

The Interchange, Oval Road, London NW1 7DZ

FEATURES OF SIGNIFICANCE IN THE INTERCHANGE BASEMENT

Report to British Waterways

by

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CONTENTS

1. Introduction
2. History
3. Structure and Form of the Interchange Building
4. Significant Features Observed in the Basement
5. Wider Significance
6. References
7. Listing Description
8. Illustrations

FEATURES OF SIGNIFICANCE IN THE INTERCHANGE BASEMENT

1. INTRODUCTION

- 1.1 The Interchange Building is a former railway warehouse, constructed circa 1901-5 within the Camden Goods Yard of the London and North Western Railway. It straddles an earlier canal dock connected to the Regent's Canal and there was provision for the transfer of goods between rail and canal. The building and the towpath bridge over the dock are listed separately as buildings of special architectural or historic interest, both Grade II. Whereas the upper parts of the building were in warehouse use until the 1970s and have since been converted to offices, most of the basement and the adjoining dock have been disused for many years. The building's freehold is now owned by British Waterways.
- 1.2 This report has been commissioned by the London office of British Waterways, from Malcolm T. Tucker, MA CEng MICE, Engineering Historian and Industrial Archaeologist, to advise on the historical and archaeological significance of the features of the disused parts of the basement and canal dock. The site was inspected on 12 July 2010. Use has been made of the author's accumulated historical research and knowledge in the writing of this report.

2. HISTORY

- 2.1 The London and Birmingham Railway (L&BR) was constructed under Acts of 1833 and 1835 and ran its first trains from 1837. The site chosen for the goods terminus of the line was to the north of the Regent's Canal at Camden Town and previously agricultural land.¹ It was developed in several stages and initially there was no provision for direct interchange with the canal. The Regent's Canal, built under an Act of 1812, was completed as a through route in 1820, but it had opened from Paddington to Camden Town in 1816 and several private docks were built to provide wharfage space at this temporary terminus. The two, later three, docks on the north side of the canal backed onto Commercial Place (now Camden Lock Place), and that street formed the original southern boundary of the goods yard.
- 2.2 Semple's Wharf, containing the westernmost of these docks, was acquired by the railway company in the early 1840s and, after some years' delay, the dock was extended landwards and a railway line was laid down to the water's edge in 1847-8.² The wharf was over 3 metres (10 feet) lower than the embanked goods yard, and a reversing spur was used to ease the steep gradient.³ (See figs. 2, 3). The dock was roofed over later in 1848, creating the first covered canal interchange facility at Camden. A warehouse for Allsopp and Co., brewers of Burton-on-Trent, was also built on this site. The London and Birmingham had merged in 1846 with other railway companies to become the London and North Western Railway (LNWR).

- 2.3 To avoid having to cross the wharves and docks on the northern side of the canal, the canal towpath originally passed behind Semple's Wharf into Commercial Place and canal horses made their way thence to the Hampstead Road (now Chalk Farm Road). The rail line to the wharf severed this route and it was necessary to construct a new towpath alongside the canal, commenced by the canal company in 1845 but doubtless reimbursed by the railway through the purchase agreement. It crossed the former Semple's dock by a new bridge and then crossed over the canal diagonally by another, 80-foot-span bridge. The ironwork was provided by J. Deeley & Co., ironfounders of Newport, Monmouthshire, whose name is cast upon the bridge over the dock.⁴
- 2.4 Within a very few years the LNWR was finding the goods yard congested and a major enlargement and partial reconstruction was agreed upon in 1854.⁵ This included extending the railway sidings at goods-yard level southwards to the boundary with the canal, over the whole of the former Semple's wharf and over the site to its west, where the L&BR previously had coke ovens to fuel its locomotives. The land was made up to the new level, to the east of the dock with an embankment behind retaining walls, and to the west of the dock on extensive vaults in an L-shaped plan.⁶ (See fig. 6). The dock was rebuilt longer and on an altered alignment, while keeping the existing bridge over the entrance. Along the dock edge at the upper level stood cranes, to raise and lower goods and transfer them between barges and railway wagons. Standing on the vaults and spanning the dock there were iron roofs, creating an L-shaped, single-storey transit shed.⁷ It was open-sided except towards the canal, and tracks ran through it, interconnected by wagon turntables. Further cranes could assist the transfer of goods between rail and road vehicles. The works proceeded apace and seem to have been completed by 1856, when the surface layout was shown on a new plan of the Goods Yard.⁸ (See figs. 4, 5). It is shown similarly on the largest-scale Ordnance Survey made in 1870.⁹ (See fig. 7). The shed was one of several goods handling facilities in the goods yard.
- 2.5 The vaults to the west of the dock were probably used initially for storing barrels of beer, with direct access to the dock through arches.¹⁰ Later, W&A Gilbey Ltd, the distillers and vintners, used these vaults as their No. 1 Bonded Store, for wines.¹¹, and the arches were closed off from the basin for security, using brick walls with iron grilles above. Two loading doors were provided into a lobby, separated from the secure area by an inner doorway.
- 2.6 Many of the horses that were used in the goods yard for shunting wagons and drawing road delivery vehicles were stabled near the eastern edge of the yard. Horses previously stabled in that area had probably reached the main yard via a ramped roadway, which was removed during the 1854-6 works. New access was provided by a horse tunnel that passed through the embankment retaining wall and under the tracks leading to the interchange shed, then around the edge of the new vaults to emerge via a stepped ramp in the re-entrant angle of the L.
- 2.7 At the western end of the interchange shed there were two 2-storey pavilions housing offices. These were extended at various times during the nineteenth century and again, eastwards, shortly after 1900.¹² Rail sidings were partly retained beneath the building. This created the District General Manager's Offices, generally of 3 storeys, which with further additions of 1933 became the offices at 30 Oval Road.

- 2.8 Around 1890, new loading platforms were built over the canal basin, with trap doors to below.¹³ They were supported on timber piles along the centre of the basin.
- 2.9 The interchange shed of 1856 (where not already displaced by the offices) and the loading platforms of circa 1890 were all swept away for the construction of a new interchange shed with goods handling on the ground floor and 3 warehouse floors over, designed in 1901 and called at the time the New Warehouse.¹⁴ This was the building that stands today. It supplemented the conventional main goods shed, which was situated some distance to the north west. (See figs. 8, 9).
- 2.10 The ground floor was open on the W side and partially on the N, where road vehicles docked under glazed canopies, while two rail sidings entered from the north. These had turntables to single transverse tracks at each end. A wide platform or "loading deck" was used to transfer goods between rail and road, and also to and from the warehouse above by means of hydraulic lifts or by hoisting sacks through trap doors. There was also a grain chute. A narrower, island platform or "tranship deck", under a further glazed roof on the east side, would seem to have been intended for transshipment between rail vehicles, but with a pair of bascule bridges to allow hand trucks to cross the intervening track to the main platform¹⁵. The various platform edges were to be provided with 24 hydraulic cranes of 15 hundredweight (0.75 ton) capacity.¹⁶ Three of these cranes were also able to transfer goods between the main platform and canal barges through trap doors above the dock, and three others through trap doors into the basement. (See fig. 14). The building's structural features are described in Section 3 below. (See figs. 10 to 13).
- 2.11 The basement below the interchange shed, to the east of the dock, was constructed in place of the solid embankment of c. 1856. The retaining walls on the northern and eastern sides of the dock were demolished down to basement level and new warehouse walls built, while the retaining wall on the eastern side of the site was retained, with its stepped and backwards-inclined inner face rendered over. The new basement was inspected for insurance purposes in 1906, when it was occupied by the wine and spirit merchants Gilbey's as a store for empty bottles.¹⁷ These would have been new stock, and perhaps "returned empties", brought in by rail and lowered by crane for use in their bottling stores that adjoined to the north-east. An opening (now blocked) was made through the wall to the bottling stores, secured by double iron fire doors.¹⁸ The 1906 report mentioned the trap doors, ventilation openings, fire sprinklers and other features of the basement discussed in Section 4 below. The "extensive range of cellars" in Gilbey's No.1 vault west of the canal basin was also noted then.
- 2.12 A further report of 1928 noted two floors of the warehouse as occupied by Cadbury Bros. Ltd, the cocoa and chocolate manufacturers. They had largely vacated by 1933, replaced by general storage.¹⁹
- 2.13 The LNWR merged into the London Midland and Scottish Railway (LMS) in 1923 and upon nationalisation in 1948 the depot came under British Railways London Midland Region (BR LMR). The Beeching Report of 1963 led to the rapid run down of the traditional rail-borne sundries traffic that had provided the mainstay of operations at the Camden goods depot, handled in the main Goods Shed nearby. The depot was transferred in 1969 to a new company, National Carriers Ltd, which concentrated on traffic carried by road, and very little rail traffic remained in 1975.²⁰

- 2.14 The Interchange Warehouse was made a listed building in 1974. Around 1986, the building was acquired by the locally-based property entrepreneur Eric Reynolds, who set in train the conversion of the ground floor and upper floors to offices²¹. The glazed canopies on the western, northern and eastern sides of the building were taken down, while retaining the screen walls at the southern end. A new access route for pedestrians was made from Camden Lock Place through a new archway in the eastern boundary wall, involving the opening out of part of the basement. Except for this well, the ground floor and the now unroofed area to the east were made up to levels above the former platforms, by filling in the lower parts where the railway tracks had been. New paving and surface drainage were provided on the eastern side and raised floors internally.
- 2.15 The conversion work was completed by 1991, except for fitting out of the uppermost floors, and the building was renamed The Interchange. The offices were leased to a television news company whose successor, Associated Press Television News, continues to lease all but the basement. British Waterways bought the freehold of the building in 2004-5.²² In 2007-8, Associated Press installed a plant room at the northern end of the basement, while an escape staircase and the foundations of a large microwave antenna have been inserted in the southernmost bay, but the remainder of the basement is currently disused. The vaults west of the dock, which lie beneath the western forecourt of the building, are understood to be in other ownership.²³

3. STRUCTURE AND FORM OF THE INTERCHANGE BUILDING

- 3.1 The building, comprising the three upper warehouse floors, the railway interchange shed at ground level and the basement alongside the earlier dock, appears to have been built closely in accordance with the 1901 drawings.²⁴ (See figs. 10-13). It has a steel internal frame enclosed in brick external walls, handsomely detailed, the facings being of bright red bricks with Staffordshire Blue brick embellishments.²⁵ Whereas the warehouse contains much structural timber (floors of solid timber, i.e. "slow-burn" construction, and a traditional slated timber roof on king-post trusses), the basement and ground-floor ceilings are of heavy, entirely incombustible construction, of brick jack-arches on steel secondary beams, so as to impede the spread of fire. Trap doors, ventilation shutters and crane mountings did perforate the deck (all now sealed), and the steelwork was mostly left exposed, but further fire protection was provided by a comprehensive sprinkler system fed from the distinctive water tower. All internal doorways were provided with self-closing sliding fire doors in accordance with the best practice of the time, suspended from inclined runways with fusible links to the counterweights.
- 3.2 Girders made of mild steel, a relatively recent introduction in buildings, permitted wider spans and a freedom of planning on the main floor that had previously been practicable only in single-storey buildings roofed with trusses. Plate girders (i.e. built-up from plates and angles, joined by rivets) span 29 feet (8.84 metres) for the main, beams (but half that distance in the basement where they have to support rail tracks). Substantial rolled-steel beams span 25 feet 1 inch (7.65 metres) for the secondary beams. Where these supported the extra loads from rail tracks, their flanges have extra plates, making them "compound" sections. (See figs. 18 to 21).

