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ENGLAND

ROYAL ORDNANCE DEPOT
Weedon Bee
Northamptonshire

NBR No: 97080
NGR: SP 625 595 (centred)
Listed: Grade II*

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SUMMARY

The Royal Ordnance Depot at Weedon Bee, Northamptonshire, was authorised by Act of Parliament in 1803 and constructed between 1804 and 1814 during the Napoleonic War. It was built for the Board of Ordnance, to provide a secure inland store for gunpowder, firearms and other military stores, which could be transported by water (a vital safety consideration for gunpowder) via the Grand Junction Canal and the wider network of navigable waterways. The original buildings, including storehouses, magazines, lodges, barracks accommodation, and houses for the Board's officials, were well-proportioned and built on a generous scale.

Throughout its life the Depot was subject to cycles of high defence spending in wartime, or under threat of war, and low spending in times of apparent security. It was also subject to repeated changes in policy and organisation. Six of the eight original storehouses were converted in the 1840s - four to provide an additional barracks, and two for a military prison and associated accommodation. Other buildings which were provided to serve the Lower Barracks (to distinguish it from the original, or Upper, Barracks) have been demolished. From the Crimean War (1854-6) onwards additional storage capacity began to be provided, commencing with a large new powder magazine. Developments in the last quarter of the 19th century and the first two decades of the 20th consolidated Weedon's position as a major Depot, with rail communication and hydraulic handling facilities supplementing the canal, and a series of large new storehouses. Those built between the 1870s and the First World War were substantial structures, most of which remain, but wartime construction was more rudimentary and has mostly been swept away. Thereafter most alterations were connected with infrastructure, although a few new buildings were erected during the Second World War. The Depot was disposed of by the Ministry of Defence in 1965, and after a period as a Home Office store was sold off in 1984.

From the first phase of construction at Weedon, the storehouses and lodges, the powder magazines and their associated traverses, and the perimeter walls enclosing them, have all survived, as has the Ordnance Canal which served them. While the Barracks and the associated houses have been lost, the functional areas of the site - the Storehouse Enclosure and the Magazine Compound - have retained much of their integrity. Away from the nation's coasts there are few more impressive reminders than Weedon of the scale of military planning which was undertaken under the threat of Napoleonic invasion, and the extent of survival at Weedon contrasts starkly with other contemporary Ordnance Stores, such as those at Marchwood (Hampshire), Purfleet (Essex) and Great Yarmouth (Norfolk).

INTRODUCTION

The following report is based on fieldwork and documentary research carried out, for the most part in 1997, by staff of the Royal Commission on the Historical Monuments of England (RCHME) at the request of Northamptonshire Heritage, and has benefited from additional documentary research undertaken by members of the Weedon Bec Historical Society. It supersedes an Interim Report issued in September 1998. Since 1 April 1999 RCHME has been merged with English Heritage.

All of the surviving buildings at the Royal Ordnance Depot were examined, though continuing use (at varying levels of intensity) meant that internal observation was ruled out or restricted in some buildings. The present report covers all the buildings still standing within the complex in 1997, together with briefer mentions of the principal buildings demolished by that date.

Many of the buildings have been used for a variety of purposes, and have been known by a variety of names, since construction. In order to avoid confusion and to assist comparison with existing materials referring to the site, all buildings are referenced below using the numbering system which was adopted in the last period of military use, and are described as far as possible in numerical order. Reference should be made to the key map produced by Northamptonshire Archaeology (at end of report). The building numbers are expressed below either in the form 'Building 75', or, where there is a name in common use, as figures in brackets after the name. Preference is normally given to original or early names. References to certain key sources are employed as follows: Ordnance Survey 1:2,500 maps (Northamptonshire Sheet XLIII.12, various editions) are referred to in the text by date of survey or revision (not date of publication); drawings in the Royal Engineers Library (REL), Brompton Barracks, Chatham, are referred to in endnotes both by the current index number and by the former classification prefixed 'W'. Documents in the Public Record Office, Kew, are given their full reference in endnotes.

OUTLINE CHRONOLOGY

Historical events		Events at Weedon Bec
French Revolution	1789	
War with France	1793	
Grand Junction Canal authorised		
Grand Junction Canal opened, linking London with Birmingham and the Midlands	1800	
Peace of Amiens	1802	
War with France resumes	1803	Act of Parliament to establish Depot at Weedon
	1804	Work Starts on Weedon Storehouses
Battle of Trafalgar	1805	
	1806	Storehouses 1-4 completed
	1807	Magazines & Storehouses 5-8 started
	1811	8 Storehouses and 4 Magazines in use
Battle of Vittoria	1813	Canal extended to Magazine Enclosure
France sues for peace	1814	
Napoleon's '100 Days'; Battle of Waterloo	1815	
Army rapidly disbanded	1816	
	1821	Board of Ordnance Return
Army used against radicals; widespread civil unrest	1831	Board of Ordnance Return Bastions and walls loopholed
Great Reform Act	1832	William IV refers to refuge at Weedon
Commission into Military Punishment	1837	
	1845	Discussions on Weedon's future as a 'Grand Depot'; Prison opened in Storehouses 5 & 7
	1847	Lower Barracks first mentioned (Storehouses 2, 4, 6 & 8 converted for Barracks use)
Chartist Rally in Trafalgar Square and widespread revolutionary activity in Europe; first rise in Army Establishment since 1815	1848	

	1851	Canal Basin ordered to be cleared of mud
Crimean War	1854	
Board of Ordnance dissolved	1855	
Indian Mutiny	1857	Magazine E (29) started?
	1858	Renamed General Store and Clothing Depot
Report of the Royal Commission on the Defences of the United Kingdom	1860	Wheeling Platforms at Magazines built
	1861	Census shows Prison still in use
Period of increased expenditure on defence; 'Palmerston Forts'; Colchester and Camberley Barracks built		
	1865	Magazines become 'Great Reserve Depot'
Cardwell Reforms of the Army	1871	Census shows no prisoners at Weedon
Martini-Henry Rifle introduced	1874	Plan of Storehouse 5 made
Zulu War	1879	Wagon Shed (15) built
	1880	Plans of Storehouses 1, 11, 12 & 13 made
End of Army reorganisation; Army Stores pass from civilian to military administration	1881	
Khartoum falls to Mardi	1885	Renamed 'Small-Arms Depot'
		Ordnance Office built
		Hydraulic power installed
		Boiler House built
Sudan War	1887	
	1889	Storehouse 2 rebuilt
		Wagon Shed (15) rebuilt
Gunpowder replaced by cordite	1891	
Battle of Omdurman	1898	
Boer War starts	1899	
Boer War ends	1902	Clothing Store (17) finished
	1903	New Boiler House (77) in existence
	1904	Building 14 completed
Haldane Reform of Army	1905	
	1906	Receipt and Issue Store (15) extended

	1906	Scherzer Rolling Bridge built
First World War starts	1914	
'New' Volunteer Army recruited	1915	Canal Basin at magazines backfilled
Battle of the Somme	1916	Marne and Somme Storehouses built
Armistice declared	1918	
Treaty of Versailles	1919	
Conscription ends	1920	
Drastic cuts in defence spending	1921	Clothing Store closed
Army withdraws from Ireland	1922	
	1925	Machine guns moved from Woolwich; Army Equitation School Established
Army employed on colonial policing duties		
	1930	Central Ordnance Depot for small arms, machine guns and bicycles
Oxford Union Debate on pacifism	1933	
	1934	Plan of site labels magazines as RAOD storehouses
Germany re-occupies the Rhineland	1935	
Re-armament starts	1936	
Munich Crisis	1938	Storehouse roofs rebuilt Storehouse 7 rebuilt Concrete roadways laid
Second Worid War starts	1939	Railway Loading Platform built
Battle of Britain	1940	Magazines used for AA ammunition; Machine-gun mounts added to Bastions
Germany attacks Soviet Union Lend-lease arrangement starts	1941	Building 42 constructed; lifts installed in Storehouses
US Troops arrive in UK	1942	Magazines re-used as Storehouses
D-Day landings	1944	
VE and VJ Days	1945	Ordnance Sub-Depot to COD Bicester
Malayan Emergency starts	1949	Returned Stores Depot
Korean War starts	1950	
Cyprus Emergency starts	1955	No. 1 Store re-roofed

Lee-Enfield rifle withdrawn	1957	Bulk Holding Depot/Technical Stores Depot
End of National Service	1960	
	1965	Royal Ordnance Depot closed
		Home Office Supply and Transport Store
	1984	Home Office disposes of site

HISTORICAL CONTEXT

From the 15th century until its abolition in May 1855, at the height of the Crimean War, the Board of Ordnance had been responsible for supplying the Army and Navy with armaments and munitions, and for holding stocks in reserve.[1] Gunpowder was manufactured by private concerns, supplemented from 1760 by the Board's own works at Faversham, Kent, and from 1788 by their works at Waltham Abbey, Essex. Most of the larger gunpowder stores were associated with the Royal Dockyards, but there were numerous smaller stores throughout the provinces.[2] The estuarine location of the major stores (on the Thames and Medway, on Plymouth Sound, Southampton Water, Portsmouth Harbour and Milford Haven) was necessary for supplying the Navy, and these sites were heavily defended. Despite the strength of the Royal Navy, war with France in the 1790s had exposed the vulnerability of the nation's defences, and there remained a risk that major reserves might be subject to bombardment or blockade if the balance of naval power shifted. The site at Weedon Bee was attractive because of its central inland location, out of reach of enemy action, and newly linked by waterways with the metropolis, with gunpowder works in the South-East, and with the major manufacturing areas of the Midlands. Contemporary strategists identified the major invasion threats being against the south coast or East Anglia, London being the prime objective in either case. Weedon Bee would thus be well placed to supply a counter-offensive. Land was acquired from Eton College in 1802 and the Act of Parliament authorising the expenditure on the Royal Ordnance Depot at Weedon Bee was passed in 1803, as war with Napoleon resumed after the shortlived Peace of Amiens.

Weedon was intended as a 'grand store' following the example of the Board of Ordnance stores at the naval dockyards. Weapons, ammunition and related stores were the property of the Board of Ordnance which issued them to Royal Navy ships at the start of their commissions or the army at the start of a campaign. When the ships or regiments returned then the weapons and stores were returned to the Board of Ordnance stores.[3]

The location of Weedon Bee roughly midway between London and Birmingham on both Watling Street and the recently completed Grand Junction Canal made it a sensible location for a large central armaments depot. It is clear from documentary sources that Weedon was intended as a major central store for weapons. A letter, dated 8 October 1806, from the Office of Ordnance to Captain Pilkington, R.E. (the officer in charge of construction), states that Weedon would receive 'muskets for the regular service'.[4] The letter also states that Weedon would become the general depot for the weapons and equipment of the volunteer corps. The principle duty of the volunteers was to man the defences against invasion. The weapons probably arrived at Weedon direct from the factories in Birmingham (the centre of gun-making). A newspaper article of 1809 reports that large numbers of new muskets were arriving at Weedon by canal from Birmingham.[5]

Despite the envisaged role of Weedon in both the supply of weapons to the Army and as part of the defences against invasion, construction proceeded relatively slowly. The Board of Ordnance letter books show that the instruction to begin work on the storehouses was issued in March 1804.[6] The four storehouses were probably completed at the end of 1808 and may not have received arms and

accoutrements until 1809.[7] In addition in 1806 the Board of Ordnance had ordered the construction of four further storehouses and a 10,000 barrel gunpowder magazine along with barracks and ancillary buildings, the first two magazines being completed in 1807.[8] This slow progress may have been connected with a change in priorities connected with the strategic situation. The decline of the invasion threat after the victory at Trafalgar in 1805 meant that the need for large reserves of weapons declined. The major land campaign was being conducted in Spain and Portugal so supplies for the Duke of Wellington's army (including the Portuguese) may have been sent direct to London and the other ports.

In 1811, at the height of the Napoleonic War, Weedon comprised four storehouses (holding muskets and equipment for a train of field artillery) and four magazines, with three holding their maximum capacity of 5000 barrels each and one holding artillery ammunition (two more magazines had been authorised in 1808).[9] The magazines at Weedon were complete before the nationwide magazine-building programme started in 1811.[10] Magazines completed under this programme like that at Marchwood, near Southampton, were provided with stoves or other re-manufacturing facilities.[11] The absence of these facilities at the Weedon magazines suggests that they were not used as central stores like Marchwood but as issue magazines for garrisons (like the Martello towers in East Anglia) or the Royal Artillery.

The Napoleonic War finally ended with the Battle of Waterloo in 1815. With Napoleon exiled to St Helena, Europe settled down to thirty years of relative peace. The immediate consequence for the British army was rapid disbandment. For the next forty years the maintenance of public order in the face of widespread unrest proved to be the main duty of the rump of the home-based army. It may have been the fear of domestic insurrection at a time of political upheaval and agricultural and industrial distress that led to works of defence and the loopholing of the perimeter walls in 1831.[12] Apart from this event the generally low level of activity is reflected in the returns to the Board of Ordnance: practically the same amount and type of stores were held in 1821 and 1831. The only noticeable change is a decrease in the amount of powder kept in the magazines.[13]

The 1847 'Return for Barracks in the United Kingdom' notes that the empty storehouses at Weedon had been converted to barracks in 1837.[14] It has been suggested that the small arms stored at Weedon were removed around this date and sent to the new armoury at the Tower of London (which burnt down in the 1840s).[15] Two of the other redundant storehouses (Nos. 5 & 7) were converted to form a military prison and prison governor's residence, early documentary evidence of this work being the annotation of the Board of Ordnance site plan of 1844 with the handwritten comment: 'military prison'.[16] Both of these changes at Weedon are probably the direct result of the 1837 Commission into Military Punishment.[17] The principal recommendations of this Commission where that greater use should be made of custodial sentences rather than flogging and that barracks accommodation should be improved with (among other things) the provision of one bed per man. It seems that in the light of these recommendations the rapidly emptying storehouses at Weedon provided a cheap way of providing the extra barracks and prison accommodation required by the Commission.

Weedon appears to have functioned as a combined prison, barracks and store until the Crimean War. Anecdotal evidence suggests that the troops stationed at Weedon left for the Crimea leaving the barracks

empty.[18] By an Order in Council dated 6 June 1855 the Clothing Establishment, which stored cloth, uniforms, saddlery and miscellaneous items for the entire Army (except the Royal Engineers and Artillery) was established at Weedon. The principle reason for its establishment at Weedon was to take advantage of the empty storehouses and former barrack blocks.[19] A further reason may have been the proximity of Weedon to the towns and villages of Northamptonshire, which supplied much of the Army's demands for footwear.

