, and a commercial 1820s powder store at Newlyn in Cornwall), and are not comparable with the Marchwood examples. Of the rest, the overwhelming majority date from the mid- to late-19th century⁷³.

The earliest building listed as a magazine is the Square Tower, Broad Street, Portsmouth of 1494 (grade I): this was used for powder storage until a major fire in the Dockyard in 1760 led to Portsmouth's citizens petitioning the King for a safer store, which resulted in the establishment of the Priddy's Hard depot across the harbour. Next in date is Upnor

⁷²See Inspectorate of Ancient Monuments files AA 62702/1, AA 62704/1 and AA 62706/1.

⁷³See Jonathan Coad's *Historic Architecture of the Royal Navy* (1983), ch. 7 and *The Royal Dockyards 1690-1850* (1989), ch. 10 on magazines in general.

Castle on the Medway, (grade I), which was converted in 1668 for magazine use, a use it retained until 1827. The magazine at Yarmouth Castle on the Isle of Wight is dated to c1718 (grade I). The grade I White Tower at the Tower of London also contains a vaulted roof of brick, inserted in 1730-4 when the basement was made into a powder store. All of these examples consist of powder stores inserted into extant medieval fortifications.

Purpose-built free-standing magazines begin with the 1716 examples at Tilbury Fort (substantially altered in the 1860s), built in brick along Vaubanesque lines, with heavily vaulted roofs. The next surviving example, at Morice Yard, Devonport dates from 1743-4. This is closely followed in date by the stone example at Berwick-upon-Tweed (grade II*). Five powder magazines were constructed at Purfleet, the Board of Ordnance's principal powder store (and thus a direct forerunner of Marchwood), in the 1760s: one of them survives following extensive site clearance in the mid 1970s. The earliest magazine at Priddy's Hard, Gosport dates from 1770: the finest of all early magazines, it is listed grade I. A magazine was also built to service the late C18 battery at Hardy's Head, Brixham, Devon.

Two magazines at Shrewsbury's Armoury were built to the designs of James Wyatt in c1806, at which time a great wave of Martello Tower building, each of which included powder storage facilities, was under way. A magazine was included within Eastbourne's Redoubt Fort of a similar date. The large Ordnance store at Weedon, near Daventry, Northants., includes no fewer than five magazines, four of which date from 1803 onwards. These are the closest in date and function to the Marchwood magazines, but were constructed with the massive vaulted brick roofs associated with earlier examples, rather than Marchwood's expendable roofs. It relied on the canal network for communication, and included waterways within the complex: this may have been the inspiration for Marchwood's altogether smaller canal system. The Weedon magazines are listed grade II* on account of the extent and survival of this purpose-built inland ordnance depot. Next in this chronological overview of extant powder magazines comes Marchwood. Decimus Burton's small powder magazine and store house in Hyde Park of c1830, built for the Grenadier Guards, is perhaps the most elegant magazine in purely architectural terms. A magazine was built in the inner bailey of Carlisle Castle in either 1827 or 1850.

The largest wave of magazine construction took place from c1860 onwards. Several were built within the Palmerston Forts that ring Portsmouth such as Fort Purbrook (grade II*), Fort Nelson (grade I), and Fort Southwick (grade I). Of this date also is the 1865 magazine at Polhawn Fort, Maker-with-Rame, Cornwall (grade II*) and the 1868 one at the nearby Cawsand Battery. Later coastal batteries with magazines -virtually all of which are grade II- include that on Sheepholme Island, Weston-super-Mare (1866), Woolpack Batteries, St Mary's, Isles of Scilly (1901), Lentney Coast Battery, Wembury, Devon (1905), Nothe Fort, Weymouth (c1870), Portland Naval Base (remains of, c1870), new magazines at Priddy's Hard (1879 and 1887, the earlier listed II*), Spurn Point, Holderness (1895 onwards), Blyth Links Fort, Northumberland (late C19), and the Alnwick Battery (c1887). Many of these underwent substantial modification during the First and Second World Wars, when a further phase of magazine construction was undertaken.

17 OVERALL HISTORICAL ASSESSMENT

The Marchwood magazines deserve to be better known and better cared for. In national historical terms, its magazines constituted the greatest single store of gunpowder at the time of Britain's imperial emergence, and at a time when gunpowder was just losing its centuries-old position as the sole sort of ballistic propellant force.

The surviving structures are of importance in the history of ordnance buildings. The remains of A Magazine are of greater interest than their forlorn condition might suggest: here was the earliest 'soft top' powder magazine in the country, built with a novel method of ventilated brick wall construction. The great blast walls, with their overgrown earthen banks, are eloquent witnesses to the explosive potential of these magazines. The spaciousness of the depot in terms of the distances between buildings, more apparent before the construction of the 1850s magazines, also refers to the need to separate one magazine from another as far as possible: another innovation that appears to have developed at Marchwood, and one which contrasted with the regimented ranks of magazines that were constructed at the other powder storage depots at Weedon and Purfleet.

In local terms, the Marchwood site is an eloquent reminder of Hampshire's importance in the country's defence. Located across the water from the walled city of Southampton, along the shore from Calshot Castle and around the coast from the ship-building village of Buckler's Hard, the Marchwood magazines were planned to service the Portsmouth fleet. Carved out of arable land, the site was chosen for its closeness to Portsmouth, the seclusion of its setting and the navigability of this part of Southampton Water. Its buildings, constructed of local red brick, survive well enough to give a clear insight into the functioning of the depot in its heyday.

The principal depots associated with gunpowder manufacture and storage have survived to varying extents. Purfleet, perhaps the most analogous site to Marchwood, has lost four of its five magazines as well as nearly all sense of its layout. Priddy's Hard, home of the soon-to-be revamped Museum of Naval Ordnance, does retain both magazine buildings and a sense of the site's overall layout and is thus Hampshire's pre-eminent Ordnance site. Waltham Abbey is in the throes of redevelopment, and part at least of the country's oldest gunpowder manufactory is to be retained. The greatest Ordnance depot of the Napoleonic Wars, Weedon Bec, remains substantially intact too. Marchwood, then, is not a unique survival and its generally poor condition has compromised its interest. Sufficient remains, however, of Victorian Britain's largest military gunpowder store for its conservation to be a matter of priority. The historical interest of the Marchwood magazine depot ought to form the basis of an outstanding enclave of regeneration.

Roger Bowdler
Historical Analysis and Research Team
English Heritage

November 1997

APPENDIX ONE: LIST OF POWDER MAGAZINES IN 1817

Source: *Parliamentary Papers* (1817) IV, 131 ff.

The following places had gunpowder magazines of sufficient size to warrant the appointment of a Board of Ordnance storekeeper:

Fort William
Hull (Yorkshire East Riding)
Yarmouth (Norfolk)
Harwich (Essex)
Purfleet (Essex)
Waltham Abbey (Essex)
Woolwich (Kent)
Gravesend (Kent)
Faversham (Kent)
Sheerness (Kent)
Chatham (Kent)
Upnor (Kent)
Portsmouth (Hants)
Priddy's Hard (Hants)
Tipnor Point (Hants)
Plymouth (Devon)
Keyham Point (Devon)
Pendennis Castle (Cornwall)
Chester Castle (Cheshire)
Weedon (Northants)
Picket Field (Berks)
Marchwood (Hants)
North Hyde (Middlesex)
Brecon
Shrewsbury (Salop)
Derby (Derbys)
Bristol
Horsham (Sussex)
Chelmsford (Essex)
Bury (Lancs?)

APPENDIX II

INSTRUCTIONS FOR RUNNING
ORDNANCE MAGAZINES AT
MARCHWOOD, 1814

(Hants CRO, 109 M91/col 17).

Instructions for the good Government of the Office of Ordnance at Marchwood Magazine, committed to the Care of R. B. Ady Esqr. appointed Ordnance Storekeeper at that Station.

1st You are to keep a daily Register of all such Letters received from The Master General, the Principal Officers of the Board, or any of them or by Their Order to Minute down the day of their receipt, and to return Answers with all diligent dispatch, and you are also to make an arrangement from day to day, of the Business or Work that is to be done in the Cooperage or in the Magazine, appointing a sufficient number of Labourers to perform the same, and taking care that none of them be taken off such work until it shall be finished; You are not to employ any of the Foremen, Artificers or Labourers who are placed under your Superintendance upon any Services not connected with the Ordnance, yet if there should be any relaxation of Business and the Men can be spared without detriment to the Magazine Duty, you may then employ them in keeping in Repair the Kings Roads, and what may be necessary to be done to the Grounds round the House and Buildings belonging to the Magazine. All Office Books whatever, - whether kept by yourself or any Person under your direction are to remain in a Press in the Public Office for the free Inspection of every Person concerned.

2nd You are not to employ any Extra Coopers, Artificers or Labourers or incur any Expence without Orders from the Board, and when any Person in the Service of this Office misbehave, you are to represent the same to the Board, and you are not to suffer any Artificer, Cooper, Labourer or other Person belonging to the Office, to enter the Magazine or to come within the Outward Gates, that has the least appearance of Intoxication, but on finding such, you are to suspend them and report their misconduct to the Board, and if any Labourer is found drunk or intoxicated on Guard, you are immediately to relieve him, suspend him and report the same to the Board, and in order to preserve a due respect and Subordination from the several Artificers and Labourers, you may for Small Crimes and Misdemeaners too trifling to trouble the Board with, cheque them not exceeding one days Pay, Minute the Persons name, his Crime and your reasons for cheequeing him, that the Board may have recourse thereto when they think proper. - With respect to the Working time of Artificers and Labourers, the Board refer you to the established Regulation dated 30th June 1786, a Copy of which is here- with enclosed. No Labourer Cooper or others employed in or about the Magazine are to leave their Work on frivolous pretences, all the Outward Gates to be kept shut, and the Labourer's are not to let any one pass during the Working Hours, without leave from you.

3rd You are to give strict charge to the Labourers doing duty as Watchmen, that they permit no Persons to go into the Magazines, or Inclosures of them, but such as are employed in the Service of the Office, and that no Person whatsoever be permitted to Smoke near the Magazine, the several Persons whose duty obliges them to go into the Magazine, are constantly to change their Shoes, and to put on Magazine Pumps and when the

Ref.....

door is opened the Floor of the Magazine is to be swept and well watered, likewise the Passages leading thereto, you are to take great care that no Iron be used about the Tackles for Swivels, Canhooks or any other Tools or Instruments used in the Magazines, but only such as are made of Wood or Copper.

4th You are to take care that of the Serviceable Powder that which has been longest in Store be always issued first except by especial order from the Board to the contrary and that all new Barrels when properly seasoned, be exactly tarred and the weight of the Tare marked on the Barrel.

5th You are to take care that no Barrels of Powder lay open in the Magazine, except during a Proof, and that all Remnants to be immediately headed up entering the quantity and quality of the same in a Book to be kept for that purpose; No Powder is to be shifted without being removed into the Shifting House and having a sufficient number of Tanned Hides under the Barrels, in order to keep the Powder as much as possible from the Floors, the loose Powder is to be carefully swept up and not suffered to remain. You are to take care that powder be properly and securely stacked in the several Days, and in case any of the Heads of the Barrels fly or start, you are immediately to cause the same to be removed and the Powder shifted into a Serviceable Barrel.

6th On the Arrival of Powder from any Place, you are most carefully to examine every Barrel in order to discover if any of the Hoops are fastened with Iron Nails, and if there is any Iron on any part of the Barrels, and you make such discovery, you are on no account to receive any of the Barrels so circumstanced, but immediately to cause the same to be rebarbed and make a report thereof to the Board, very fatal Accidents having happened in other Places from inattention to the above Circumstances, - this Regulation is never to be dispensed with, and you are to enter a Minute of the Examination made on every arrival of Powder for the satisfaction of the Board.