The main stanchions are of a compound cruciform section (built up from three rolled sections and supplementary flange plates), which becomes an octagon shape on the main floors for strength through the greater height and greater fire resistance. The cruciform shape is exposed in the columns down the centre of the canal dock and can be observed at close quarters from the bridge at the mouth of the dock. (See fig. 17). In the basement, the columns were encased with engineering brick, since at particular risk from fire in an unattended storage space. The flared stanchion bases within massive concrete casings that spread the column loads to the foundations stand expressed above floor level next to the canal dock; elsewhere they are buried more deeply, to avoid obstructing the basement floor and the dock. (See fig. 20). The weight of the trains on the sidings necessitated additional columns in the basement, halving the main beam spans there.

- 3.3 The beams in the basement ceiling are located below the level of the sidings, leaving dead space above them under the platforms. In those locations, the jack arches were built about 4ft 6in. (1.35m) higher, raised on brick sleeper walls above each of the secondary beams, which are at 4ft 10in. (1.47m) centres. In the sides of the platforms, below every third jack-arch, openings to ventilate the basement were provided, closed by wooden flaps. There are similar vents in the wall to the dock. (See figs. 19 to 21).
- 3.4 This dead space also provided room for the swivel mountings and slewing gear of the hydraulic cranes that stood on the platforms, described in Section 4 below.
- 3.5 The rail sidings were originally paved with blue brick paving and the jack arches beneath them were to be set in cement rather than lime mortar, which would provide frost resistance.²⁶ Cast-iron drain pipes, now seen protruding through the ceiling and disconnected below, will have served gulleys for rain water that made its way in from beyond the end of the glazed canopy or dripped from wagons. (See fig. 23).
- 3.6 Two wagon turntables were provided at the SE corner of the shed²⁷, and they would normally have worked in pits below rail level. However, the beams and jack-arches of the ceiling below are uninterrupted by any such feature, so the turntable structure must have been inverted except for a central pivot.

4. SIGNIFICANT FEATURES OBSERVED IN THE BASEMENT

- 4.1 The vacant part of the basement was inspected in detail on 12 July 2010 and the features observed are shown on Figure 1. The plan outline has been based on the 1901 drawings. Some features previously observed in neighbouring locations have also been indicated. Grid lines have been introduced for locational reference, using the recent numbering of the transverse bays seen painted on the east wall and arbitrary lettering in the other direction. (There is evidence of an earlier bay-numbering system painted on some columns).
- 4.2 Structural Steelwork: The details of the structural steelwork described in 3.2 above are characteristic of the leading practice of the 1900s, when technical development and rising prosperity allowed the structural capabilities of steel to be exploited to the full and reinforced concrete had yet to establish itself fully as a competing material. The close spacing of heavy compound girders in the secondary spans, able to support

trains of wagons upon the long spans required in the planning of the building at ground floor, is well expressed in the basement ceiling. The continued use of traditional **brick jack arches** is of interest, and reflects the bridge-building experience of the railway, since jack arches of unreinforced concrete and encasement of steel beams within concrete for fire protection were seeing increasing use in industrial buildings.

- 4.3 Raised Ceilings under Platforms: The raised areas of ceiling are important in expressing the presence of the former railway platforms, an essential feature of the building, since they have been covered over and obscured from view as seen from above.
- 4.4 Ventilation Openings: The ventilation openings in the sides of the platforms and in the wall to the dock express the functional need for ventilation of the basement, situated next to a dank canal. Although many have been bricked up, presumably for modern fire separation, some of them remain with their hinged wooden flaps and iron gratings on the outside. They add visual interest to the raised ceilings.
- 4.5 Mountings for Cranes: The areas of raised ceiling also accommodated mountings for the swivelling platform cranes above. Within the area of basement inspected, there are two principal configurations:
 - 4.5.1 East of gridline C and between gridlines C and D, the upper pivots of the cranes were fixed to the beams at first floor – a bracket for one crane projects from the east wall of the warehouse at C-5 at that level. At these locations, therefore, the basement ceiling mountings provided only vertical support. They are identified by pairs of substantial steel joists bridging between the secondary beams to carry the footstep bearings and slewing gear. In most cases, a steel spreader plate on top of one span of the joists and a small square hole at the centre of the jack arch above it indicate the position of the crane post, matching the locations shown on the 1902 ground floor plan to within a foot. Slewing cylinders were also mounted here, with their rams extending through an arched opening in the adjoining sleeper wall, while a further span of joists beyond the sleeper wall supported hydraulic control gear. (See Fig. 25).. One set of this equipment survives and is described in 4.6 below.
 - 4.5.2 At C-9 the support is a variant of that above, with a third joist in parallel and a larger sleeper-wall opening. The crane post may have been located differently. (See Fig. 26).
 - 4.5.3 Adjoining gridline B, the cranes under the glazed roof may have been freestanding, requiring their upper lateral support to be at platform level (to stop them falling over), although it was common to fix lateral bracing between the roof trusses in such a situation. In any event, they seem to have been of a different design from the others, although all were to be of the same 15cwt capacity in 1902. A large hatch, now sealed with concrete, was provided through the platform deck, which will have allowed the whole crane post to pass through. This hatch interrupted the pair of jack arches, necessitating trimmer joists, whose outer ends are each propped by a steel post off an additional joist that lies parallel to the others at the lower level. The upstanding frame thus created is braced by inclined struts back to the girders

at the lower level, to give lateral stiffness to the platform in its narrow, east-west direction. The provision of this bracing is consistent with the cranes having been freestanding. There are further arches through the sleeper walls, presumably to accommodate the hydraulic equipment. At B/C-14, a folding access ladder and an upper ladder to platform level remain in place, possibly later insertions. (See figs. 27 to 30).

- 4.5.4 Over the canal dock, where there is no lower level of beams below the platform, the mountings for the cranes will be different again. Inclined suspenders can be seen from across the dock, but they have not been investigated.
- 4.6 Hydraulic Crane Slewing Gear: A remarkable discovery is the relatively intact remains of the hydraulic slewing gear for the crane at C/D-14, and the associated footstep bearing, mounted above the pair of beams described in 4.5.1. Small hydraulic cylinders are placed to either side of the bottom bearing for the crane post, with their rams projecting through an arch in the sleeper wall. Pulleys on the further ends of the rams will have engaged with chains to pull the crane post to left or right and thus turn the crane. Under the further jack arch there is the valve gear for operating both the slewing rams and the hoisting ram. (The hoisting ram was mounted on the post of the crane, as may be seen in the retained example within the offices on the ground floor). There are two rectangular holes in the ceiling for former rods or cables from control levers at platform level. Cast-iron bearing brackets are bolted to the brickwork next to the holes, to hold an axle for the bell cranks. (See figs. 31 to 34).
- 4.7 Pairs of holes for the control rods or cables can be seen at the other crane mounting locations (see 4.5.1 and 4.5.2). At B/C-14, bearings for the bell cranks remain, but of a different design from C/D-14, and there are also small pulleys for further control cables. (See figs. 28, 29).
- 4.8 Catwalk and Slewing Gear over Dock: Over the dock, there is a timber catwalk or rather crawlway, suspended by rods beneath the ceiling close to line F. It is likely to extend the whole length of the dock, to give access to crane slewing gear. Because of inaccessibility for their removal, the several sets of slewing gear are likely to survive in situ here, although obscured by timber casings (for frost protection) when viewed from across the dock. (See fig. 38).
- 4.9 Evidence of Control Rods, Trucking Bridges and Wagon Stops: Near the middle of the western wall of the eastern platform, at grid reference C-8¼, there is a forged iron bar hanging from a pivot below the ceiling, next to a chase and small hole in the wall. It is evidently the **support for a control rod** that passed through the wall close to track level, either for the operation or control of one of the removable **trucking bridges** that joined the two platforms close to this point, or as part of a **wagon stop** mechanism, both of which are shown indicatively on an LMS drawing of 1923.²⁸ In the latter case, the sliding rod passing through the hole and worked by a lever at platform level would have placed a stop across one of the rails, to prevent a wagon from rolling into the bridge. The drawing shows that there were five such wagon stops in this vicinity. Further evidence of the bridges and wagon stops is likely to be found in a more detailed inspection. (See Figs, 15a, 15b and 35).

- 4.10 Trap Doors: Trap door openings in the basement ceiling were seen to remain at C/D-7 and 11, and they should remain similarly over the dock at D/E-6 and 14 and E/F-14. The openings are substantial, about 2½ metres by 2 metres, requiring structural trimmer beams to support the interrupted secondary beams. Brick-lined wells penetrate the platform void space above the basement. There are beech-wood rollers in cast-iron bearings around the lower edges to prevent rope wear. The trap doors themselves differ from the design shown on the 1901 drawings²⁹ – there appear to be two heavy wooden panels probably lifted by crane and resting on a removable joist along the centreline.
- 4.11 Sliding Fire Doors: Along the east side of the dock there are three narrow doorways for access to the waterside. A sliding door remains in place at two of them, being smaller versions of the fire doors shown on a 1902 drawing and described in 3.1 above.³⁰ These two are made of solid timber with sheet metal cladding. The counterweights with fusible link are missing, so they remain shut, although the pulleys for them remain mounted on the inclined runways. (See fig. 36).
- 4.12 Sprinkler System: The fire sprinkler system is an aspect of the basement design that is now missing, although in full working order in 1987, when a splendid array of valves was also seen near the base of the water tower. Sprinklers continue to be used to protect the upper floors.
- 4.13 Floor Drains: The basement floor of concrete slabs neatly divided into panels may possibly be the original "9 inch lime concrete". Set into the floor, at the centres of substantial York Stone paving slabs, are four drainage gulleys, as a precaution against liquid spillages or leakages. They discharge into the basin. The gully gratings are missing but otherwise they appear to be in pristine order. (See fig. 22).
- 4.14 The Dock: About 225 feet (69 metres) long and 44 feet (13.4 metres) wide, this was wide enough for three barges when originally built in 1856, i.e. one moored on each side with an access lane down the middle. There was never room for a barge to turn round, so strictly a dock and not a "basin", although often so called. Insertion of the central line of columns will have marginally reduced flexibility of use, but it was probably never used intensively. In addition to the three hatches in the ceiling, there were two loading doors to the vaults near the northwest corner, but only three narrow doorways into the warehouse basement, perhaps provided with an eye to further storage in bond. There is a tradition that Gilbey's gave up water transport because of pilfering. The recent name of "Dead Dogs Basin" reflects its present abandoned state. (See figs. 17, 37, 38).