The demise of the Board of Ordnance (partly attributable to the mismanagement of supplies during the Crimean War) resulted in the reorganisation of the artillery. The ammunition supply was also reorganised with the creation of four separate classes of magazine. In 1865 Weedon was classified as a 'Great Reserve Depot', the highest class of magazine, capable of accepting both loose powder and made-up ammunition, and having the benefit of water-borne communications.[20]

In 1860 the Clothing Store was transferred away from Weedon after a series of parliamentary enquiries into its management (including the absconding of the storekeeper).[21] The store was then used for small-arms storage (the 1861 census lists seventeen men employed in the small-arms store) and as a saddle store.

At the end of the 1860s a series of invasion scares, culminating in the rapid defeat of France by Prussia in 1870, raised fears of a European war. Examination of the Army showed that it was unfit for warfare in Europe. Accordingly in the early 1870s a series of reforms to the Army based on the Prussian army were undertaken by Edward Cardwell, the Secretary of State for War. The new Army was based on military districts roughly corresponding to two or three counties. Line regiments would be based in a county with the replacement of the old regimental number system ('4th Foot') with a county title ('Kings Own Lancashire Regiment'). Each regiment would be divided into two battalions, one at the county or district depot and one posted somewhere in the Empire. The home battalion would provide recruits, administration and stores for the entire regiment. There would be a central store for each district for weapons and supplies along with equipment for the troops raised on a corps basis (the engineers, artillery and commissary).

The large number of plans drawn up in the 1870s concerning existing or proposed buildings at Weedon suggests that it was being reorganised and extended as part of the Cardwell reforms of the Army. The 1871 census shows that no prisoners or prison staff were present at Weedon, suggesting that the prison had closed by this date. The Library of the School of Military Engineering has plans dated 1874 for re-converting the former quarters of the Prison Governor back to a Storehouse (No.5) and plans for the new Wagon Shed (15) dated 1879.[22]

The introduction of the Martini-Henry rifle in the 1870s heralded the start of the re-equipment of the Army throughout the 1880s and 1890s with progressively improved rifles. The use of these increasingly sophisticated weapons (and the machine guns entering service slowly in the 1890s) required a new infrastructure for storage and maintenance. Large stocks of new rifles had to be maintained so that an entire regiment or expeditionary force could be re-equipped at a stroke. At the same time the weapons they replaced had to be returned, accounted for and disposed of. The re-designation of

Weedon as a Small-Arms Depot in 1885, the equipping of the storehouses with cranes (perhaps for handling large cases of rifles) and the rebuilding of the 1879 Wagon Shed as a Receipt and Issue Store were probably part of this process.[23] The magazines probably continued in use until the general replacement of gunpowder by cordite around 1891.

An era of small colonial wars in the latter part of the 19th-century came to an end with the costly and often badly conducted war against the Boer republics which ended in 1900. It was clear that the Army had found great difficulty defeating what was seen as a loose grouping of farmers (although very well armed and led farmers). The main weakness that the Boers exposed in the Army was in tactical organisation but it was also clear that much equipment was either obsolete or inadequate. In addition, the Army found it very difficult to find enough weapons, horses, equipment and uniforms to outfit the hastily raised volunteer cavalry of the Imperial Yeomanry. In the aftermath of the war the Army stores system was drastically reorganised. Weedon was reorganised with the erection of a Clothing Store (17) by 1902.

This appears to have been the last construction work performed at Weedon before the outbreak of the First World War. It is clear that no new permanent construction was undertaken during this war and that what was built took the form of prefabricated Nissen Huts or simple structures of concrete and corrugated iron. The lack of any large permanent buildings may be due to the concentration of supplies in northern France (mainly at Étaples) behind the Western Front. The principal role performed by Weedon was probably the outfitting of Kitchener's Volunteers in 1915 and the drafts of conscripts from 1916, although the enormous size of the Army during the First World War meant that many new temporary depots were built for the Army's supplies. Weedon may have specialised to a degree, J.E. King's history of the depot mentioning that one storage hut was entirely given over to army boots.[24]

In 1919 the demobilisation of the largest army in British history saw vast stocks of weapons and equipment returned to Weedon. The storage huts built during the war and the now-disused magazines appear to have provided enough storage space for this equipment. After demobilisation (1919) and the withdrawal from southern Ireland (1921), the home-based army found itself reduced to garrison and training duties for the rest of the twenties and early thirties. The principal reasons for this low level of activity were a strict limit on government spending and a national reaction against the militarism that was felt to have caused the First World War. The only changes at Weedon during this time were purely administrative and usually driven by the need to make economies. In 1921 the clothing depot was moved back to London and in 1923 the Army Bicycle Store was moved to Weedon from Didcot, Oxfordshire. [25] The only change that appears to have required investment was the moving of the Army School of Equitation to the pavilion and barracks in 1925.[26]

The rise of Nazi Germany, and particularly the re-occupation of the Rhineland in 1935, led to substantial amounts of money being spent on the British armed forces for the first time in 14 years. The initial increase in funds went to the Navy and Air Force. At Weedon the noticeable effects of the increased spending on the Army were concrete roads for new lorries and the closure of the cavalry school as the cavalry converted to armoured vehicles. The other building work at Weedon was directed by the concern that Britain would come under sustained attack by German bombers. As part of the

defence the magazines were rebuilt to accept anti-aircraft ammunition and became part of the ammunition supply system to the belt of anti-aircraft guns that would defend the midland cities.[27] A minor sign of the preparations against air attack was the provision of a thick concrete roof on the new Railway Loading Platform (9) in the Depot.

The threat of attack from the air and the demands for vast quantities of supplies by mechanised armies fighting on fronts all over the world, ensured Weedon's decline as a major stores depot. New, large stores depots such as Kineton (Warwickshire) and Bicester (Oxfordshire) were built with single-storey storehouses dispersed over a wide area, and many buildings were placed underground or were camouflaged by trees and landscaping to make them less vulnerable to air attack. There was also a new emphasis on streamlining procedures, with mechanised handling and facilities for road transport in addition to rail. The stores at Weedon, by comparison, provided a small concentrated target for a bomber and the large two-storey storehouses made mechanical handling difficult. To cope with these problems Weedon initially dispersed its stores around Northamptonshire but by 1944 Weedon itself had become a dispersed sub-store of the new central stores depot at Bicester.[28] It is notable that only one large building was added to Weedon during the war and this was an office building for the clerks who kept track of the dispersed stores.

At the end of the war Weedon found a new role as the store for weapons returned by demobilised troops. This role continued and by 1957 the depot was involved in the re-equipment of the Army with the new 7.62mm Self-Loading Rifle by storing the returned Lee-Enfield rifles. The storage of old weapons proved to be Weedon's last principal role and kept it in use until the stores were removed and the Depot closed in 1965.[29]

After closure by the Army the Depot was handed over to the Property Services Agency. It was then used by the Home Office as a furniture store and 'Supply and Transport Store'.[30] Supply and Transport stores provided a strategic reserve of vehicles, including the 'Green Goddess' fire engines for use in a civil emergency or nuclear war. With the thawing of the Cold War and subsequent government economies the site was sold to the private sector in 1984.

SITE DEVELOPMENT

The Royal Ordnance Depot was laid out on land falling quite steeply southwards to the diminutive upper course of the River Nene. The land originally purchased had somewhat irregular boundaries, which were consolidated by small additional purchases after 1807.[31] It was crossed from north to south by a public right of way, which was extinguished, and included a number of pre-existing buildings, which seem to have been demolished over the next few years. Viewed as a whole, the site that resulted from this process is linear in form and roughly rectangular, extending east-west for roughly one kilometre, and north-south by a minimum of 550m, but with a triangular projection at the west end of the north side, where it follows the course of the Daventry Road (now the A45). To the east the site is bounded by the Grand Junction (now Grand Union) Canal, though in part cut across by Bridge Street, the minor road linking Lower Weedon with Road Weedon, the second village nucleus at the crossroads formed by Watling Street and the Northampton-Daventry road. The eastern half of the southern boundary is formed by Lower Weedon. To the west and south west the site overlooked open country, but was enclosed by the dog-leg course of Ordnance Road, which survives as a track. The elongated form of the Depot is determined by the Ordnance Canal, a 1km branch extending westwards, for the most part in a straight line, from a basin on the Grand Junction Canal; the branch follows the contour of the valley side in order to avoid the necessity for locks. Via the Ordnance Canal the site was linked to the wider canal network, which facilitated the movement of all kinds of stores, and was particularly important for the movement of gunpowder.

As originally laid out, the site was in four main parts: the Storehouse Enclosure, the Magazine Compound, the Barracks (demolished), and the complex popularly known as the 'Royal Pavilion', but in fact built for the principal officials at the Depot, such as the Storekeeper and the Clerk of Cheque (also demolished). The Storehouse Enclosure and the Magazine Compound formed the working areas of the Depot, and were positioned along the Ordnance Canal, each surrounded by high brick walls, and separated by an interval of some 220 metres as an insurance against the risk of a powder explosion. The larger Storehouse Enclosure (roughly 400m by 155m), containing the Storehouses and ancillary buildings, was to the east, where it fronted Bridge Street. The Ordnance Canal passed through the Storehouse Enclosure from east to west, a little to the north of the centre-line, and incorporated a large central basin. Apart from the pedestrian bridges associated with the two Lodges, the Canal was crossed by just two bridges, placed on either side of the basin. To the west of the Storehouse Enclosure the smaller Magazine Compound (originally 190m by 80m) contained the powder magazines and traverses. The two other main elements of the Depot were set apart from the main functional areas of the site on rising ground to the north. The Barracks (later known as the Upper Barracks, to distinguish it from the Lower Barracks in the converted even-numbered Storehouses) formed a courtyard complex on the south side of the Daventry Road, with a detached building – probably officers' quarters originally, but in use as a hospital by the 1840s – to the south. Further east lay the offices of the Storekeeper and the Clerk of Cheque, and their associated outbuildings, gardens and shrubberies. Throughout its history much of the western part of the site remained in agricultural tenancies.

There were a number of other buildings belonging to the first phase of construction (1804-14). South

of the Storehouse Enclosure, and the fronting the same minor road, a short terrace known as Ordnance Row provided accommodation for lesser officials. This was demolished following the closure of the Depot. There was also two Guard Houses, one overlooking the basin on the Grand Junction Canal, and one to the west of the Magazine Compound.

To a casual glance the Depot at Weedon presents a fortified appearance, with its high perimeter walls and corner bastions. In reality these were not defensible against a determined and well-armed adversary. The Storehouses and Magazines are overlooked by rising ground to the north, and the north-east bastion of the Storehouse Enclosure is particularly vulnerable in this respect. An earthwork feature, of which traces survive and which appears on early maps of the site marked 'Old Redoubt', may have been intended to cover these weak points. It is more likely, however, that the garrison at the Barracks, and the perimeter walls and bastions, were intended primarily to guard against civil disturbance at a time of considerable discontent.

As the historical section of this report makes clear, the Depot underwent numerous changes of use in its 160-year history, and many of these were accompanied by new building. The creation of the Lower Barracks in Nos. 2, 4, 6 and 8 Storehouses necessitated the provision of a number of other facilities, shown on an 1844 plan.[32] These were constructed along the southern perimeter of the Magazine Enclosure, and comprised (from west to east) a Reading Room, Sergeants' Mess and Wash Room; a Canteen and Cook House; and a Guard House incorporating a series of cells. The same map shows that Ordnance Row was then in use as Officers' Quarters, probably for officers of the Lower Barracks, and there was a further building – the Barracks Sergeants' Quarters – on the opposite side of the road. The accommodation for the Storekeeper and other senior officials is marked 'Pavilion Officers' Quarters'. Further building work within the Storehouse Enclosure followed with the conversion of Nos. 5 & 7 Storehouses to form a Military Prisou in 1845. A series of extensions associated with this use, including the Prison Hospital, are not shown on the 1851 plan of the site,[33] but must have followed before 1860, when a further plan was made.[34] Two further structures are marked on the 1851 map, one against the south, and one against the west wall of the Storehouse Enclosure, and a 'Ball Practice Butt' is shown outside the north-west bastion. The principal alteration to the Magazine Compound is thought to have occurred *c*.1857, when the Compound was extended westwards on the north side of the Canal, to accommodate a further magazine (29) and traverse (206). Probably at about the same time, and certainly before the 1860 plan was made, the site was provided with a Gas Works (now demolished) on the north bank of the Nene, immediately south of the Storehouse Enclosure.

From the 1870s until the immediate aftermath of the Boer War there was considerable building activity in the Storehouse Enclosure. Large structures were erected against the northern perimeter, including the Wagon Shed (15) of 1879, and a number of buildings were constructed on the south side of the site. A standard-gauge railway spur from the London & North-Western Railway at Weedon Station was brought into the Magazine Enclosure between 1884 and 1899 (on map evidence), serving the odd-numbered Storehouses and the former Wagon Shed, now the Receipt and Issue Store (15). The Enclosure was also provided with narrow-gauge tramways connecting all the remaining storehouses. From the late 19th century onwards the Depot began to spill outside its original boundaries. On the east side of Bridge Street an unusual tenement block, the upper storey galleried, was built as

unusual tenement block, the upper storey galleried, was built as accommodation for the Depot's firefighters; it is now known as 'The Flats' and remains in domestic use.[33] The Clothing Store (17) was built just west of the Storehouse Enclosure in 1902, and further stores followed to the north and west during the First World War, eventually filling the space between the two original walled enclosures, though everything in this area with the exception of the Clothing Store has been demolished. In the same period a massive storehouse (now demolished) was built to the north of the Enclosure, alongside the Receipt and Issue Store (15). This was served by an extension of the standard-gauge line network. The latter was also extended past the Clothing Store (17) and into the Magazine Compound at some time between 1899 and 1923, by which time the Magazines were no longer being used to store powder. The Ordnance Canal, the principal means of transport on the site before the arrival of the railway, must have remained in use in the years leading up to the First World War, since a lifting bridge was installed in 1906.

New work dating from the Second World War was comparatively restricted, reflecting the vulnerability of the site to air attack, and the preference given in consequence to newer, more secure depots. The main additions were the Railway Loading Platform (9), demolished in 1998, and a large single-storey office building (45).