7th You are strictly to take care that all the Engines, Hose, Ladders, Firehooks etc. be kept in perfect repair, and so lodged that they may at all times be ready and fit for use. The Fire Engines and Hose are to be examined and played the first Monday in every Month, and if any Repairs are wanting the same to be immediately reported to the Board. - You are to take care that the several Pumps are kept in proper repair, and in case they should at anytime be defective you are immediately to write to the Board that directions may be given for the same being put into perfect repair.

8th You are upon the application of the Clerk of the Works, to cause such of the Labourers as are not necessarily employed upon His Majestys Service to Work under his direction in performing such Works as are ordered by the Board, and the Clerk of Works is to deliver to you every night a report of their attendance, agreeable to which report you are to include them in the Pay Lists, inserting the Cheques made by him.

9th You are upon observing Water to issue from Barrels of returned Powder to order the same to be unheaded, and the Water gently poured off and the Barrels to be reheaded and properly stowed. - You are to be particularly careful not to suffer Powder to be put into wet or damp Barrels, but to reject such as have the least appearance of Moisture till

properly received; you are to send a Monthly state of all Powder in the Magazines to the Board, and to the Controller of the Royal Laboratory.

10th The Boat belonging to the Office is not to be employed on any pretence whatever; except upon His Majesty's Service, without an Order from the Board, so that no unnecessary Expence may be brought on the Office.

11th You are not to suffer any Merchandise or Goods - belonging to any Private Person to be lodged in the Magazine.

12th You are to take care that the Cisterns be kept constantly full of Water for the Security of the Magazines, employing the Labourers upon such Service.

13th You are to make up your Accounts of such Sum of Money as you have paid for Service of the Office Quarterly transmitting the same at the Expiration of each Quarter, and when you find it necessary to demand a further Imprest, you will make out and transmit with it, a State of your Cash, showing the Expenditure of former Imprest, and the Balance remaining in your Hands.

14th You are to keep a Minute Book wherein you are to enter Minutes of everything that is ordered or transacted at the Magazine a fair Copy of which is to be sent to the Secretary's Office Annually. You are also to keep a day Book of all Receipts and Issues of Powder and other Stores, that proper Vouchers may be drawn up fair and entered in the respective Journals, and from thence transferred into the Ledger, which the Storekeeper is Annually to transmit to the Board, accompanied with the proper Vouchers.

15th You are to see that the several Persons borne on your Cheeque Books, do their Duty and perform what may be required of them in their several Stations, you are to Superintend them whether Artificers or Labourers at the different Places at which they are employed (excepting such are employed by the Clerk of the Works for whom he is responsible) to see they do their Duty with care and diligence, that they do not mispend or waste their time by loitering or otherwise, and if any are found Idle, negligent or disorderly in performing their Business, you are to cheeque them. The Superintending the Men is considered to be your Duty and you are not on any account to leave it to the direction of the Foreman, except in case of Illness or Multiplicity of Business. You are to see that the several Artificers and Labourers are called three times a day, that is to say at going to Work in the morning, returning to Work after Dinner and leaving Work at Night, and to cheeque such as are absent from Call.

You are likewise strictly to take care that no Artificers or Labourers waste or Embezzle any of the Kings Stores, and if any such waste or Embezzlement is discovered, you are immediately to signify the same to the Board. You are to make out Monthly Pay Lists for such Artificers as have actually worked or Watched, which List must be properly certified before you pay the same.

Lastly you are to cause these Instructions to be entered fair in a Book to be kept in the Office for that purpose, that no one may plead Ignorance of the same, and you are also to enter in the said Book, all such additional Orders as the Board shall in future think necessary to give for the Government of the Department at Marchwood.

Given at the Office of His Majesty's Ordnance, under the Seal of the
said Office this Fifteenth day of February 1815.

By Order of the Board

Signed R. W. Crews

Secretary

11/17/17

OFFICE

11/17/17

OFFICE

SCHEDULE OF BUILDINGS AND STRUCTURES AT MARCHWOOD

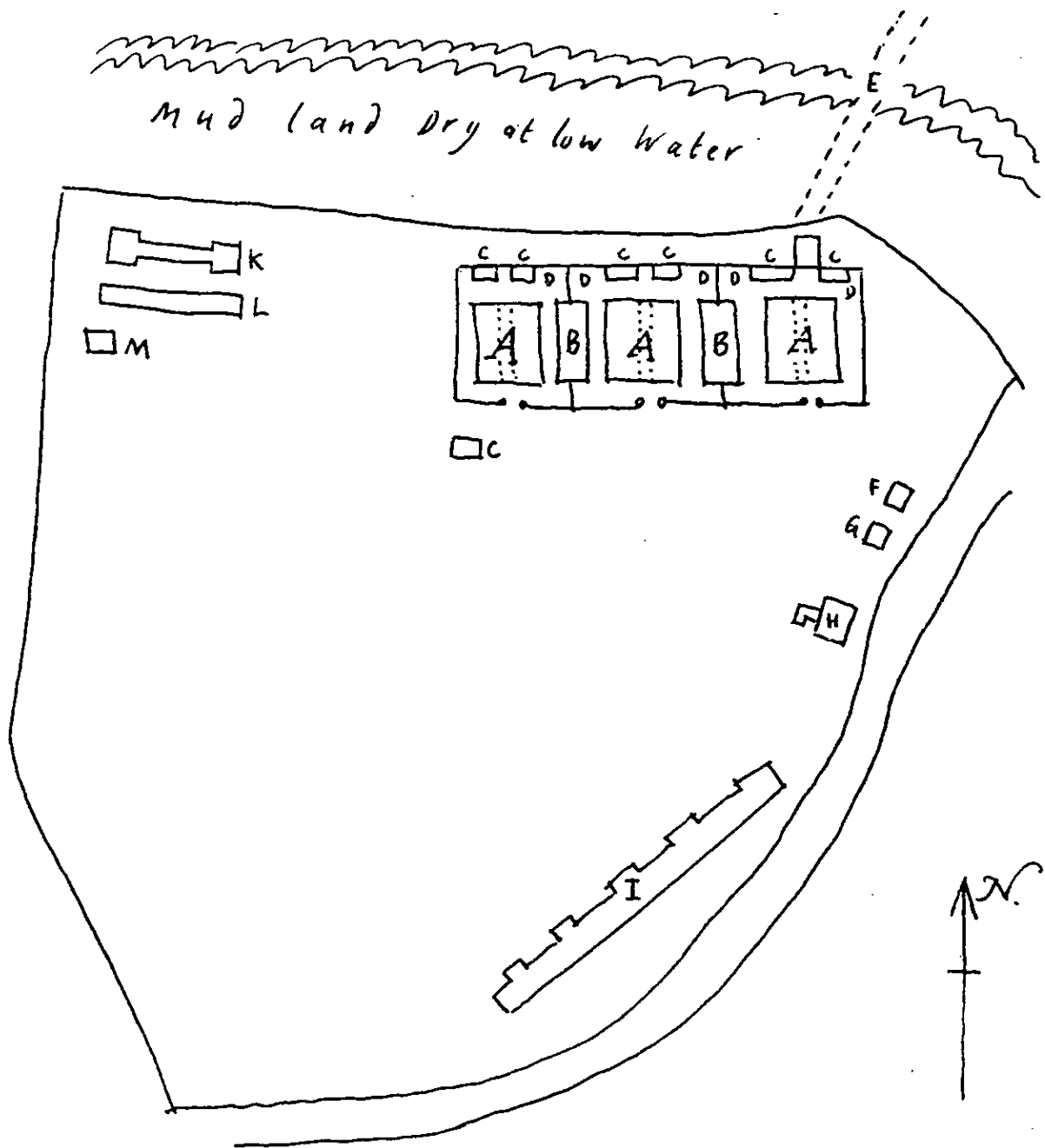
This is a summary list of individual items at Marchwood, which gives dates (where known), listed status, materials and notable alterations. It accompanies the annotated plan to be found at the end of this report. Items are numbered in sequence, starting at the north-eastern tip of the site and running anti-clockwise.

- 1 Sea Wall**
Mid-19th century. Not listed. Weathered Portland stone. Principally rubble construction, some re-used ashlar blocks.
- 2 Receiving Rooms**
1814-6, enlarged 1899. Listed Grade II. red brick, slate roof.
- 3 A Magazine and surrounding walls**
1814-6. Listed Grade II. Red brick, slate and tile roof fallen in. Portland stone surrounds to ventilation openings with wooden covers. Earthen bank to west blast wall.
- 4 Walls formerly surrounding B Magazine**
1814-6, altered 1854-6; recent repairs to gate piers. Not listed.
- 5 Examining Rooms and surrounding walls**
1814-6. Listed Grade II. Red brick. Modern temporary roof. Earthen banks to east and west blast walls now within B Magazine enclosure.
- 6 C Magazine and surrounding walls**
1854-6. Listed Grade II. Red brick, Portland stone cills. Modern temporary roof over softwood trusses, partial survival of original barrel racks within.
- 7 Walls formerly surrounding D Magazine**
1814-6, extensively altered in recent years when Hawkins Court was built within on site of former Magazine. Not listed. Red brick. Earthen bank to east blast wall now within enclosure of C Magazine.
- 8 Former canal**
1814-5. Closed in 1858, returned to use in 1899. Shallow trench with sloping sides. Currently drained. Only northern branch survives. Not listed.
- 9 Western perimeter wall**
?Mid-19th century. Red brick. Not listed.
- 10 Walls around former E Magazine**
1854-6, with substantial later losses. Red brick. Not listed.

- 11 Walls around former F Magazine**
1854-6. Red brick. Not listed. Earthen bank to blast wall at south relates to former G Magazine of 1814-6.
- 12 Former labourers' cottages**
c1891 with piecemeal alterations. Row of five two-storey cottages. Red brick, slate roofs. On site of former Labourers' Cottages nos. 7 and 8 and carpenter's workshop. Not listed.
- 13 Entrance gate piers, railings and south-west perimeter wall**
c1840. Later alterations. Not listed. Partial run of cast iron railings on either side. Continues as dwarf wall of Portland stone with red brick capping along Magazine Lane.
- 14 Former barracks (now Frobisher Court)**
1814-6. Listed Grade II. Red brick, slate roof, stone string course. Three by seven by three bays. Altered in recent years during conversion to Frobisher Court, including addition of new buildings to rear in similar style. Appearance compromised by raised road in front.
- 15 Former Depot Office (now Marchwood Yacht Club premises)**
1814-6, altered ?1854-6 by addition of verandah carried on cast iron columns. Listed Grade II. Red brick (many stamped with pheon badge of Board of Ordnance), slate roof. Square foundation stone at floor level inscribed G III R 1814. Between this and the Guard House stand the gate piers to the Storekeeper's residence, their stone caps inscribed ORDNANCE HOUSE.
- 16 Former Guard House (now Marchwood Yacht Club premises)**
1814-16, altered ?1854-6 in similar manner to No. 14 above.