5. WIDER SIGNIFICANCE

- 5.1 A number of large railway warehouses have survived nationally from the late 19th and early 20th centuries, representing a range of layouts, construction techniques and details. The LNWR's Lower Byrom Street Warehouse in Manchester of c.1880 and their New Warehouse in Huddersfield of 1885 have similarities with the Camden Interchange but there are also marked differences, illustrating evolution in design. In London there was an LNWR warehouse at Broad Street of similar era to Camden but it has now gone. It is important that the smaller details of the limited surviving stock

of warehouses are protected for continuing study and interest as well as their general architectural form.

- 5.2 A notable distinguishing aspect of the Interchange is the canal basin beneath it, allowing three-way transshipment. In its well-preserved retention of this feature within a railway warehouse, the Camden example is effectively unique. It is singled out as "most sophisticated" in the discussion of Railway Depots in English Heritage's "Industrial Buildings Selection Guide".³¹
- 5.3 Another important feature is the survival of remnants of the hydraulic platform cranes, which are now rare nationally. The crane displayed on the ground floor is not in its original position and is partially rebuilt, perhaps rescued at the last minute from the scrap men, but it serves to demonstrate the character of such a crane. The survival of some of the slewing mechanisms is therefore an important discovery. The various remains need further investigation and detailed recording and their retention in future conversion works should be given priority.

6. NOTES AND REFERENCES

¹ Tomson's Map of St Pancras, 1801; Barton, Britton and Davies' map, "Topographical Survey of the Borough of St Marylebone", 1834.

² Lease purchased from Semple in December 1840; purchase of freehold from the canal company agreed in January-March 1845 and completed February 1847: L&BR Board Minutes, RAIL 384/4-6, *passim*; Alan Faulkner, *The Regent's Canal – London's Hidden Waterway*, Burton-on-Trent, Waterways World Ltd, 2005, p.73.

³ Shown on a plan of circa 1847 in RAIL 410/1024; also on the Plan of Camden Station, 1848, in RAIL 410/2072.

⁴ Alan Faulkner, *op. cit.* note 2, p.73.

⁵ LNWR General Works Committee Minutes, 12 April 1854, 12 May 1854 and 8 Dec 1854, RAIL 410/282; Minutes of Meeting on Enlargement of Camden Station June 8th 1854, Report No. 68 of LNWR Reports to Board, RAIL 410/54; LNWR Board Minutes, Vol. 3, 13 May 1854, RAIL 410/22.

⁶ Plan of new dock area showing vaults and retaining wall, circa 1856, held digitally in Network Rail archives.

⁷ The iron columns on the east side of the shed stood on piers embedded in the embankment.

⁸ LNWR, "Plan of Camden Station 1856", in RAIL410/2072 (currently unfit for inspection).

⁹ Ordnance Survey, London, 5-feet-to-1-mile, sheets VII-11 and 12, surveyed 1870.

¹⁰ Plan of portion of the vaults, 1866, BR LMR no. 12794, held digitally in Network Rail archives.

¹¹ Charles E. Goad, Insurance Plans, London sheet XII-407, 1891 and subsequent revisions to 1954..

¹² Goad Insurance plan, London sheet XII-407, 1891; ditto, 1921; drawings of 1900 held digitally in Network Rail archives.

¹³ Drawings of 1890 held digitally in Network Rail archives.

¹⁴ Drawings of 1901, BR LMR numbers 12886-12913, and some further drawings of 1902, held digitally in Network Rail archives; copies from them in possession of British Waterways. Drawing No. 1 carries two signatures with the date "May 29. 1901", which may relate to the construction contract.

¹⁵ An additional Ground Floor Plan of 1902, BR LMR No. 12918, shows one "trucking bridge", about 28 metres from the north end of the building. A pair of such bridges is shown in a similar location on a drawing of 1923, "LMSR^y Camden New Goods Warehouse, Proposed additional Wagon Stop in front of Balance Bridges", LMS drawing no. 2536. Copies held by British Waterways from Network Rail archive. Compare note 28.

¹⁶ Ground Floor Plan of 1902, BR LMR No. 12918, shows these cranes.

¹⁷ Guildhall Library, MS 14943, Wharves and Warehouses Committee reports, Vol. 20, p. 540, W&A Gilbey, Camden Town, 20.12.1906,.

¹⁸ Goad Insurance plan, London sheets XII-406 and 407, 1921 revision. The former Bottle Stores, on the north side of Camden Lock Place, burnt down in 1980 and the doorway was bricked up and obscured by the repair work.

¹⁹ Guildhall Library, MS 14943, Wharves and Warehouses Committee reports, Vol. 25, LMS Railway Depot, Oval Road and Chalk Farm Road, 1928; *ibid.* Vol. 34, LMS Depot, Oval Road and Chalk Farm Road, 28.9.1933.

²⁰ Greater London Industrial Archaeology Society/ Camden History Society, MS notes of site visits, 5 March and 4 June 1975, copies held by the writer..

²¹ Urban Space Management Ltd, brochure, http://www.urbanspace.com/usm_experience.pdf accessed 20 July 2010.

²² British Waterways, Annual Report and Accounts 2004/05, p.36.

²³ Conversation with Frances Salberter of British Waterways, 12 July 2010.

²⁴ See note 14.

²⁵ The List Description is erroneous in describing the bricks as multicoloured stocks, although the latter were used in a warehouse of similar style at the LNWR's Broad Street Goods Station, now demolished.

²⁶ 1901 Drawing No. 7 (BR LMR No. 12892).

²⁷ Confirmed by a mid-20th-century plan of the goods yard.

²⁸ LMSR^y Camden New Goods Warehouse, Proposed additional Wagon Stop in front of Balance Bridges, LMS drawing no. 2536. Cf. note 15.

²⁹ Drawing Nos. 21 and 22, BR LMR drawing numbers 12905-6.

³⁰ "L&NWR Camden New Warehouse &c., Armored Fireproof sliding doors &c. colored blue supplied by Messrs Mather & Platt", c.1902, BR LMR drawing number 12920.

³¹ English Heritage, *Industrial Buildings Selection Guide*, March 2007, p.15.

7. LISTING DESCRIPTION

Listed Buildings Online



Building Name:	The Interchange On North Side Of Grand Union Canal	LBS Number:	477688
Parish:	Camden Town	Grade:	II
District:	Camden	Date Listed:	14 May 1974
County:	Greater London	Date Delisted:	
Postcode:	NW1 7EB	National Grid Reference:	TQ2859684093

Listing Text:

CAMDEN

TQ2884SE OVAL ROAD
798-1/65/1260 (North side)
14/05/74 The Interchange on north side of Grand Union Canal
(Formerly Listed as:
GRAND UNION CANAL
British Rail Goods Shed on North side of Canal)

GV II

Formerly known as: Interchange Warehouse GRAND UNION CANAL. Warehouse converted to offices. c1896, cleaned and refurbished c1989. Multi-coloured stock brick with blue engineering brick dressings. Rectangular main block of 6 windows facing canal and 24 window returns.

4 storeys and basement dock access. Single storey flanking extensions, running the length of the building, with 3 round-arched lights each to canal facade being the enclosing ends to railway tracks and platforms. Above and to each side, top lit floors for storage. Cast-iron windows with small panes; ground floor round-arched, upper floors segmental-arched in recessed vertical bays. Dentil cornice and blocking course.

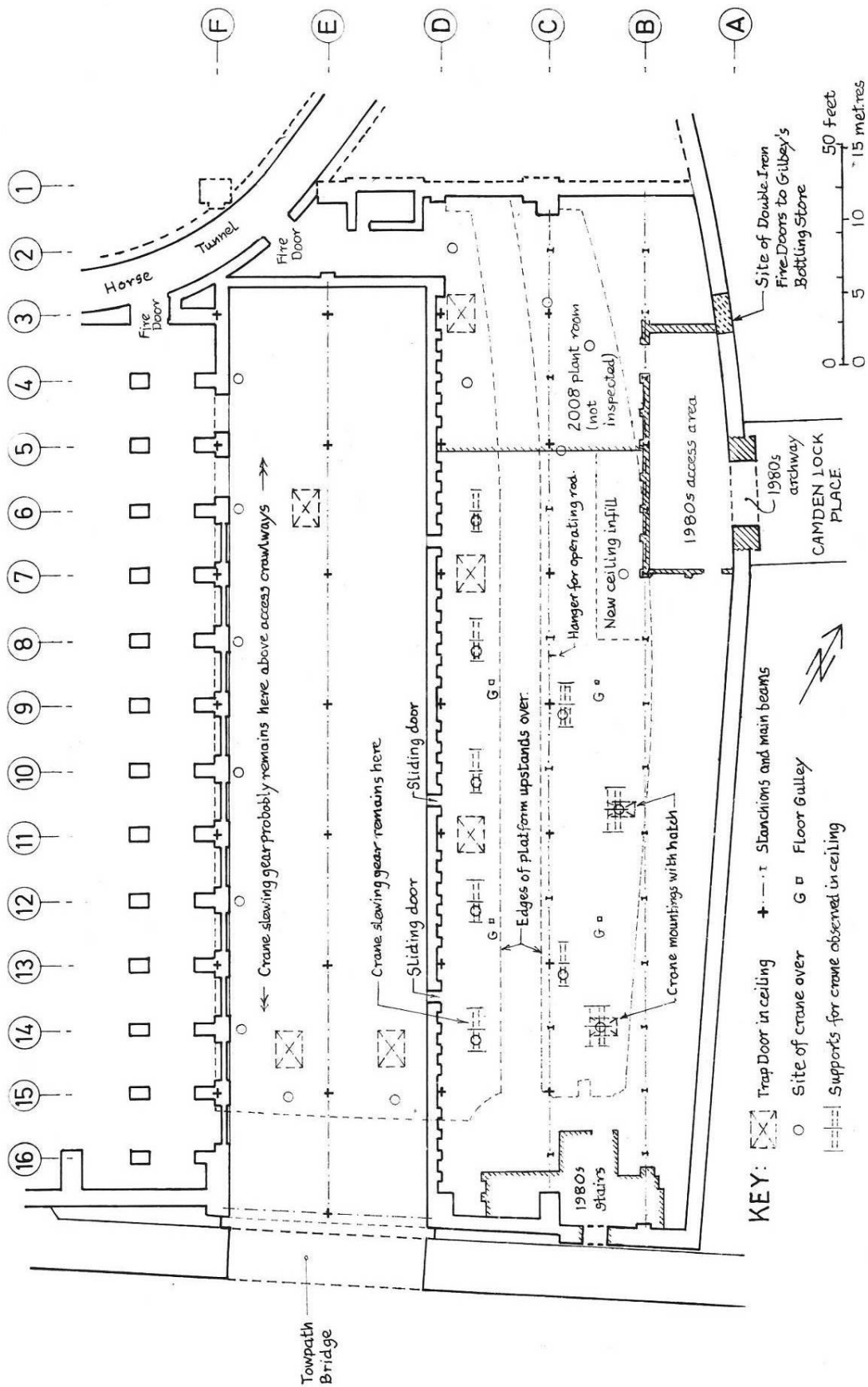
INTERIOR: retains brick-arched fireproof construction. Particularly impressive is the enclosed inlet from the canal from which goods were transferred, with cast-iron rivetted columns set in the water supporting large beams. The upper floors also retain original features. To one side of this a large area of basement storage extends under forecourt, this is of brick arched construction; to the other a gin store, with steel doors in thick, canted openings. From the corner of the Interchange warehouse a ventilated tunnel connected the building with the railway at Primrose Hill and with the stabling at Stanley Sidings, Chalk Farm Road (qqv). This tunnel for the movement of horses survives, though it is now blocked at several points. It is of round-arched brick construction, with cast-iron ventilation grilles placed regularly in the roof. West of the Interchange Building it ascends via broad steps to ground level.

