



Luas Cross City (BXD_400)
Archaeological Desktop Assessment Report
Royal Canal: Broadstone Branch and Harbour
Constitution Hill, Dublin

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TABLE OF CONTENTS

1.0 INTRODUCTION	3
2.0 METHODOLOGY	3
3.0 RECEIVING ENVIRONMENT.....	4
3.1 The Royal Canal.....	4
3.1.1 Diversion of the Bradogue River	6
3.1.2 The Broadstone Branch of the Royal Canal.....	7
3.1.3 Development of Foster Aqueduct.....	8
3.1.4 Development of the Floating or Pontoon Bridge.....	9
3.2 Midland Great Western Railway.....	10
4.0 BROADSTONE BRANCH AND HARBOUR	12
4.1 Development and use of the Broadstone Branch and harbour	12
4.2 Previous Investigative Works	15
4.2.1 Ground Investigations.....	15
4.2.2 Utility Slit Trenches.....	16
4.2.3 Archaeological testing.....	16
4.2.3.1 The canal approach to Broadstone harbour.....	16
4.2.3.2. Broadstone harbour.....	18
4.3 Potential archaeological remains	19
4.3.1 The Bradogue River Culvert	19
4.3.2 18th Century buildings	19
4.3.3 Foster Aqueduct	20
4.3.4 Canal approach and layby	20
4.3.5 Broadstone harbour	21
5.0 DEVELOPMENT OF THE MGWR AT BROADSTONE	22
5.1 Previous investigative works	24
5.1.1 Ground investigations	24
5.1.2 Utility slit trenches.....	24
5.2 Potential sub-surface remains	25
6.0 DEVELOPMENT OF TEMPLE VIEW	25
6.1 Previous investigations	26
6.2 Potential sub-surface remains	26
7.0 BIBLIOGRAPHY	27

List of Illustrations

Figures

Figure 1: Extract from Rocque's 1756 "Map of the City of Dublin"

Figure 2: Plan of the Broadstone Branch and Harbour, 1791 (WSC/Maps/071)

Figure 3: Extract from "A Plan of the City of Dublin", 1815

Figure 4: Extract from a "Plan of Dublin", 1818

Figure 5: Extract from a "New map of the city of Dublin", 1829

Figure 6: Extract from "Dublin" 1836, Published under the Superintendence of the Society
for the Diffusion of Useful Knowledge

Figure 7: Extract from the 1st Edition Ordnance Survey map of 1843

Figure 8: Extract from Thom's Directory, 1848

Figure 9: Extract from the 1st edition 25" Ordnance Survey Map of 1864

Figure 10: Extract from the 2nd edition Ordnance Survey map of 1871-1875

Figure 11: Extract from the 4th edition Ordnance Survey Map of 1935-38

Figure 12: Plan of the floating or Pontoon Bridge (after Mallet 1850)

Plates

Plate 1: "The Royal Canal Harbour" by Samuel Frederick Brocas, 1818

Plate 2: "View of the City of Dublin, the Bay, Mountains, &c., the Royal Canal and Foster
Aqueduct" by James George Oben, 1813

Plate 3 : "The King's Inn and Royal Canal Harbour" by George Petrie, 1821

Plate 4: View of Foster Aqueduct (after The Penny Journal, 1835)

Plate 5: "Dublin Terminal" by David Bryce, 1854

Plate 6: The Broadstone building and Foster Aqueduct c. 1861 – note the Pontoon Bridge
across the canal channel

Plate 7: View of Foster Aqueduct c. 1940

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1.0 INTRODUCTION

Luas Cross City (LCC) will serve a 5.6km long corridor, extending from the Luas Green Line at its current terminus (St. Stephen's Green) to the Iarnród Éireann Broombridge Station on the Maynooth railway line. The proposed scheme will link Dublin City Centre to Phibsborough and Cabra via Broadstone and Grangegorman.

This report comprises an archaeological desktop assessment of the Royal Canal Broadstone Branch and Harbour located on Constitution Hill, Dublin 7. The desktop assessment was prepared to inform the archaeological potential of proposed works associated with the construction and operation of LCC at this location.

A Railway Order for Luas Broombridge was granted on 2nd August 2012 and became enforceable on 28th September 2012. The Minister for Transport, Tourism and Sport formally changed the project name from Luas Broombridge to Luas Cross City (LCC) on 21st January 2013.

2.0 METHODOLOGY

For ease of identification in the Environmental Impact Statement (EIS), LCC was divided into two distinct areas. These areas were labelled Area 29 and Area 30 respectively. Area 29 extends from St. Stephen's Green (West) to the former Broadstone Railway Cutting on Constitution Hill. Area 30 stretches from the former Broadstone Railway Cutting to Broombridge.

This assessment was conducted in order to identify the key archaeological and cultural heritage constraints relating to the Royal Canal Broadstone Branch and Harbour to the west of Constitution Hill. The site of the canal branch and harbour lies to the fore of the Broadstone Building (RPS 2029) and beneath the present day Dublin City Council (DCC) and Dublin Bus Phibsborough Garage car parks.

The following archaeological and cultural heritage constraints, as related to the site of the canal and harbour (Figures 1-12; Plates 1-7), will be addressed:

- The Bradogue River
- The Broadstone Branch and Harbour
- Foster Aqueduct
- The Floating or Pontoon Bridge
- The Midland and Great Western Railway (MGWR)
- Temple View

3.0 RECEIVING ENVIRONMENT

For the purpose of this desktop assessment, the boundary of the study area has been set to correspond with the existing boundary of the Dublin Bus Phibsborough Garage in the east, west and south. The northern limits of the study area correspond with the façade of the Broadstone Building. The study area incorporates the Broadstone Conservation Area (CA), Dublin Bus Phibsborough Garage, Bus Éireann Depot and the DCC car park and the Maxol Filling Station, west of Constitution Hill. The site is accessed in the east from Constitution Hill via Broadstone Road.

The study area is dominated by the Broadstone Building (RPS 2029) which stands on an artificially raised hillock on the west side of Constitution Hill. Though now serving as a bus depot, the building was originally constructed in 1850 as the headquarters and terminus of the MGWR. The forecourt of the Broadstone Building is enclosed by a granite and limestone wall, and the surrounding land, once occupied by engine sheds and railway sidings, is now predominantly occupied by parking areas for coaches and staff. A number of 19th century railway workshops survive in the north of the study area and are predominantly in a state of disrepair. The forecourt and depot boundary walls somewhat obscure the Broadstone Building from public view but at the time of its construction, it commanded extensive views and fronted onto the actively used Broadstone harbour.

There are no Recorded Monuments (RMPs) within the study area, with the lands primarily exploited for agricultural purposes until the early to mid-18th century. However, two Protected Structures (RPSs) and four sites of architectural, archaeological and industrial heritage merit were identified within the study area in the Luas Broombridge (now Luas Cross City) EIS.

The aforementioned Broadstone Building (RPS 2029) which defines the northern limit of the study area is a Protected Structure, as is the St. Brendan's Hospital Complex (RPS 3288). The boundary wall of the latter Protected Structure forms the eastern boundary wall of both the Dublin Bus Phibsborough Garage and the Bus Éireann Depot.

Sites of architectural heritage merit within the study area comprise two upstanding, though derelict, Victorian Houses (6–7 Temple View) fronting onto the DCC car park. Subsurface sites of archaeological and industrial heritage merit comprise the Broadstone Branch and Harbour, Foster Aqueduct, the MGWR and the course of Bradogue River.

3.1 The Royal Canal

The construction of canals in Ireland developed in response to a 1715 Act of Parliament to make the inland rivers of Ireland navigable, to improve communications and to promote

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economic development of the midlands. In 1751, a further Act was passed in order to establish a Navigational Board and in 1755, £20,000 was made available to promote a system of inland navigation from Dublin to the Shannon (Clarke 1993, 46). Two schemes were proposed at this time: one to the south and the other to the north of the River Liffey. The money was awarded to the southern scheme which became the Grand Canal.

In 1788, Parliament devised a grant system to promote the private construction of canals. The Royal Canal Company was established in order to fund and manage the construction of the canal to the north of the River Liffey, to be called the Royal Canal. The company, which comprised a significant number of gentry and members of parliament, proposed the construction of a canal leading from the River Liffey in Dublin to the River Shannon in Longford; the course of which was first proposed in 1755. The proposed canal was 140 miles long and construction was estimated to cost £197,098. The scheme was approved and the company received a parliamentary grant of £66,000 towards building costs. Construction of the Royal Canal commenced in Phibsborough in 1790 (Clarke 1993, 47). A house on Constitution Hill was purchased for use as offices, and was subsequently transformed into a hotel for canal passengers and workers. The hotel building survives today as No.1–2 Royal Canal Terrace, though now functions as offices.

Construction of the Royal Canal was poorly supervised which in conjunction with a failure to properly assess the suitability of the chosen canal alignment, resulted in substantial costs and delays. By 1794, only 15 miles of canal had been completed and the Royal Canal Company was bankrupt. However, further funding and grants were obtained and construction of the Royal Canal continued such that it was completed by 1817 at a cost of £1,421,954 (Clarke 1993, 49). The canal had two branches, the Broadstone Branch and the Longford Branch; the former was completed in 1796, though the associated harbour did not open until 1806. The Longford Branch was not completed until 1831.

The canal was initially used for both freight and passenger travel. In 1845, the Royal Canal was purchased by the MGWR who proposed to drain the canal and use its bed as the line of a new railway. Under the terms of the sale, the MGWR were obliged to maintain and operate the canal as a separate transport system, and thus the railway was constructed parallel to the canal instead. Due to improved road and rail innovations, passenger transport along the canal became too costly to remain viable and this passenger boats ceased trading in 1848. In 1877, the Broadstone harbour was infilled and trade was transferred to the harbour at Spencer Dock. Although trade along the canal continued until 1951, it was at a much decreased pace, such that by 1866, 78 boats were in operation, decreasing to 22 boats in

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1905. The canal was closed to navigation in 1961, at which time it was damned and allowed to fall into disrepair.

3.1.1 Diversion of the Bradogue River

The first task required to accommodate the construction of the Broadstone harbour was the diversion of the Bradogue River which ran roughly east west across the chosen site of the harbour before crossing Constitution Hill.

The route of present day Constitution Hill was annotated on Rocque's map of 1756 as "Glasmanogue", "Broad Stone" and the "Road to Glasnevin" (Figure 1). The name Glasmanogue is derived from "Glas mo Canoc" or Canoc's Stream, from which the name of the Bradogue River arises (Sweeny 1991, 48). A man-made crossing for the river is known to have existed at this location and it is from this crossing via the "Broad Stone" that the area gets its name. The Bradogue River is not named on Rocque's map but its location appears to be indicated by a narrow curvilinear laneway accessing the "Broad Stone" from the west. The alignment of this laneway corresponds to subsequent cartographic illustrations of the river.

The "Baradoguc River" is illustrated on the 1815 "A Plan of the City of Dublin" on an east west alignment intersecting the northwest corner of the Broadstone harbour, at which point it appears to terminate, suggesting it was culverted beneath the harbour (Figure 3). The river is not illustrated on Thom's Directory of 1818 but as per Rocque's map, its location appears to be indicated by the course of a narrow embanked laneway (Figure 4). In 1829, a substantial course of the river is illustrated leading from the north of Cabra Road and North Circular Road, along Grangegorman Lane, from where it deviates eastwards beneath the site of the Richmond Penitentiary (Figure 5). On exiting the site of the Penitentiary, it moves in a southwest direction to divert under the harbour at a location much further south than earlier depictions.

The course of the Bradogue River is partially illustrated on the 1st edition Ordnance Survey (OS) map of 1843 between the Richmond Penitentiary and the harbour (Figure 7). On this map, its route appears to correspond with that to the city boundary and as such crosses beneath the canal channel approach to the harbour rather than the harbour itself.

The course of the river is not illustrated on subsequent cartographic sources but DCC Drainage Drawings indicate that the assumed line of the culverted river runs parallel to the southern boundary of the derelict Victorian houses at Temple View, and exits onto Constitution Hill to the fore of the Maxol Filling Station (refer to Section 4.3.1)

3.1.2 The Broadstone Branch of the Royal Canal

Construction of the Broadstone Branch commenced in tandem with that of the Royal Canal main line. The branch was $\frac{3}{4}$ of a mile long and commenced at the canal's 5th lock at Cross Guns Bridge. Construction of the Broadstone Branch was completed as far as Constitution Hill by 1796, at which time construction of the Broadstone harbour commenced; the latter was completed and opened to boats in 1806. The site of the Broadstone harbour was originally proposed for the intersection of Bolton Street and Dominick Street, in proximity to the prominent trade areas. In particular, the preferred site was in proximity to the Linen Hall (located on Coleraine Street) and the proposed site of the Queens (now Kings) Inn which was purchased in 1793 (Casey 2005, 157). However, the price of land proved too expensive and a site to the west of Constitution Hill was ultimately chosen for the harbour (Figure 2).