ILLUSTRATIONS

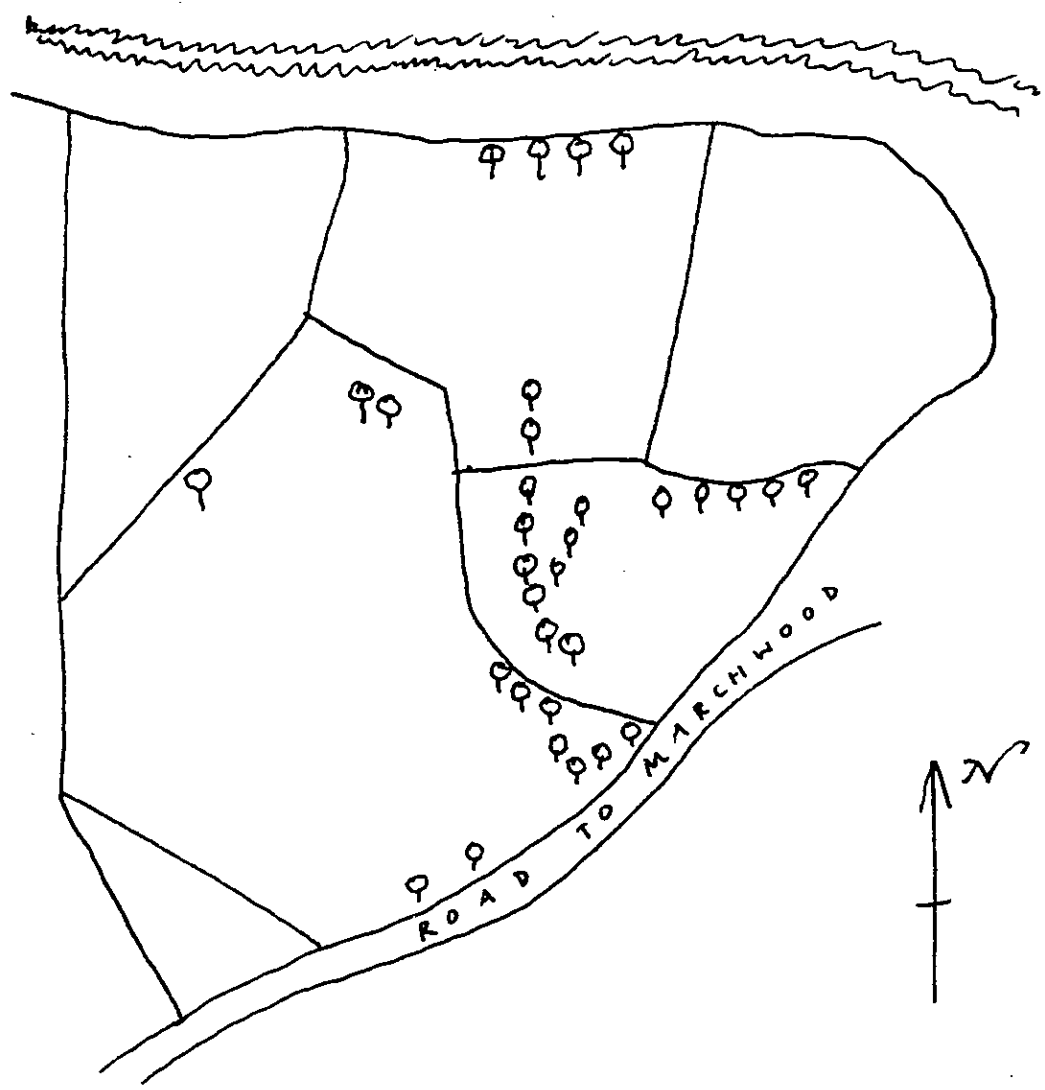
- 1 **Sketch copy of initial plan for Marchwood site, 1812** (from PRO, MPH 273/1, *A General Plan of the Depot for 20,000 Barrels of Gunpowder... as called for by the Inspector General of Fortifications 7th August 1812*)
- 2 **Sketch copy of plan of Marchwood site at time of purchase, 1813** (from PRO, WO 44/243, *Plan of the Ordnance Land at Marchwood purchased of Sir Charles Mills Bart. by Capt. Hassard RE, 19th January 1813*)
- 3 **Plan of Magazines as built, 1815** (from PRO, MPH 534/1, *Sketch of the Powder Magazines etc. at Marchwood Drawn to accompany Major Hassard's letter to Lt. Genl. Mann, dated the 28th February 1815*)
- 4 **Marchwood Magazine site: extract from 1st Ed. Ordnance Survey 25" map (Hampshire, sheet LXV.9), 1869 (enlarged)**
- 5 **Plan of Marchwood Magazine site, 1871** (from PRO, WO 78/2751 (4), *Marchwood Magazine Establishment*, drawn by Corpl Dods, RE 31 March 1871)
- 6 **Marchwood Magazines: plans and sections, 1871** (from PRO, WO 78/2751 (7), *Marchwood Magazine Establishment*)
- 7 **Marchwood: photograph of Barracks, Office, etc. to north-east, 1871** (from PRO, WO 78/2751 (13).
- 8 **Marchwood: photograph of A Magazine to north, 1871** (from PRO, WO 78/2751 (15))
- 9 **Marchwood: photograph of Cooperage and Rolling Stage to south-east, 1871** (from PRO, WO 78/2751 (16))
- 10 **Marchwood Magazine site: extract from Ordnance Survey 1:2500 map (Hampshire, sheet LXXII N.W.), 1910**
- 11 **Marchwood: 1947 aerial photograph, from north-east** (Hampshire County Council)
- 12 **Marchwood: 1972 record photographs** (English Heritage)
- 13 **Marchwood: 1997 photographs**
- 14 **Marchwood: phased sketch plan of site**



Rough sketch copy of:

'A general Plan of the Depot for 20,000 barrels of Gunpowder' Proposed to be built at MARCHWOOD on the Shore of Southampton Water... as called for by the Inspector General of Fortifications dated the 7th August 1812'. (PRO, MPH 273/1)

- | | |
|--------------------------------|---|
| A - Magazines | H - Storekeeper's + clerk's House |
| B - Traverses | I - Foreman + Labourers' dwellings |
| C - shifting Houses | K - Barrack for 2 officers + 50 men |
| D - Cooperages | L - NCO's Quarters, Offices to barracks |
| E - Stage + rolling way | M - Coal shed |
| F - Guard House + Engine House | |
| G - Office, Watch House | |



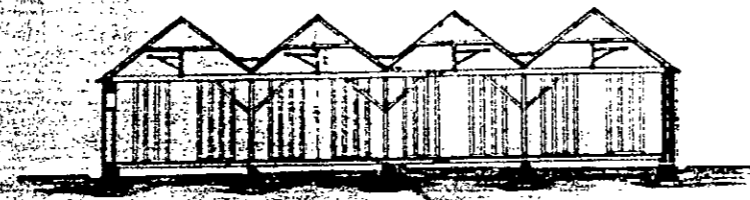
MARCHWOOD: plan of Depot Site at time of purchase, 1813

(from PRO, WO 44/243, "Plan of the Ordnance Land at Marchwood purchased of Sir Charles Mills Bart" by Capt. Hassard, RE 19th Jan. 1813)

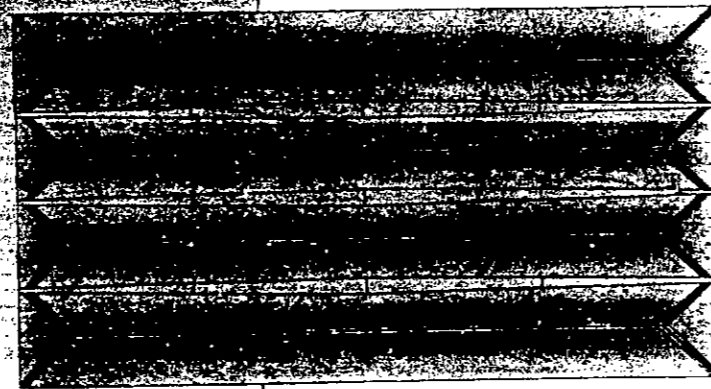
~ rough sketch copy. adapted.

MARCHWOOD MAGAZINE ESTABLISH

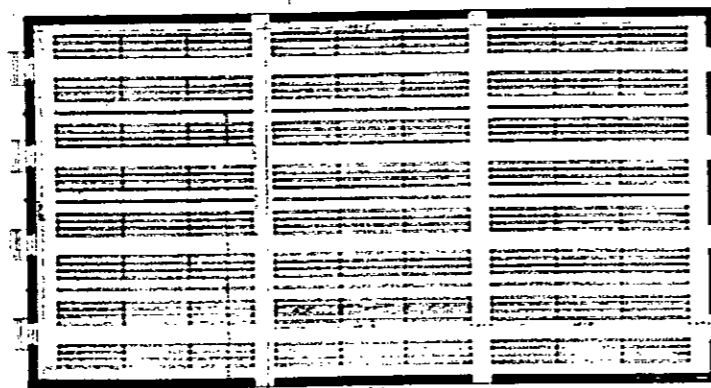
MAGAZINES. B. C. F.



SECTION ON LINE AB

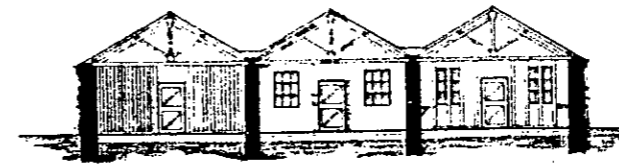


ROOF PLAN

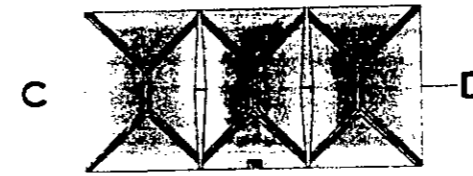


GROUND PLAN

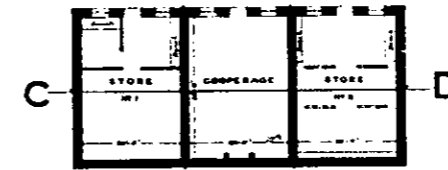
COOPERAGE & STORES



SECTION ON LINE CD

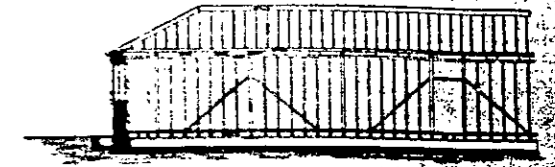


ROOF PLAN

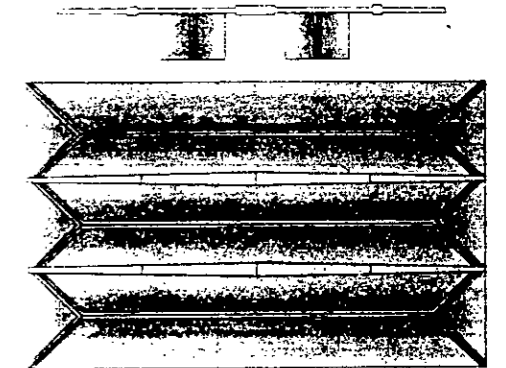


GROUND PLAN

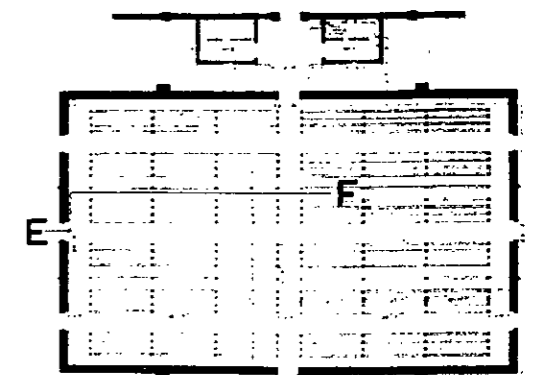
MAGAZINES. A. D. G.



SECTION ON LINE EF

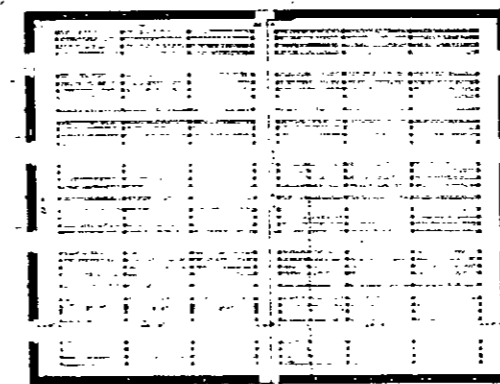


ROOF PLAN



GROUND PLAN

MAGAZINE. E.