HISTORICAL NOTE: built on the site of a previous warehouse. A private canal inlet runs under the building, entered under the towpath bridge (qv). Railway lines entered the warehouse from the sidings at high level, enabling direct transfer of goods between train and barge. Some 400 horses worked in the sidings, helping the transfer of goods, and the tunnel was a

means of moving them round the site.

Listing NGR: TQ2859684093

8. ILLUSTRATIONS



THE INTERCHANGE BUILDING - FEATURES OF BASEMENT Drawn by MTTucker, July 2010. Outline from 1901 drawings.

Fig. 1: Reference Plan of Features of the Basement



Fig.2: From 1848 site plan, showing Semple's dock lengthened

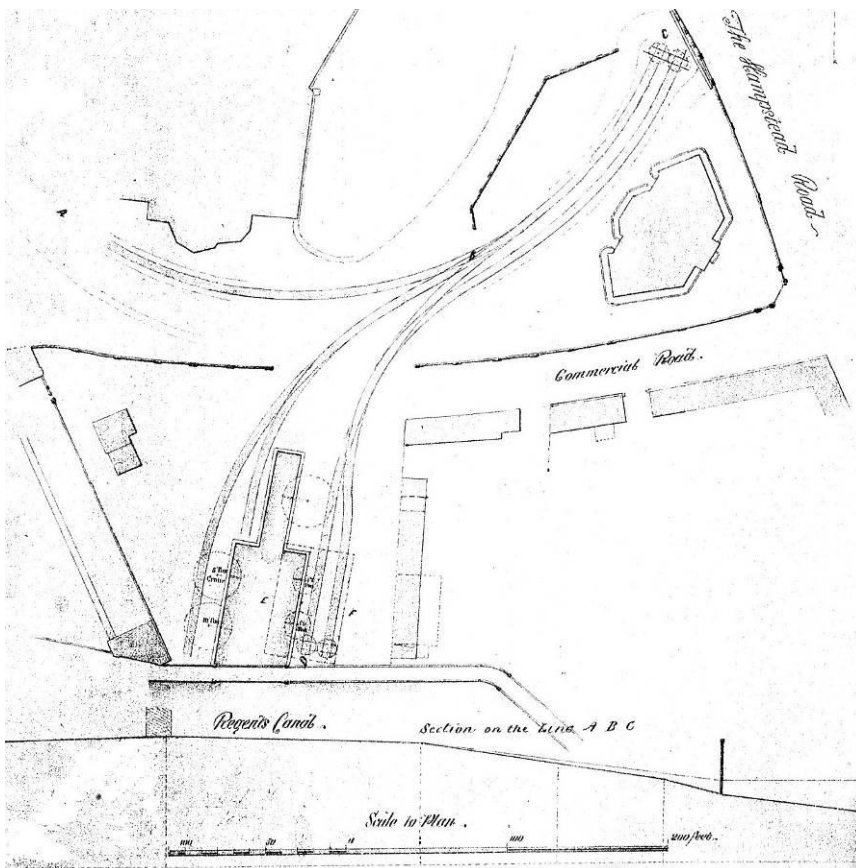


Fig. 3: Detailed plan of first interchange dock, c.1848

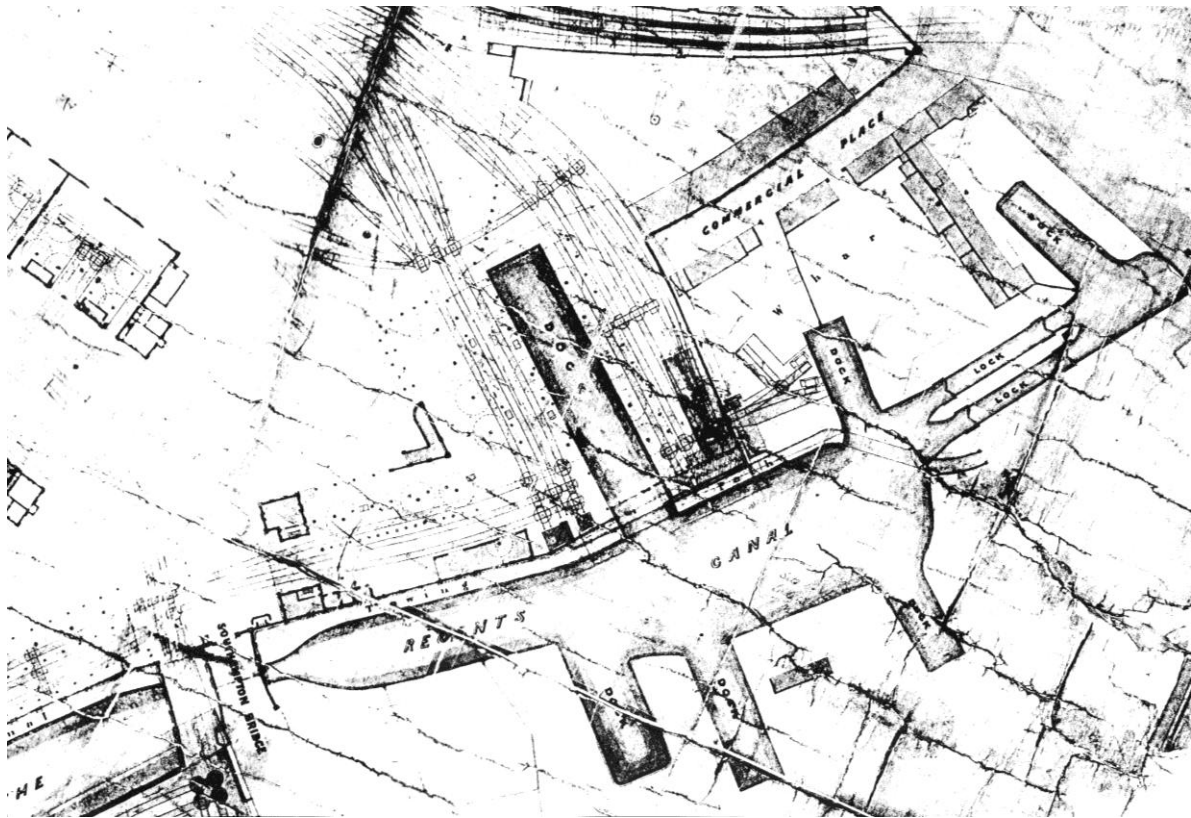


Fig. 4: From 1856 site plan, showing new dock and interchange shed.

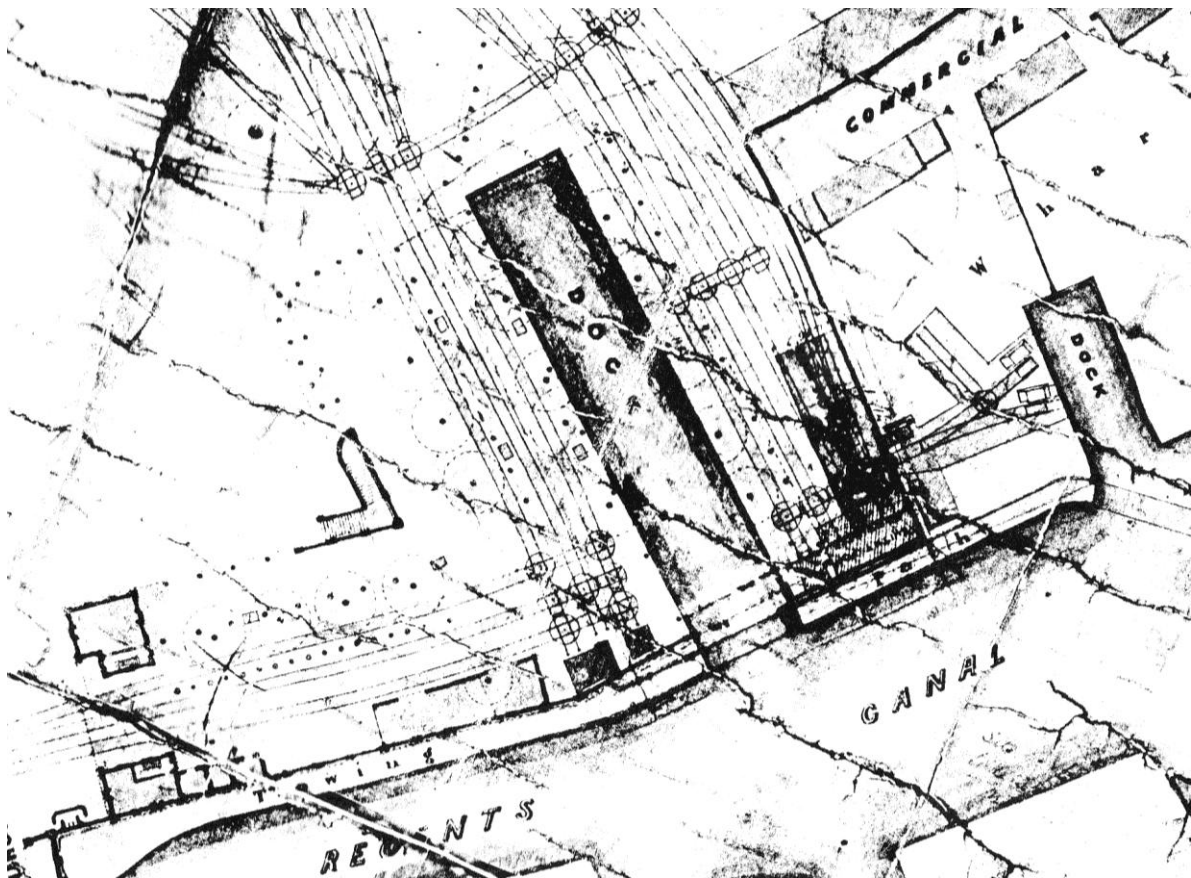


Fig. 5: From 1856 site plan, more detailed view showing cranes in interchange shed.