Construction of the harbour (c. 1796–1806) initially entailed drainage of the site and the culverting of the Bradogue River (as detailed in Section 3.1.1 and 4.3.1). As the site of the harbour was located on a hill, construction works required levelling of the site through the introduction of made ground. References to this in documents dating to 1850 indicate that made ground was introduced to a “level of nearly 30 feet” or 9.1m (Mallet 1850, 344). However, it is not clear if the entire site was levelled prior to the excavation of the harbour or, if site preparation work was restricted to the erection of substantial embankments, forming the walls of the harbour and canal channel. The latter appears more probable with sources referencing the purchase of soil “for the huge embankment for the harbour area” (Delaney and Bath 2010, 136). This soil was purchased from Dublin Corporation, who had a surplus of excavated earth from the construction of the nearby Blessington Basin. Material required to level the site was also derived from city waste, with an 1801 report from the consultant engineer John Brownriggs referring to the site being “chalked out and leave given to carters to lay down rubbish thereon” (Delaney and Bath 2010, 57). He records the material being used as “not good clay but heterogenous stuff from the city”.

The construction methodology for the Broadstone Harbour does not survive, however in general once a harbour or canal was excavated, it had to be made water tight by lining the base and sides with puddle clay. A harbour/canal base was normally lined with 3 feet (0.91m) of clay, while the sides were lined with 1 foot (0.30m) of clay. The sides of a harbour/canal were subsequently lined or topped with coping or a wash wall of stone or brick to create hard edge moorings and tow paths. It is known from contemporary sources that the upper levels of Broadstone harbour and canal were lined with granite and limestone blocks (Plate 1).

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Analysis of cartographic sources indicates that the Broadstone harbour had a maximum length of 90m and width of 40m, and that the length of the canal approach from the aqueduct to the harbour was approximately 79.5m (Figures 7-9). The external width of the canal approach was approximately 7.4m, and was lined with masonry walls, each approximately 1m in width (insert refer to testing). This resulted in a navigable canal channel of 5.3m which corresponds with information from Mallet's report of 1850 which stated the canal channel was 17 feet, 4 inches wide (Mallet 1850, 345). The depth of the original harbour is undocumented but the depth of the canal channel is recorded as being 2.43m, suggesting that, at minimum, the harbour was excavated to a similar depth.

3.1.3 Development of Foster Aqueduct

Due to the height difference between Constitution Hill and the Broadstone harbour, it was necessary to construct an aqueduct over the road to carry the canal over the road and into the harbour. Construction of the aqueduct was completed c. 1800 to the design of Miller and Ruddery (Casey 2005, 282; Figure 2). The aqueduct was described by Mallet (1850, 344-5) as comprising "heavy ashlar masonry, having a channel 17 feet 4 inches wide, by 8 feet deep, formed of an inverted elliptical arch of 60 feet span, stretching over the roadway below, and sustaining the navigable channel" (Plates 2-5). Cartographic sources indicate that the aqueduct also accommodated parallel tow paths and a parallel road; the latter permitted pedestrian and carriageway access from Dominick Street to the harbour (Plates 4-6 & 4; Figures 3-5).

The completed aqueduct is illustrated in a number of contemporary line drawings, with detail design information also provided on the Wide Street Commissioners (WSC) maps of 1791 (Figure 2). The latter shows the proposed alignment of the aqueduct, and illustrates that its construction required the demolition of a number of buildings fronting onto the east and west sides of Constitution Hill.

Contemporary line drawings illustrate that the abutments of the aqueduct at road level were substantial and projected outwards from the parapets for some distance. Two arched side channels providing pedestrian access were incorporated into the abutments on either side of Constitution Hill (Plate 2). An image of the aqueduct, published in the Penny Journal in 1835, illustrates that the embankment on the western side was extended to accommodate the construction of a side road, providing direct access from Constitution Hill to the harbour (Plate 4).

Railway Procurement Agency

Title: LCC Broadstone Branch and Harbour Desktop Assessment (BXD_400)

It is only on the 1st edition 6" OS map of 1843 that the aqueduct is named as "Foster Aqueduct", being merely referred to as "aqueduct" on all cartographic sources prior to this (Figure 7). The aqueduct was named after John Foster (1740–1828), Baron Oriel, the last Speaker of the Irish House of Common (Stephenson 1952, 62), and a dedication plaque was placed on the aqueducts southern side with the following inscription, "Foster Aqueduct. Serus in coelum redeas, diuque, populo Hiberniae intersis".

In 1878, the MGWR decided to build a new approach road to the station from Upper Mountjoy Street via Foster Aqueduct known as "New Road". As the harbour was infilled, it was no longer necessary to maintain a navigable aqueduct and consequently the aqueduct was capped with an iron superstructure and transformed into a road bridge (Plate 7). This was initially a private roadway with a set of gates permitting access located at towards Mountjoy Street (Killeen 1981, 147). It survives today as Western Way.

The demolition of the aqueduct was initially proposed by the county council in 1939 to accommodate road widening; however this was not carried out until 1951. Although the majority of the aqueduct was demolished, the western embankment wall was maintained and survives today as a section of retaining wall flanked by breakfront piers. The remains are topped by a Statue of Virgin Mary designed by A. Powers and Sons. The inscription on the base reads: "Erected by the employees of Córas Iompair Éireann to the honour and glory of our lady queen of peace, May 1953. Pray for us." Additional remains of the aqueduct walls may be preserved to the rear of the Maxol Filling Station.

3.1.4 Development of the Floating or Pontoon Bridge

When the MGWR purchased the Royal Canal in 1845, they were obliged to maintain its operations as an alternate form of transport. Their construction of the MGWR terminal building (now known as the Broadstone Building) in direct proximity to the Broadstone harbour, resulted in the lack of a railway forecourt. This posed difficulties for the large volumes of passengers requiring access to the station on a regular basis.

The initial solution proposed to overcome this issue was the construction of an iron swivel bridge across the canal channel. This proved unsuitable due to costs, operational issues and required land take. An alternate solution was proposed by the engineer Richard Mallet, in the form of an "Insistent Pontoon Bridge" (Figure 12). This was, in effect, a form of flat-topped barge which allow railway passengers to safely cross the canal channel and access the terminal building (Plates 5 and 6).

Railway Procurement Agency

Title: LCC Broadstone Branch and Harbour Desktop Assessment (BXD_400)

The pontoon bridge was approximately 5.3m wide, in line with the width of the canal channel and was 50 feet (15.24m) in length, comprising 40 feet of carriageway with 5 feet of pedestrian access on each end (Figure 12). For passenger safety, wrought iron handrails were erected on either end of the pontoon and the pontoon's deck beams overlapped the canal walls. When in position for passenger use, a complicated copper siphon system was activated, introducing ballast water to the pontoon bridge, causing it to lower and rest snugly and securely on rebates carved into the canal walls. The latter were lined with oak scantling which acted as a buffer between the base of the bridge and the canal masonry.

The mechanism for the bridge's siphon system was located on the western abutment of Foster Aqueduct and was housed in a rectangular cast-iron cover (Mallet 1850, 349). When the bridge was not in use, the siphon discharged the water ballast into the underlying sewage system, allowing the bridge to rise and be floated to rest into a layby. The layby was a deliberately constructed holding area, approximately 15.5m long and 5m wide and 0.91m deep. The base of the layby was paved; rebates lined with oak scantling were also present on the structure sides.

The pontoon bridge could be moved in and out of position as required by a gateman, and the process took just 4 minutes to complete. The pontoon bridge and layby were built between October 1846 and February 1847 at cost of £1,125 for the bridge and £150 for masonry works (Mallet 1850, 351).

The completed structure is first illustrated on the 2nd edition 6" OS map of 1871–75, where it is annotated as a "Floating Bridge" (Figure 10).

3.2 Midland Great Western Railway

The MGWR received royal assent in 1845, authorising it to build a railway from Dublin to Mullingar and to purchase the Royal Canal; the latter was achieved for a fee of £318,860. Construction of the railway commenced parallel to the Royal Canal on 8th January 1846, with the railway terminus established adjacent to the Broadstone harbour. Here, the railway terminus building, now known as the Broadstone Building, was constructed to the design of John Skipton Mulvany, facing over the Broadstone harbour and commanding extensive views of the city (Plates 5 and 6). Two railway platforms, a booking office and a passenger shed were also constructed at this time. The railway engineer's report for 1846 confirmed, as per construction of the Broadstone harbour, infilling of the site was required in order to achieve the required construction levels (Killeen 1981, 141). The first section of the railway line was open to the public on 28th June 1847, though building works at the site continued for

Railway Procurement Agency

Title: LCC Broadstone Branch and Harbour Desktop Assessment (BXD_400)

several years. This included construction of the “Goods Store” which was completed in 1853 to the south of the harbour (Killeen 142; Figure 9).

In 1861, George Wilkinson carried out a major redevelopment of the station complex at Broadstone which included construction of a new carriage shelter and waiting rooms which were accessed by a cast-iron colonnade. By 1863, this branch of the MGWR extended from Broadstone in Dublin via Broombridge to Athlone, Galway, Sligo and Clones in County Monaghan.

In 1870, the MGWR required additional lands to accommodate the increasing nature of their works at Broadstone and approached the neighbouring prison of Grangegorman. After a prolonged period of negotiations, close to 3 acres were purchased for a fee of £2,128.8.9. A new boundary wall, railway sidings and an engine shed were constructed on the acquired site (Figure 10). Associated ground excavation works exposed a number of human burials, believed to have been interred at this location during the cholera outbreak of 1832 (Killeen 1981, 147). The remains were recorded as being reinterred on an isolated patch of ground which may lie within Grangegorman lands to the north east of the surviving Bus Éireann Depot (RPA 2010, AC93).

With the ensuing demise of the canal, the railway company applied for and obtained legislation in 1877, empowering them to infill Broadstone harbour and a 150 yard (c. 137m) section of the Broadstone Branch, running west from the eastern side of Constitution Hill/Phibsborough Road and in front of the Broadstone Building. This area was subsequently used to construct a new forecourt and new approach road to the station terminal building (Delany 1992, 165). The section of the Broadstone Branch extending from the eastern side of Constitution Hill/Phibsborough Road, north to Circular Road was later infilled in 1927 and now consists of a tree-lined linear park. This park is known as the “Royal Canal Park” or “Broadstone Park” (The Railway Procurement Agency (RPA) 2010; Figure 11).

In 1925, 26 separate railway companies operating in the Irish Republic were amalgamated to form the Great Southern Railway (GSR). The MGWR thus became part of the GSR (Delany 1992, 174). On 16th January 1937, the railway station was closed and the site was transformed for use as a bus depot. A number of stone sheds located to the northeast of the Broadstone Building are surviving elements of the railway’s goods shed, carriage shed and railway coach factory. These are large gabled structures with brick dressings and iron roof trusses, dating to the mid-19th century development of the site (Casey 2005).

4.0 BROADSTONE BRANCH AND HARBOUR

4.1 Development and use of the Broadstone Branch and harbour

The site of the Broadstone Branch and Harbour is illustrated on Rocque's 1756 map as predominantly comprising open pasture land to the east and west of "Broad Stone". The street frontage is relatively well developed and set out in a series of linear plots; only a small number of which appear to be vacant. Agricultural lands and orchards are located to the rear of these properties.

The area is subsequently depicted as the same on the 1791 maps of the WSC (Figure 2). The WSC, more formally known as the "Commissioners for making Wide and Convenient Ways, Streets and Passages in the City of Dublin", was established by an Act of Parliament in 1757. The WSC drew up a number of maps detailing proposed improvement for the city with their archives including information on both proposed and completed works for the Broadstone Branch of the Royal Canal. The completed works illustrated on the WSC maps of 1791 are of the Broadstone Branch, which is illustrated terminating just to the northeast of Constitution Hill. The proposed works include the location and levels of the aqueduct crossing Constitution Hill, and the proposed layout of the harbour. The latter is to the design of Richard Evan and is illustrated as an elongated rectangular harbour with four mooring docks on the eastern side. The proposals show the intention to construct a series of stores and market houses around the harbour. Proposed market areas for selling flour, oats, timber and other goods are also shown on the harbour's east side.