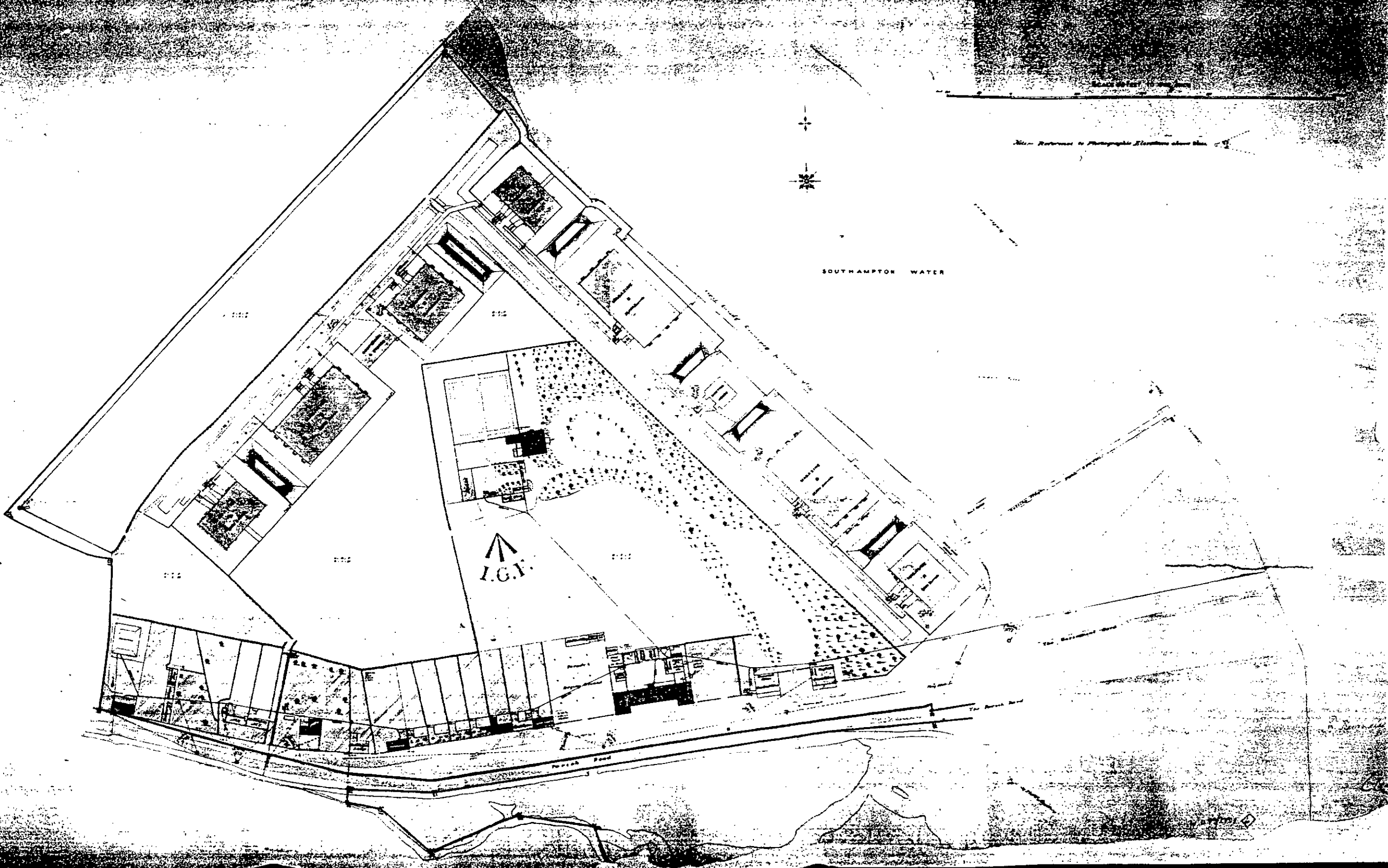


GROUND PLAN

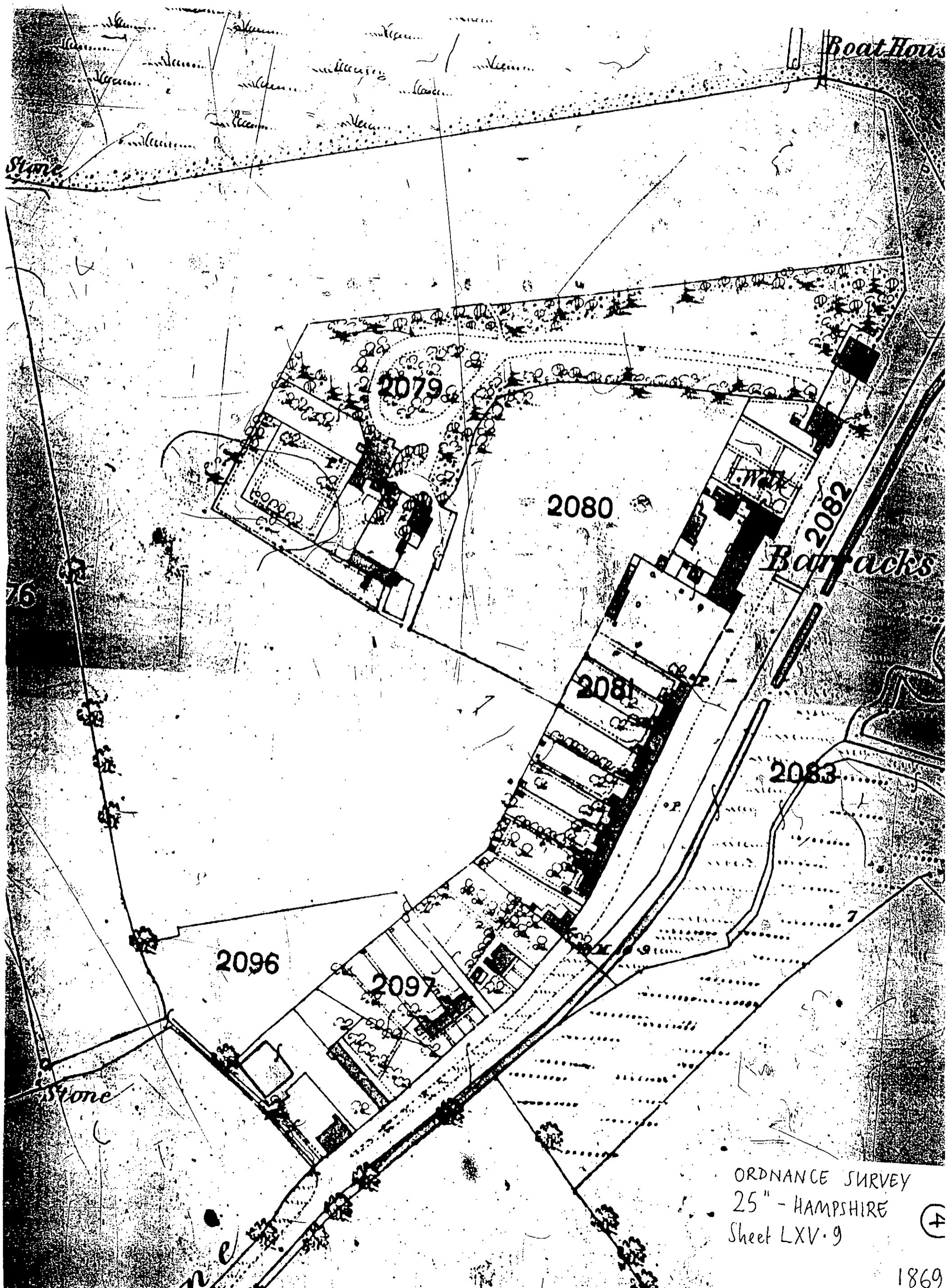
*Drawn by W. H. Gode & Co. for
Wm. H. Gode
27 March 1877*

SCALE FOR PLANS IS FEET TO ONE INCH
FEET ————— FEET

SCALE FOR SECTIONS IS FEET TO ONE INCH
FEET ————— FEET



WO 78/2751 (2)



Boat Houses

Stone

2079

2080

Barracks

2082

2081

2083

2096

2097

Stone

ORDNANCE SURVEY
25" - HAMPSHIRE
Sheet LXV.9

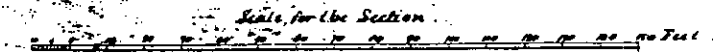
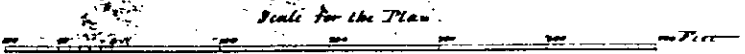
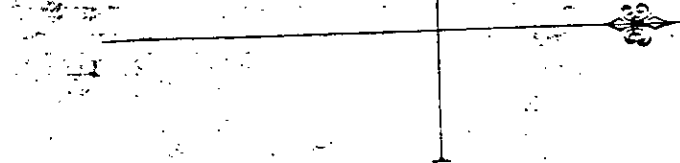
4

1869

Sketch of the
POWDER MAGAZINES &c
AT MARCEWOOD.

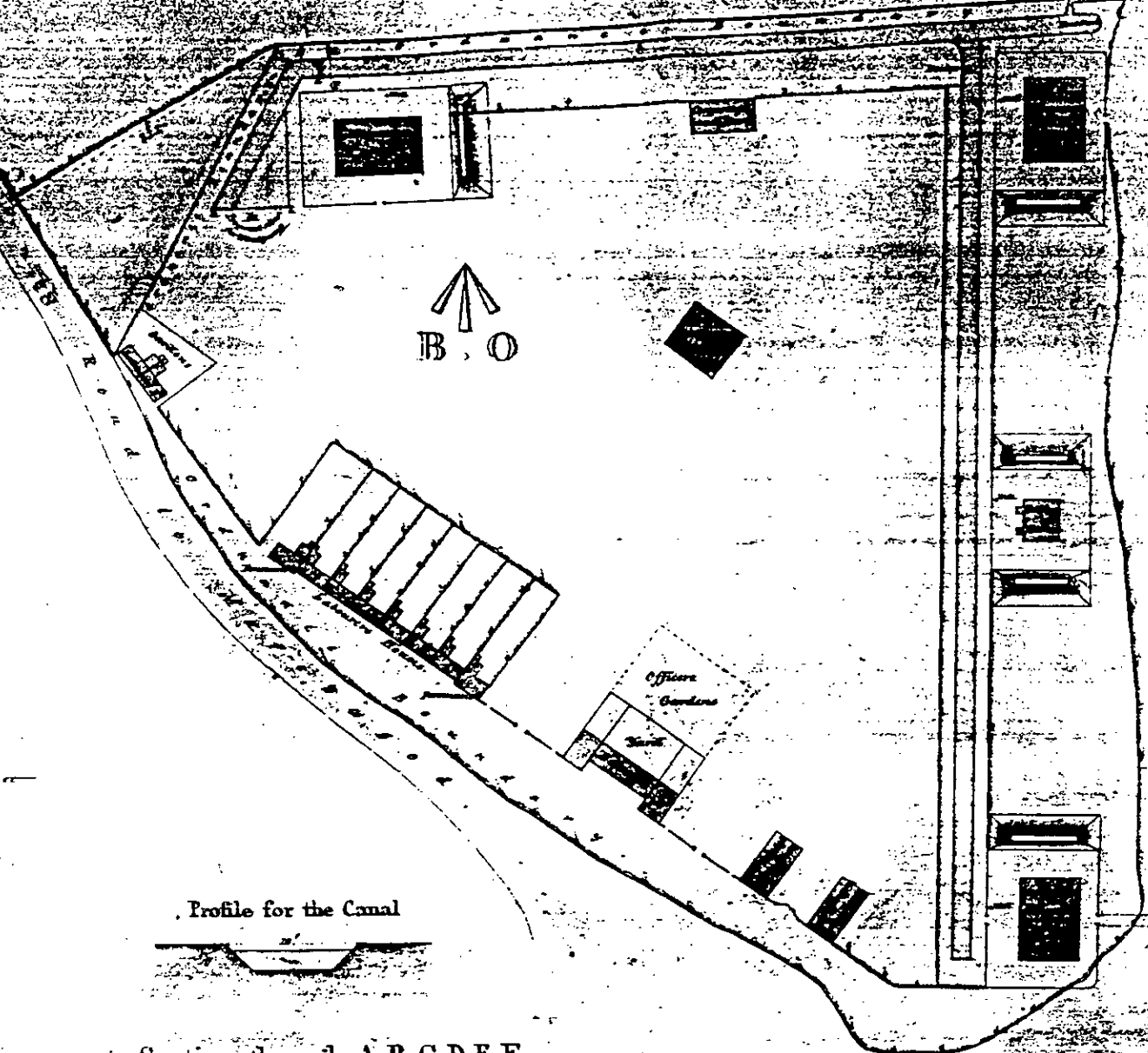
Drawn & accompanied by Major H. ...
20th February 1815

This Point (B) is on the same Level with the water in the Canal when full.



