

COURTNEY • DEERY

ARCHAEOLOGY & CULTURAL HERITAGE

Archaeological Assessment Report:

No 42A Parkgate Street

(Former Hickey's Fabric Factory)

Dublin 8

Planning ref.: N/A Preplanning

Licence No. 19E0781

ITM: 713663 734400

Licensed Archaeological Director: Edmond
O'Donovan

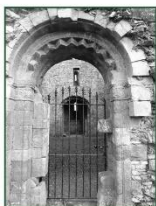
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Graphics: Reddy Architecture+Urbanism

For

Chartered Land Ltd

20th March 2020





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EXECUTIVE SUMMARY

This report describes the results of an archaeological assessment undertaken at 42A Parkgate Street Northwest Dublin 8 (Licence no.: 19E0781). It was undertaken on behalf of Chartered Land Ltd. The testing was carried out under licence by Edmond O'Donovan.

In total twelve test pits approximately measuring 3m x 3m were archaeological examined and recorded over a six-day period from the 6th-13th February 2020. The test pits yielded early 19th and 20th century industrial deposits and features associated with the Phoenix Iron Works and later factories on site.

Based upon development design and impact of a dense piling layout and having considered the archaeological findings, it is recommended that the Dublin City Council (subject to planning approval) attach a condition requiring that archaeological excavation be carried out within the basement / undercroft footprint of the proposed development (part of Block B and C) and also that archaeological excavation be carried out under Block A.

Prior to the demolition of existing buildings on site, a full photographic and descriptive record of the upstanding remains in relation to the Phoenix Iron Works (c. 1800-1878) and Kingsbridge Woollen Factory (1880-1890) should take place in order to add to the archaeological record of the subsurface industrial remains.

These works should be accommodated within a designated window for archaeological work established within the demolition and ground works construction contract with a suitable programme for archaeological work which must be accommodated within the construction programme.

All recommendations are subject to the approval of the City Archaeologist of Dublin City Council and the National Monuments Service of the Department of Culture Heritage and the Gaeltacht.



Illustration 1 View from Heuston Station

1. INTRODUCTION

1.1. Report Brief

This report provides the results of archaeological assessment based upon archaeological test excavation undertaken to provide a broader understanding of the below ground archaeological potential of the site at 42A Parkgate Street (Figure 1).

The proposed development (Figure 1) is located within the constraint area or zone of archaeological potential for the Historic City of Dublin, which is a Recorded Monument / Place (RMP Ref: DU018-020---). This affords the site protection under National Monuments Legislation (Appendix 1).