"A Plan of the City of Dublin", produced in 1815, illustrates the completed harbour and aqueduct at Broadstone (Figure 3). The harbour was constructed in line with Evans's late 18th century design; though only three mooring docks are represented along the eastern side. No evidence of the warehouses or markets illustrated on the original design is apparent. A continuous line of structures is illustrated to the east of the harbour and most likely represent the residential houses illustrated on Rocque's map of 1756 (Figure 1) rather than industrial structures associated with the harbour.

Samuel Frederick Brocas's drawing of "The Royal Canal Harbour", produced three years later in 1818, depicts the harbour on the cusp of a hill, overlooking the city (Plate 1). The harbour, which is in active use, is illustrated with a course of large cut stones lining its sides. However, the land immediately surrounding the harbour is shown as earthen and unpaved. Large stores of turf are shown lying on the harbour edge and turf boats are afloat in the harbour. This depiction is supported by the contemporary "Plan of Dublin", which also shows the three mooring docks(1818; Figure 4).

Railway Procurement Agency

Title: LCC Broadstone Branch and Harbour Desktop Assessment (BXD_400)

The harbour is similarly illustrated in 1821 by George Petrie who, though focusing on the newly built Kings Inns, illustrates this building with a view from the harbour (Plate 3). A potential warehouse is shown in the foreground and the harbour itself is illustrated as a hive of activity for both industrial and social purposes. The lands around the harbour remain unpaved.

The “Royal Canal Harbour” is again illustrated in 1829 on “A Plan of Dublin” and remains unchanged from earlier depictions (Figure 5). By this time, a series of stores, orientated north-south, had been constructed along the harbour’s eastern side and a number of the houses previously shown to have fronted onto Constitution Hill had been demolished. A walk/roadway is shown along the harbour’s west side linking to the Royal Canal via the aqueduct. A house at the intersection of the harbour and Constitution Hill most likely represents the Royal Canal Hotel. Significant development of the adjacent Richmond Penitentiary, Asylum and House of Industry has taken place.

The 1836 map of Dublin, published under the “Superintendence of the Society for the Diffusion of Knowledge” illustrates a number of changes to the harbour and canal (Figure 6). The harbour is now illustrated with a straight eastern side, rather than with the three mooring docks of its original design. A store house is still present on the eastern side of the harbour, and some formalisation of the streets facing onto Constitution Hill is apparent.

The harbour is subsequently illustrated on the 1st edition OS map of 1843 (Figure 7). The aqueduct, crossing Constitution Hill, is now referred to as “Foster Aqueduct” and parallel tow paths and a southern access lane are shown. The latter links the harbour with Dominick Street. The harbour is illustrated as a substantial deep rectilinear structure, west of Constitution Hill and Prebend Street. In contrast to the map of 1836, some vestiges of the original mooring docks are present as small indentations on the harbour’s east side. The warehouse illustrated on earlier maps on the east side of the harbour is still present. Houses fronting onto Constitution Hill are separated from the harbour by “Prebend Street”. A pedestrian walk leading from the adjacent Workhouse to Constitution Hill is illustrated along the harbour’s west side. The Broadstone Branch is shown as linear in plan. Also annotated on this map to the north of the harbour is “Royal Canal Ho.” which functioned as the Royal Canal Hotel.

By 1848, for which the next cartographic source is available, the canal had come into the possession of the MGWR and the railway terminal and lines, located to the north west of the harbour, are illustrated as complete (Figure 8).

Railway Procurement Agency

Title: LCC Broadstone Branch and Harbour Desktop Assessment (BXD_400)

On the 1st edition 25" OS map of 1864, the Broadstone Building, which functioned as a terminal for the railway, was complete and is annotated as the "Midland Great Western Railway Terminus" (Figure 9). As the canal and harbour are still in operation, they are similarly depicted to previous maps; however a noticeable change is that the canal channel, as it passes in front of the Broadstone Building, has been substantially narrowed or formalised and a small layby has been constructed approximately 15m east of Foster Aqueduct. This layby, which was just 0.91m deep, was constructed in order to accommodate the use of a pontoon bridge (Figure 12). It was constructed between 1846–1847 to allow railway passengers, carriages and horses to cross the canal while maintaining canal navigation (Mallet 1850, 344; refer to Section 4.3.4). A substantial road linking the harbour area with Dominick Street is illustrated on the southern side of the aqueduct.

The warehouse present on the 1st edition OS map of 1843 is still present, with two ancillary buildings and storage yards also indicated (Figure 9). A "Goods Store" associated with the MGWR has been constructed to the south of the harbour. Railway sidings are also present along the west of the harbour; the construction of which appears to have necessitated the erection of a buttressed boundary wall between the harbour and the adjacent Richmond Penitentiary.

There is no change in the depiction of the harbour between 1864 and the publication of the 2nd edition 6" OS map of 1871–75 (Figure 10). A Gasometer, used for converting coal to coke, creosote and gas is present to the south of the harbour. An access road is also shown, south of the Gasometer, leading from Constitution Hill to the railway sidings.

In 1877, the MGWR received powers to infill 150 yards of the canal branch and to infill the harbour in order that a new forecourt for the Broadstone Building could be constructed. With the closing of the canal harbour, it was proposed that a new quay and stores would be built at the new canal terminus but the works did not proceed.

On the 2nd edition 25" OS map of 1897–1913, the harbour is shown as completely infilled with its site functioning as an extension of the MGWR railway being occupied by railway sidings, turntables and stores (<http://maps.osi.ie/publicviewer/#V1,714944,735048,7,9>).

In 1909, Parliamentary sanction was given to the MGWR and the County Council to infill the remaining section of the Broadstone Branch; however infilling did not occur until 1927 when the land was handed over to the public (Nolan 2001, 2; Figure 11). The site of the Broadstone harbour is now primarily occupied by the Dublin Bus Phibsborough Garage.

4.2 Previous Investigative Works

4.2.1 Ground Investigations

RPA and Córas Iompair Éireann (CIÉ) have undertaken a series of ground investigations within both the Dublin Bus Phibsborough Garage and the Bus Éireann Depot. The investigations were undertaken to the fore of the Broadstone Building, within the environs of the canal approach and Foster Aqueduct, on the site of the Broadstone harbour. A borehole was also excavated on the east side of Constitution Hill, on a green area located between Western Way and Temple Cottages.

The ground investigations identified a significant depth of made ground within the environs of the canal approach and harbour varying from 6.4–10m. This corresponds to historical documents which recorded the artificial levelling of the site by approximately 30 feet, in preparation for construction of the harbour. The depth of made ground was greatest on the eastern side, adjacent to Constitution Hill, indicating that the level difference between original and required ground level was greatest at this location. A factor most likely influenced by the requirement to build substantial embankments to support Foster Aqueduct (refer to Section 4.3.3). Analysis of the borehole results identified that the made ground predominantly comprised boulder clay and may indicate that it is waste material derived from the excavation of the $\frac{3}{4}$ mile Broadstone Branch; construction of which ceased just prior to the commencement of harbour works. This is further substantiated by archaeological excavations at Royal Canal Bank which confirmed that material from the canal cutting was used to form the canal embankments (Turrell 2004).

Archaeological monitoring of all RPA ground investigations, relating to the site of the Broadstone harbour and canal approach, was carried out. A small fragment of clay pipe was retrieved at a depth of 4.40–4.65m (ENV/BX/003) at the intersection of the canal approach and harbour. It was postulated that this may have been retrieved from canal fill. A thin brown/black silty clay deposit, containing red brick fragments, oyster and muscle shell fragments and overlying boulder clay and recorded at 4.65–4.70m below ground level, was interpreted as potentially representing the base of the harbour.

Infill deposits containing red brick and limestone were found in a number of boreholes at varying depths of 0.30–1.20m below current ground level. The upper level of one borehole contained a clay pipe fragment (ENV/BX/002; O'Donovan 2012).

The borehole excavated on the west side of Constitution Hill identified the presence of made ground to a depth of 2.45m below current ground level. This may represent the surviving

Railway Procurement Agency

Title: LCC Broadstone Branch and Harbour Desktop Assessment (BXD_400)

remains of the eastern embankment of Foster Aqueduct or may relate to the subsequent construction of Western Way at this location.

4.2.2 Utility Slit Trenches

Two utility slit trenches were excavated by RPA to the fore of the Broadstone Building on or in proximity to the alignment of the canal channel. ST-021B was excavated c. 30m to the southwest of the Broadstone Building and to a depth of 2.3m. The recorded stratigraphy primarily comprised infill material containing redbrick, mortar and masonry fragments. A grey-black stoney clay deposit was identified at a depth of 1.9–2.3m. The second utility trench (ST129) was located c. 26m to the south east of the Broadstone Building, a short distance to the west of the site of Foster Aqueduct. Excavation of this trench ceased at a depth of 0.38–0.60m due to the presence of bonded masonry. The overlying layers contained red brick fragments.

4.2.3 Archaeological testing

Two phases of advance archaeological testing, comprising nine test trenches, were carried out at the site of the Broadstone harbour and canal approach (Doyle 2010 and Bolger 2013). Six trenches were excavated in order to identify the sub-surface location of the canal channel on the approach to the harbour, with three trenches excavated to determine the location of the harbour. The testing was restricted in depth to a maximum of 2m below current ground surface.

4.2.3.1 The canal approach to Broadstone harbour

The canal walls were identified in two of the test trenches at a depth of 0.36–0.61m below current ground surface and at a distance of c. 27m west of the perceived site of Foster Aqueduct and c. 24m south of the Broadstone Building respectively. The canal walls were constructed from large limestone blocks which were faced internally and varied in width from 0.75–1.9m. Their recorded location confirmed earlier documentary sources that the canal channel was 5.3m wide internally.

The canal wall, located c. 24m south of the Broadstone Building, was recorded in association with a 1m wide cobbled surface, which may represent a parallel tow path or drainage channel. At this location, excavations adjacent to the canal wall were undertaken to a depth of 1.1m with 2–3 courses of limestone walling surviving. Beneath this limestone walling the canal channel walls appear to be lined by a compact deposit of puddle clay.

On the south side of the canal and c. 29m from the postulated site of Foster Aqueduct, the remains of the layby constructed to accommodate the pontoon bridge was identified.

Railway Procurement Agency

Title: LCC Broadstone Branch and Harbour Desktop Assessment (BXD_400)

Surviving remains at this location comprised a flagstone surface and oak scantling, corresponding with Mallet's 1850 description of the layby (Figure 12). The remains were identified at a depth of 1.25m below current ground surface. As the layby had an original depth of 0.91m and no associated canal wall was identified, it is probable that the original wall of the layby was removed when the canal was in-filled in 1877. The removal of the wall at this location may have resulted from levelling of the site to create Western Way c. 1879 (Killeen 1981, 147).

A mortared stone wall was identified within the postulated area of the layby and parallel to its eastern edge at a depth of 1.8m below current ground level. The wall which was orientated north-south and on a parallel axis to the west side of the layby comprised mortared limestone blocks and was faced on both sides. It may have been heavily robbed out. The location and orientation of the wall would indicate that it formed part of the layby; however as it was identified at a depth of c. 0.60m below that of the bed of the layby, this interpretation does not seem robust. It could be that the wall formed part of the embankments for Foster Aqueduct, or part of the underlying sewers referenced in Mallet's 1850 account of the pontoon bridge. However, the fact that the wall was faced on both sides would appear to indicate that this may not be the case. Cartographic sources such as Rocque's map of 1756 and the WSC map of 1791, illustrated that a number of existing structures at this location were demolished in order to construct the aqueduct and canal approach to the harbour. The potential that this wall relates to a mid-late 18th century house site should therefore not be overlooked.

Masonry remains were only identified in three of the six trenches excavated along the length of the canal approach. The absence of canal walls in the remaining trenches may be due to inaccuracies in determining the canal location from historic maps, or may indicate that significant proportions of the canal walls were robbed out/removed, either during the infilling of the canal, or through subsequent development works at the site.

The deposits identified within the canal channel would appear to indicate that the canal was in-filled in a continuous single episode in 1877. The infill material generally comprised medium brown clay silt with inclusions of stone, rubble, red brick oyster shell and charcoal. The depth of infill material varied from 1.60–2m within the excavated test trenches. Artefacts retrieved from this deposit include red and black earthen ware, North Devon ware, clay pipe fragments, corroded iron objects, dressed stone and wood.