Profile for the Canal

Section through A, B, C, D, E, F.



1910
O.S. 1:2500 Map

10



Union By.
Co. Boro. By.
o. Div. & Union By.
R I V E R

Slowhill Cottage

CorE's Farm

Coastguard Station

Byam's House

Tomlin's Farm

Marchwood

MARCHWOOD

Acres 1885 596

St. John's Church

Marchwood Green Farm

Adam's Copse

Highlands Copse

Pumpfield Farm

The Plantation

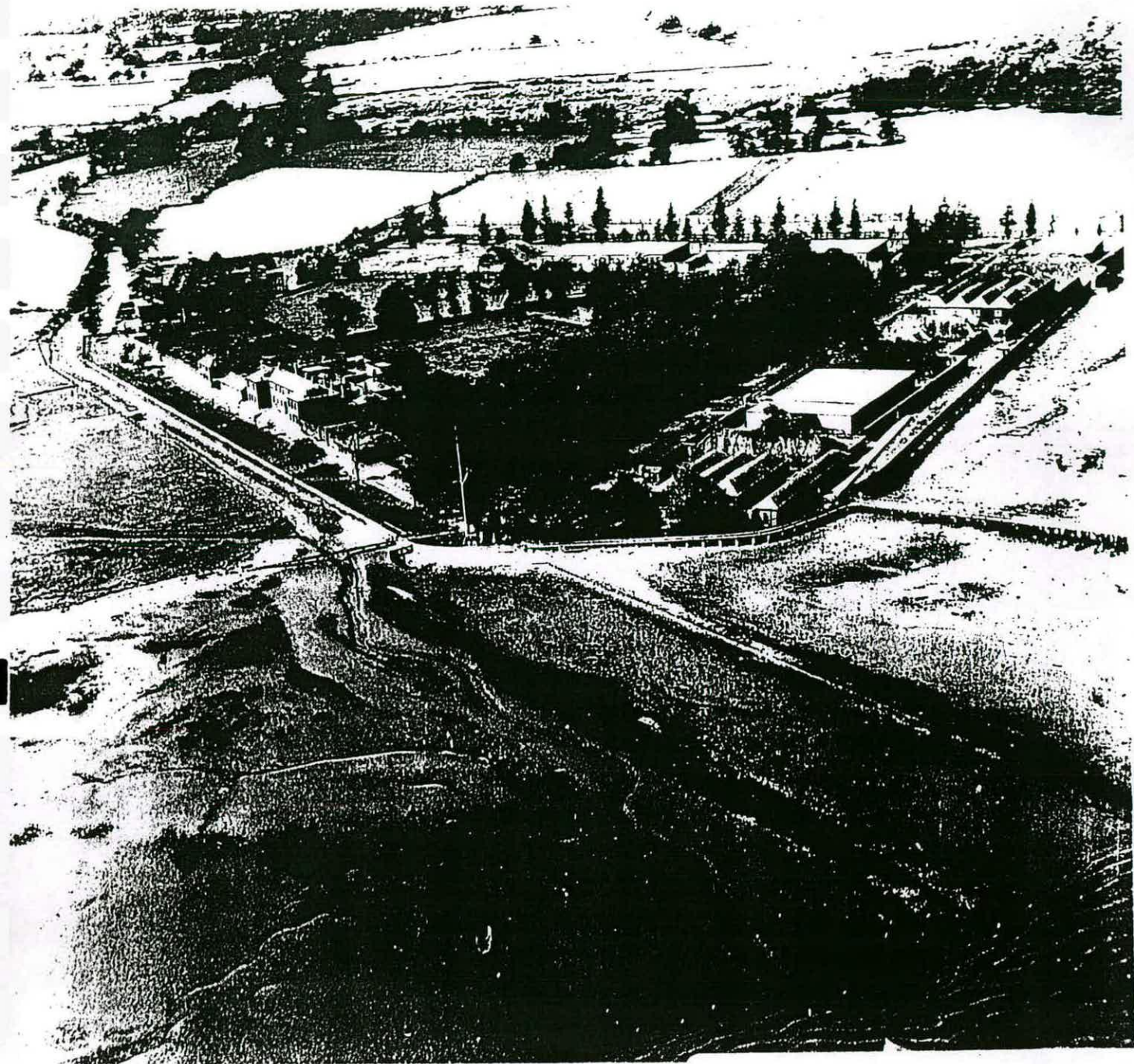
Warwick's Copse

Hannigod's Copse

Horseclose Copse

Weal's Farm

Round Copse



MARCHWOOD ROYAL NAVAL
AMMUNITION DEPOT
1947 aerial photo, from N.W
(Hants C.C.)



12a. Marchwood: Former barracks to North. 1972



12b. Marchwood: former office and guardhouse, to the north. 1972



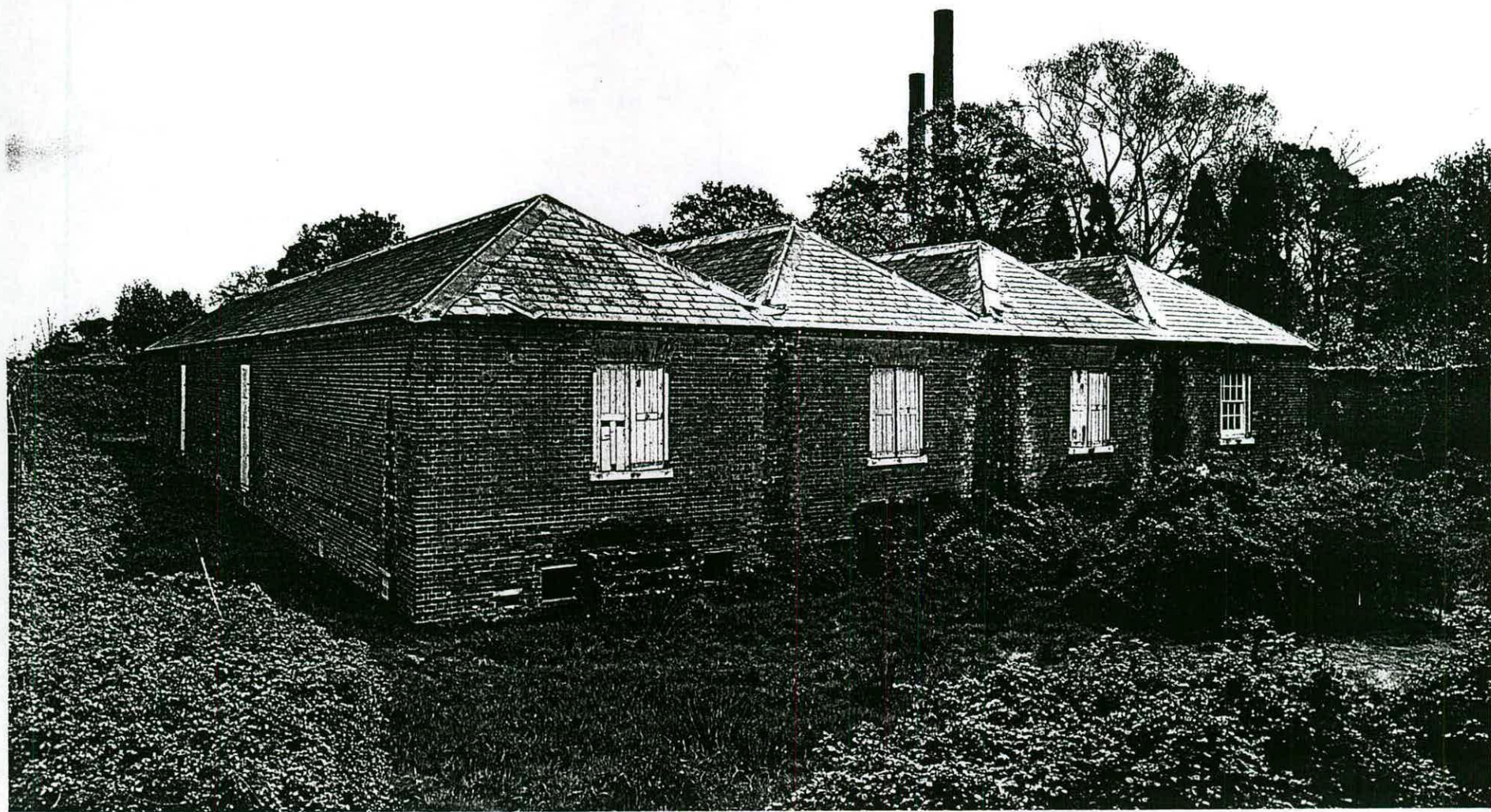
12c. Marchwood: former receiving room, to east. 1972



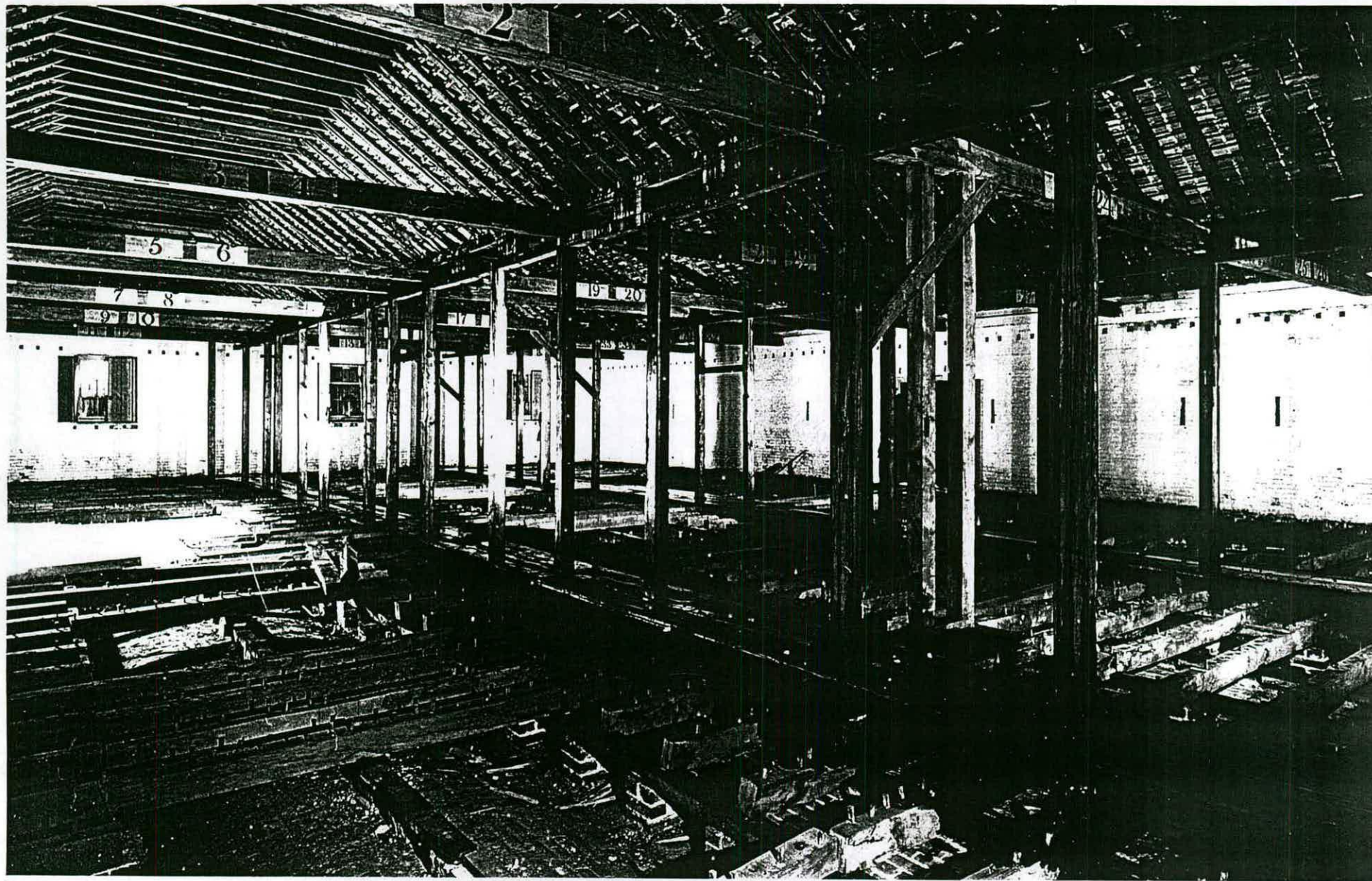
12d. Marchwood: A Magazine, to north-west. 1972