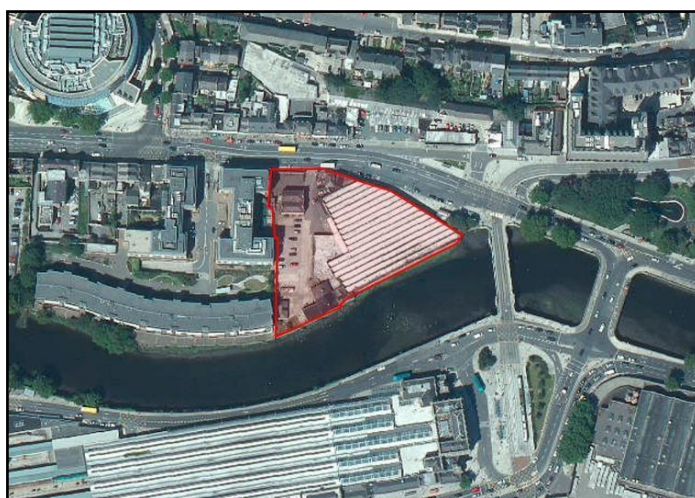


Figure 1 Site location

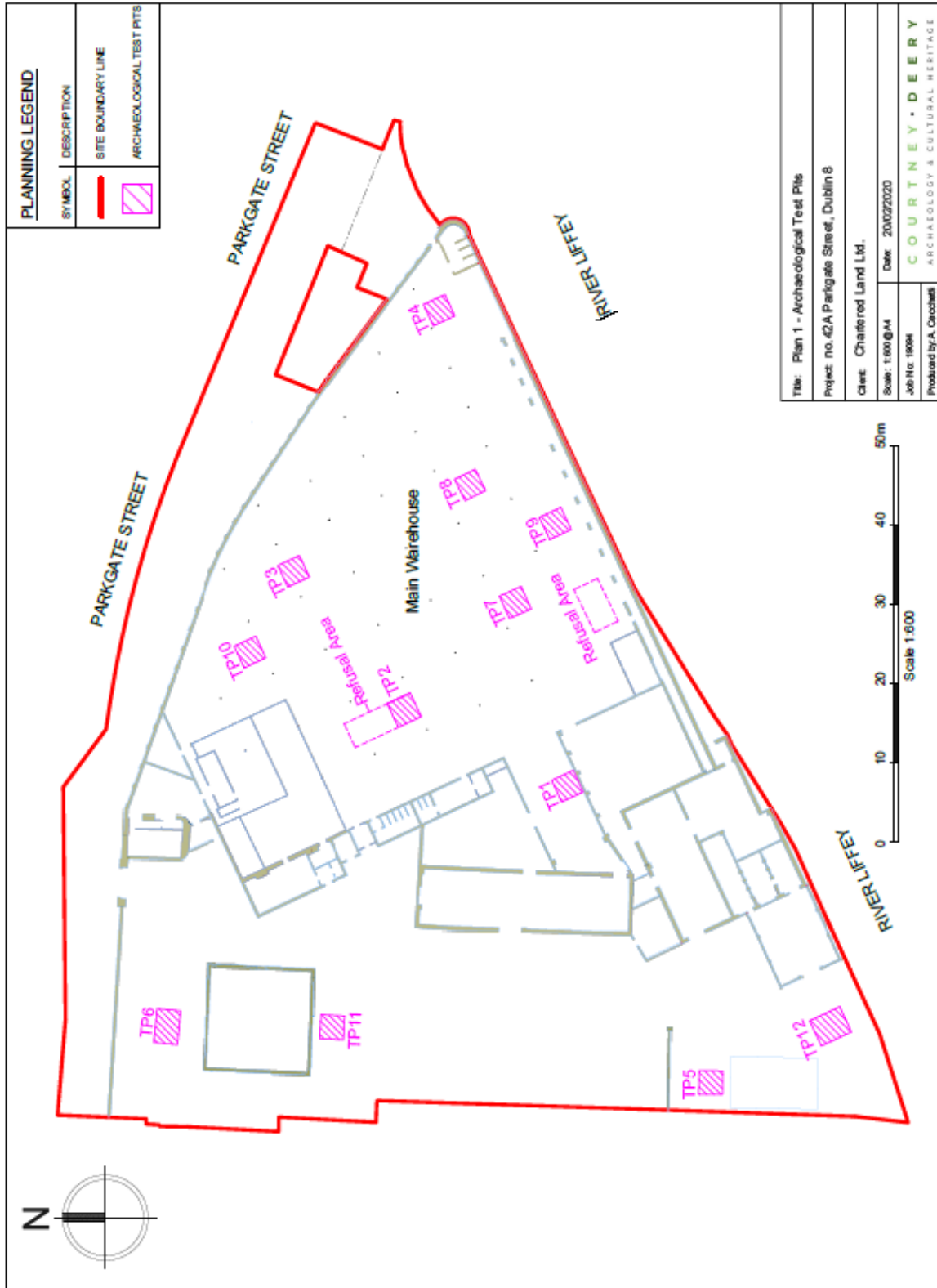
The archaeological investigation was undertaken in response to the proposed development (described below) that is currently being considered on the site. It was also undertaken in response to consultation with the City Archaeologist where it was suggested that the site would benefit from archaeological assessment as early as possible in the design and planning process.

In particular, the assessment was conducted in order to address two key questions in relation to the archaeology at the site:

- Is there the potential to uncover medieval or earlier archaeological remains specifically dating to the Viking Period on site?
and
- to what extent do the industrial heritage remains of 19th century date survive below ground level?

Test excavation was carried out by Edmond O'Donovan under licence to the statutory authorities (Licence 19E0781) once the site was vacated in February 2020. In total, twelve test pits were examined, test pits TP5,

TP6, TP11 and TP12 were located in an external yard on the western side of the site. Test pits TP1, TP2, TP3, TP4, TP7, TP8, TP9 and TP10 were located indoors within an existing factory building (Plan 1).



1.2. Site Location

The site is located on Parkgate Street, on the northern bank of the River Liffey, opposite the point of discharge for the River Camac and immediately west of Sean Heuston Bridge (Figure 2). It lies south of the Phoenix Park and within Arran Quay Ward, with the River Liffey acting as the boundary between Arran Quay Ward and Usher Quay Ward. Parkgate Street itself marks a Municipal Boundary, with the southern wall of the Phoenix Park acting as a 'County / City' and Parliamentary Boundary.