A probable *in situ* canal deposit was identified within a number of the test trenches at a depth of 1.8–2.0m below current ground level. The deposit comprised a loose, dark black

Railway Procurement Agency

Title: LCC Broadstone Branch and Harbour Desktop Assessment (BXD_400)

brown, organic silty clay, with organic material and most likely derives from the natural siltation of the canal base during operation. This deposit was also identified overlying the paved surface of the canal layby at a depth of 1.25m below ground surface.

4.2.3.2. Broadstone harbour

Three archaeological test trenches were exected in order to determine the east and western extent of the harbour as present beneath the Dublin Bus Phibsborough Garage. The potential location of the harbour walls was determined from examination of the 1st edition OS map of 1843 and from a MGWR plan of the site dating to 1877. The remains of the canal harbour walls were not identified within the confines of the test trenches which were excavated to an average depth of 2m. The stratigraphy of the test trenches excavated on the west side of the harbour primarily comprised infill deposits to a depth of 1.8–2.0m below ground level; the nature of which was consistent with material identified within the canal channel (ST122, ST123). A possible embankment was identified within one trench which may mark the west side of the harbour; however due to Health and Safety restrictions, detailed inspection was not possible.

Similar stratigraphy was identified on the east side of the harbour with infill deposits identified to a depth of 1.8m. However, possible natural clay or a deposit of puddle clay was identified in the trench's east side at a depth of 1.8m, potentially representing the eastern limits of the harbour.

Organic deposits, similar to those present within the canal channel were identified at the base of all three trenches, indicating the potential for organic preservation on the site. This is further supported by the identification of a timber within the infill material.

The absence of masonry walls within these trenches may indicate that the location of the canal harbour walls lay outside of the confines of the excavated trenches, or that significant portions of the harbour wall were robbed out at time of infilling. Earlier representations of the harbour also indicated that the harbour wall may have been indented along the east side. If the latter is the case, it is probable that this material was reused within the internal boundary walls of the present day site which contain numerous large limestone and granite blocks. However, these could equally be derived from associated warehouses and goods sheds which also occupied the site.

No artefacts were retrieved from the archaeological testing of the harbour. The timber noted within the infill material was preserved *in situ*.

4.3 Potential archaeological remains

The proposed works pose the potential for the uncovering of significant sub-surface remains relating to the construction use and decommissioning of the Broadstone Branch and Harbour of the Royal Canal. In addition to various structural elements, these remains may include up to 10m of made ground, the introduction of which was required in order to obtain the required levels for the successful operation and use of the harbour and associated aqueduct.

4.3.1 The Bradogue River Culvert

Inspection of utility manholes located to the west of the Broadstone Building and within the present day Bus Éireann Depot, indicate that the Bradogue River was culverted to a depth of 8.3m below current ground level. Inspection of the chamber was not possible; however visual indicators suggest that the Bradogue River is housed in a red brick culvert. The route of the Bradogue culvert crosses the Broadstone forecourt/DCC car park in a northwest-southeast direction towards the location of the Victorian Houses at Temple View. It then proceeds beneath or adjacent to the cottages through the forecourt of the Maxol Filling Station before proceeding under Constitution Hill at an approximate depth of 5m below existing ground level.

4.3.2 18th Century buildings

Cartographic sources from the 18th Century illustrate that Constitution Hill (formerly “Broad Stone” and the “Road to Glasnevin”) was relatively well occupied from at least the mid 18th century and underwent significant levels of development and redesign from the late 18th to early 20th century. In particular, the sources of the WSC illustrate that the construction of Foster Aqueduct in 1800 required the demolition of a number of existing structures on the street’s eastern and western sides. As construction works for the aqueduct and harbour entailed significant increase of the existing ground levels, it is highly probable that foundations of these buildings may be preserved beneath the modern day ground surface. In particular, 18th century structural remains may be located beneath the embankments of Foster Aqueduct and the canal approach to the harbour. Additional related features which may be preserved at this location could include boundary walls and garden features (such as cess pits and middens) and workshops.

Artefactual remains associated with these houses could include ceramics, glass, animal bones, organic remains such as food and human waste and work tools may also be identified.

4.3.3 Foster Aqueduct

Although demolished in 1951, potential remains relating to Foster Aqueduct are preserved on the east and west side of Constitution Hill. Construction of the aqueduct initially entailed the construction of earthen embankments which were then retained by ashlar walls. Borehole analysis on the east and west side of Constitution Hill identified the presence of made ground in the vicinity of the aqueduct embankments to a depth of 2.45m and 8.7m respectively. Should redeposit or infill material be identified at these locations, it will most likely represent material relating to the aqueduct embankments.

An ashlar retaining wall on the west side of Constitution Hill is interpreted as representing the west wall of the aqueduct. Additional remains of the aqueduct may also be preserved to the rear of the retaining walls of the Maxol Filling Station. Ground disturbance work at this location is likely to expose elements of, and features relating to, this wall.

Mallet's account of the construction of the pontoon bridge across the canal channel to the fore of the Broadstone Building, required the operation of a complicated copper siphon. His notes and sketches indicate that the mechanisms for the siphon were inserted into the aqueduct's western embankment. Elements of this system and the underlying sewer into which it discharged may be preserved at this location beneath the current ground surface. Tow paths and remains of a parallel access road which subsequently extended to form Western Way may also be identified within the vicinity of the aqueduct.

Given the recorded presence of made ground, the potential of finding masonry remains relating to the retaining wall of Foster Aqueduct in addition to infilled remains of the canal approach to the aqueduct on the east side of Constitution Hill should not be overlooked.

Artefactual remains could include worked and unworked timbers, cut/dressed stone, copper and leather artefacts relating to the siphon. Additional residual artefacts may have been incorporated into the made ground used to create the embankments of the aqueduct. These could include ceramics, brick and stone in addition to discarded worker tools, animal bone and food debris.

4.3.4 Canal approach and layby

Archaeological test excavations have indicated that the canal channel on its approach to the Broadstone harbour is well preserved at a minimum depth of 0.36m beneath the existing ground surface. In particular, well preserved remains of the canal walls and the associated layby for the pontoon bridge have been identified to the south and southeast of the Broadstone Building. As the canal veers westwards towards the harbour, masonry remains

Railway Procurement Agency

Title: LCC Broadstone Branch and Harbour Desktop Assessment (BXD_400)

may not survive. Despite this, the cut of the canal channel may still be well preserved beneath the current ground level and deposits of puddle clay and hydraulic cement are to be expected.

Structural remains relating to the canal approach and layby may also include tow paths, cobbled surfaces, road surfaces and drainage elements. Oak scantling, possibly used to line the canal approach and layby for the pontoon bridge, was identified and preserved *in situ* during archaeological testing. Significant sections of these timbers are likely to be preserved below current ground level.

Artefactual remains are likely to comprise post-medieval and modern ceramics, clay pipes, glass, worked stone and iron objects. The potential for organic preservation has been demonstrated by the preservation of the oak scantling. Additional organic remains such as moss and reeds which may have grown on the base of the silting canal channel, food debris and oyster shells may also be preserved at this location. Archaeozoological skeletal remains such as fish, dogs, cats and horses may also be recovered as the Broadstone Branch was a popular location for disposing of unwanted animals (Nolan 2001, 2).

The material used to raise the level of the Broadstone site prior to construction and subsequently to backfill the canal may also contain significant quantities of building debris including red bricks, dressed stone, timber, mortar and ceramics.

4.3.5 Broadstone harbour

Archaeological testing of the harbour did not identify the harbour walls within the confines of the test trenches excavated. There is a high potential that sub-surface walls relating to the harbour may still be preserved beneath the existing ground level. As per the canal approach, the cut of the harbour and related deposits of puddle clay and hydraulic cement are to be expected. Archaeological testing indicated that the harbour survives to a minimum depth of 2m, with archaeological monitoring of boreholes identifying a potential base for the harbour at a depth of c. 4.7m below current ground level.

The deposits within the harbour would also indicate that the harbour may have been infilled in a single episode with material incorporating red brick, building debris, mortar and timber.

Deposits within the harbour also confirm the potential for organic preservation and, as for the canal approach, remains such as moss and reeds, food debris and oyster shells should be anticipated.

Railway Procurement Agency

Title: LCC Broadstone Branch and Harbour Desktop Assessment (BXD_400)

Ancillary elements of the harbour which may also be identified include tow paths, cobbled surfaces and drainage features. Foundations of associated warehouses and market areas are also likely to be uncovered, in particular to the east of the harbour. Substantial deposits of redeposited soil and waste material used to level the site prior to the construction of the harbour are also likely to be uncovered.

Artefactual remains are likely to comprise post-medieval and modern ceramics, clay pipes, glass, cut/dressed stone, iron objects, barrels and barge/ship timbers, barge poles, ropes, horse harnesses, horse shoes, carts and cart wheels, mooring rings and mooring posts. The potential for finds of this nature is supported by excavations of canals and harbours at Leamington Wharf, Edinburgh, and Centenary Square, Birmingham, where artefacts recovered represented activities from the daily use of the harbours (Coleman 2004 and <http://www.thefreelibrary.com/History+revealed+on+building+site%3B+EXCAVATIONS%3A+Work+on+the+new...-a0206348998>).

Barges are known to have occasionally accidentally discharged part or all of their cargo into harbours. Cargo in the form of turf, coal, timber, brick, oats, flour, whiskey/beer, textiles and food is known to have been traded at Broadstone and remains relating to such cargo may also be identified within the harbour.

Records indicate that a number of barges may have been deliberately sunk at Broadstone, though accidental sinkings also occurred. The potential for barge remains to be uncovered within the harbour is substantiated by the excavation of a complete barge at Leamington Wharf, Edinburgh (Coleman 2004).

Archaeozoological skeletal remains such as fish, dogs, cats and horses may also be recovered within the harbour.

5.0 DEVELOPMENT OF THE MGWR AT BROADSTONE

The site of the MGWR complex at Broadstone is illustrated on the 1st edition OS map of 1843 as predominantly comprising a series of fields and laneways. The site of the Broadstone Building is partially occupied by the rear gardens and outhouses of buildings fronting onto Constitution Hill and forming present day Royal Canal Terrace.

The construction and development of the MGWR is recorded on various cartographic sources commencing with Thom's Directory in 1848. Only the twin rail lines and a rectangular block, possibly representing the aforementioned passenger sheds or the site of

Railway Procurement Agency

Title: LCC Broadstone Branch and Harbour Desktop Assessment (BXD_400)

the terminal building, are illustrated on Thom's Directory, to the northwest of the Broadstone harbour.

The 1st edition 25" OS map of 1864 illustrates that a significant development of the MGWR terminal from its initial recording in 1848 had taken place. By this date, the Broadstone Building is complete and illustrated as a substantial structure orientated northwest-south east. Approximately 12 lines of track, accommodating movement of the trains from the terminal building and around the associated depot, are shown. The depot area itself, to the north and west of the terminal building, is extensively developed, though located on a narrow linear plot. Goods sheds, workshops, an "Engine House", and "Goods Shed" and a "Saw Mill" are shown; the latter is located to the west of the terminal building, adjacent to a turntable and surrounded by a semi-circular arrangement of buildings. The rail sidings leading from the saw mills in the south to the engine house in the east are shown skirting gardens belonging to the adjacent Grangegorman prison, which records indicate were subsequently purchased by the MGWR in 1872. Approximately 4 railway sidings are illustrated to the west of the Broadstone harbour, and a "Goods Store", known to have been completed in 1853, is shown to the south of the harbour. No passenger sheds are shown on this edition and given the extensive nature of the works, it is probable that these structures were temporary and subsumed into the main terminal building.

The 2nd edition 25" OS map of 1906–9 illustrates the MGWR approximately 30 years after the infilling of the canal harbour and aqueduct. The infilled canal channel which formed the approach to the harbour now forms the forecourt of the Broadstone Building which is set out on a triangular plan, consistent with the modern day layout. The west side of the forecourt is defined by a curvilinear arrangement of buildings. The Goods Store, constructed in 1853, to the south of the harbour has been extended and a number of rail sidings have been constructed across the harbour site, leading to a newly constructed turn table. The railway depot complex to the north and east of the terminal building has also been expanded, in particular the "Saw Mill" to the west of the terminal building is no longer annotated and extensive development of the turntables has taken place. The associated engine house has also been extended in a curvilinear arrangement around the turntable's western half.

An "Engine House", illustrated on the 1st edition 25" OS map of 1863–7 as being located some distance to the north of the Saw Mills and turntables has been demolished and replaced by a second "Engine Shed" constructed to the north of the turn table on lands purchased from Grangegorman prison. The Goods Shed and workshop located to the north of the terminal building have also been considerably extended.