12e. Marchwood: former shifting house, to north-east. 1972



12f. Marchwood: C Magazine, to east. 1972



12g. Marchwood: C Magazine, interior. 1972



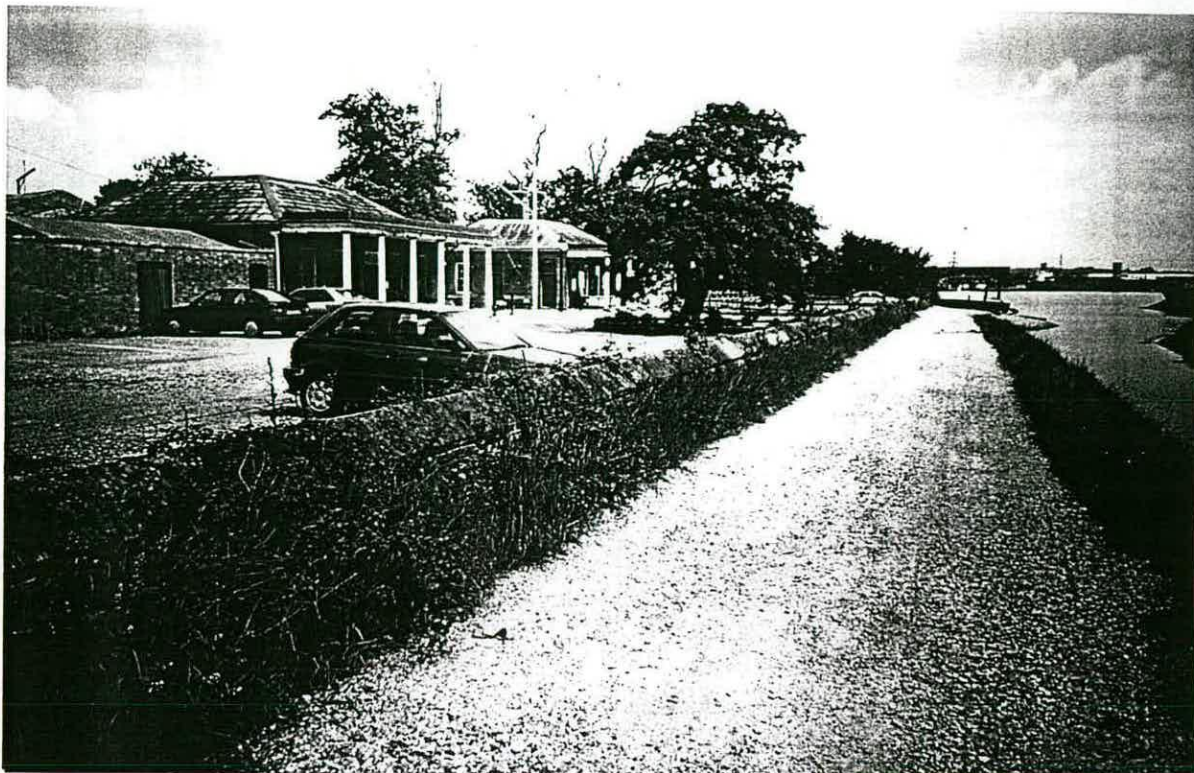
12h. Marchwood: Ordnance House, to north-west. 1972



Marchwood: former entrance and general view to north



Former Barracks, to north



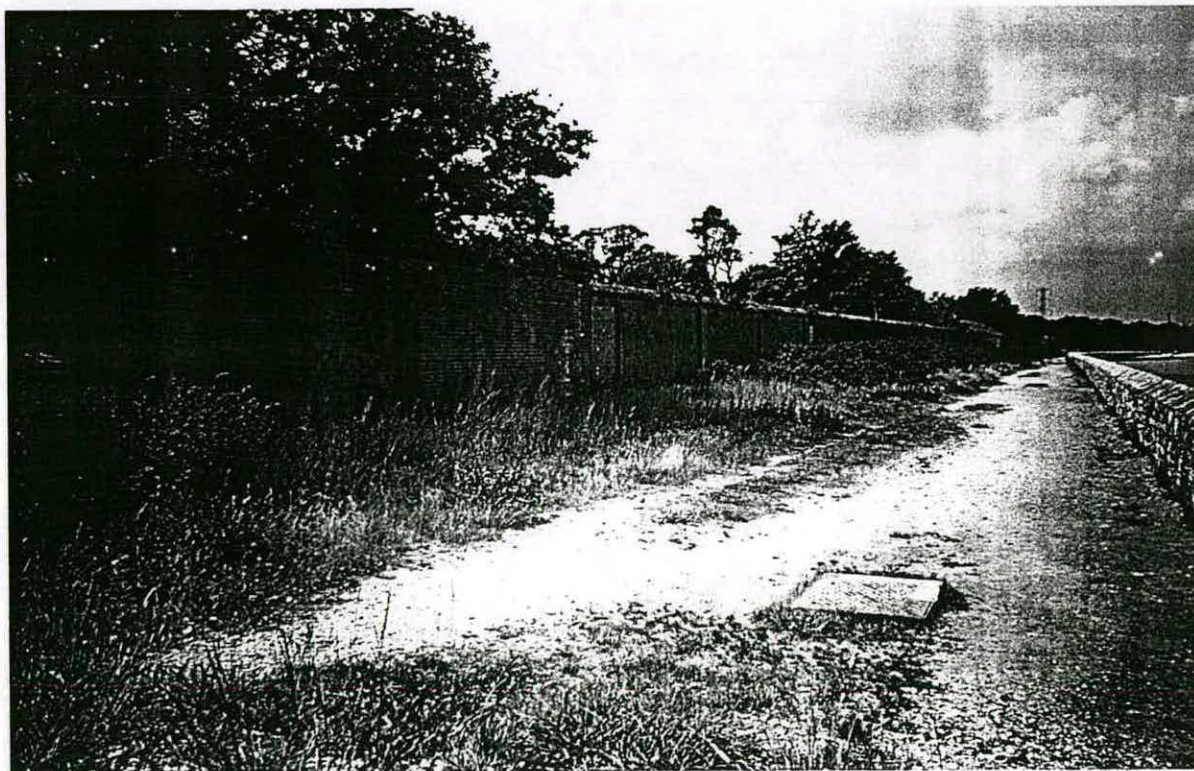
Marchwood: sea wall, former office and guard room to north