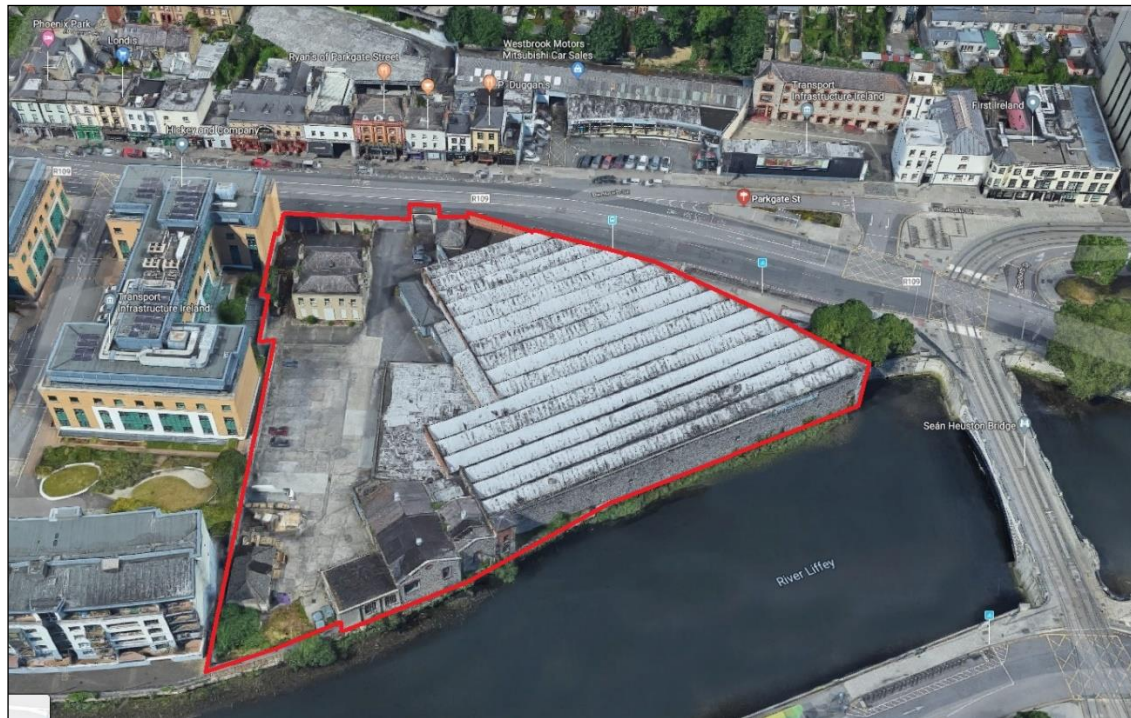


Figure 2 View of proposed development site looking north

1.3. Proposed Site Description

The landowner, Chartered Land Ltd, is proposing to redevelop the site with the demolition of the existing factory buildings whilst retaining the historic protected building/ structures. The development involves the construction of three interconnecting tall buildings with a basement under the central structure for a mixed-use development.

Illustrations by Reddy Architecture + Urbanism of the proposed development are placed throughout the report to provide an understanding of how various heritage features will present (Illustration 1-5) (these features and structures are discussed in detail in Chapter 12 Architectural Heritage of the EIAR for Parkgate Street) and how the overall development will look from various viewpoints (Appendix 4).

1.4. Previous Archaeological Assessment and Investigations at 42A Parkgate Street Site Description

Test excavation follows on from the ground investigation (GI) phase of works which were conducted throughout March-May 2019 on behalf of Chartered Land Ltd. This phase of works was archaeologically monitored under licence (19E01779) (Clancy 2019) (Plan 2).

In summary, the results of the ground investigations confirmed the presence of made ground across the site to a depth of 3 – 5 meters BGL (Beneath Ground Level). Beneath the modern ground surfaces of concrete and tarmac is a layer of building rubble with a high concentration of red brick. This ranged in depth between 0.35m – 1.80m BGL.

The rubble fills overlay deposits of industrial material, these were characterised by black charcoal-rich clays with varying degrees of sands and gravels. Inclusions of slag, shell, bone and mortar were noted. These deposits ranged between 0.45m – 1.90m BGL. They were predominately located in the southern half of the site and appear to infill sub-surface foundations/ structures. These deposits are possibly associated with the demolition of the 19th century iron works.