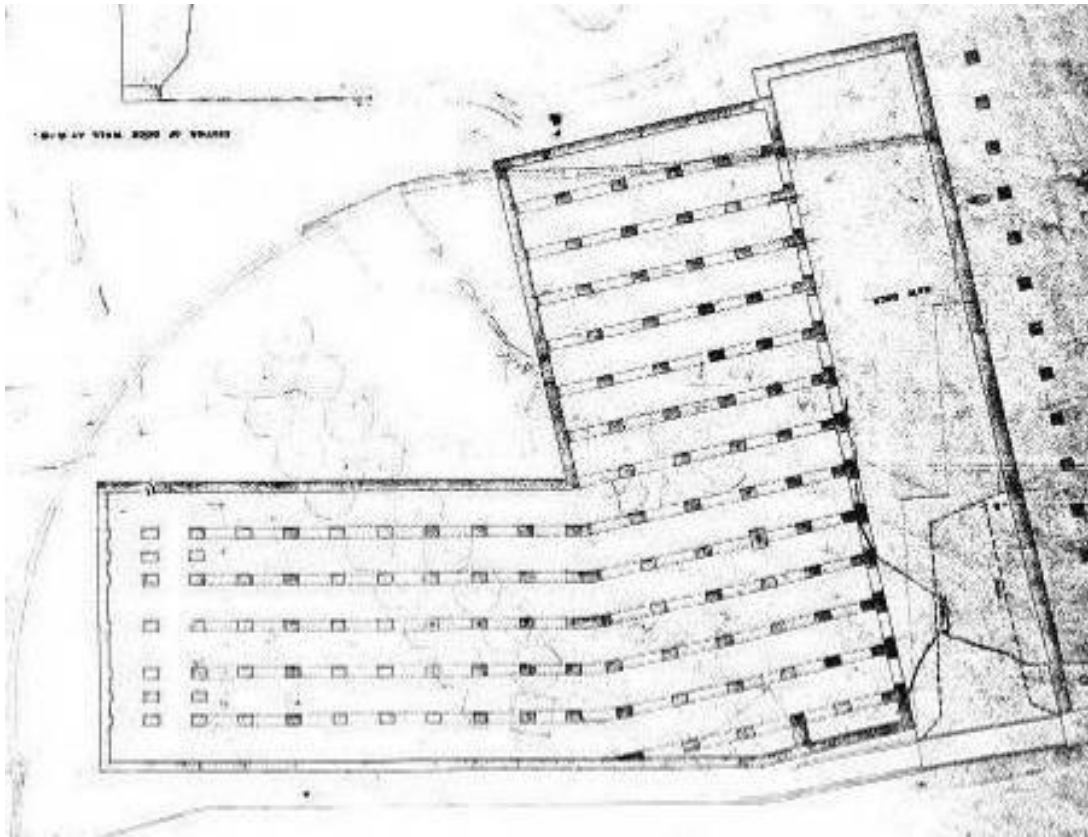


Fig. 6: Plan showing old and new Dock and the Vaults, c. 1856

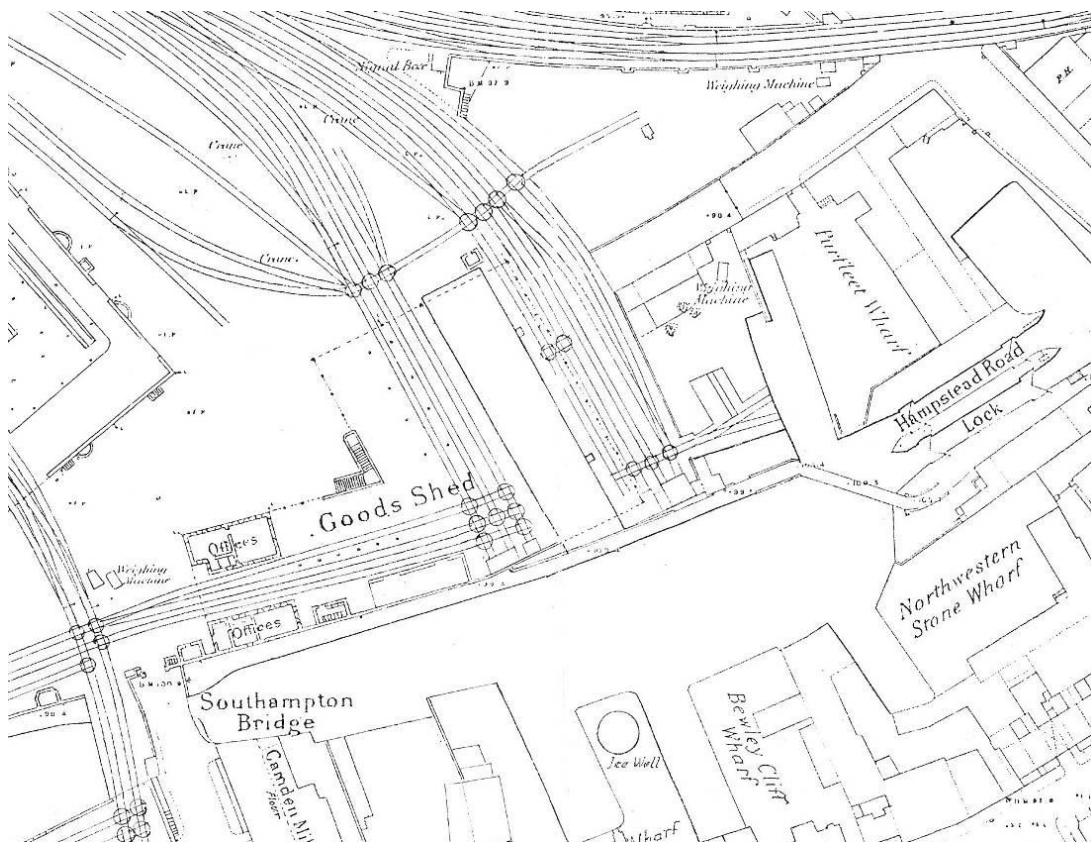


Fig. 7: From Ordnance Survey 1:1056 series, 1870

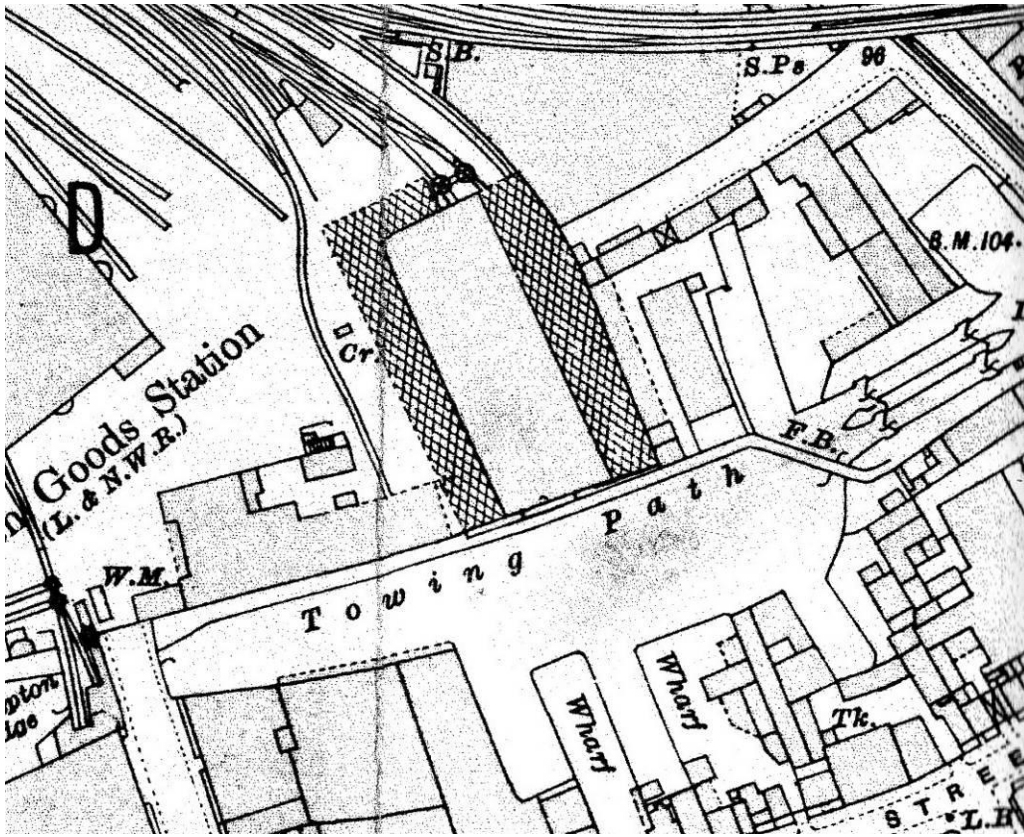


Fig. 8: From Ordnance Survey 1:2500 series, 1913

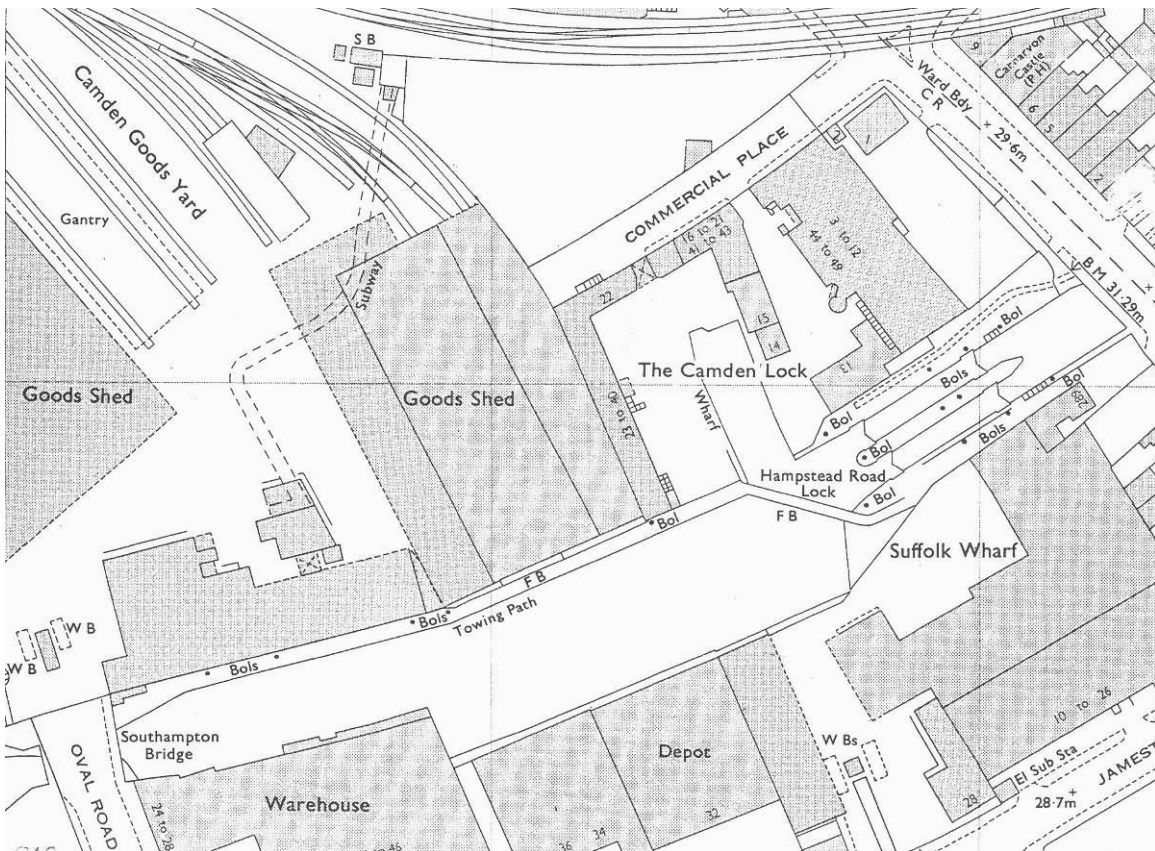