5.1 Previous investigative works

5.1.1 Ground investigations

Ground investigations relating to the site of the MGWR were undertaken to the west and southwest of the Broadstone Building and along the western site boundary of the Bus Éireann Depot. Made ground at this location varies from 2.4–8.1m but has an average depth of c. 6.5m. The presence of made ground at this location appears to confirm the MGWR Engineer's report of 1846 which noted that ground levels had to be increased to accommodate construction of the platforms and passenger sheds.

5.1.2 Utility slit trenches

A number of utility slit trenches were excavated to the fore of the Broadstone Building and within the existing car park area of the Dublin Bus Phibsborough Garage; the results of which were described in Section 4.2.3. No materials which could be related to the MGWR were identified within the slit trenches.

An additional utility slit trench was excavated within the Bus Éireann Depot, 57m west of the Broadstone Building, and 75m north of the study area for this desktop assessment. The slit trench was excavated to a maximum depth of 1.80m and was subject to archaeological monitoring.

The stratigraphy comprised a concrete yard surface (0.06m thick) overlying a 0.64m deep fill comprising hardcore and large stones. A 0.10m deep red brick surface was encountered at a depth of 0.72m, this rested on a 0.08m deep concrete bed encountered at a depth of 0.90m. The latter overlay a 0.85m deep deposit of stone and clay. A mortar deposit was encountered at a depth of 1.75–1.8m below current ground level.

The redbrick surface appears to represent paved flooring, potentially indicating that it represents the interior of an earlier structure. However, its location does not appear to correspond with that of structures illustrated on earlier cartographic sources, though it is located in close proximity to the former site of the MGWR Saw Mill and turntable. It may represent a previous operating/platform level associated with the operation and use of the MGWR, or more probably is related to the subsequent use of the site as a bus depot.

It is probable that the fill layer encountered at a depth of 0.90–1.75m represents the infilling of the site by the MGWR in advance of construction work. The basal mortar deposit may represent activities associated either with the MGWR or with the construction and use of the Broadstone harbour.

5.2 Potential sub-surface remains

There is a high potential to find remains associated with the MGWR to the fore of the Broadstone Building and across the extent of the site of the harbour and canal approach.

A number of 20th century structures were recorded on the 2nd edition OS map of 1897–1913 to the fore of the Broadstone Building and running northwards parallel to the existing boundary wall of the DCC car park. Additional structures were also illustrated towards the eastern boundary of the Broadstone harbour. The construction of these buildings may also have entailed significant drainage systems, while operational works may have entailed the use of above or below ground storage tanks for oil, sand, diesel and water. The foundations of these elements of the MGWR may be preserved beneath the existing ground level.

Rail sidings ran to the west of the Broadstone harbour adjacent to the boundary with St. Brendan's Hospital Complex and across the harbour on a northwest-southeast axis. Remains relating to the rail sidings such as ballast, sleepers, rail tracks and signals/signalling equipment may be preserved on site.

Analysis of borehole information indicates that there is a risk of hydrocarbon contamination at this location as a result of activities associated with the operation of the MGWR and the site's subsequent use as a bus depot and car park.

6.0 DEVELOPMENT OF TEMPLE VIEW

To the southeast of the Broadstone Building and lying between Constitution Hill Flats and Constitution Hill is a triangular plot of land identified within the Luas Broombridge Railway Order as forming part of the Broadstone Compound. This site predominantly comprises a green area but also incorporates the derelict remains of two Victorian houses and the Maxol Filling Station.

This section of land is well documented on various cartographic sources. Its extent and plan has remained relatively static since the 19th century, though the area was marginally shortened in the south in the late 20th century to accommodate the widening of present day Broadstone Road.

This site is originally illustrated on Rocque's map of 1756 fronting onto "Broad Stone" and occupied by a series of linear house plots with rear gardens. The area is subsequently illustrated on the WSC maps of 1791 as triangular in plan, defined in the north by the proposed site of Foster Aqueduct and in the west by Prebend Street. The site is occupied by approximately four buildings and is crossed by the route of the Bradogue River. The site is

Railway Procurement Agency

Title: LCC Broadstone Branch and Harbour Desktop Assessment (BXD_400)

similarly illustrated on the 1815 “A Plan of the City of Dublin”, though less definition in the number of houses occupying the site boundary is apparent. The site is shown as vacant in 1829 and again in 1836.

On the 1st edition 6” OS map of 1843, the site is illustrated as a well-defined triangular plot of land running flush with the boundary of Broadstone harbour, rather than separated by Prebend Street. It predominantly comprises a grassed area, defined by a laneway but two structures and an outbuilding are present within its south west corner. A footpath providing access with Constitution Hill is also illustrated.

The site is subsequently illustrated on the 1st edition 25” OS map of 1864, by which point the site is annotated as “Temple View” and additional housing has been constructed along the length of its southern boundary. On the 2nd edition 25” OS map of 1897–1913, the laneway defining the sites southern limit is annotated as “Farrell’s Lane”. In the late 19th century, two Victorian houses (Nos. 6–7 Temple View) were constructed on the central west side of the site; the location of which is depicted on the 4th edition Ordnance Survey 6” map of 1835–8.

In 1951, subsequent to the production of the aforementioned map, the adjacent Foster Aqueduct was demolished, as were the structures fronting onto Farell’s Lane. To accommodate the construction of Broadstone Road, Farell’s lane was widened northwards incorporating the location of the mid 18th century houses which formed Temple View. The Maxol Filling Station was constructed in the north west of the site in the mid 20th century.

6.1 Previous investigations

Ground investigations undertaken within the environs of Temple View entailed the excavation of three boreholes: one to the fore of the derelict Victorian houses, one within the adjacent green area and one within the forecourt of the Maxol Filling Station. Made ground was identified at a varying depth of 5.5m at the Maxol Filling Station, increasing to 10m to the fore of the derelict Victorian houses. The depth of made ground may reflect the fact that this area is predominantly located on the former embankments of Foster Aqueduct. A brick-lined void identified in the Maxol Filling Station borehole at a depth of 2.3–4.0m below current ground level may represent the culverted remains of the Bradogue River.

6.2 Potential sub-surface remains

Potential sub-surface remains at this location are likely to comprise material introduced to the site in advance of the construction of the harbour and Foster Aqueduct. As the latter entailed the demolition of a number of pre-existing 18th century buildings, there is the

Railway Procurement Agency

Title: LCC Broadstone Branch and Harbour Desktop Assessment (BXD_400)

potential that the foundations of these structures may be preserved beneath material relating to the aqueduct embankments. Associated features may include boundary walls, outhouses drains and cess pits.

The alignment of Broadstone Road incorporates the route of the 19th century Farrell's Lane and the location of several houses which fronted the lanes northern side. It is estimated that structural remains relating to these houses are most likely to be located beneath the existing road and footpath. However, associated boundary walls, outbuildings, cobble surfaces and laneways may be located beneath the surviving green area. The course of the Bradogue River and/or the culverted remains of same may also be preserved at this location.

Artefactual remains will most likely comprise domestic material related to the occupation of both the 18th and 19th houses which occupied this site. This may include pottery, glass, animal bone, shell and dressed stone.

Analysis of borehole information indicates that there is a risk of hydrocarbon contamination at this location, particularly within the vicinity and to the rear of the Maxol Filling Station.

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<http://www.thefreelibrary.com/History+revealed+on+building+site%3B+EXCAVATIONS%3A+Work+on+the+new...-a0206348998>

<http://shop.osi.ie/Shop/MapView.aspx>

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Figure 1: Extract from Rocque's 1756 "Map of the City of Dublin"

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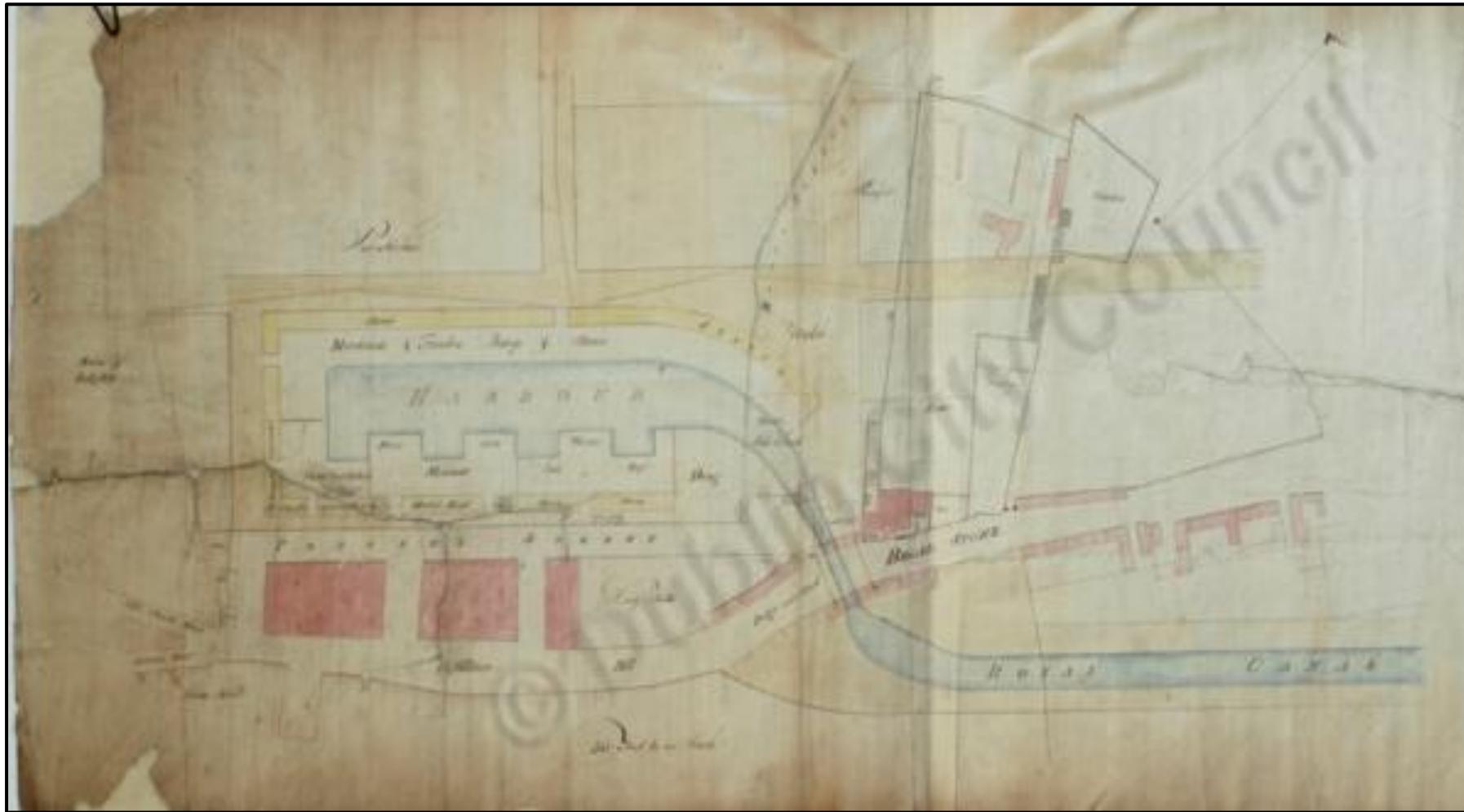


Figure 2: Plan of the Broadstone Branch and Harbour, 1791 (WSC/Maps/071)

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Figure 3: Extract from "A Plan of the City of Dublin", 1815