The Storehouses (1-8)

The eight original Storehouses are arranged in two rows lining the north and south sides of the Ordnance Canal. Each row consists of two pairs, which are placed facing the canal east and west of the canal basin. The Storehouses are numbered one to eight, the odd numbers lying on the north side of the canal, and the even numbers on the south side. The latter are built on made-up ground associated with the embanking of the canal against the slope, which falls to the south. This circumstance is exploited to provide a basement of 'casemates' in the even-numbered Storehouses. Nos. 1-4 (two on each side of the canal, at the east end of the site closest to the entrance) were started in 1805, Nos. 5-8 in 1807.

Structure and form

The Storehouses consist of two storeys, supplemented, in the case of the even numbers, by a basement. With this exception they are built to a single design, with only relatively minor variations, chiefly in the decorative finish of the structural timber carrying the upper floor. The brickwork is laid in Flemish bond externally, with gauged brick heads to the windows; internally the walls are in English bond. Sandstone ashlar is employed for the plinth, a first-floor sill band, a moulded string course above the first-floor windows and a moulded eaves cornice. The cornice survives only on Storehouse No. 8, the others having lost this feature through re-roofing. In every case except that of No. 2, re-roofing has also involved replacing the parapets with a higher eaves. Between the plinth and the sill band the bricks are orange and unevenly fired; above the sill band they are dark red and more evenly fired. The ground-floor brickwork retains traces of at least two types of wash. The earlier stone-coloured wash may have been original, and perhaps accounts for the differing grades of brickwork employed. Given that it coincides with the ashlar work of the entrances, it is possible that the wash was intended to give the appearance of a ground storey entirely of stone. A later wash is more of a mustard colour.

Each storehouse is fenestrated as eleven bays on the north and south elevations, and this pattern coincides with the internal bay structure of cross walls and storey posts. The end bays and the three centre bays project, with a further projection of the central bay. On the east and west end elevations the fenestration is confined to a central projection incorporating an opening on each floor; this masks a four-bay internal structure of axial ceiling beams and storey posts. Wide entrances are placed in the centre of each elevation beneath what was originally a tripartite window, though only the north and south entrances remain unblocked. The entrances are framed by a Doric entablature and pilasters in ashlar; each has double-leaf harr-hung doors of six panels (boldly fielded externally, flush-beaded internally), beneath a two-panelled tympanum in the same style. The tripartite windows above have plain brick jambs and a shallow segmental-arched head of gauged brick. The other windows on both floors are single lights, round-headed in round-headed recesses on the ground floor, square-headed and flush on the first floor.

The entrances to north and south open on to a spacious 'vestibule' occupying a wide single bay. The vestibule provided access to a large storeroom on each side, and contained the twin stairs to the first floor. The ground-floor rooms were entered via square-headed doorways, set in recesses with semicircular brick arches at both ends of the cross walls. Where original fixtures survive (e.g. in No. 2), they consist of double-leaf doors, each leaf of three panels, and panelled tympana (e.g. in No. 6); all the panelling is flush-beaded, and set within a chamfered and stopped frame. The storerooms have three ranks of storey posts and bolsters supporting heavy axial beams; lesser transverse beams which are staggered on either side of the posts are also original features. The posts are chamfered and stopped in most instances, some with scrolled stops, and stand on stone bases; the bolsters also exhibit a variety of treatments, some having rounded ends. The storerooms are well lit but the windows have high sills, perhaps as an aid to security, though in other respects reliance seems to have been placed primarily on the security of the surrounding compound.

Twin stairs against the cross walls originally rose from the front or canal side of the vestibule to a single landing serving the two first-floor storerooms. The original stairs had an open string, chamfered and scroll-stopped newels (possibly with a finial originally), diamond-set balusters (two per tread) and a moulded handrail. The two stairs each commenced with a long straight flight against the cross wall, then made a quarter-turn and met after a further short flight, the landing broadening to the full width of the central bay towards the front. In every case the left-hand stair (on entering from the canal side) has been removed, but in most cases scarring is still clearly visible in this position. Light for the vestibule and stair was provided by large tripartite windows on the first floor, positioned above the entrances. As on the ground floor, each of the first-floor storerooms has two doorways set in arched recesses at the vestibule end, but while the stairs cleared the rear ground-floor doorways, they did not allow for the use of their first-floor equivalents.

The first-floor storerooms, unlike their ground-floor counterparts, are currently unobstructed by posts, but this has been the case only since the re-roofings of the late 19th and early 20th centuries. A drawing of Storehouse No. 2 dated 1874 illustrates arrangements during the period of its use as a barracks (see below), and shows that at this time it retained its original twin hipped roofs meeting at a central east-west valley.[36] The valley was supported by a single rank of storey posts following the centre-line of the building. The first-floor rooms are currently open to the roof, but it is not clear whether this was always the case; the set-back in the cross walls at eaves level might suggest that a ceiling has been removed. The large tripartite window in the end wall retains original features in a number of cases, despite the later insertion of stacks blocking all but the narrow flanking lights. In Storehouse No. 6, for example, the east storeroom has an original moulded architrave, slender cavetto-moulded glazing bars with a bead, and a flush-beaded intrados or soffit to the arch.

The basement level of the odd-numbered storehouses is faced to the south in coarsely vermiculated ashlar with dressed margins. A projecting fluted band divides the vermiculated masonry from the ground-floor plinth above. At the east and west ends coped revetments return southwards (the east revetment of Storehouse No. 6 has been rebuilt). Narrow stone stairs, ascending the rise to the canal level, are placed on the outer sides of these revetments. Each casemate is entered independently via a semicircular arch with double-leaf nail-studded doors beneath a louvred tympanum. Additional

ventilation is provided by perforations in the doors. Each door is pintle-hung on heavy straps, and is of double-skinned construction, with vertical tongued-and-grooved boards externally and wider horizontal boards internally. There are twelve casemates per storehouse, divided by cross walls corresponding to the bay divisions on the upper levels, with the exception that the wide central bay provides two casemates which are slightly narrower than the norm. Where they support storey posts, the cross walls incorporate piers. Each casemate has a transverse semicircular brick vault and a herringbone brick floor. Although there was no original intercommunication between casemates, cross-ventilation towards the rear was provided by a circular opening in each cross wall. These were originally occupied by cast-iron grilles, two of which survive in Storehouse No. 6.

On each of the four basemented storehouses the central casemate is fronted by a feature reminiscent of a *porte-cochère*, the function of which appears to have been to provide a balcony opening off the ground floor. They are constructed of brick faced in smooth ashlar. Deep segmental-arched openings to east and west open onto a barrel-vaulted spaced which is groined at the intersection with the vault of the central casement. The two casemates in the centre of each storehouse differ in having a narrower plan and a single-leaf door. The variation in plan-form, taken with the fact that the masonry courses with that of the basement, indicates that these features are original. The tympanum above the door also differs: it is filled by nail-studded boards set in a perforated frame. This form may pre-date the louvred form of tympanum described above, as the latter lacks a rebate for the doors to close against and therefore appears less secure. The balcony is surrounded by iron railings with ball finials to the standards.

Differential survival

No original roofs survive, though Nos. 2 and 8 retain a covering of Welsh slate, possibly the original material; all the others have corrugated asbestos. Only No. 8 retains the original stone eaves cornice. One of the stairs has been removed from each storehouse (the scars are clearly visible in most cases), and in No. 2 no original stair survives, but the remaining stairs (e.g. in Nos. 5 & 8) are substantially original, with diamond-set balusters and a low moulded handrail (later crudely raised). Most of the storehouses retain the original large entrance doors of boldly fielded panels. Original internal double-leaf doors, flush-beaded, have also survived in some cases. Some original fenestration has survived, particularly in the central tripartite windows of the end walls (e.g. Nos. 6 & 8, complete with contemporary moulded architraves).

The Lower Barracks

All the even-numbered storehouses were converted for use as barracks at some time before 1847, continuing in this use until about 1874. The buildings had certainly reverted to use as Storehouses by 1886, when hydraulic cranes were installed (see below). A drawing dated 1874 shows the arrangements in No. 2, with an annotation to the effect that the other three were similar.[37] The principal alterations entailed by the conversion were to the first-floor storerooms, which became barrack rooms. Large fireplaces and stacks, supported on large stone corbels, were inserted against the end and cross walls, providing a fireplace at each end of the former storerooms. The stacks against the end walls masked

all but the narrow flanking lights of the central tripartite window in each end elevation, but these remained fully glazed. The barrack rooms were undivided with the exception of a small room which was partitioned off on the south side in the corner against the cross wall. Each contained a bunk and would have provided a degree of privacy for the highest-ranking soldier in the room.

The ground-floor storerooms do not appear to have been much altered at this time. A pencil annotation to the drawing brackets together four bays of the eastern storeroom with the comment 'available for harness', suggesting that the ground floor may have been used as stabling. Mortices in the faces of some of the storey posts may relate to stall partitions, but these are not shown on the drawing.

Other alterations were to the perimeter of the building. Urinals were added, according to the drawing, one at each end of the building, positioned against the revetment on the south side. Some of these had apparently been removed by the time of the 1884 Ordnance Survey. In the angle formed by the return of the west revetment an ash pit was constructed.

The Military Prison

Storehouse No. 7 was converted to serve as a military prison, with No. 5 being converted to provide the Governor's Quarters at the same time. The conversion was approved in 1844 and the prison opened in 1845. A block plan dated 1854 marks No. 5 as 'Chapel' and No. 7 as 'Prison'.[38] The changes were comparatively shortlived: the prison appears to have closed at some time between the Decennial Censuses of 1861 and 1871. On the 1911 Fire Prevention Plan the buildings are shown as Stores.[39]

The alterations and additions to **Storehouse No.** 7 were considerable. The conversion involved the removal of the original upper floor, and the insertion in its place of two new upper floors, giving three levels in all. Subsequently the original floor levels and window openings were reinstated. This work was carried out to a high standard, and relatively few signs of the original arrangements have survived. The prison first-floor level is indicated by courses of inserted brickwork beneath the present ground-floor ceiling, and cutting across original openings from the vestibule, while the prison second-floor level is suggested by the existence of a break-back on the internal faces of the walls about 1.5 metres above the reinstated first-floor level. This break-back was created by building up from the original break-back.

The plan appears to have consisted of a central axial passage extending east and west from the vestibule, with the accommodation consisting of a series of small one-man cells. However, although blocked segmental-arched doorways off the vestibule can be identified for the two lower levels, there is no sign of openings on the highest level. Rendered strips on the south wall, west of the vestibule and beneath the internal window sills, suggest ten cells per floor on each side of the vestibule (other walls could not be examined). Each pair of cells shared one window. The fenestration appears to have consisted of truncations of the original windows, supplemented by inserted windows for the new first-floor level. This would account for the evidence of the south first-floor tripartite window, which retains the top one-third of its original jambs, while the lower parts have been rebuilt. Similar evidence suggests that the ashlar work to the entrances was mutilated to accommodate the new windows. Of the prison yard on

the north side of the building, only a short length of high wall survives. This projects northwards from the west end of the building, which it meets at a sharp quadrant turn. The wall has been lowered slightly, and now forms the yard wall of the building adjoining to the west (see below).

A single-storeyed building (**Building 70**) added at the west end of Storehouse No. 7 belongs stylistically to the period of the prison conversion in the 1840s, and is indicated on the 1854 block plan already referred to. Known latterly as Storeholder's Quarters No. 1, it appears to have originated as the prison hospital. The original nucleus consists of two parallel ranges gabled north-south, the east longer than the west so that the latter was originally set back slightly both to north and south. On the south front the gables are concealed by a parapet, and the brickwork is in Flemish bond, with gauged brick flat arches and limestone sills. There is a similar window in the north wall of the east range. The original entrance, at the east end of the south front, has been blocked, and replaced by a porch in the re-entrant further west; this alteration appears to be associated with internal re-planning consequent upon extensions to the original building, but the interior was not seen. The west wall is rendered, concealing junctions with later phases. An original two-flue stack, now enlarged to three, survives on the west wall of the west range, but two stacks against the storehouse, serving the east range, have been dismantled. An outbuilding with a mono-pitch roof was added at the north end of the east range between 1884 and 1889; between then and 1911 (when the building was described as the Storeholder's Quarters) the west range was extended northwards by one bay,[40] and between then and 1923 a single-bay extension was added on the west side of the west range. Both the later additions broadly match the original work, but the north extension has segmental-headed windows to east and west.

While the prison was shortlived, it is possible that Storehouse No. 7 retained its three-storeyed form until quite late, perhaps as late as the 1930s, when it was re-floored (in ferroconcrete), re-roofed and re-fenestrated using steel-framed windows with a central pivoting section. The arch of the south entrance was rebuilt with a concrete keystone, and the entablature was rebuilt or reinstated in what looks like Portland stone instead of sandstone. On the north side a simpler entablature was substituted.

Storehouse No. 5 was converted to provide the **Governor's Quarters** and other accommodation. Here, too, the alterations were extensive, though Storehouse No. 5 retained its original floors. The first floor was extensively subdivided, but on the ground floor the west storeroom was left undivided, and much of the western three bays of the east storeroom also remained open. The conversion provided living quarters for the Governor on both floors towards the east end, and what appear to have been two further apartments in addition to other prison amenities, including a chapel, in the remainder. The domestic accommodation comprised mainly heated rooms, with stacks in some cases corbelled out from the existing walls on paired quarter-round stone corbels, in others forming part of the inserted partitions. A number of the fireplaces were corner fireplaces, set against the original external walls. The original twin stairs were retained in the central vestibule (though the first-floor landing was divided, so that each stair now operated independently, serving one half of the first floor only), and two further stairs were added, one within the building at the east end, the other in an addition at the west end. There were also extensive single-storeyed additions, principally on the north side of the building. A surviving series of plans, dated 1874, shows the additions and the inserted partitions and stacks in

detail, but does not identify room uses.[41]

The chapel is not identified on the plan. It has been suggested by Mike Rumbold that it occupied the former western ground-floor storeroom. This is shown as having a single central rank of storey posts, instead of the three ranks elsewhere, suggesting a modification for some alternative purpose. The posts are octagonal in section, unlike those elsewhere which are of a chamfered square section, and it is possible that this was intended to give a church-like effect. RCHME photographs include one of a round-headed niche with a raised moulded surround in plaster, which is situated towards the east end of the south wall. This has been interpreted as belonging to the chapel, but was not seen during the present survey. Although the plan shows the whole of this storeroom continuing as a single space in 1874, the pecking of the brickwork indicates a partition, date uncertain, closing off the easternmost bay formerly.