Fig. 9: From Ordnance Survey 1:1250 series, c. 1980



BASEMENT PLAN

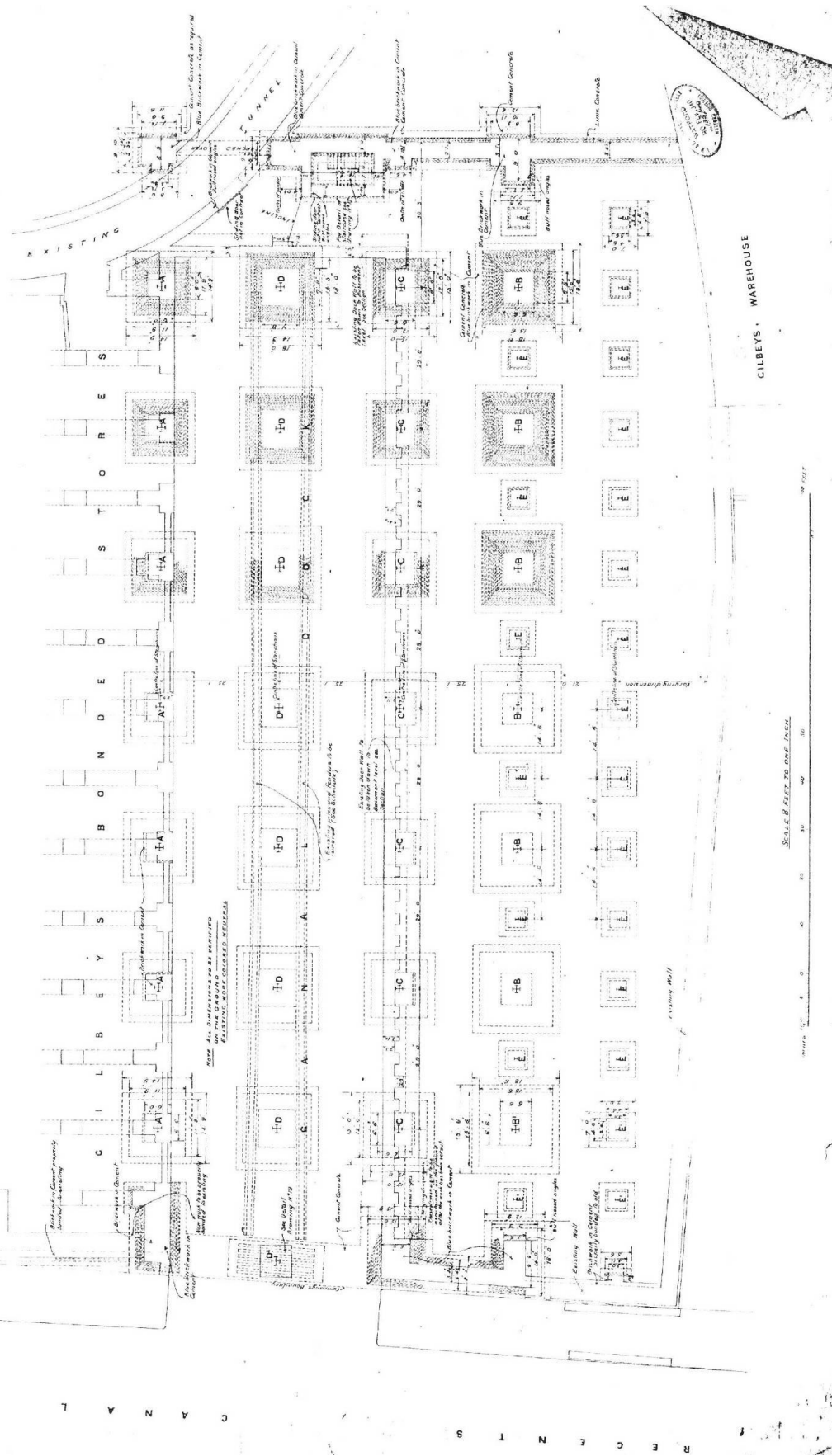


Fig. 10: Basement Plan, 1901

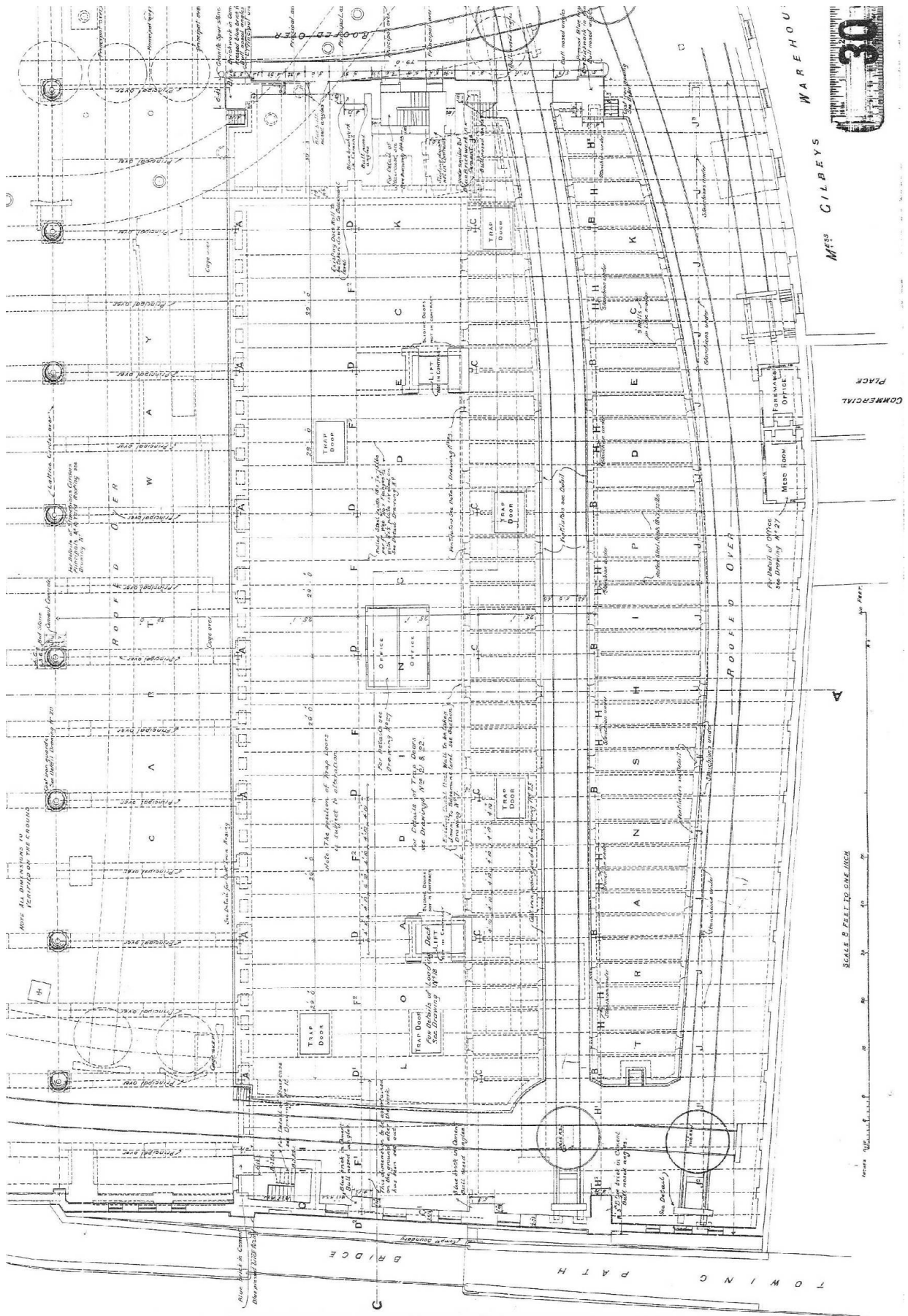


Fig. 11: Ground Floor Plan, 1901

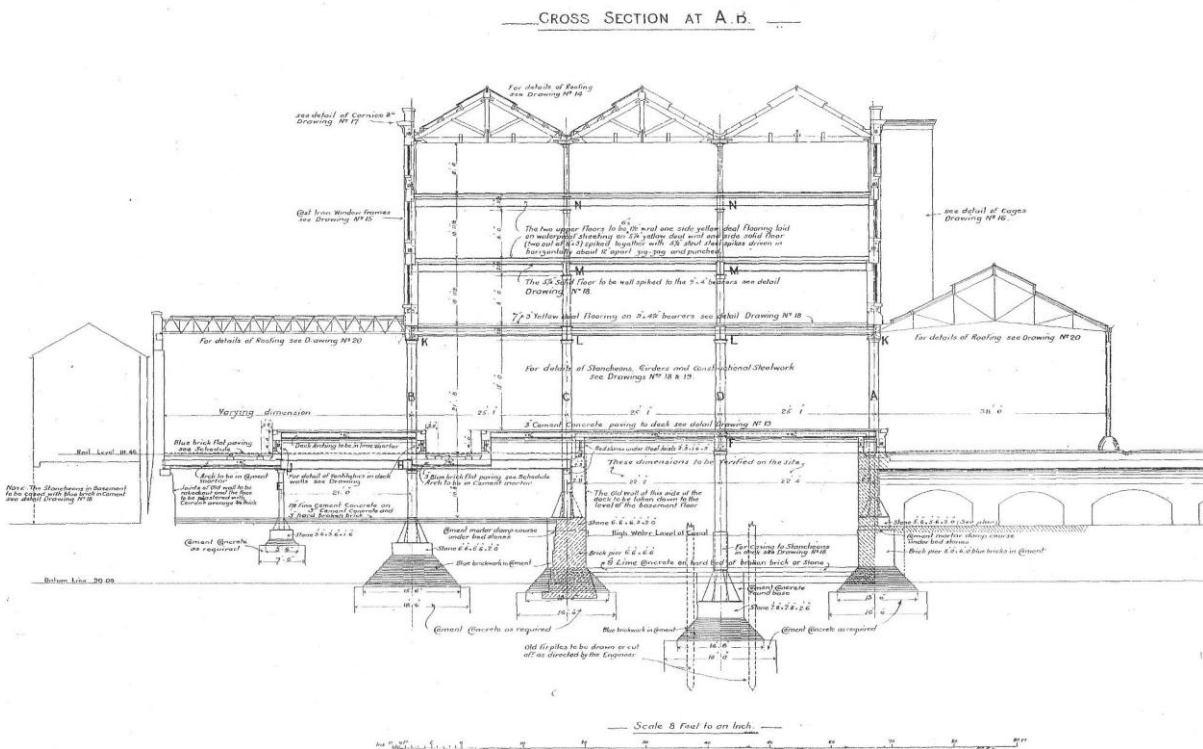


Fig. 12: Cross Section, 1901

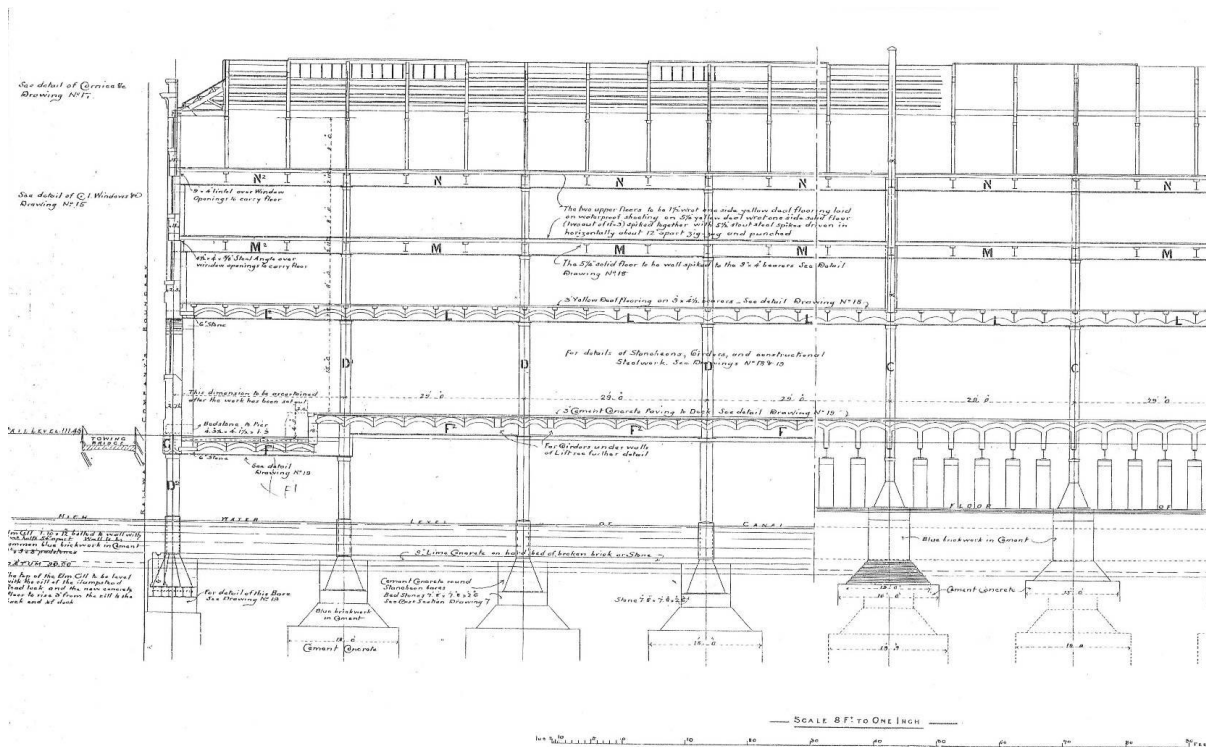