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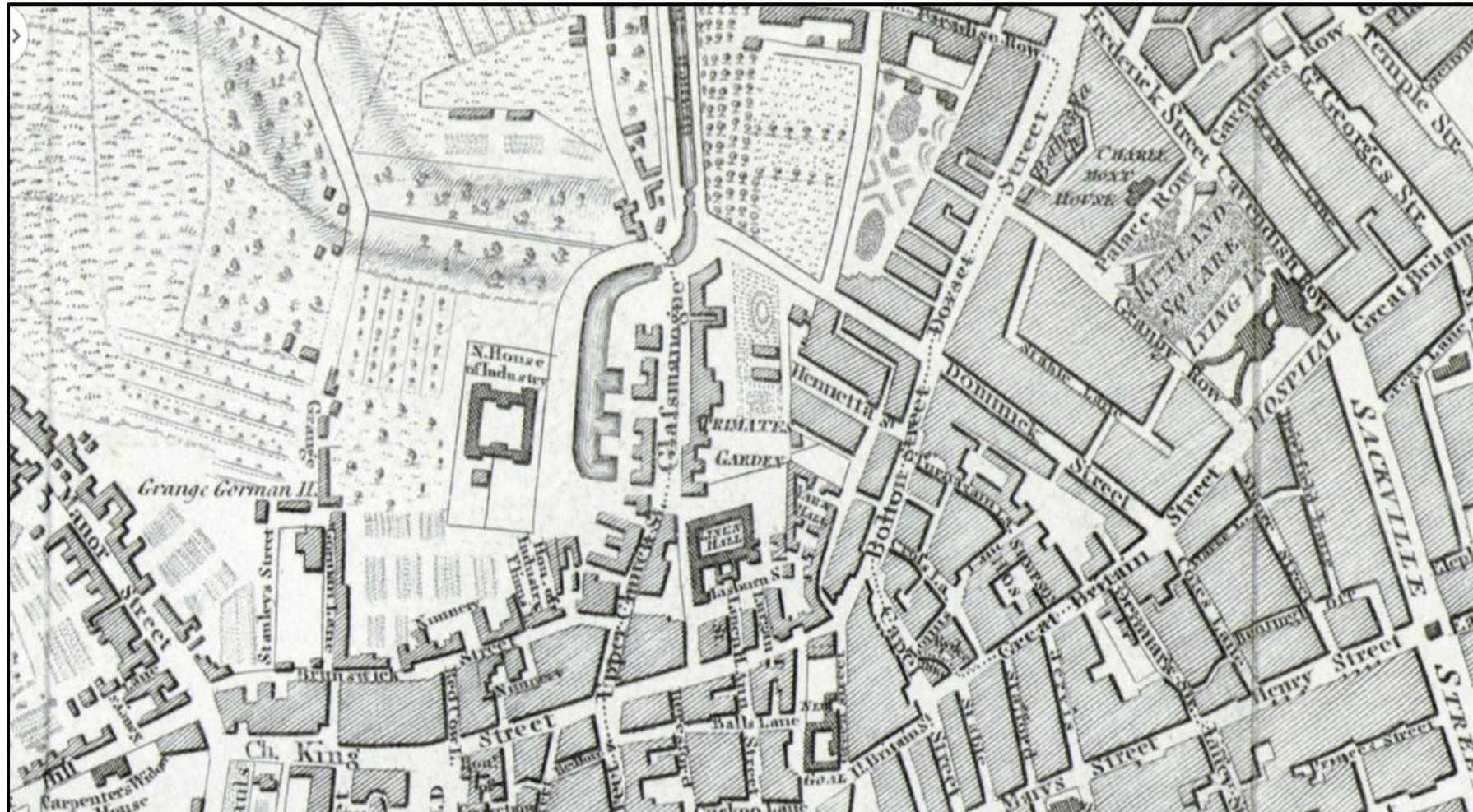


Figure 4: Extract from a “Plan of Dublin”, 1818

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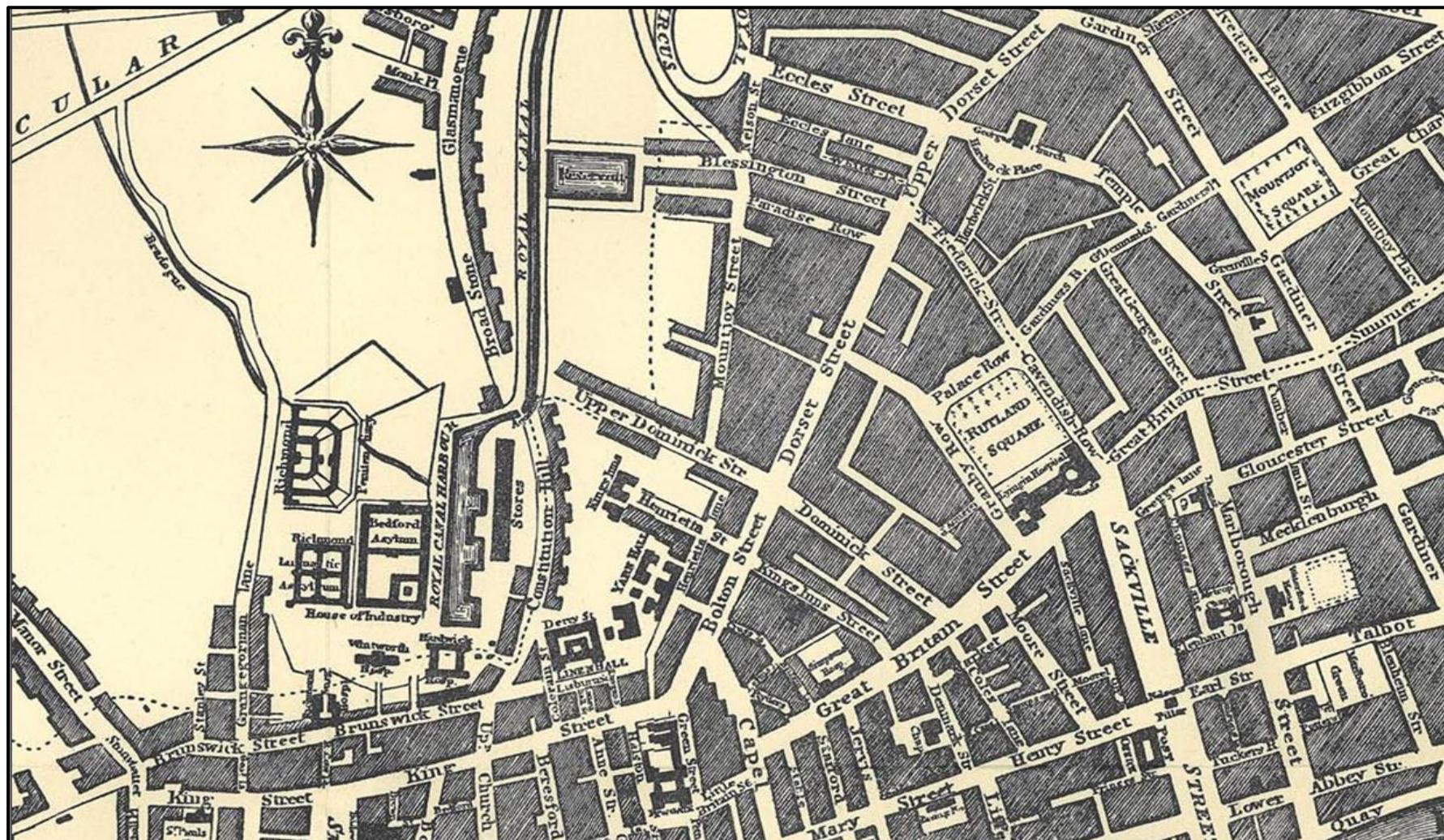


Figure 5: Extract from a “New map of the city of Dublin”, 1829

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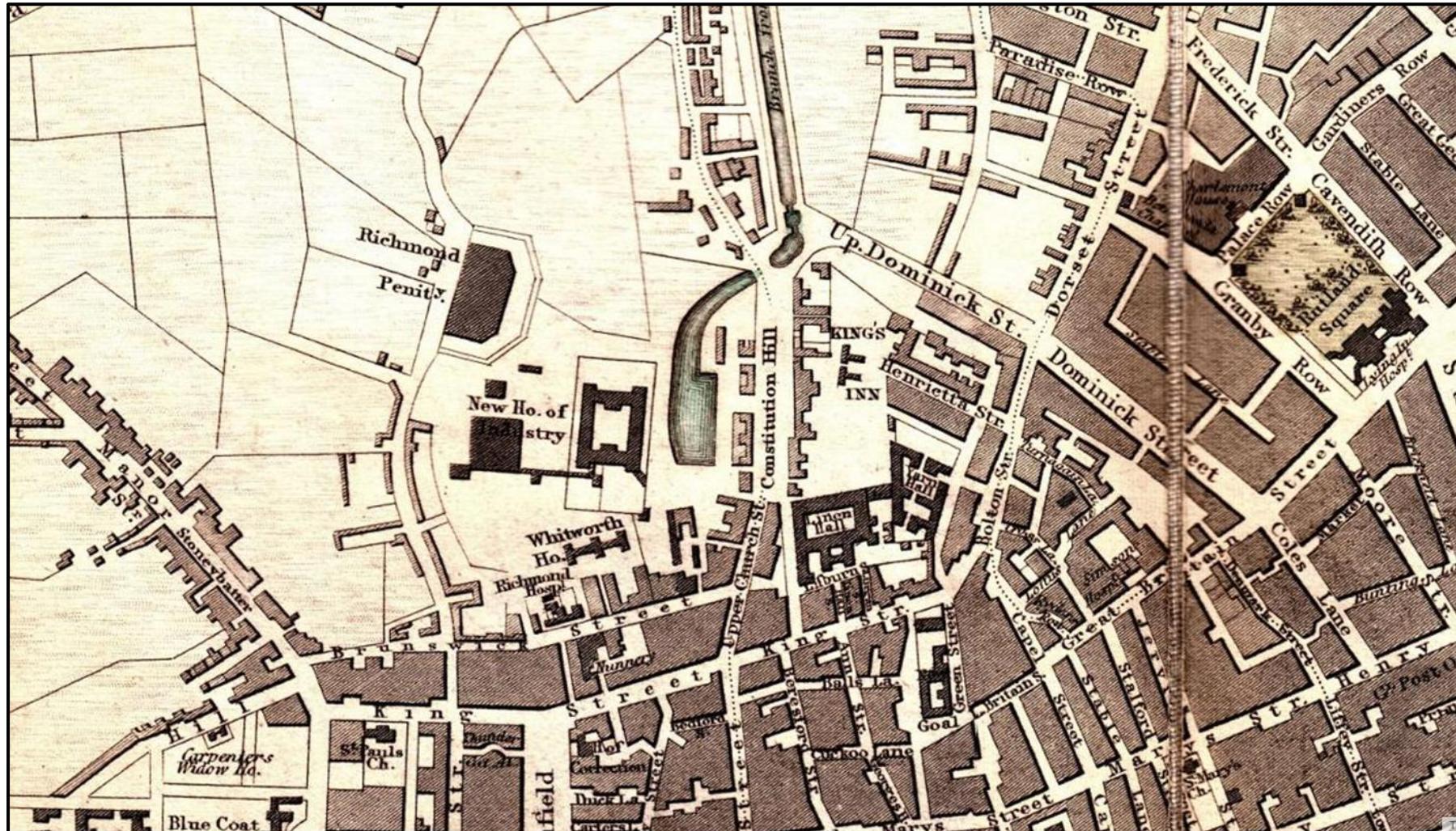


Figure 6: Extract from “Dublin” 1836, Published under the Superintendance of the Society for the Diffusion of Useful Knowledge

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Figure 7: Extract from the 1st Edition Ordnance Survey map of 1843

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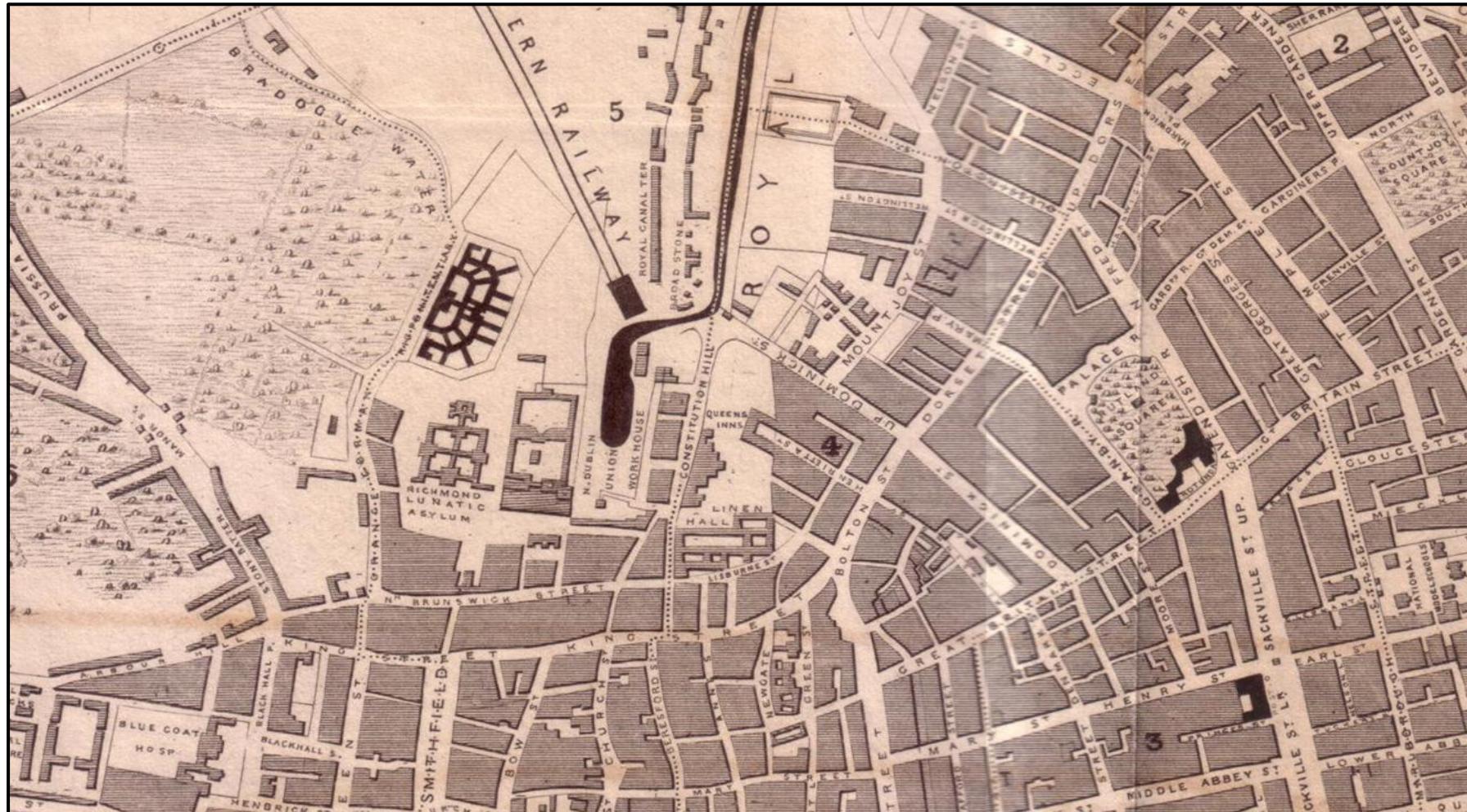