From the same plan it can be seen that the governor's quarters proper occupy the eastern two bays of the eastern ground-floor storeroom, and the whole of the eastern first-floor storeroom. A porch was added on the east elevation, opening on to a stair hall with what were probably offices to north and south. These occupy the easternmost bay. The next bay to the west has what was probably a kitchen to the north. This has a large fireplace, and its relatively low status is suggested by the presence of freestanding storey posts within the room. A smaller room to the south may have been for a housekeeper, or a small servants' hall. Service rooms were situated in an addition to the north. On the first floor a series of rooms to either side of an axial corridor probably served as reception rooms and bedrooms. The east flight of the original twin stair provided alternative access to these rooms, including one of two heated rooms created at the south end of the former landing.

On the western side at first-floor level, the west flight of the original stair served an irregular apartment of four heated rooms. The added stair at the west end served a larger suite of rooms, heated and unheated, disposed on either side of another east-west corridor. These appear to have provided accommodation for prison personnel, and may account in part for the duplication of yards on the north side of the building, each with one or more privies. The added stair was housed in a lean-to addition of Flemish bond brickwork, with rubbed brick dressings and a roof of Welsh slate. This covered the original west entrance, and extended as far as the north-west corner of the building. The west elevation has two bays defined by plain pilasters. On the ground floor this wall was blind, forming part of the prison yard to the west, but on the first floor there are two flat-arched windows. The semicircular-arched entrance was in the narrow south wall. The addition housed a simple dog-leg stair, and gave access to the upper floor only, via a fan-lit round-headed doorway in the position of the former tripartite west window.

Comparatively little remains of these very extensive modifications. All the additions and yard walls were demolished by 1899, on map evidence (and perhaps shortly after 1874), with the exception of the west lean-to housing the stair. At first-floor level pieced-in boarding indicates the former stair position. All the secondary internal divisions have also been removed, together with the inserted east stair, though the positions of many of the walls and some of the stacks can be identified from scarring on the internal faces of the original walls, and the pecking of the brickwork on these faces indicates that these rooms were formerly plastered. The only substantial remains are those stacks which were abutted

against the original west end wall and both cross walls (two stacks against each). These survive, together with their hearth slabs, the segmental-arched fireplaces blocked and the flues capped below the present roof. The positions of the stacks against the cross walls necessitated alterations to the first-floor doorways leading through the cross walls from the landing. The new doorways were narrower, and offset on the south side of the original openings, beneath inserted segmental heads. The west doorway has subsequently been reinstated in its original form. The blind doorways at the north ends of the cross walls were also altered, on the west side apparently by the insertion of borrowed light (according to the plan), later adapted to form a doorway (on structural evidence). The central doorway leading from the landing to the east corridor is now blocked. The east first-floor window retains the narrowed dimensions probably acquired during the conversion to governor's quarters. A number of the first-floor windows east of the vestibule formerly had lower sills, which may also date from the conversion. On the ground floor the missing ranks of storey posts have been reinstated in the west storeroom, where they are clearly distinguishable from the octagonal originals by there simple chamfering and plain (as opposed to shaped) bolsters, which are set north-south instead of east-west.

The installation of hydraulic power

Hydraulic cranes were installed in Storehouses Nos. 1-4, 6 and 8 (one per Storehouse) *c*1886. A drawing of that date shows 'Doors for Hydraulic Gib Crane'; others presumably showed the hydraulics.[42] It is possible that this alteration formed part of wider improvements in the handling facilities at the Depot, and that it accompanied the construction of the spur from the London & North Western Railway at Weedon Station, which occurred between 1884 and 1899. It is certainly connected with developments on the north side of the site, where a hydraulic accumulator and associated steam plant must have been provided at about this time (a 1904 plan[43] shows a pre-existing accumulator). The cranes were mounted next to the central first-floor window facing the canal, and the window was narrowed, and its sill lowered through the entablature of the entrance below, to form a taking-in doorway. An annotation notes that stone removed from the entablature was to be reused in the jambs.

Storehouse No. 8 has the most complete range of surviving hydraulic features. Internally there are the remains of a wall-mounted hydraulic jigger, including a single pulley wheel. Externally the iron top and bottom pivots of a jib crane remain. More fragmentary evidence can be seen in the others. Most of the Storehouses retain the double-leaf taking-in doors of this period, which have vertical planks on a ledged and braced frame, chamfered and stopped internally, beneath a segmental-headed fanlight. No. 3 retains a stone-flagged vestibule floor incorporating a length of 46cm- (18in-) gauge tramway, the position of which probably implies the removal of the second stair.

No evidence for hydraulic cranes was found on Storehouses Nos. 5 and 7.

Painters' Shop (attached to Storehouse No. 7)

A single-storeyed Painters' Shop was added at the east end of Storehouse No. 7 between 1899 and 1911 on map evidence, replacing an earlier, smaller structure, present by 1884.[44] Providing a single large room, well-lit by large round-headed windows (two to north and south beneath gable oculi, and four

to the east), it has brickwork in English bond, with rubbed brick window heads and oculi and sandstone sills. The gables incorporate corbelled kneelers, and rise above the verges with sandstone copings. The roof, of Welsh slate, is pierced by two cowled vents, offset to either side of a clay ridge, and supported by a single iron or steel truss.

The Blacksmith's Shop (attached to Storehouse No. 5)

A single-storeyed lean-to blacksmith's shop was added to the stair lean-to at the west end of Storehouse No. 5 between 1899 and 1923 (again on map evidence). The materials used in the present building raise the possibility that it represents a rebuilding at a later date. It is constructed of Fletton bricks laid in English bond, with concrete or cement-faced lintels and moulded blue-brick window sills. The windows (two in the west elevation) are steel-framed with a central pivoting section. The entrance is in the south wall. This addition was integrated with the ground-floor of the stair lean-to, the entrance to which was converted into a window. There is a timber louvre on the roof, which is slated. On the west elevation there is a corbelled brick stack and also a metal flue.

Other alterations

In 1888, according to a drawing of that date the lower east room (drawing says upper, corrected to lower) of Storehouse No. 3 was re-floored to serve as an armoury.[45] This involved introducing two stoves, flued into corbelled external stacks on the north wall. The stacks remain *in situ*, but there are two full-height stacks in the corresponding positions on the west rooms, suggesting that the west room was also adapted in this way.

Following a fire, Storehouse No. 2 was extensively rebuilt in 1889. The stone stair with iron balustrade, and the fireproof ceiling on cast-iron columns in the west storeroom appear to be of this date.[46] At this stage the upper floor was still intended for the storage of small arms, with more general storage on the ground floor.

Extensive alterations dated to 1938 included the re-roofing of the Storehouses and the reinstatement of the original upper floor in Storehouse No. 7 (with ferroconcrete floor and posts). Large goods lifts were installed in the Storehouses in 1941, suggesting improvements in efficiency necessitated by the wartime situation (including labour shortage). Storehouse No. 1 was re-roofed in 1955. The Royal Ordnance Depot closed in 1965, but parts of the site were retained by the Home Office until disposal in 1984.

Railway loading platform (9)

The loading platform is thought to date from the Second World War. It stands between the north side of the Ordnance Canal and the rail spur, close to the main east entrance. It consists of a raised platform with ramped ends, sheltered by a canopy which is cantilevered off the rear wall (backing on to the

canal), giving a front which is open throughout its length. The canopy falls to the south. The structure is of ferroconcrete in three sections, consisting (from east to west) of seven, six and seven bays. Each bay is further divided into three by the cantilevers and their supporting posts on the rear wall. The posts, cantilevers and an axial beam are all cast with chamfers and stops. The infill between the posts on the rear wall is of shuttered concrete.

Fire-engine house (10)

Building 10 is a three bay brick building, gabled east-west and built of English bond brickwork with a roof of Welsh slate and a slate damp-proof course. It is not shown on the 1885 Ordnance Survey but it is present on the 1899 revision and labelled as Fire Engine House on the 1911 site plan. Quick access to fire appliances is provided by three sets of double doors in the north front of the building. The closers in the door jambs suggest that the large openings are an original feature of the building. The only original illumination provided for the building is a north roof light running across all three bays suggesting that the building was intended only for the storage of the fire appliances not their repair. In view of its role as accommodation for the depot fire appliances it is worth noting that the building is at a central point in the depot and well placed for fire appliances to reach all parts of the main site quickly.

Clerk of Works' Office (11)

This small single-storeyed office stands a little to the west of Storehouse No. 3. It was built between 1899 and 1911, and appears on a site plan of the latter date marked 'C[lerk] of W[or]ks Office'. It is constructed of brick, laid in English bond, on a plinth with a chamfered blue-brick top course. The openings have segmental brick heads and the windows have sandstone sills and horned sashes. The roof is laid with Welsh slate, with leaded rolls and valleys. The plan is T-shaped, with the stem of the 'T' projecting northwards. The building provided a larger office to the south and a smaller one to the north, both heated, and served by an entrance in the north-east re-entrant. The building was not entered, but both offices retain original fireplaces of vaguely *art nouveau* detailing, moulded architraves and deep skirting boards.

Storehouse No. 14

This extensive building is the subject of drawings dated 1902 in the hand of Smith & Pitts.[47] It stands to the north of Storehouses Nos. 5 and 7, though set a little forward of the north perimeter wall. An earlier long wooden shed, built against the perimeter wall before 1884, was demolished.[48] The building consists of three parts, each with nine-bay south elevations. The central nine bays break forward slightly on the south front, and rise through three storeys, while the flanking wings are of two storeys and have three-bay return elevations. One of the 1902 drawings[49] gives the intended uses of the

building as follows: on the ground floor the west wing was the Armourers' Shop, the central block was the Examining Store and the east wing was the Packers' Shop; on the first floor the central block was a Carpenters' Shop; the first floor of the wings and the second floor of the central block formed stores, and on the 1911 Fire Plan these are referred to as Store No. 14. The functions allocated to particular areas appear to have varied over time. A sign next to the central south taking-in doorway reads: '1st Floor / SA. & MG. [small arms & machine guns] / Examination', while in the post-Second World War period the ground floor was devoted to stores except for the east wing, which provided two workshops.

The building has orange-red brickwork laid in English bond, with a series of stepped courses at the eaves. The nine-bay north and south elevations of the three blocks are uniformly fenestrated except where taking-in doorways are provided (see below), but the central block is shorter than the flanking wings, and the windows are correspondingly narrower. The ground-floor windows and the first-floor windows of the central block have semicircular brick arches turned in a buff sand-faced brick with fine joints. The top storey of each block has square-headed windows, the lintels apparently either cement-faced or of ferroconcrete. The surviving original windows have cast-iron frames with a cavetto moulding and a central four-pane pivoting section; some have the maker's name: 'Henry Hope & Sons Ltd|—Birmingham—'. The sills are of sandstone. The end elevations of the wings originally presented three regular bays of fenestration, but the central bay is in each case now modified by the insertion of doorways and the addition of an external brick and ferroconcrete fire-escape stair.

The internal structure of the central block consists of two ranks of circular-section cast-iron columns supporting a series of I-section transverse steel beams by Dorman Long of Middlesbrough, which in turn support lesser axial steel beams of the same form (Frodingham Iron & Steel Company), over which a concrete floor is laid. The columns have moulded heads and gussets to the fixing plates. In the wings and on the first floor of the central block this structural system is varied to the extent that the columns are of lighter scantling (23 rather than 28 cm diameter), with fewer gussets at the head, and in place of the concrete floor there are transverse timber joists and alternating broad and narrow boards.

The roofs are hipped, and laid with Welsh slate and lead rolls to the hips. The trusses resemble those in the Clothing Store (17), designed two years previously. In the east wing a cross wall immediately west of the taking-in doorways rises above the roof line, providing a fire break within the wing; the same feature does not occur on the west wing. Although it is built around two columns and hard against one of the roof trusses, the brickwork of the cross wall is keyed into the external walls, suggesting that it may be original. There is a similar cross wall in the central block, just west of the taking-in doorways, to which similar arguments apply, but this does not project above the roof. If not original, they are likely to represent early modifications.

Goods were received and despatched via large taking-in doorways, positioned for the most part on the south front. Here the central bay of each block is occupied by a tier of taking-in doorways, with bullnosed blue bricks protecting the jambs. This arrangement is repeated on the north side of the central block (masked by a later steel fire-escape stair), but on this elevation the wings have windows to the central bay. There are slight indications of former jib cranes serving the wings, but similar evidence was not identified on the central block. Inside the wings there are remains of hydraulic supply

pipes and operating levers. The doors consist of boards on a stop-chamfered ledged and braced frame.

Pedestrian access, particularly to the upper floors, was via doorways set within the semicircular-arched windows in the north elevation. Each block has one such entrance: they are placed four bays from the outer end of each wing, and in the easternmost bay of the central block. Each has a boarded door on a ledged and braced frame, chamfered and stopped internally, set on one side of an otherwise glazed opening. This arrangement is original, and is associated with timber stairs, which are boxed off from the main working spaces by tongued-and-grooved boarding on framed partitions, the latter chamfered and stopped on the stair side. The stairs, of which the east and central examples survive, have close strings, square-section balusters and simple moulded handrails. The newels are also square-section, chamfered and stopped, with simple shaped terminations. The stair in the north-east corner of the central block rises via quarter-landings around a narrow well. The other stairs each consisted of a single straight flight. The removed west stair can be identified from scars for the former boxing.

On the ground floor the central block and wings were separated by original cross walls incorporating doorways in the centre and against the south front. These have segmental brick heads, and are fitted with double-leaf iron or steel fire doors. While the central doorways permitted free movement between one block and another, the south doorways appear to have served lifts situated in the south-west and south-east corners of the central block. On the first floor the wings are open to the roof, which incorporates a roof light and two cowled vents in the east wing. The cross wall inside the east wing incorporates a fire door of the same form as elsewhere, and appears to be contemporary with the roof light and cowls.

An addition to the north of the west wing is comparatively recent.

Wagon Shed, later Storehouse No. 15

The Wagon Shed lies to the north of Storehouses Nos. 1 & 3. Plans signed by Col. J Bevan Edwards are dated 1879,[50] and the building therefore pre-dated the construction of the railway spur to the Depot. A large eastwards extension, known as the East Wing, was completed between 1899 and 1911 (Fire Plan), by which time the building as a whole was referred to as the Receipt and Issue Store. By 1929 it was being used as the Rifle Store,[51] and later it was known as Storehouse No. 15.