Fig. 13: Part of Long Section, 1901. It shows the jack-arched ceiling at lower level under rail tracks, at higher level under platform over dock and with platform raised on sleeper walls over basement

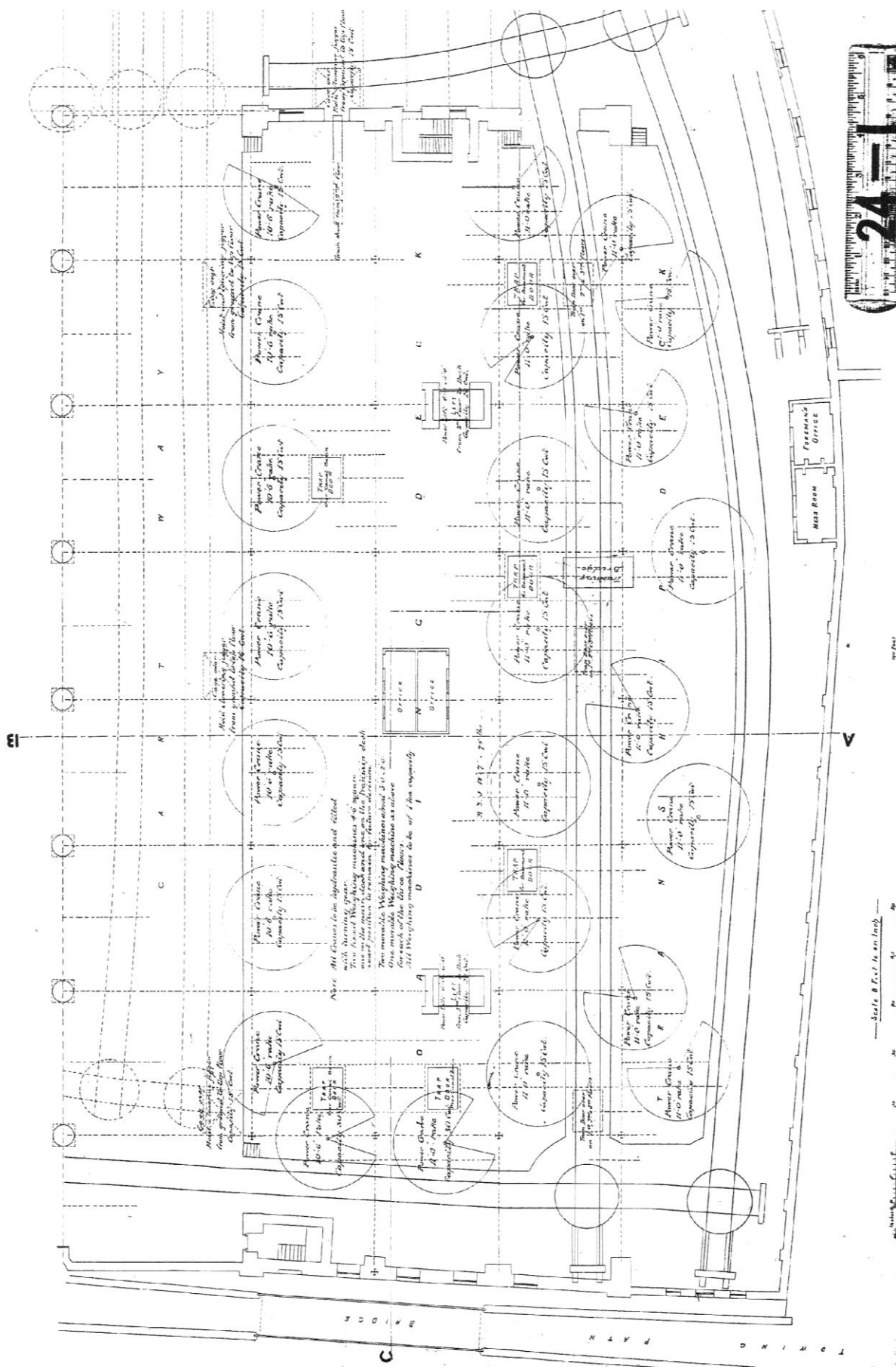


Fig. 14: Plan of showing Cranes at Ground Floor, 1902

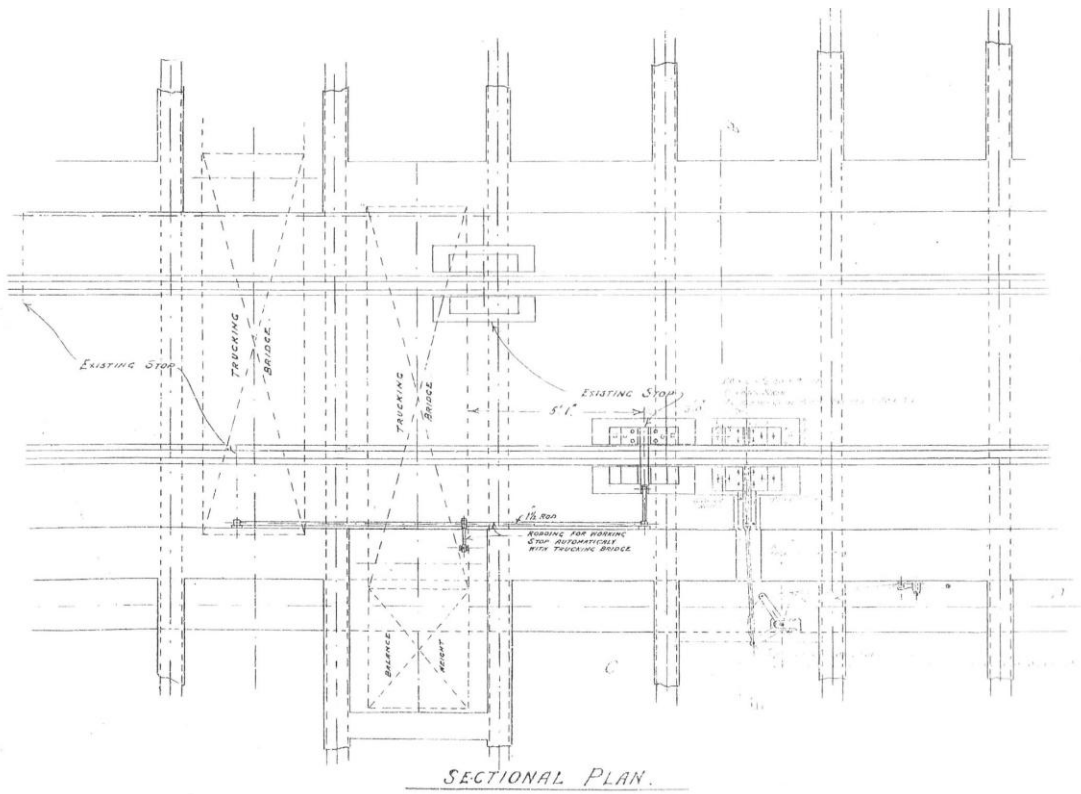


Fig. 15a: 1923 plan showing Trucking Bridges and Wagon Stops.