Figure 8: Extract from Thom's Directory, 1848

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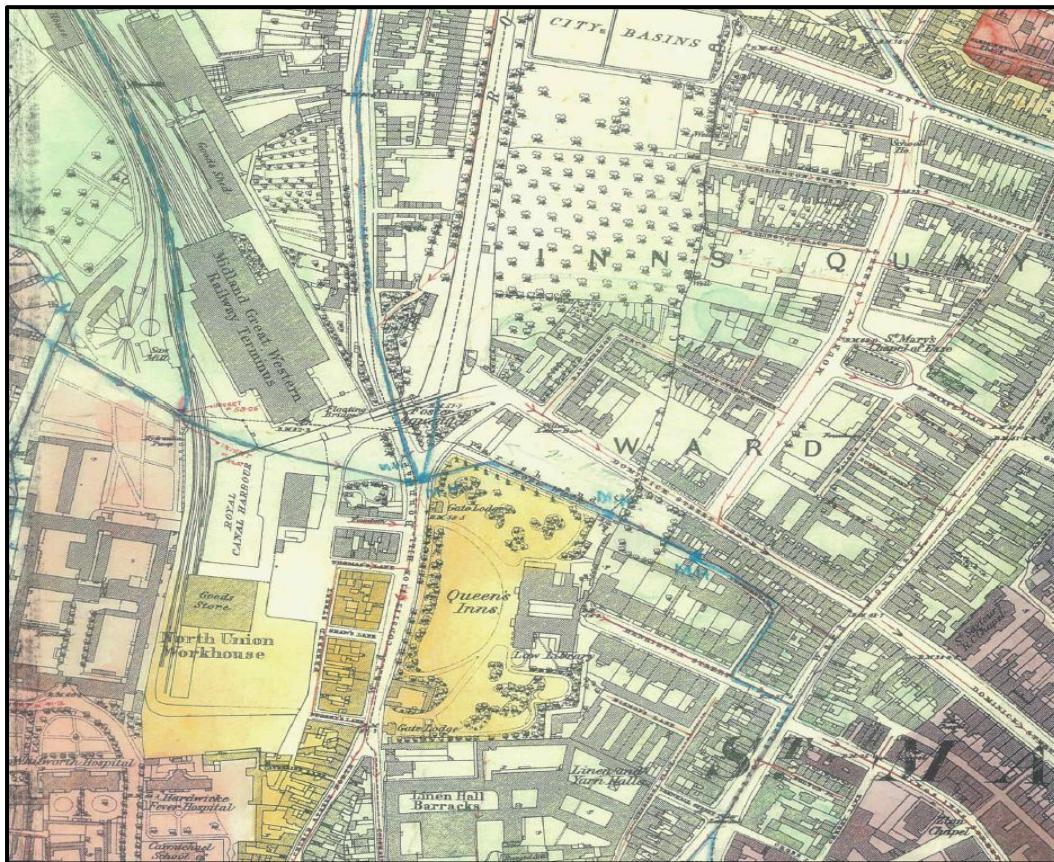


Figure 9: Extract from the 1st edition 25" Ordnance Survey Map of 1864

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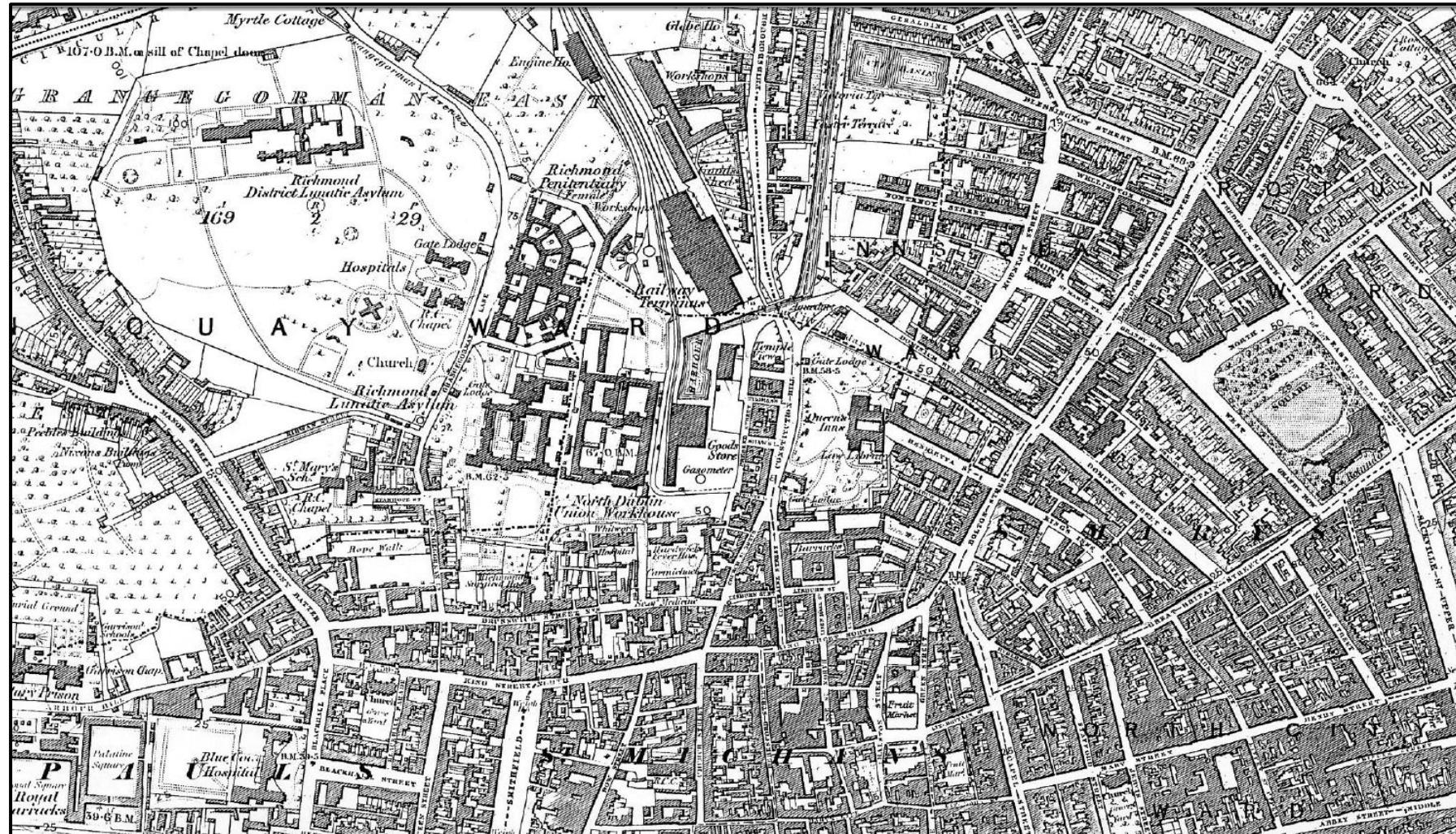


Figure 10: Extract from the 2nd edition Ordnance Survey map of 1871-1875

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Figure 11: Extract from the 4th edition Ordnance Survey Map of 1935-38

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Title: LCC Broadstone Branch and Harbour Desktop Assessment (BXD_400)

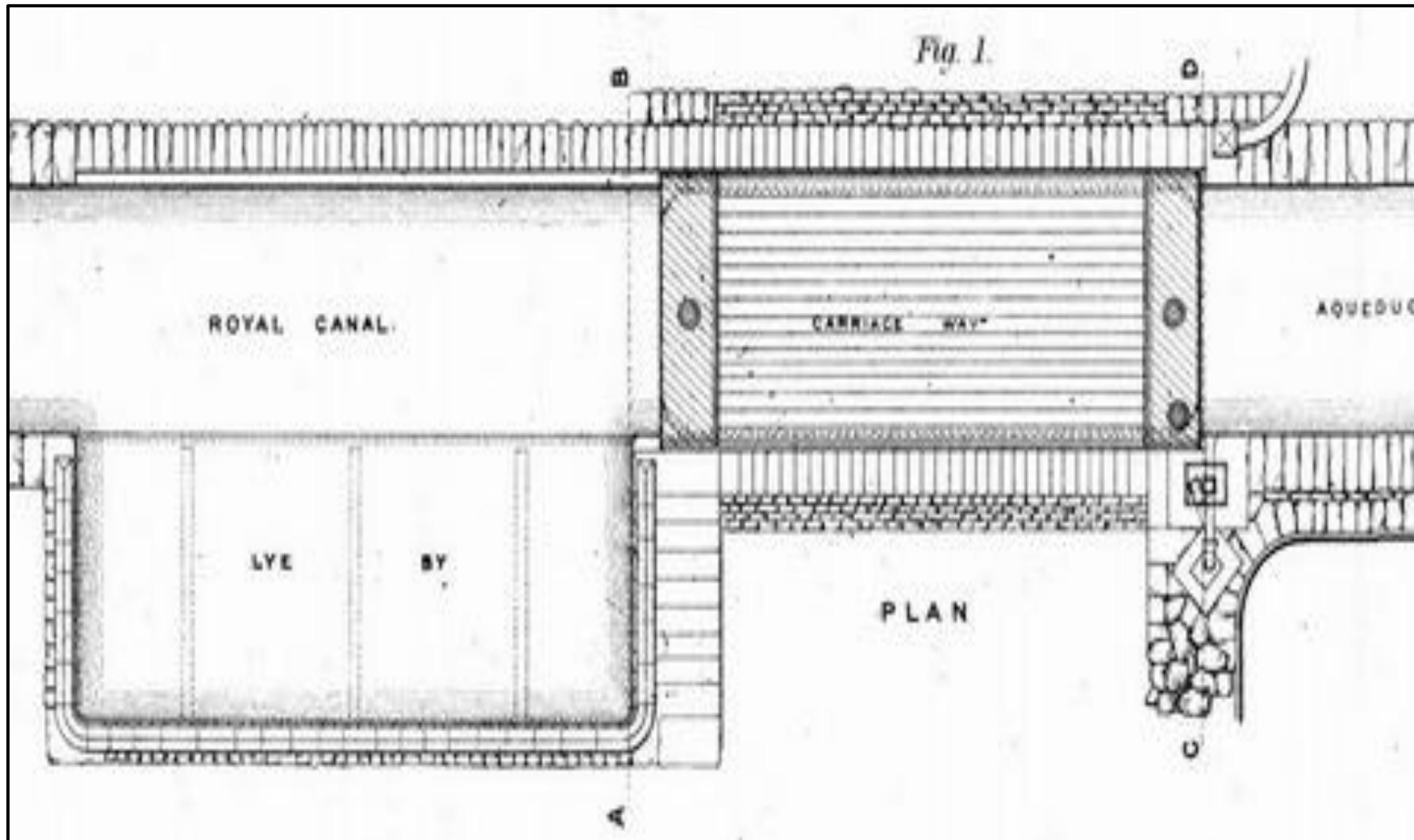


Figure 12: Plan of the floating or Pontoon Bridge (after Mallet 1850)