As originally built, the Wagon Shed was a tall single-storeyed building consisting of two parallel ranges gabled east-west either side of a central valley. The eleven-bay south front and the twin-gabled end elevations are of pier-and-panel construction with segmental brick heads to the openings, while the rear wall utilises the original perimeter wall, which has piers projecting at intervals, and a stone coping which remains *in situ*. Above the coping the English bond brickwork is plain except for a continuous course of air bricks at mid-height and a stepped eaves. On the south front the central and end bays project slightly beneath gables, which incorporate narrow louvred vents arranged as triplets, the louvres formed by slates. Each bay, with the exception of the central bay, has a single large panel, which is

further subdivided to give two sunk panels per bay. Both kinds of panel have chamfered blue bricks to the base. The central bay differs in having a large central entrance (subsequently narrowed and heightened) flanked by narrow sunk panels. On the gabled projections the overall panel rises to a stepped head within the gable apex, and there is further stepped decoration to the verges. A similar treatment is applied to the twin-gabled end elevations. These contain a single central opening per gable flanked by narrow blind panels. Again, the gables have triplets of vents and stepped heads, and there is stepped decoration to the verges. All the entrances incorporate stone anchor blocks and have jambs which are corbelled inwards about a metre below springing height. The latter detail does not appear on the original drawings, and may suggest a later widening of the lower part of each entrance.

Internally the building consisted of a single space, interrupted only by a rank of columns supporting the valley at the junction of the two ranges. Light was provided almost exclusively by long roof lights, the only openings in the walls being doorways or vents. Ventilation was further provided by four large ridge-mounted louvres on the Welsh slate roof. The tall cast-iron columns are of circular section with moulded capitals, and support a simple lattice girder of riveted construction, on which the timber valley plate rests. The lattice girder sections meet at square-section stanchions set on top of the columns. The stanchions have bracketed seatings for lugs to which the truss are bolted. The trusses are placed to coincide with the columns, and at two further points on each lattice girder span, giving three roof bays to each column bay. They have L-section principal rafters, cruciform-section struts and wrought-iron tension rods, the collars tightened with turnbuckles. At the external walls the lug plates are set in pockets and bolted. Further lattice girder sections also carry the wall plate where it spans the bays left open by the gabled projections on the south front.

The original drawings show the building to have had an oval standard-gauge tramway loop, the curved ends passing through the twin entrances in the end elevations, and Ordnance Survey maps up to the 1920s confirm this arrangement. The purpose of such a tramway, not originally linked to any wider system, is unclear. The 1899 Ordnance Survey shows what was probably an 18 in-gauge tramway entering the Wagon Shed at the west end, and both standard and narrow gauge tracks passing through the south door (fragments of both are still exposed internally).

The East Wing was added in the first decade of the 20th century, at which time both it and the original building were still single-storeyed. Both were later provided with an upper floor, perhaps as late as the inter-War period. The East Wing has been badly damaged by fire, and while the ground floor is intact, only the roofless shell of the first floor remains. It was built in a broadly matching style, with pier-and-panel walling exhibiting the same panelled subdivisions, and incorporating chamfered blue bricks at the bases of the panels. On the north side it replaced, rather than building on top of, the perimeter wall. On the south front, a gabled projection on the easternmost bay balanced those on the original south front. There is an entrance in the south half of the east elevation. The internal structure consisted of five bays, with a single rank of steel stanchions, supporting a central east-west valley as in the original building. Lighting, as previously, was probably from roof lights, supplemented by a small number of windows in the exterior walls.

The insertion of the upper floor might be dated, stylistically, to around 1930. It is carried by circular-

section columns, transverse I-section steel beams (Frodingham) and axial ferroconcrete joists, cast with a chamfer. Stone pads, visible on the exterior, correspond to beam positions. Taking-in doorways were inserted in the south front, crudely breaking through the wall panels. These doorways were served by jib cranes, the bolting plates of which are visible internally. First-floor windows were inserted in the gables, some in the upper part of the entrances, which were reduced to ground-floor openings, and a series of ground-floor windows were also inserted. A lift and stair were also installed, together with an external stair on the south front. The central bay remained open to the roof, with a gallery linking the two upper floors. In the addition the upper floor was carried by ten bays and five ranks of columns, supporting the same kind of beams and joists.

Two single-storeyed lean-to additions on the north side of the original building are comparatively recent.

Clothing Store (17)

The Clothing Store dates from 1900 and stands on the north side of the Ordnance Canal just west of the main compound, on land which was originally left vacant because of its proximity to the magazine enclosure. Its construction is said to have resulted directly from the operational difficulties encountered during the Boer War. An extensive series of original drawings survives.[52] By 1923 the building was linked to a series of Nissen huts (18), probably of First World War vintage, to the north (now demolished). These also served as clothing stores. One later use is indicated by a sign on the east fire-escape stair, which reads: 'Home Office Communication Stores'.

The Clothing Store is of brick pier-and-panel construction with a hipped roof of Welsh slate partially concealed by a stone-coped parapet. It has twelve-bay elevations to north and south, the central four bays breaking forward slightly, the central two beneath a gable. The end elevations are of three bays. The brickwork is in English bond on a plinth topped with a cement weathering, and sandstone is used for window sills and copings. The panels rise to segmental heads on the second floor, except on the break fronts, where they rise to flat corbelled heads, and they are linked by a brick string course at first-floor level, and by a flush band, corbelled out from the panels, at second-floor level. The piers are embellished slightly on the ground floor, a projecting course below the string course serving to define the 'capital' and giving them the appearance of pilasters. The gable over the two central bays has a recessed panel with stepped corbelled decoration to the verges. The ground and first-floor windows have semicircular heads, while the second-floor windows have segmental heads, coinciding with the arched heads of the panels except on the break fronts. The original glazing has been replaced. Wide taking-in doorways, occupying the full width of the panels, take the place of the first and second-floor windows in the bays immediately flanking the break fronts. These have heavy timber frames, and double-leaf doors of vertical boards. In the central bay of each end elevation there are narrower doorways, apparently original, and not intended for taking-in. They open on to cast-iron fire-escape stairs. These may have been re-erected in their present positions (the elements come from at least two sources and there are two kinds of decking in use), though some such arrangement is recorded on plans

of 1911 and 1923.

Cross walls corresponding to the ends of the break fronts divide the interior of the building into three compartments. These cross walls also act as fire breaks, rising above the level of the slates. In this function they are supplemented by the fitting of double fire doors to each of the two openings in the walls on each level. The floor structure is also fireproof, consisting of a single rank of cruciform steel stanchions, stiffened by rings, and with shaped heads. These support transverse box-section plated beams, the ends resting on stone pads, which in turn carry lesser axial I-section beams. What appear to be inverted T-section joists carry concrete panels, forming the floor. The stanchions are slighter on the first floor. The clear-span roof trusses are of riveted L-section members, and support two ranks of purlins and vertical boarding. The floors consist of pine blocks.

The original stair is contained within a brick-walled compartment in the north-east corner of the central compartment, where it is served by an original entrance in the sixth bay from the east. The stair has stone treads on iron or steel bearers, and a simple wrought-iron balustrade.

An early addition was a gabled loading bay projecting in the centre of the south elevation over the former railway spur. Of steel-framed construction, including I-section stanchions, this has left a series of scars on the south front. A lift in the south-east corner of the central compartment is probably also a later feature. On the end elevations, the north ground-floor window has been converted into a doorway at some stage, on the west side giving access to an addition, now demolished.

The Gunpowder Magazines and traverses (21-9, 206)

At the time of the Napoleonic War gunpowder was in use for all forms of military ordnance, from muskets to large cannon. Extensive stores were required to keep in readiness the quantities of powder which might be required by the Army and Navy in times of war. Owing to the risk of explosion, elaborate precautions were built into both the design and the day-to-day management of powder magazines. As far as possible, movements of powder were water-borne; trans-shipment and storage were subject to detailed procedures designed to minimise the risk of powder accumulating in areas outside the magazines, and the risk of sparks inside the magazines. This involved a strict clothing regime, the use (latterly at least) of raised walkways outside the buildings, and the elimination of iron from the construction of the magazine buildings, by the substitution of timber or copper, and from the clothing of the magazine workers through the use of slippers.

The Magazine Compound encloses the Gunpowder Magazines and associated structures. It forms a rectangular enclosure, elongated east-west and originally with bastions at each corner, of which all but the north-west survive entire. The east end of the compound is some 225 metres distant from the west end of the Storehouse Enclosure, giving a measure of protection to the latter in the event of an explosion. The Ordnance Canal extended from the Storehouse Enclosure, across the intervening ground and through the Magazine Compound, where it was offset towards the south side, terminating immediately west of the Compound at a turning bay. Where the canal passes through the walls of the

Compound security is provided by arched gateways, each incorporating a portcullis. A road passed through the Compound along the north side of the canal, and the buildings were ranged in an east-west line on the north side of the road, which also served as the wharf for trans-shipment between barge and magazines. A 1910 plan shows three landing stages on the canal, and a network of 'wooden walkways' linking them with the magazines and traverses and with two pedestrian entrances in the north perimeter wall.[53]

In the first phase of development four magazines were built, each comprising two vaulted chambers. Traverses, or blast houses, intended to absorb the impact of an explosion, were placed between the magazines and between the easternmost magazine and the perimeter wall. Similar protection was not provided at the west end, which faced onto open country. Building work commenced at the west end, and two magazines, together with an intervening traverse and the walls of the Compound, had been completed by November 1807.[54] The remaining magazines and traverses were built by April 1811, along with a Guard House situated outside the Compound to the west, but the canal gates (like those to the Storehouse Enclosure) remained unbuilt.[55]

All the buildings of the initial phase, including the canal gates, are finished to a high standard, with walls of red brick laid in Flemish bond, and roofs of Welsh slate. Most of the large original slates have been replaced.

The perimeter walls and bastions

The original perimeter walls define a Compound which is eighteen bays by eight. They are constructed of brick, laid in Flemish bond three bricks thick, and divided into bays by piers. The copings are of stone. At each corner of the Compound there was originally a bastion-like projection, but unlike those of the Storehouse Enclosure these were not constructed as fighting positions. Original pedestrian entrances were provided in the north wall, in the fifth and fourteenth bays west of the north-east bastion, but the present vehicular entrances to east and west on the north side of the canal must date from the infilling of the canal turning bays immediately outside the Compound. Further entrances were provided when the rail siding was brought into the Compound after 1899; these also face east and west, at the north end.

The canal gates (106)

The canal gates consist of a lean-to structure set against the inside of the perimeter wall and supported by a round-headed arch over the canal, large enough for barges to pass through. The walls are of brick laid in Flemish bond, and are keyed into the perimeter wall. To north and south the walls rise above the roof slope as parapets with stone copings. External brick steps with a stone-coped balustrade rose from either side of the canal via a round-headed doorway to the lean-to, which was lit from inside the Compound by three low segmental-headed windows with simple header arches. From here a portcullis could be operated. This is of morticed-and-tenoned construction, and rose in a slot against the perimeter wall. The slot is formed in red sandstone, cut to a half-round profile. A trussed timber trestle supports the winding drum for the chain, which is set between pulleys on either side.

The original Gunpowder Magazines (22, 24, 26 & 28)

The four magazines were numbered 1-4 from west to east, in line with the likely sequence of construction. Following the addition of a large fifth magazine in the mid-19th century they were lettered A-E, starting at the east end. No original plans of the Magazine Compound and its buildings have been identified, but two drawings (plan and cross-section) survive for a 'Single Magazine', dated 14 June 1806.[56] These depict a building 64ft by 24ft internally, dimensions which tally with those of one chamber in the Weedon magazines. The depiction of alternative wall thicknesses on one side of the building (4 or 6½ bricks thick), while not identical to the Weedon thicknesses, suggests that the drawings were of a standard module, which could be doubled using a thinner dividing wall. An annotation records that the single magazine was designed for the accommodation of 2,516 barrels of powder, which are shown stacked in three ranks. This would give a total for the four magazines of 20,128 barrels.

The four original magazines are essentially alike, although the prolonged construction period resulted in minor differences between the earlier and later magazines. Each magazine is nearly square on plan (21.82m north-south by 18.35m east-west), and consists of two ranges gabled north-south to either side of a central valley. The exterior walls stand on a rendered plinth with a chamfered sandstone top course; the east and west walls have a dentilled eaves course. Sandstone is also employed as copings for the gables, which incorporate brick kneelers and a parapet across the central valley, and for the ridges (e.g. the western ridge of No.1). Between the gables there is a channel to allow the rainwater fall-pipes draining the roof valley to be inset. Entrances are placed in the centre of each gable (giving four in total), and have segmental arches of gauged brick. These have been much altered at various dates, but probably incorporated both internal and external doors, each set in a rebate, as shown on the single-magazine plan. A number of 7cm-thick six-panelled flush-beaded doors survive, re-hung. The south entrances, where the ground level is lower, gave onto short flights of steps originally, but these were swept away when the present loading platforms were built. Above each entrance there is a window with an iron outer and timber inner frame, and pulley operated inner and outer shutters. This form is repeated on the later magazine in the Compound, and presumably replaces an earlier arrangement. The entrances of Nos. 1 and 2 are flanked by ventilators, which also occur at a lower level in the long east and west walls of all four magazines (five ventilators in each wall). Each ventilator has a single aperture externally, but bifurcates in the wall thickness to give two apertures internally, thus providing a baffle against driving rain or malicious acts. Further protection was provided by perforated wrought-iron plates set well back from the exterior.[57] Traces of copper lightning conductors were noted at ground level at the north-east and north-west corners, but it is not clear that they are original.

As with other Board of Ordnance magazines, the roofs disguise the internal structure, which consists of two elongated chambers, each with a parabolic brick vault springing from a timber plate or skew-back (the timber has an angled upper face), now mostly replaced in brick. Between the two chambers there is a substantial dividing wall. Each chamber functioned as a separate unit, with its own entrances, but parabolic-arched openings piercing the dividing wall allowed for movement between the chambers. The floors are boarded (except in No.2 where the floors are now of concrete), and raised above a

substantial void on joists and beams which rest in turn on dwarf brick walls. In No.4 the original 2-inch boards survive, pegged to the joists. There are under-floor ventilators in all the exterior walls of No.4 (the last-built), and blocked vents just above plinth level in No.3, but the two first-built have vents which appear to be insertions.