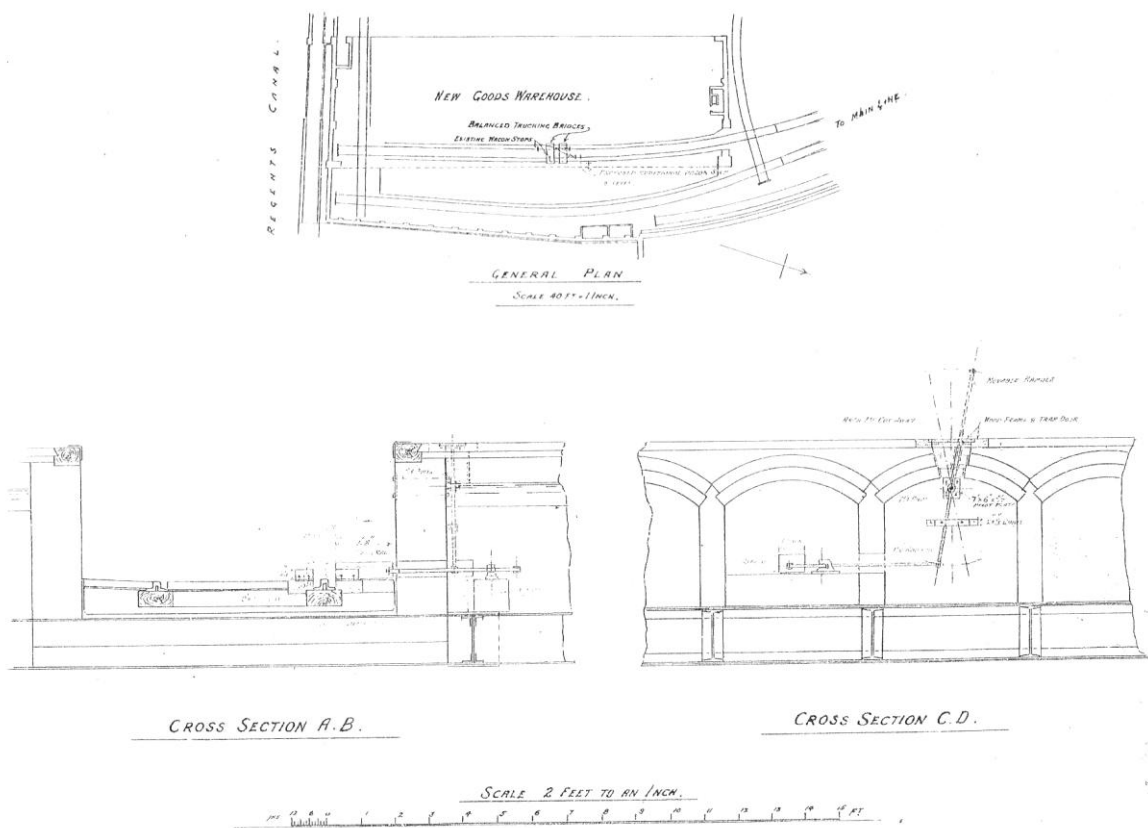


Fig. 15b: Detail of proposed additional Wagon Stop, 1923



Fig. 16: Canal Frontage and Bridge over Dock from E.



Fig. 17: Cruciform Steel Column at Dock Entrance.



Fig 18 (above): View southwards at E side of Basement, with back of former retaining wall on left. Main beam (north-south) with brick-encased columns. Secondary beams (east-west) beneath former rail track.

Fig. 19 (right): Main beam (north-south) of plate girder construction. Secondary beams (east-west) under platform area are rolled steel beams (supporting raised ceiling on brick sleeper walls). Secondary beams under rail tracks beyond are of rolled steel beams strengthened by riveted flange plates, i.e. compound girders.(See paragraph 3.2) Red oxide paint on areas corroded and repaired areas.





Fig. 20: Dividing wall between Basement and Dock, with flared column base and ventilation shutter. View from SE.

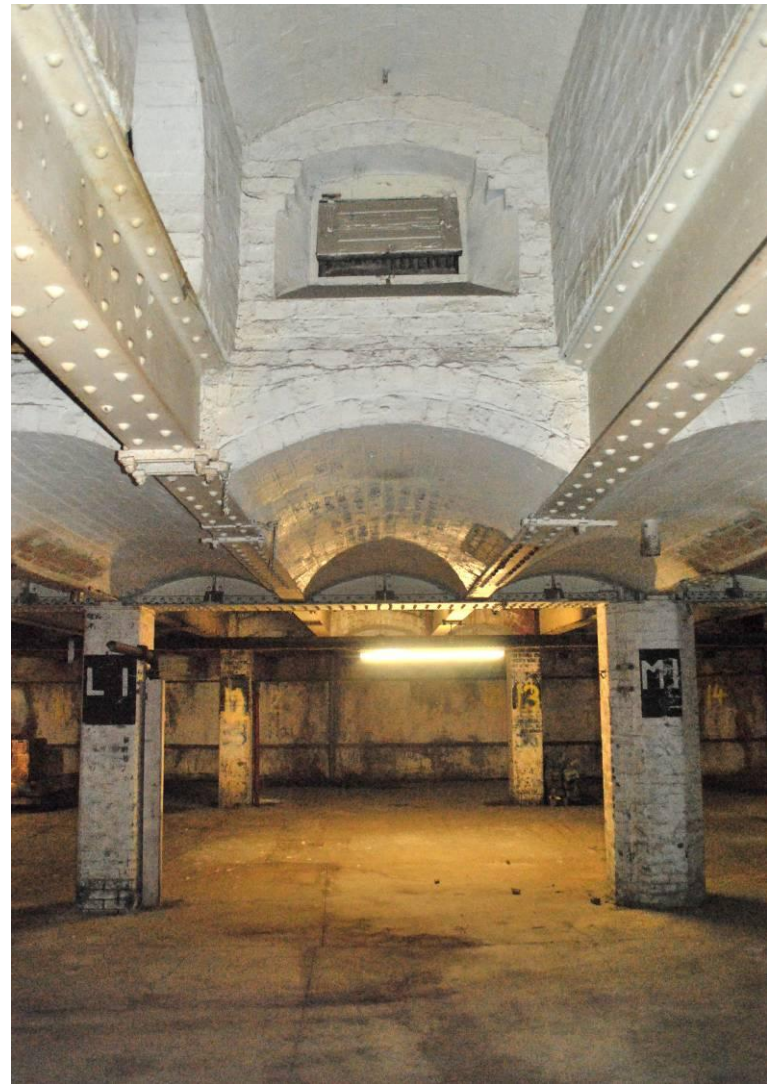


Fig. 21 Raised ceiling on sleeper walls under a platform, with ventilation shutter in platform side. View from W.



Fig. 22 (left): Drainage gully in floor



Fig 23 (right): Drainage pipe from former rail siding above. Connecting pipework now removed.



Fig 25 (above): Detail of rollers below trap door to protect against wear from ropes.

Fig. 24 (left): Trap Door in platform above basement, with brick well though the ceiling void and trimmer beams below. At D-11 from SE.



Fig. 25 (above): Twin beams to support platform crane, seen here at C/D-10. Note small square hole for foot of crane post and archway for slewing rams. View from SE. Compare Figs. 31-2.

Fig. 26 (right): Variant design with three beams next to C-9, view from SE.

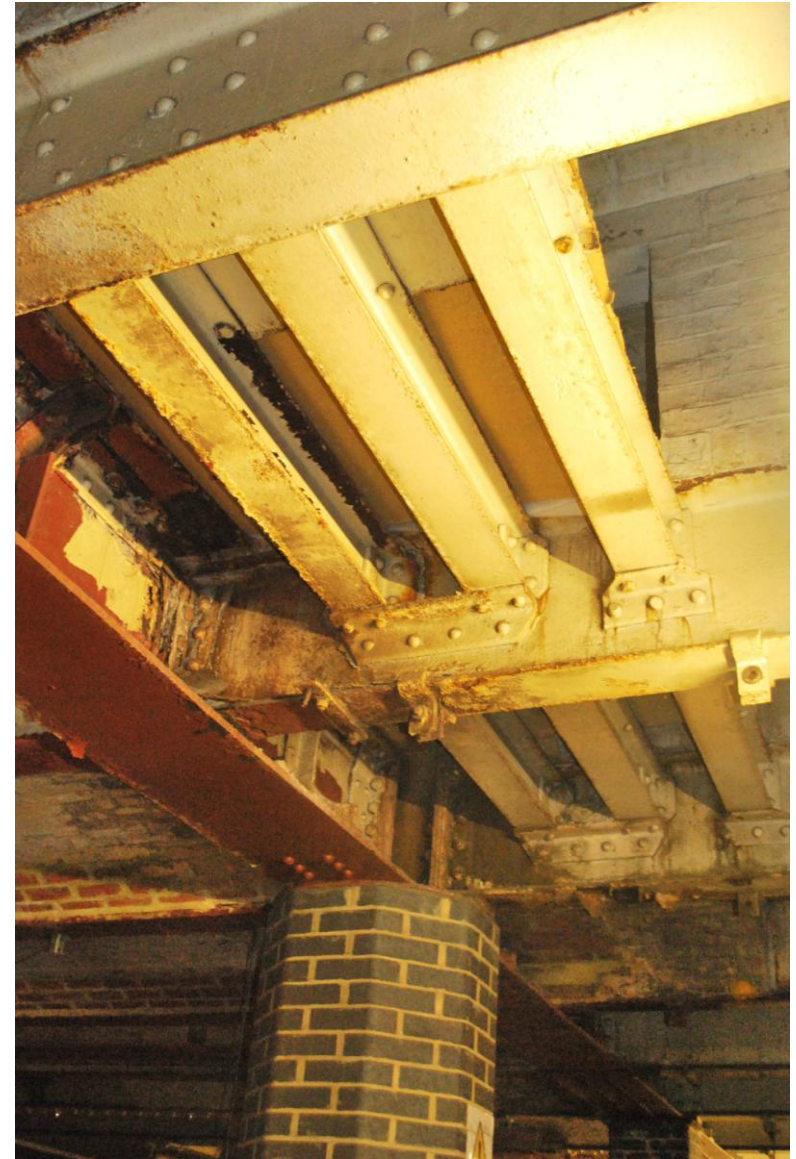




Fig. 27 (above): More elaborate mounting for platform crane at B/C-14 with third beam, viewed from NE.

Fig. 28 (right): View from NE at B/C-14 looking up into the ceiling space, showing fixings for hydraulic control gear next to holes for control rods. Former large opening to above for crane post to pass through is seen top right, infilled with concrete.





Fig. 29 (above): View upwards into ceiling space at B/C-14 from west, showing end of trimmer joist to opening , also pulleys for former control cables.

Fig. 30 (left): View from SE within ceiling space at B/C-14, showing posts and joist forming a frame, which supports the trimmer joists and is braced back to the beams at lower level seen on the left to give lateral stability to the platform.



Fig. 31 (above): Slewing cylinder mounted on bottom support for crane, remaining in situ at C/D-14, viewed from east. Compare Fig. 25.



Fig. 32 (right): Slewing rams extending through the archway, viewed from SE.



Fig. 33 (above): View of next ceiling bay, showing pulley on slewing ram protruding through archway, and control gear on right. Note hydraulic pipework, severed at front. View from east.



Fig. 34 (right): View of control gear from west. Note fixing brackets on ceiling, which are next to two holes for control rods or cables.



Fig. 35: Hanger bar for support of a control rod that passed through hole in platform wall behind. (See paragraph 4.4).



Fig. 36: Sliding Fire Door to Dock at D-13/14



Fig. 37: View westwards across Dock from D-6/7.



Fig. 38: Ceiling over Dock at E/F-6, showing trap door and suspended mounting for a platform crane, with north-south crawl-way for access.