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Plate 1: "The Royal Canal Harbour" by Samuel Frederick Brocas, 1818



Plate 2: "View of the City of Dublin, the Bay, Mountains, &c., the Royal Canal and Foster Aqueduct" by James George Oben, 1813

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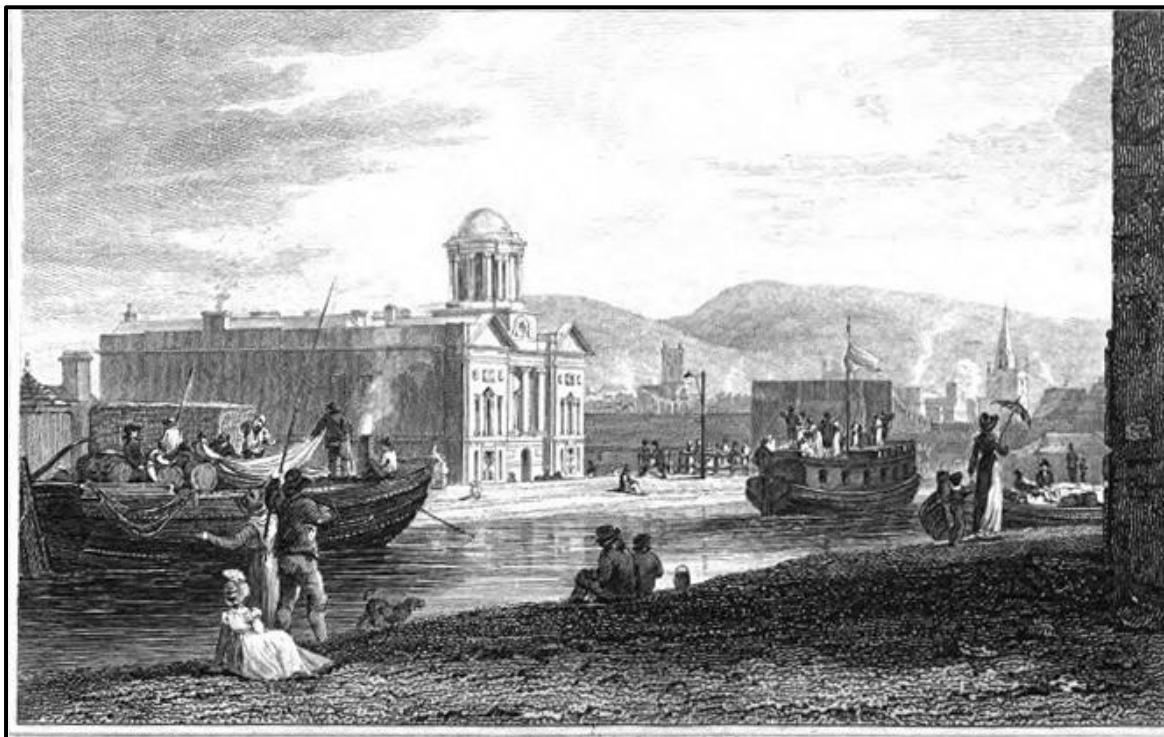


Plate 3: George Petrie "The King's Inn and Royal Canal Harbour", 1821



Plate 4: View of Foster Aqueduct (after The Penny Journal, 1835)

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Title: LCC Broadstone Branch and Harbour Desktop Assessment (BXD_400)

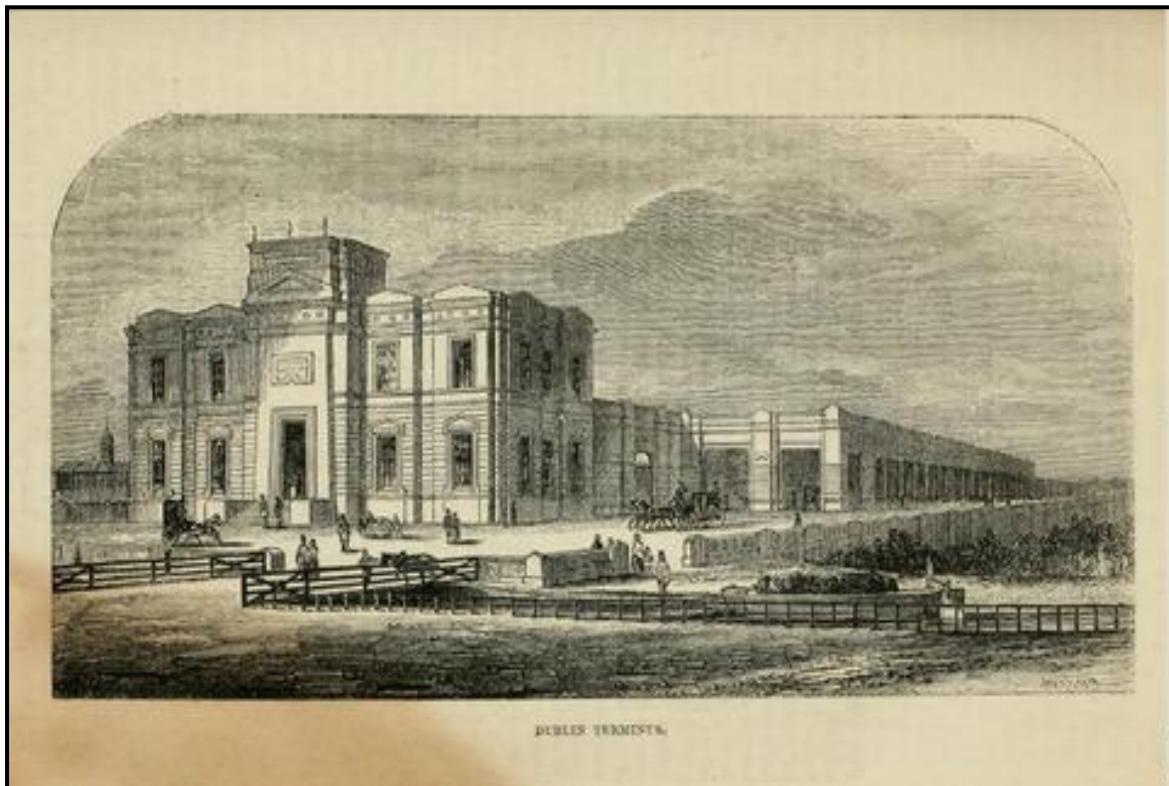


Plate 5: "Dublin Terminal" by David Bryce, 1854

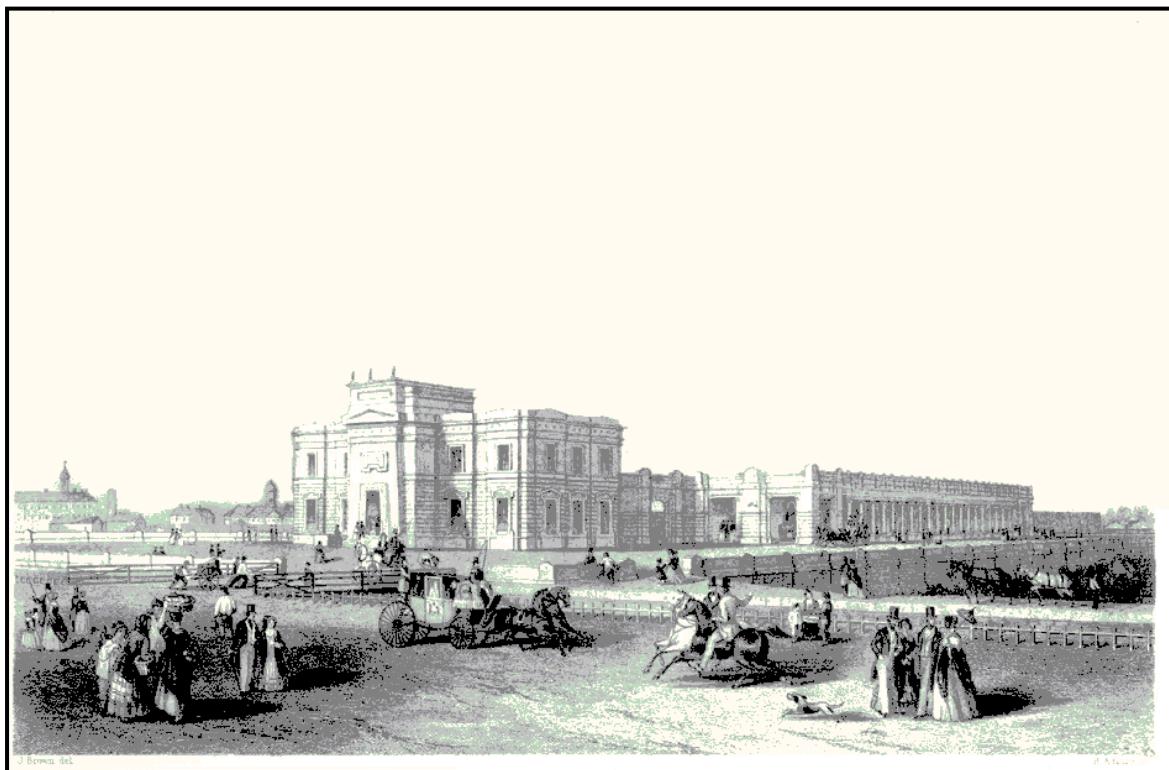


Plate 6: The Broadstone building and Foster Aqueduct c. 1861 – note the Pontoon Bridge across the canal channel

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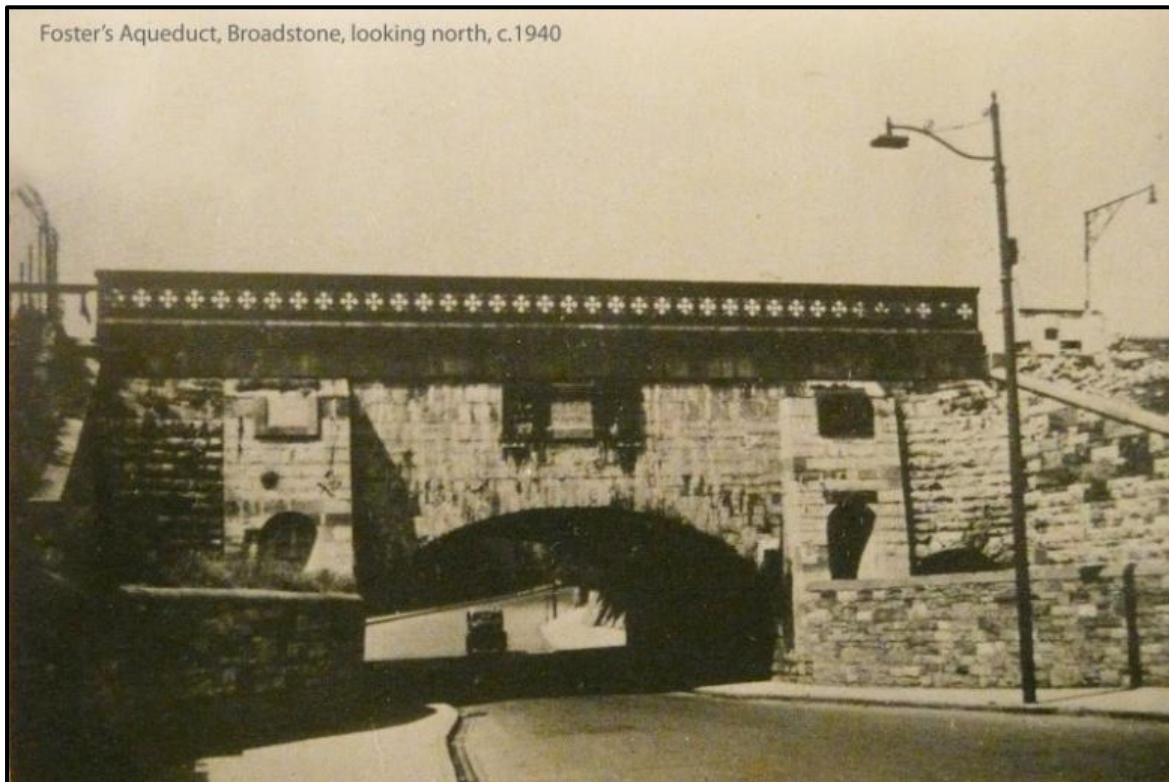


Plate 7: View of Foster Aqueduct c. 1940