The roof voids above the vaults are not accessible, but a plan dated 1910 includes a section through No.2. It shows a roof structure consisting of collared common rafters, a single set of side purlins and a collar purlin resting on the crown of the vault. The valley plate is set somewhat higher than the wall plates, and there is a light ridge board. The roof voids are comparatively small and do not appear to have been filled with sand as was done at some earlier examples.[58]

The Traverses (21, 23, 25 & 27)

The traverses are built to minimise the effects of blast in the event of an explosion in one of the magazines. For this purpose an earthen bund is all that is required, but brick revetments allow the traverse to be raised to a sufficient height while retaining a small plan-footprint, with the result that the traverse assumes an architectural form. The degree of elaboration applied to the Weedon traverses is nevertheless exceptional. Each traverse forms a large sand-filled block, gabled north-south and measuring 21.8m by 8.0m externally, originally with slightly narrower shifting rooms, 3.05m by 7.76m, attached to the north and south ends.[59] Of the shifting rooms only those at the south end of each traverse survive, though there are sufficient remains at the north end of the easternmost traverse to indicate that the lost examples were probably identical.

The walls have Flemish-bond brickwork and dentilled eaves, as on the magazines, but the plinths have a cement weathering rather than a stone top-course. The only significant variation between the four traverses occurs on the easternmost, where the east wall incorporates two small sentry boxes. These take the form of a round-headed apsidal recess. Above eaves level there is a six-bay roof over the traverse, carried by two cross-walls, which rise high enough to support the single set of side purlins, and three king-post trusses. These appear to be of pegged mortice-and-tenon construction, with raked struts. The shifting rooms each have a lower eaves and ridge; the single-bay roof is carried by two trusses set against the gables and similar in form to those over the main roof. All the gables have brick kneelers and sandstone copings.

Each shifting room has an entrance placed centrally in the gable, and flanking windows, all with segmental heads. Latterly at least, external timber steps were placed against the doorways. Inside there is evidence in the form of timbers inset in the walls (some now replaced by brick courses) for wainscotting or boarding, and the two westernmost examples have original pegged floorboards. The second from the east has a re-hung six-panelled flush-beaded door, which may indicate the original form (but may have been discarded from elsewhere). Ceilings employing a lightweight form of plank-and-muntin construction, with a cyma moulding to the muntins, may also be original. The remaining interior features are principally the result of a refurbishment in the late 19th or early 20th century. This included the replacement of the original windows with horned sashes, the insertion of stone sills and thresholds (previously the timber floor had extended into the doorway), and the replacement of the

wainscotting.

The later gunpowder magazine (29) and traverse (206)

Before 1860 the Compound was extended westwards to accommodate an additional magazine. This was probably the occasion for the re-ordering of the magazines, which were henceforth designated A-E working from east to west. The impetus for this work is likely to have been the Crimean War (1854-6), which exposed serious shortcomings in British military organisation, including supplies. A likely date is 1857, since drawings dated 14 November 1856 include one of a proposed 'Traverse E' and one of the Guard House, and there is a third drawing, lacking a date but in the same hand, of a proposed 'E Magazine'. The original west wall of the Compound was dismantled north of the canal gate, and a roughly square area, four bays from east to west, and five from north to south, was enclosed in a similar style of walling, with a similar bastion at the north-west corner. As well as a new magazine a traverse was constructed between it and the adjacent original magazine. These alterations are shown on a plan dated 1860.[60] There is clear evidence that the new magazine (E) was suffering severe structural problems as early as 1869, when the rebuilding of defective sections of brickwork and the addition of a series of 'counterforts' were proposed.[61] Drawings dated 1872 for a 'Magazine F' appear to relate to a building which was projected but not built, as its internal dimensions are significantly greater (each cell is 72ft 8in by 25ft)

The new magazine consisted of four cells, each (as in the original magazines) 64ft by 24ft internally. In essentials, the new magazine resembles a double version of the original two-cell magazines, but there are numerous differences of detail. The new building has walls faced in English bond with stepped rather than dentilled eaves, a stone top-course to the plinth and stone cyma corbels to the brick kneelers of the gables. The openings have segmental arches externally, consisting of three rows of brick headers, but parabolic arches internally. The treatment of the shuttered gable openings has already been described. The ventilators are bifurcated and incorporate a baffle, as on the earlier buildings, but differ inasmuch as those on the gables are on the same level as the others. The internal fixtures relating to the storage of powder barrels have been removed, but sockets low down in the vaults above each internal opening indicate the positions of former transverse beams which supported the travelling crane. Unlike in the earlier magazines there do not appear to have been timber skew-backs at the vault springing; instead brick skew-backs are employed. The floorboards are secured by the use of copper nails rather than pegs, and at the thresholds on the north side there are shallow copper trays.

Latrines (44)

This is a brick-built toilet block of lean-to construction placed against the eastern perimeter wall of the Storehouse Enclosure. Concrete has been used for sills and lintels with corrugated asbestos for the roof. These features suggest a wartime construction date contemporary with the nearby Offices (45). The building is divided more or less equally into male and female blocks. The female block occupies the south end and consists of seven cubicles. It is the only external toilet block for women encountered on the site and is closest to the building with probably the largest female workforce, suggesting that

Building 44 was built to provide toilets for the workforce of Building 45. The male side has two urinals and five cubicles. One of these cubicles is labelled 'officers only' and has a wooden seat.

Offices (45)

Building 45 is described in J.E. King's *A Short History of the Technical Stores Depot, Weedon* as having been built in 1941 as accommodation for clerical staff. The building is constructed almost entirely from ferroconcrete and has evidence for internal partitions for offices. A brick lean-to washroom has been added at its east end. The main building was modified after World War Two with a tall double-leaf door on the south side.

Building 45 is a nine-bay building, twin-gabled east-west, constructed out of prefabricated ferroconcrete panels slotted into grooves in concrete posts. Double doorways are placed in the north and south walls, two bays back from each gable end. All the other panels incorporate a set of steel-framed casement windows, and these are supplemented by north-facing roof lights. Ventilators in the gable ends, the absence of any large taking-in doors and the provision of so many windows suggest that this building was intended as office accommodation rather than as a warehouse. Perhaps for this reason Building 45 is unique at Weedon, as during this period additional warehousing appears to have been provided solely by 36ft Nissen huts.

The roof is supported on seven concrete trusses which are bolted to jowled ferroconcrete posts which also contain the drains from the roof valleys. There are four ranks of fish-bellied ferroconcrete purlins. The construction of this large roof from ferroconcrete is interesting, wartime roofs usually having either steel columns or wooden trusses. The absence of these materials might suggest construction during a period when these materials were in very short supply (which would be about 1941) or some form of experiment. The interior of the building has the scars of dividing partitions on both the south and west walls. The partition marks along the west wall suggest seven small office cubicles, each with its own window and fixings for a radiator. Marks on the floor by the doorways suggest that each doorway had a small lobby to stop draughts. The evidence suggests a large open space in the middle of the building for clerical staff, filing cabinets, etc, with offices around two walls of the building for more senior staff.

The east wall of the building has a three bay brick lean-to washroom with a corrugated asbestos roof supported on a single purlin. Access to the washroom is via standard window openings that have been opened out into doorways. The washroom is divided into two rooms each with a doorway. Each room contains the metal supports for a line of sinks along with a drainage channel. The division into two rooms suggests male and female washrooms, with toilet facilities presumably provided by the nearby Building 44. The brick construction of the washroom suggests a later addition although such a small building could be as easily constructed from brick as concrete panels and so it may be contemporary with Building 45. The use of the standard window openings for doors suggests that the washroom was part of the construction phase of the building.

The only obvious later modification is the rebuilding of the south-west doorway by replacing the entire concrete panel with brick to form a larger, taller opening. This suggests that the building was modified for storage use at a later date, although the position of the doorway raises some doubt: it is unlikely, for example, that a lorry would be able to turn round in the space between the south wall of Building 45 and the south-east bastion (93).

Storeholder's Quarters No. 2 (65)

This is a detached two-storeyed house with a kitchen and two downstairs rooms, constructed in the late 1940s or 1950s. Brick cavity-wall construction, the sparing use of wood in roof trusses and joinery, and the provision of a pantry, are all characteristic of the period. Houses of a similar design, including the use of a concrete slab for a porch roof, can be found in nearby Brook Street, suggesting that there was a wider programme of building at this time.

East and West Lodges (66, 90)

The East and West Lodges, spanning the Ordnance Canal and controlling the access to the Storehouse Enclosure, belong to the original design of the Depot, but appear (along with the Canal Gates in the Magazine Compound) to have been the last structures to be completed. Both are shown un-built on the plan prepared in April 1811, and the East Lodge incorporates a clock mechanism dated 1814. The two Lodges are similar in essentials: the disused West Lodge has been little altered and forms the basis of the following account, but the East Lodge, now in use as offices, forms the public face of the Depot, and from the outset incorporated a number of features which are absent on the West Lodge.

The lodges are differentiated from the other Depot buildings by the use of a yellowish brick, laid in Flemish bond an a sandstone ashlar plinth, and topped by a moulded stone eaves cornice. A low ashlar parapet conceals the shallow-pitched hipped slate roof. On each elevation two rainwater fall-pipes with vase-shaped hoppers drain the parapet gutters. All the openings have gauged brick flat arches, and the windows, which are considerably taller on the first floor than on the ground floor, have stone sills. The five-window front elevations face into the Storehouse Enclosure, and incorporate a central three-window break-front. In structural terms, however, the cross-walls divide the Lodges into three bays from north to south, and one from east to west, and this pattern is reflected in the fenestration of the remaining elevations. The rear elevations do not have a break-front, and originally had blind windows throughout (the single west-facing first-floor window of the West Lodge is a late-19th or early-20th-century insertion). Between the two ridge-mounted stacks which rise from the cross-walls there is a domed timber cupola, square on plan with canted corners, a slate-hung skirt to the base, sunk-panelling to the canted corners and entablature, louvred circular openings in each face, and a leaded dome. On the East Lodge the west face, overlooking the Storehouse Enclosure, has a clock face instead of the louvres. The central bay of the front elevation of each Lodge is taken up on the ground floor by the semicircular canal arch, which extends into the enclosure in the form of a pedestrian bridge; each

bridge is approached by flights of steps rising from each side of the canal, and gives access to a central first-floor doorway. This element has been rebuilt on the East Lodge, in brickwork with a rusticated surface and with concrete treads, but on the West Lodge it has been less altered: the stairs have stone treads, and a wrought-iron balustrade consisting of square-section balusters and a simple hand rail. Doors of six flush-beaded panels, a number of which have survived in both Lodges, seem to have been used both inside and out.

The manner in which the Lodges span the canal means that the ground floor consists of two single-bay rooms separated by the canal. These rooms appear to have been fitted out identically, and did not communicate with the first floor. Each was entered via a central doorway in the end wall. The rooms were plainly appointed, with a suspended timber floor and an underdrawn ceiling concealing twin axial beams. Each was heated by a fireplace on the cross-wall opposite the entrance. In the West Lodge the fireplaces survive: they have a segmental arch supported by an iron lintel, and a plain mantel shelf attached by iron plugs. The rooms, which must have served, severally or together, as gatekeepers' lodges, were refurbished in the late 19th or early 20th century, when the sashes were renewed, a domestic copper was added against the fireplace of the north room, and a west entrance was inserted serving the south room.

The first-floor accommodation, accessible only from the external stair, consists of three rooms, all with underdrawn ceilings. The north and south rooms are heated, have timber floors and were clearly intended for domestic use. The fireplace in the north room retains a plain surround, and the walls have inset timbers for a former skirting and dado rail. The original windows, one facing the enclosure, and one in the end wall, are splayed internally. A surviving door architrave in the south room has a narrow beaded form. The taller windows and ceilings, and the superior detailing of these rooms, suggest that they formed parlours or family rooms.

The unheated central room is lit by two un-splayed windows overlooking the Storehouse Enclosure. It has a stone-flagged floor and incorporates the winding mechanism for raising and lowering the portcullis which controlled passage along the canal. This is suspended from a substantial trussed timber assembly, as in the Canal Gates of the Magazine Compound. Gear wheels mounted on this assembly were operated by two men turning a windlass, which was linked to one of the gears by a short line-shaft. A 'pawl' or catch prevented the portcullis from slipping when it was being raised. In the East Lodge the central room is also occupied by two tapering octagonal posts which support the clock inside the cupola, a ceiling box for the pendulum, and a cupboard containing the clock weights. The original mechanism survives, with a maker's plate reading: 'JN° THWAITES & Co LTD, CLERKENWELL, LONDON 1814'.

The roof consists of three transverse and two axial trusses, the tie beams of the latter being notched over those of the former. The trusses are of king-post form, with raked struts, an expanded head and foot to the king post, and a wedged iron stirrup to the foot. They support a single set of trenched purlins and a ridge board. The axial trusses are necessary in order to carry the additional weight imposed by the cupola. The hipped corners are restrained by angle ties.

Building 70, later Storeholder's Quarters No. 1

See Storehouse No. 7, section headed 'Military Prison'.

Workshop, later Browning Shop No. 1 (75 & 76)

This six-bay single-storeyed building dates from 1888, and an original drawing of that date describes it as a 'New Workshop'.[62] The interior (not seen) is shown divided in two, with a smith's shop occupying the eastern bay and a half, and a machine shop occupying the remainder (the dividing cross wall does not correspond to the external bay divisions). The machine shop contained an engine, crushing machine, grindstone, saw bench, polishing lathe and turning lathe. On the 1911 Fire Plan the building is marked 'Machine Shop'. The smith's shop remained distinct, but the machine shop was at some stage divided in two and used as browning shops.

The building consists of six by two bays of pier-and-panel walling, the brickwork laid in English bond, with chamfered blue bricks to both the bottom and top of the panels, and a slate damp-proof course. The eaves projects on a further chamfered blue-brick course. There is a stepped eaves on the south front and a recessed panel with a stepped corbelled head on each gable. The rear wall was raised slightly on the existing perimeter wall. The openings have segmental brick arches, the windows narrower, and their heads set higher, than the doorways. The openings, including two entrances to the machine shop (although undivided originally) and one to the smith's shop, are all original, with the exception of the west window, which has been converted from a doorway (not shown on the drawing), and the east window, which has been inserted. The original windows have cast-iron window frames. The drawing shows a simple metal truss design, extensive roof lights, a louvre over the smith's shop, and two cowled vents over the machine shop. At present the Welsh slate roof incorporates three louvres and no cowls or roof lights, and it was not possible to judge whether this represents an original departure from the design. A single-storeyed mid 20th-century extension at the east end (76) contains switch gear.