Former guard room, to north-west



Marchwood: sea wall at eastern extremity of site



North perimeter wall, to west



Marchwood: receiving rooms, inner side, to west



Gate piers to A Magazine, to north



Marchwood: C Magazine to north-west



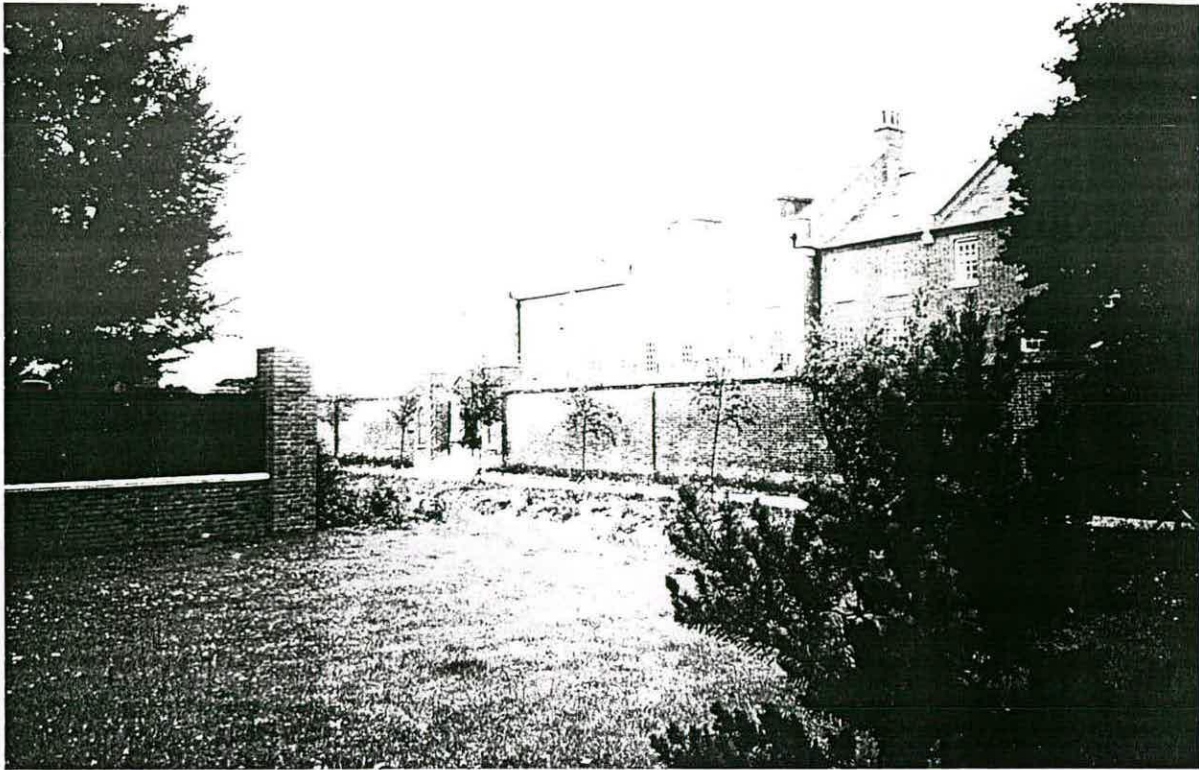
C Magazine to east



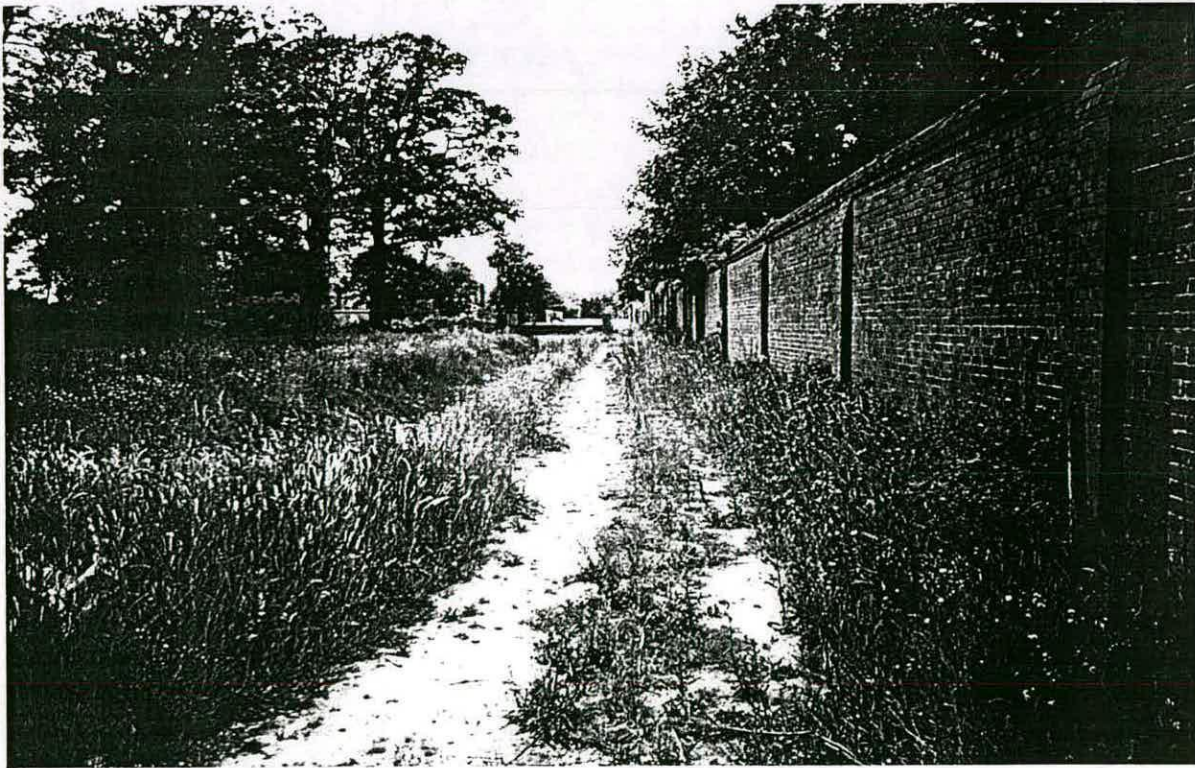
Marchwood: C Magazine, interior showing remains of barrel racks



C Magazine: interior to east, showing numbered trusses



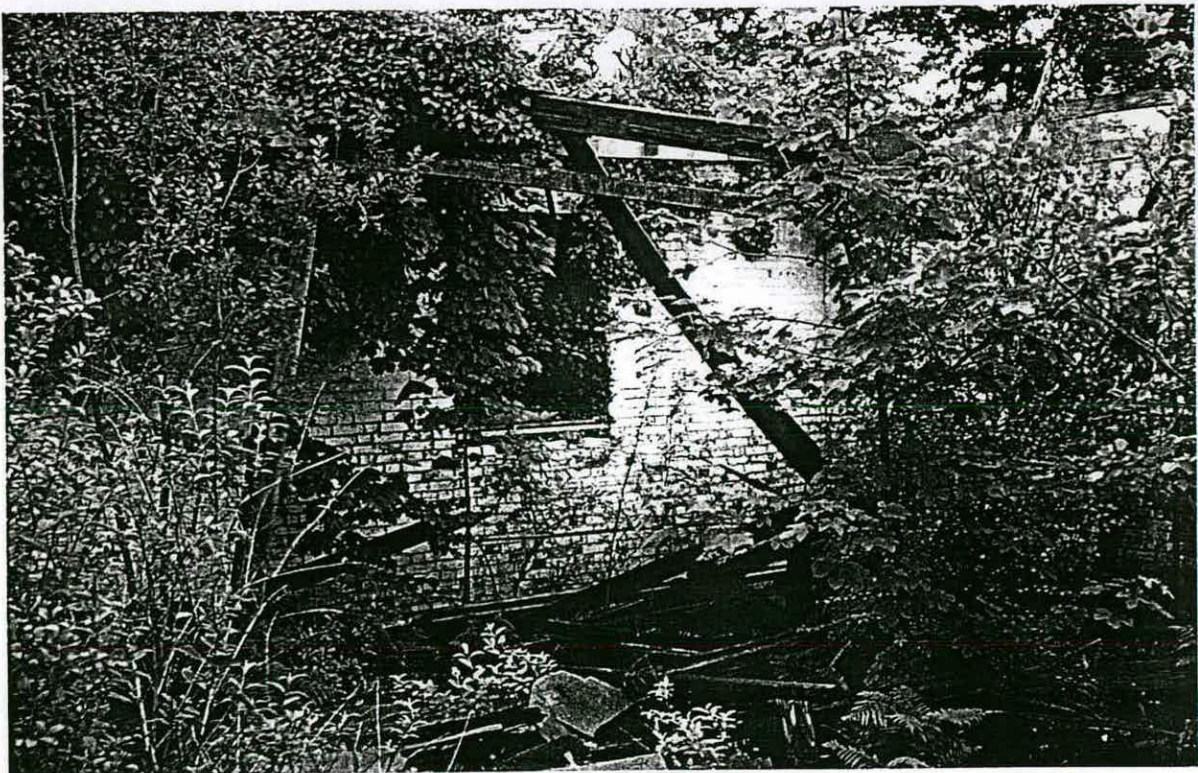
Marchwood: site of former D Magazine (now Hawkins Court), to north-west



Former canal and southern perimeter walls to Magazines, to west



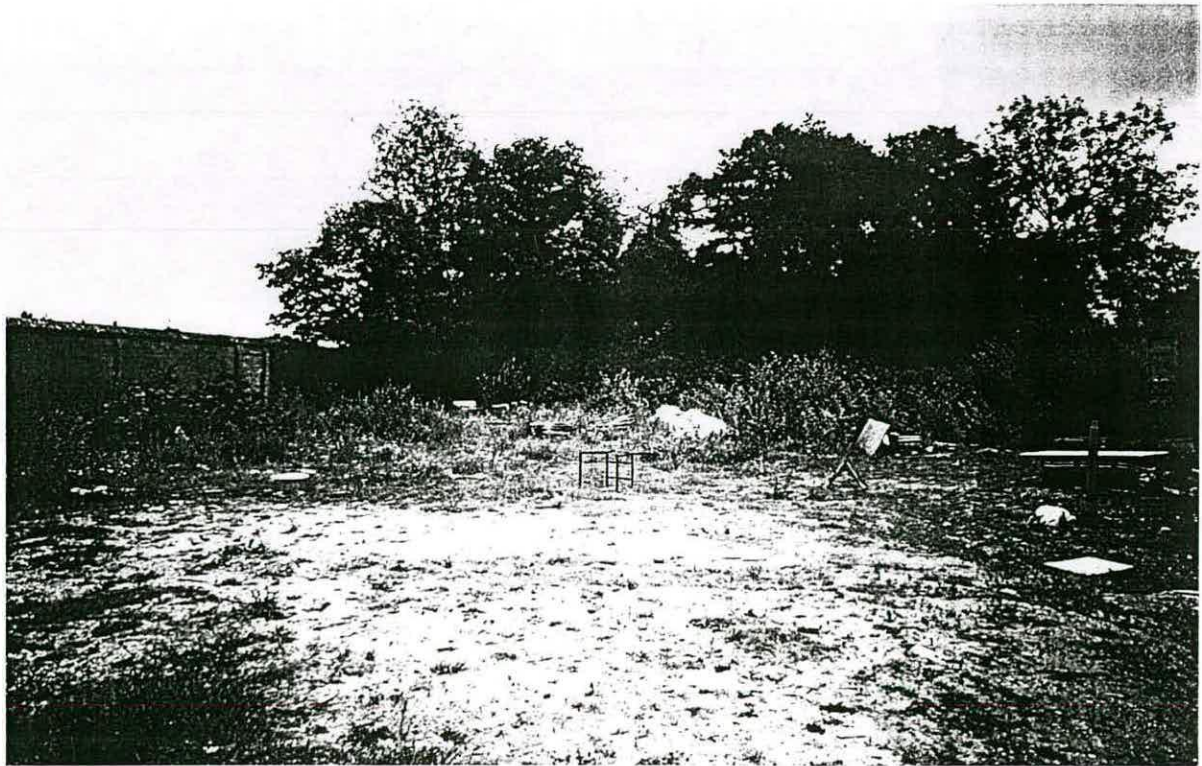
Marchwood: A Magazine, opening to ventilated wall, south side



A Magazine, interior to south-east



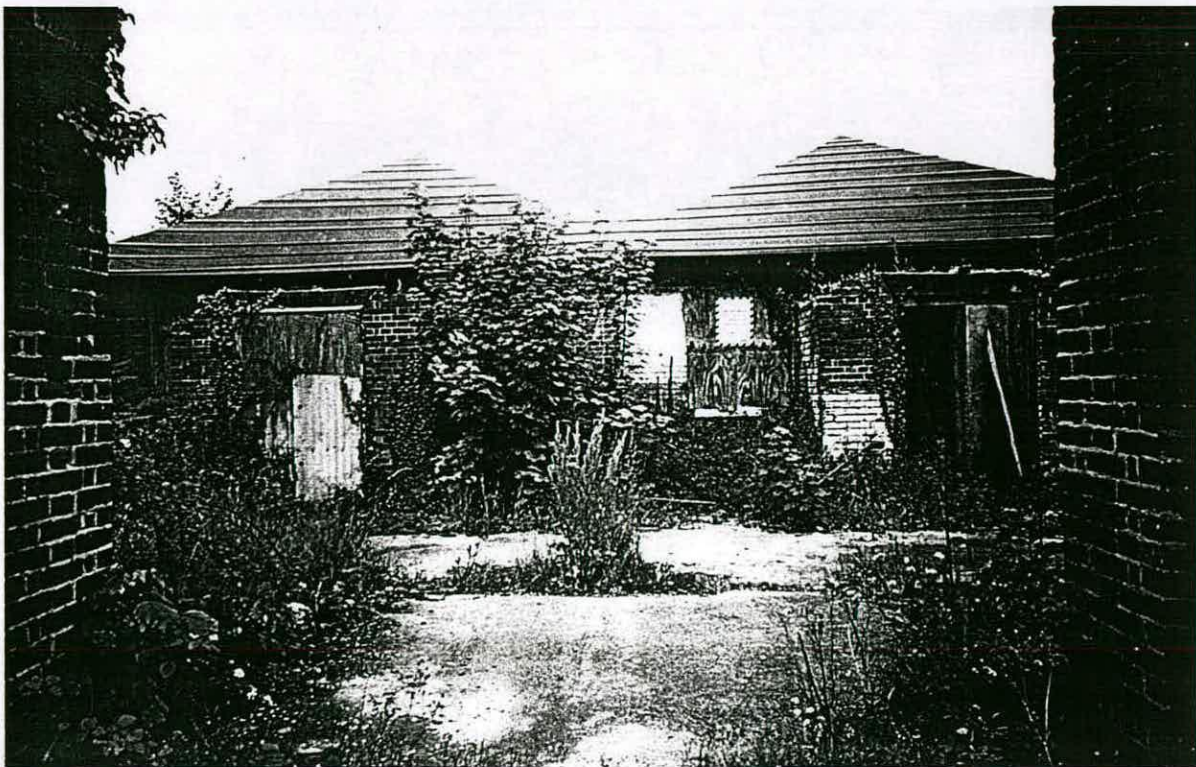
Marchwood: entrance to former B Magazine, to north