Boiler house (77)

Building 77 is a five-bay steel-framed boiler house constructed using I-section steel beams, with corrugated iron sidings to the exterior. The whole formed a lightweight shed over the boiler plant. The roof trusses are a smaller form of those found in Buildings 17 and 14, suggesting a date around 1900 (the building is first depicted, marked 'New Boiler House', on a drawing dated 1903). They comprise riveted L-section steel sections making up a truss with raking struts running from the truss apex to the tie beam. Large steel fishplates with hexagonal bolts secure the various elements. A louvered ventilator runs the full length of the roof and is constructed of the same materials, using an I-section beam as its ridge. The use of a single row of lightweight purlins indicates that corrugated iron was the original covering material for the roof. In the interior of the building a low brick wall at the north end

and the lack of windows are the only suggestions of use as a boiler house. Various clips and shackles hanging from the roof trusses may indicate cable and pipe runs.

The building has seen considerable modification, the most obvious being the removal of the boiler plant. Walls of English bond brickwork have been constructed incorporating the stanchions of the steel frame. This produces a brick box of 25 courses within the steel frame, intended either as reinforcement for a failing structure or to strengthen the structure for a new purpose. The insertion of two sets of double-leaf doors occupying the entire width of the gable suggests that the new purpose was as a garage. At some later point the lower section of the corrugated iron was removed revealing the brickwork.

The boiler house to the west of Building 77 is a five-bay building constructed out of pier-and-panel brickwork in English bond. It fills the space between Buildings 77 and 79 and is built out over the wall of Building 77. The roof comprises light trusses of bolted steel section supporting corrugated asbestos sheeting. The centre bays of the roof have a ventilating louvre. A raised brick plinth in the northernmost bay and cut back I-section stanchions in the south gable wall suggest the location of the boiler plant. Like the other two boiler houses the building appears to have been adapted for use as a garage. A set of double-leaf doors has been placed in a rebuilt south gable. Subsequently a rendered extension has been built out from the south gable containing a single set of concertina doors.

Browning Shop No. 2 (78)

This small single-storeyed building dates from the period 1911-23 and was perhaps added during the First World War. It is built in stretcher-bond brickwork and consists of three bays, gabled east-west beneath a roof of asbestos tiles laid lozenge-fashion, incorporating a long roof light. The openings have segmental brick heads, with sandstone sills to the windows. The gables contain oculi. The wide entrance is at the west end of the south front. A smaller rear entrance has a sign reading 'No. 2 Browning Shop' and a boot-scraper. At the west end there was a small projection serving as a drying room; this was later extended southwards (partially blocking an original window) to create a filing (?) room, and now has a flat ferroconcrete roof, with a break in level corresponding to the phase-break.

Engine house and pump house (79)

Building 79 is located on the north side of Storehouse No. 5 in an area of the Depot that has undergone radical rebuilding. It comprises two buildings flanking a small courtyard on the east and west sides with the perimeter wall forming the north side. The 1911 and 1929 plans label this complex as engine room and pump house. The Ordnance Survey maps show that this complex did not exist in this form until 1899; the 1885 Ordnance Survey map shows that it occupies the site of earlier buildings.

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The east side of Building 79 is composed of two sections: two bays in Flemish bond abutting the perimeter wall and four bays in English bond extending the building to the south. The section of Building 79 that abuts the perimeter wall and consists of two bays built in Flemish bond brickwork may pre-date the rest of Building 79. Certainly the use of Flemish bond, limestone sills and segmental headed openings to the windows and door is not repeated in the rest of the boilerhouse complex and matches other earlier buildings in the Depot. As the interior was hidden by modern suspended ceilings an inspection of the roof trusses and interior could not be made.

It may be that these two bays of Building 79 are a fragment of the officers' quarters, stables and ball court shown on the 1854 plan[61] abutting the east side of the boundary wall for the prison, these buildings appear to be still present on the 1884 Ordnance Survey. They must have been partially demolished by 1886 as plan W61 of that year shows a small dwelling (possibly the officer's quarters or stables) that is to be replaced by an engine house. The 1899 Ordnance Survey shows that the engine house has been constructed but is part of a larger group of buildings matching the present plan of Building 79, all labelled Engine House.

The English bond extension is of four bays, gabled north-south. The north gable has a straight joint with the original part of Building 79 and the panels on this gable respect the south wall of the original building. A full-length glazed skylight is provided across the ridge of the Welsh slate roof and this along with the small size of the extension suggests that it may have been the pump house.

The engine house section is built in the same style suggesting that they were built at the same time. This consists of pier-and-panel brickwork with all the panel bottoms finished with two stepped courses of blue brick. Both the panels and the eaves of the south gables are finished in stepped brickwork with an oculus set in the top of each gable.

The engine house section is located to the west of the pre 1886 section leaving a small enclosed courtyard containing a chimney base, between the two buildings. The engine house is a single-storey three-bay building gabled east-west. The windows have cast-iron 16-pane frames with Tudor roses at the intersection of the glazing bars, unlike the extension which uses plain 25-pane windows. The engine house is the only remaining building on the site to have this type of window and though somewhat elaborate, it is possible that they are original. Internally the engine house is undivided. The only evidence of supports for engines or their associated features is a struck-back stone corbel and some patched brickwork at the north end of the west wall. The form of the roof suggests construction in the late 19th-century with cast-iron members forming the king posts and struts, with wrought-iron rods forming the tension members. The entire truss is bolted together and then tensioned by means of bolts on the threaded ends of the wrought iron rods. The vertical boarding of the roof is supported on two ranks of timber purlins. Ventilation for the engine house is provided by a wooden louvred ventilator on the ridge running across two bays.

The yard enclosed by the walls of the pre-1886 building, its extension, and the engine house, has had a section of the perimeter wall demolished and rebuilt, still using Flemish bond, to provide an arched opening into the yard. A tar mark along the west wall of the pre-1886 section shows that a lean-to roof was built against this building; the presence of disturbed brickwork suggesting the position of a hearth suggests that it may have been for a blacksmith's shop or similar workshop.

The engine house section of Building 79 has undergone considerable internal modification since its construction, including the removal of the engine and plant. It would appear that after the removal of the engine the building was converted into a garage or vehicle store. The doorway in the south gable was increased in height using a concrete lintel, and a small brick stack (too small for an industrial engine) was built against the north wall probably to keep the garage warm.

After the construction of Building 79, two boiler houses were added: Building 77, a steel framed building on the east side shown as New Boiler House on Plan W64 of 1903 and a brick building infilling the gap between 77 and the engine house.

Offices (86)

The offices overlooking the main east entrance to the Depot are domestic in appearance and may originally have served such a purpose. The building dates from c1890. It is two-storeyed, with a narrow wing gabled north-south and a broader range projecting eastwards to a hipped end. It is constructed of brick, laid in English bond, but the use of limestone dressings distinguishes it from nearly all the surviving buildings of about the same date at the Depot. The dressings include a chamfered top course to the plinth, string courses at first-floor and first-floor sill level, chamfered lintels and sills, those to the triple gable vents extending to moulded stone copings which are seated on stone kneelers and rise to crocketed stone finials. The windows are of various sizes, all with horned sashes, some of them paired, and the first-floor windows in the wing gables exhibiting relieving arches above the lintels. The brick stacks are highly decorative, with cruciform shafts corbelled out to star-shaped heads. The roof, covered with Welsh slate, has rafters oversailing at the eaves, terracotta cresting to the ridges and a terracotta finial to the hipped end. The entrance was via a small porch in the re-entrant on the south front; the doorway has been blocked and replaced by one in the side of the porch. Inside there is a stair hall and some survival of original joinery, but the rooms were not seen. In the mid 20th century a 'traffic office' was added to the rear. This is single-storeyed and generally matched to the external appearance of the original work.

Nissen hut (87)

Situated just north of the main east entrance to the Depot, this standard 16ft-span Nissen hut is constructed of a double skin of corrugated iron in three six-foot-long bays with three dormer windows on each side. It is divided internally into two rooms with a stove in each room served by a small brick stack on the east side. Nissen huts were erected from 1915 onwards and this hut could have been built in either World War. Photographs of the site show that the majority of

Nissen huts were erected between 1915 and 1918. However huts built in World War One usually had corrugated or wooden panel ends; this hut has ends constructed out of Fletton brick suggesting building or rebuilding in World War Two. It is rare to find a Nissen hut in its original context as they are easy to remove and rebuild. It probably provided additional accommodation for the gate guard or Building 86, the Ordnance Offices.

Firewatchers' Posts (88 & 67)

These were constructed during World War Two as protected posts for guards or as firewatcher's posts. One (88) is situated just north of the main east entrance, while the other (67) is positioned immediately east of Storehouse No. 8. Both are semi-sunken structures with a square plan, 36-inch-thick brick walls and a 6-inch-thick ferroconcrete slab roof. At first sight they appear to be air-raid shelters; however they lack the loose mortared brickwork panel on the back or side of the structure provided as an emergency exit if the front entrance to a shelter became blocked. Both structures have a viewing slit in each wall formed by the removal or omission of a single brick, a feature not found in air-raid shelters. An interesting modification is the provision of a viewing slit in the entrance blast wall allowing all-round observation during an attack. It is worth noting that the usual air-raid shelter provision on military sites was a system of trenches, as military personnel were expected to continue working or firing until the last possible moment. The site history comments that civilian shelters were provided in the casemates under the even-numbered Storehouses.

Weigh House and Weighbridge (89)

The steel-framed windows and corrugated asbestos roof of this brick-built weigh house suggest that it may be a 20th-century replacement for an earlier building. A weigh house is shown on the 1899 Ordnance Survey but not on the 1911 Fire Prevention Plan and the 1929 Land Tax plan. The weighbridge is bears the name of 'Ashworth, Ross & Co. Ltd.' The weighbridge has a weight limit of 42 tons, slightly above the maximum loaded weight of two 12-ton covered goods wagons, the most common rail vehicle in use on the site.

Bastions (92-95)

Bastions project from the four corners of the original perimeter wall. Although described as bastions in contemporary documents their design and construction suggests that they were intended as guard posts rather than defensive positions or as a compromise between the two functions. The evidence suggests that modifications were made to try and improve the defensive capability of all the bastions and that the north-east bastion was abandoned as a defensive position before the end of the 19th century. The other bastions continued to have a limited defensive use until the end of the Second World War.

All the bastions have been built to the same plan using red brick laid in Flemish bond. In each bastion nine casemates are built in groups of four and five along each side of the angle formed by the corner of the perimeter wall. All of these casemates have semicircular vaults. In several places the collapse of the external brickwork reveals that 'bomb proof' construction has been used, i.e. sand and gravel has been compacted in a thick layer above the arches of casemates to form a defensive layer against artillery fire. The removal of the walkway above the casemates on the north-east bastion reveals that this bomb-proof layer was capped with a layer of bricks and then the stone flags of the walkway.

Two large casemates are present at each end of the bastions. On the south-east and south-west bastions wooden slatted doors are hung from pintle hinges mounted in stone anchor blocks. The south-west bastion has stone door stops set into the casemate floor. The large casemates in the other bastions show evidence for the pintle hinges and door fittings. The size of these casemates and their doors suggests that they where intended as protected storage for either ammunition or small artillery pieces (Ordnance Return of 1830 mentions small artillery pieces in relation to the bastions), although since their entrances are effectively outside the perimeter wall of the bastions they would be very quickly cut off by an attack from the rear.

Access to the small casemates and to the two staircases leading to the walkways is through an arch in the wall closing off the inside angle of the bastions. These arches show evidence for a similar type of door to that used on the large casemates. There is no evidence for any defensive measures such as loopholes, usually incorporated into works of fortification like bastions against an attack from the rear.

The staircases leading to the walkways across the tops of the bastions all display the same features. They have twelve stone steps with the second step from the top inclined, perhaps as a trip step. The steps are wide and would allow two men abreast to use them, speeding up the deployment of troops to the walkway. The steps are closed by a low wall on either side leaving a flat section between the low wall and the treads on both sides. The most likely use for these flat sections is as runways to allow the small pieces of artillery referred to in the 1830 Ordnance Return to be hauled onto the walkways. The only evidence for drainage of the walkways is a small stone rainwater spout projecting from the outside east wall of the north-east bastion.

The walkway has a low (90 cm high) parapet with a stone coping. The height of this parapet means that the torso of anybody on the walkway is clearly visible. This is a major disadvantage in a defensive work as it makes the defenders easy targets for the enemy. However it allows those on guard duty clear lines of sight along the length of both perimeter walls, suggesting that the main purpose of the bastions was as observation posts for guards rather than defence against a besieging enemy.

The north-west and south-west bastions both contain what appears to be an early form of musket loophole. The failure of later brickwork blocking has revealed a close grouping of three small loopholes (20 x 20 cm internally) in the end walls of the casemates. Their small size and close grouping suggest that they where intended for musket fire. The usual provision was a small loophole for the long thin barrel of the musket and a ventilation hole to disperse the smoke

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to cut embrasures in the bastions.[64] The musket was still in use in 1831 and the lack of built-in firing steps and the crude way the loopholes have been cut suggests that the loopholes are later additions to the casemates. The omission of such an obvious defensive measure as loopholes during the construction of the casemates reinforces the impression that the bastions were built more for perimeter security than defence against assault.

Later Additions

The most common modification is the insertion in the casemates of larger loopholes; their size suggests that they where intended for use by bulkier modern weapons such as the Lee-Enfield rifle which was introduced from the late 1890s. The lack of mountings in the wall or floor for machine gun tripods or ammunition boxes indicates that they were not intended for machine guns. Casemates that provide a poor field of fire for modern high-powered weapons have not been modified. This is particularly the case in the north-east bastion which has a very limited field of fire and so has only one enlarged loophole installed.

The final modification to the bastions was the installation in World War Two of mountings for anti-aircraft machine guns. These square concrete bases are placed in both corners of the south-east, north-west and south-east bastion walkways. As the walkway surface of the north-east bastion had been removed at the time of survey it is not known whether it had these bases, although the limited field of fire in this corner may have made any such mounting not worthwhile. A holdfast is formed on each concrete base from a circular depression containing three bolts. The size of this holdfast is too small (49cm diameter) for the mounting of any weapon but a Bren or Lewis machine gun (both stored at Weedon in large numbers). As the parapet wall and various surrounding buildings limit the field of fire the only available use is against attacking aircraft, a threat only encountered in the Second World War.

The only other modification to a bastion that can be attributed to the Second World War is the provision of a concrete lined loophole (88 x 24cm inside, 44 x 24cm outside) for a machine gun (probably a Bren gun) in the west parapet wall of the south-east bastion. To reach this position under fire the gun crew would have to crawl 2 metres from the head of the stairs and would have no quick method of withdrawing. This suggests it was a position intended either for last ditch defence or use by guards.

North-East Bastion (92)

The field of fire from the casemates in this bastion is impaired by the escarpment at the bottom of the hill. The relative uselessness of this position for defensive use is reflected in the conversion of the casemates to stores and ablutions during the 19th century. In the majority of the small casemates substantial timber supports for shelving have been constructed across the full width of the casemates making them useless as fighting positions. The absence of evidence for the large loopholes suggests that the shelves were installed before the 1880s. Two of the small casemates on the eastern wall of the bastion have had a brick shed built over their entrances forming a small office and store house. This shed is constructed in Flemish bond brickwork and stone window sills, and is shown on the 1885 Ordnance Survey. The casemates at the west end of the bastion have been converted to toilets, the

remaining fittings suggest a conversion date *c*1900. A further toilet block has been built in the east large casemate and this is signposted 'Industrial Workers Only' (Civil Service terminology for manual workers). The toilet block has one fully boarded cubicle probably for foremen or non industrial workers. The fittings suggest a late 19th-century or early 20th-century date. These toilets may have been built to meet the needs of the extra civilian labour employed as a result of the site's expansion during the Boer War. Neither of these toilet blocks has evidence for contemporary modesty walls. The only modesty walls present are crudely built (so crudely they have both collapsed) of Fletton brick, suggesting construction during the Second World War. This would be the first time that large numbers of women were employed on the site.

Scherzer Rolling Bridge (un-numbered)

The Scherzer Rolling Bridge crosses the Ordnance Canal immediately east of the main basin. It was completed in October 1906 and described in an article by Col. A.H. Bagnold in the *Royal Engineers Magazine* in March 1908.[65] It replaced an earlier and decayed 'roller' bridge, re-using the existing abutments, and was designed to take a roadway and 18-inch tramway. The article hints at difficulties encountered during the Boer War which eventuated in improvements to the infrastructure at Weedon. The design was attributed to E.D. McQueen, of the Building Works Department of the [Royal] Ordnance Factories, and the bridge was manufactured at Woolwich ('the Arsenal').

In operation the bridge utilised water pumped from the Nene for other purposes and held in a reservoir. This filled cylinders attached to the upturned end of the bridge, effecting a counterbalance lifting operation which could be reversed by emptying the cylinders. Opening took about 90 seconds. The bridge survives, minus the upper parts of the curved members, which have been severed short of the water cylinders.

ACKNOWLEDGEMENTS

In the preparation of this report we have been greatly assisted by the researches generously made available by Mike Rumbold and Beryl Williams of Weedon Bee Historical Society. Keith Goldsmith kindly made available a copy of his dissertation on the Military Prison at Weedon. Other documentary research was undertaken by Andrew Williams of RCHME at the Public Record Office, Kew, and the Royal Engineers Library, Brompton Barracks, Chatham. The assistance of the staff of both institutions is acknowledged. For assistance in arranging access to the site we are grateful to the occupiers of the various buildings, to Jim Clarke of the Cavalry Centre, Martin Ellison of Northamptonshire Heritage and Ian Smith of Daventry District Council.

NOTES

1. Jonathan Coad, *The Royal Dockyards 1690-1850* (Aldershot, 1989), 245.

2. See, for example, Andrew Williams, 'The Royal Ordnance Store, Great Yarmouth, Norfolk', RCHME Survey Report, NBR No. 44260 (1999), for a much smaller example, constructed during the period 1806-15.

3. Coad (1989), 310.

4. Royal Engineers Library (henceforth 'REL'), Brompton Barracks, Chatham, WEE 10/1, Letter Book 2, letter from the Office of Ordnance to Captain R. Pilkington, R.E., dated 8 October 1806.

5. J.E. King, *A Short History of the Technical Stores Depot, Weedon* (1965), reprinted in Weedon Bec History Society, *Weedon Royal Ordnance Depot Revisited* (Weedon Bee, 1996), 13.

6. Information kindly supplied by Beryl Williams, Weedon Bee History Society

7. Information kindly provided by Beryl Williams.

8. Beryl Williams.

9. Public Record Office (henceforth 'PRO'), WO55/2448 'Return Showing the Whole Extent of the Ordnance Lands at Weedon and the Same Now Occupied' (1811).

10. David Evans, 'A Preliminary Documentary Survey of Ordnance Magazines and Related Buildings', English Heritage Research Report (1998), 75.

11. Roger Bowdler, 'Former Board of Ordnance Gunpowder Magazines, Magazine Lane, Marchwood, Hampshire', English Heritage (Historical Analysis and Research Team) report, 1997.

12. Weedon Bee Historical Society (1996), 14.

13. PRO, WO55/542 'Return Showing the Whole Extent of the Ordnance Lands at Weedon' (1821); WO33/568, 'Return Showing the Whole Extent of the Ordnance Lands at Weedon' (1831).

14. *Parliamentary Papers (House of Commons)* (1847), xxxvi: 'A Return for Each Barracks in the United Kingdom', p.333.

15. Beryl Williams.

16. PRO, WO55/2859, 'Plan of the Ordnance Depot Lands and Buildings at Weedon' (1844).

17. Michael Barthop, *The Armies of Britain 1485-1980* (Chelsea, 1980), 237.

18. The 'Interim Report on the Barracks and Hospitals in the Birmingham District' of 1859 notes that the lower barracks are now empty and used as a store and prison (Beryl Williams).

19. Beryl Williams.

20. Evans (1998), 74.

21. The Select Committee on Contracts discussed Weedon in 1858 and the Royal Commission on the State of the Stores at Weedon, Woolwich and the Tower reported in 1859. The storekeeper fled to Canada with an actress. Information kindly supplied by Beryl Williams.

22. REL, 420/N/5/0067 (W130) 'Store No.2' (1874); 0068 (W131) 'Store No.5 Formerly Prison Governor's Quarters' (1874); 0130 (W32) 'Wagon Shed' (1879).

23. Weedon Bec History Society (1996), 16.

24. Weedon Bec History Society (1996), 16.

25. Weedon Bec History Society (1996), 17.

26. Weedon Bec History Society (1996), 17.

27. Weedon Bec History Society (1996), 17.

28. Weedon Bec History Society (1996), 18.

29. Weedon Bec History Society (1996), 18.

30. Duncan Campbell, *War Plan UK* (London, 1983), 159; Weedon Bec History Society (1996), 19.

31. PRO, WO55/2354.

32. PRO, WO55/2859.

33. PRO, WO55/3029.

34. Plan dated 1860, in Eton College Records. This information kindly supplied by Mike Rumbold.

35. Department of the Environment, *List of Buildings of Special Architectural or Historic Interest: District of Daventry (parishes of ... Weedon Bec ...)*, List 42 (London, 1987), 79.

36. REL, 420/N/5/0067 (W130).

37. REL, 420/N/5/0067 (W130).

38. PRO, WO44, Misc. correspondence.

39. REL, 420/N/5/0009 (W78). The prison operating at Weedon between 1900 and 1907 probably used the cell block built during the barrack conversion.

40. REL, 420/N/5/0009 (W78).

41. REL, 420/N/5/0068 (W131).

42. REL, 420/N/5/0062 (W11).

43. REL, 420/N/5/0018 (W66).

44. Ordnance Survey 1900 & REL, 420/N/5/0009 (W78).

45. REL, 420/N/5/0044 (W6).

46. REL, 420/N/5/0059 (W7); 0060 (W8); 0061 (W10).

47. REL, 420/N/5/0047 (W47); 0048 (W48); 0049 (W49); 0050 (W51).

48. REL, 420/N/5/0053 (W44).

49. REL, 420/N/5/0048 (W48).

50. REL, 420/N/5/0128-0135 (W30-32, unnumbered, W34, W35, W37 & W29); also one undated drawing: REL 420/N/5/0063 (W36).

51. Land Tax Assessment Plan, REL, 420/N/5/0064 (WB58).

52. REL, 420/N/5/0074-0084 (W12-21).

53. REL, 420/N/5/0114 (W9).

54. PRO, WO55/2354.

55. PRO, WO55/2448.

56. REL, 420/N/5/0119 (W143).

57. A further protection, probably secondary, was added to the exterior, and was respected by Second World War camouflage paint.

58. E.g. the surviving magazine at Purfleet: see Peter Guillery & Paul Pattison, 'The Powder Magazines at Purfleet', *The Georgian Group Journal*, VI (1996), 37-52.

59. The 1910 drawing (REL, 420/N/5/0114 (W9)) shows the interior earth-filled and topped with concrete.

60. National Army Museum, 8209 106/1. This reference, and the next, kindly supplied by Beryl Williams.

61. REL, 420/N/5/0112 (W145).

62. REL, 420/N/5/0053 (W44).

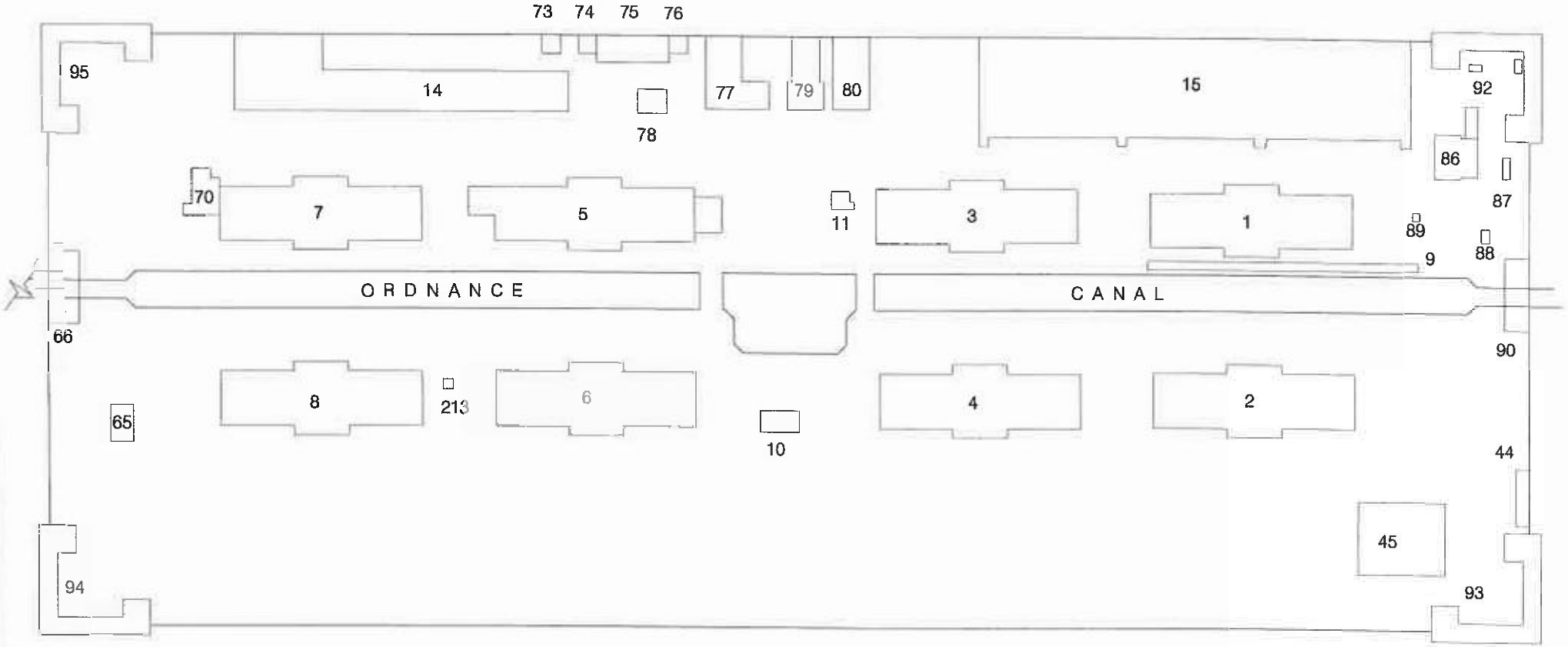
63. PRO, WO44/Misc.

64. Quoted in Weedon Bee Historical Society (1996), 14.

65. Col A H Bagnold, *Royal Engineers Magazine*, (March 1908), 125-8.

ROYAL ORDNANCE DEPOT
WEEDON BEC

Plock Plan of Storehouses



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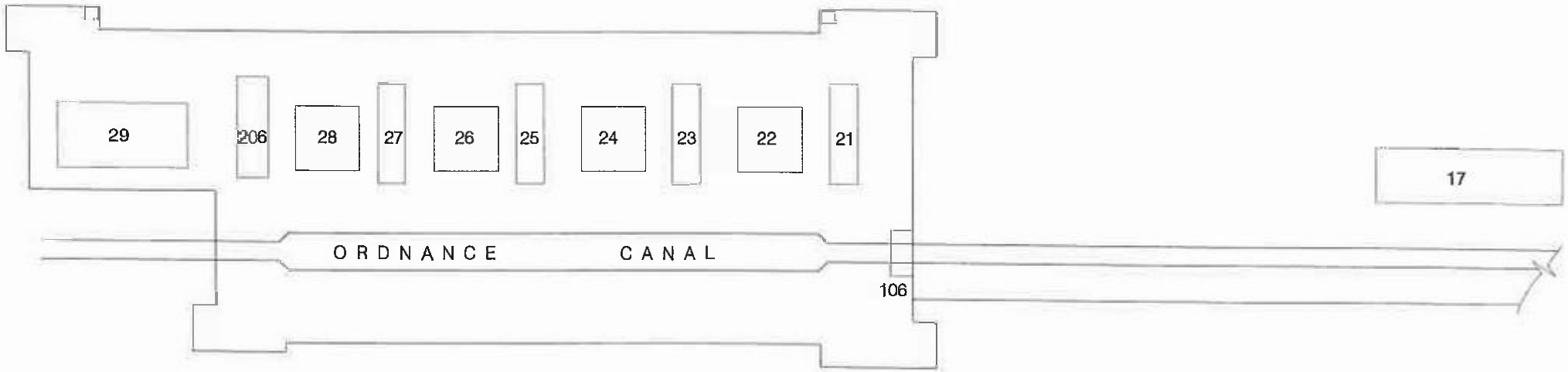
ROYAL ORDNANCE DEPOT
WEEDON BEC

Block Plan of Magazine Enclosure



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