Site of B Magazine to east, showing traverse to blast wall of A Magazine



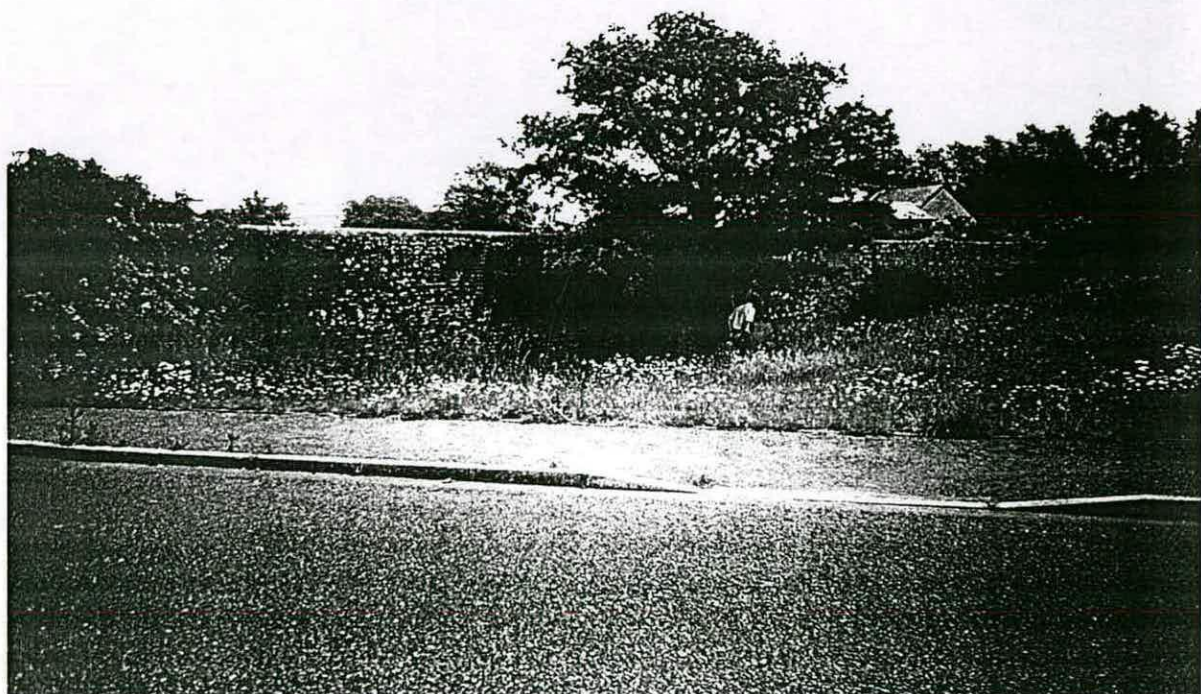
Marchwood: interior of former shifting house, to south



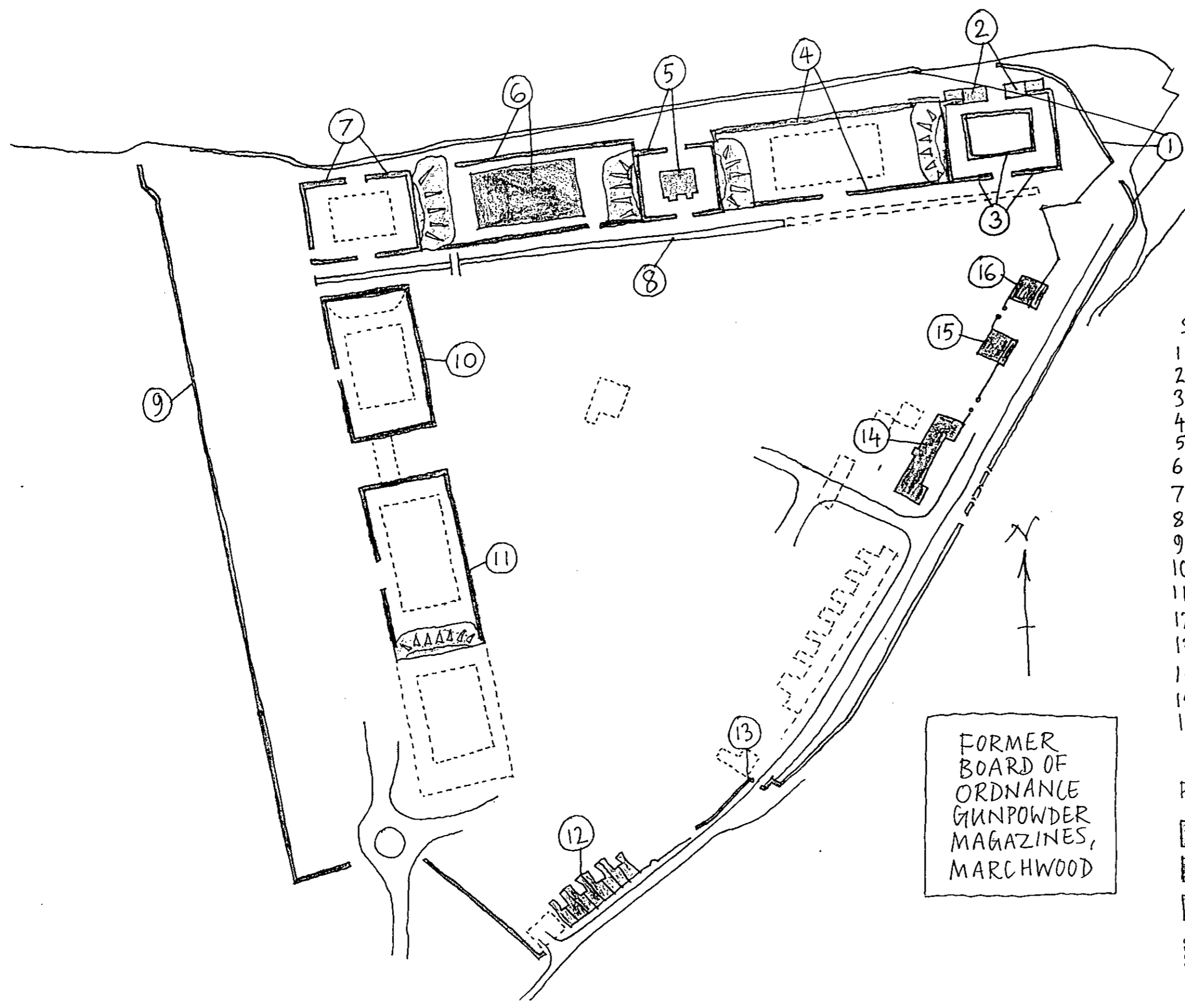
Former shifting house, to north



Marchwood: outer walls of former E Magazine (along Quayside Walk), to north



Southern perimeter wall (off Ordnance Way), to north-east







FORMER
BOARD OF
ORDNANCE
GUNPOWDER
MAGAZINES,
MARCHWOOD

SCHEDULE OF STRUCTURES

- 1 - Sea Wall
- 2 - Receiving Rooms - grade II
- 3 - A Magazine + walls - grade II
- 4 - Walls to B Magazine
- 5 - Shifting House and walls - grade II
- 6 - C Magazine + walls - grade II
- 7 - Walls to D Magazine
- 8 - Former Canal
- 9 - West Perimeter Wall
- 10 - Walls to E Magazine
- 11 - Walls to F Magazine
- 12 - Former Labourers' Cottages
- 13 - Gate Piers, Wall + railings
- 14 - Former Barracks - grade II
- 15 - Former Depot Office - grade II
- 16 - Former Guard House - grade II

PHASES OF STRUCTURES

-  1814-16
-  1854-57
-  1891
-  DEMOLISHED STRUCTURES

SU 30 NE

MARCHWOOD

8/4

Staplewood Farmhouse

GV

II

House. C16 with C20 extension. Exposed timber-frame with brick infill and other walling. Thatch roof, hipped and brought to a lower eaves at each end, eyebrow dormers. Lobby entrance form, of three bays with outshots, and rear extension in matching style; west front elevation of one storey and attic, three above five windows. Casements. Boarded door.

SU 31 SE

MARCHWOOD

MAGAZINE LANE

5/32

Former Police Barracks
at Royal Naval Armaments
Depot

20.9.84

GV

II

Military Police Section House, formerly barracks flanked by Officers' quarters. Circa 1814. Walls of red brick on Portland stone plinth; rendered to left flank. Roof covering of grey slate laid to diminishing courses; brick chimneys. Two storeys with attic lit by roof dormers. Main block of 7 bays (original barracks) flanked by returns of 3 bays (original Officers' quarters) with roof hipped to front and stair string courses of first floor level. Main block entered by central doors (2 x 6 panel), flanked by fluted pilasters and surmounted by fanlight all in recessed panel. Sash windows (2 x 6 pane) under cambered gauged brick arches, Portland stone cills. Two windows replaced by pair of smaller sashes under segmental arches, and one blocked in C20. Flanking blocks entered from side. Main roof has two chimneys and two ventilators, symmetrically placed; returns have dormers facing inwards. The interior of the right hand block retains its original stair with stick balusters and column newels, also much internal joinery and some original fireplaces. A contemporary boundary wall extends from the right of the building in the line of the front elevation.

SU 31 SE

MARCHWOOD

MAGAZINE LANE

5/33

Entrance Lodge and gates
at Royal Naval Armaments
Depot

21.5.85

GV

II

Entrance lodges and gates. Dated 1814. Red brick walls, roofs of grey slate laid to diminishing courses, except to porticos which are felted. Twin rectangular buildings flanking a forecourt, the west side closed by a brick wall with central entrance gates. Each lodge has two sash windows (glazing bars) flanking a central door with toplight. All openings have flat arches. To the front of each lodge a portico supported on 6 cast iron columns. The main roof above hipped to front and rear, with central brick chimney stack. West forecourt wall of red brick terminating in square piers with sunk panels and surmounted by urns. Plain iron gates between, with spiked terminals, formerly opening onto the drive to the Ordnance House.

SU 31 SE

MARCHWOOD

MAGAZINE LANE

5/34

Former magazine at
Royal Naval Armaments
Depot, 100m north of
Entrance Lodge.

21.5.85

GV

II

Magazine, now derelict. Circa 1814. Red brick walls, roofs of grey slate laid to diminishing courses; cambered gauged brick arches to openings. Rectangular plan, divided into 3 bays by timber posts supporting valleys of pitched roofs, hipped at ends, over each bay; now partly collapsed. Doors in long sides, 3 sash windows to end walls. Surrounded by contemporary brick blast walls, with gates to N and S, the former now opening into the receiving room (qv). The gateways are flanked by square piers each having a round-headed recessed panel surmounted by a slightly-projecting square panel.

SU 31 SE

MARCHWOOD

MAGAZINE LANE

5/35

Former receiving room
at Royal Naval Armaments
Depot 130m north of
Entrance Lodge

21.5.85

GV

II

Receiving room, now derelict. Early C19. Red brick walls, cambered arches to openings, slated roof. Rectangular building, added to centre of N blast wall around magazine 9/11 (qv); and later extended to E and W. Central doors facing former pier (to N) and Magazine (to S). S elevation has 4 sashes to either side of central doorway, which is gateway through blast wall around magazine. Roof hipped to ends.

SU 31 SE

MARCHWOOD

MAGAZINE LANE

5/36

Former examining rooms
at Royal Naval Armaments
130m west-north-west of
Entrance Lodge.

21.5.85

GV

II

Examining rooms, now derelict. Circa 1814. Red brick walls, roofs of grey slate laid to diminishing courses; camber gauged brick arches to openings. Two large rooms, each with separate roof hipped to front and rear entered via gabled porches with six panelled doors, flanked by 2 x 6 pane sash windows. Surrounded by brick blast walls, with gates to front and (blocked) to rear, flanked by square piers each with a round-headed recessed panel surmounted by a slightly projecting square panel. Originally used for charge-making.