It appears that industrial activity relating to the 19th century iron works occur at a depth of approximately 0.5m to 2m BGL. Results appear to indicate foundations, possible wall and floor levels associated with the iron works and later phases on site.

Largely beneath the industrial deposits were brown clays at 2m-3m+ BGL. Inclusions of bone and ceramic were noted in these deposits. The uniform nature of these clays across the site would suggest that they are reclamation deposits, perhaps associated with agricultural improvements to the riverside meadow before the construction of the iron works. These deposits overlay riverine sands and dark grey clay with high percentage of gravels and sands.

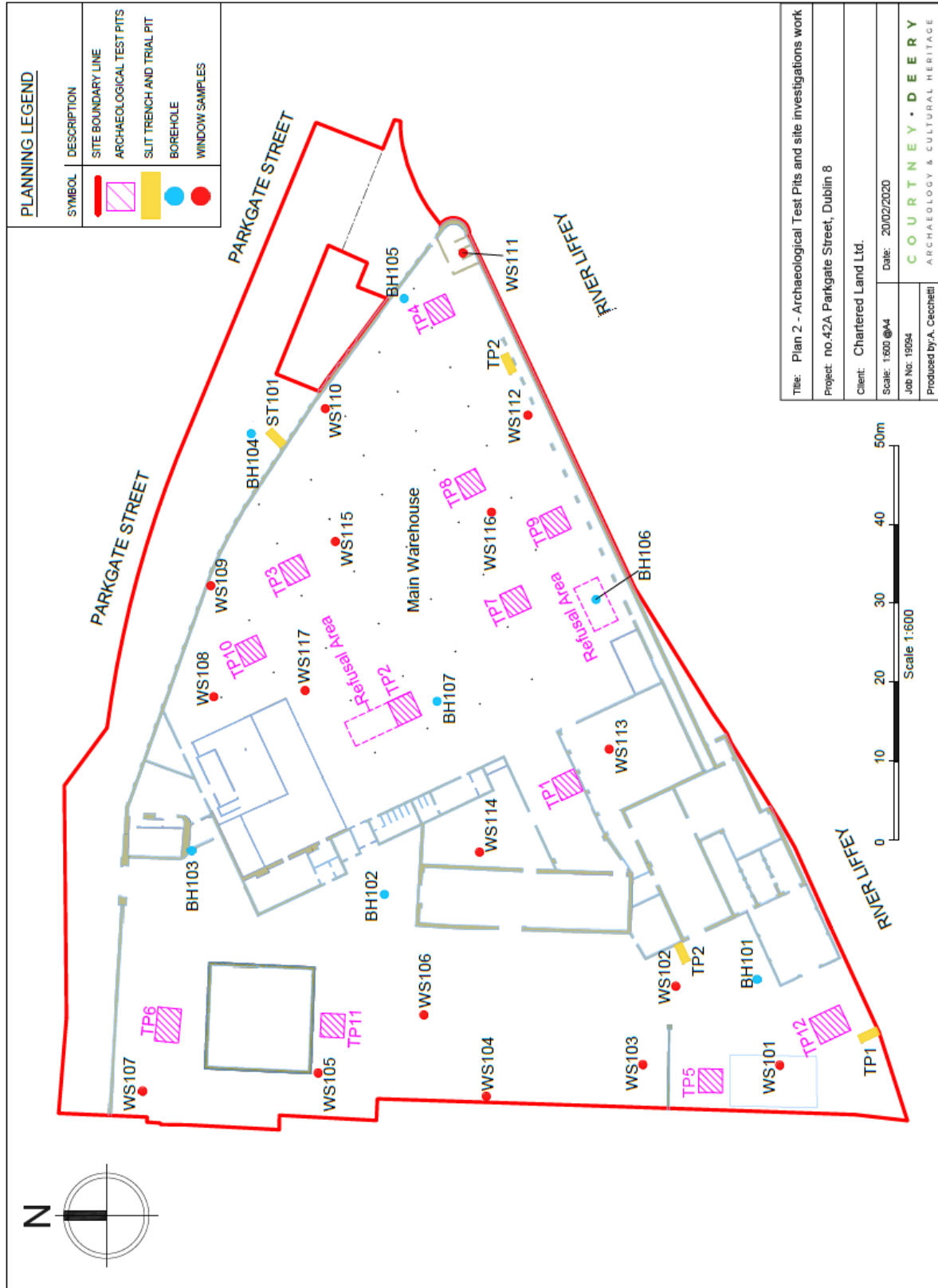
To date the following archaeological reporting has taken place in relation to 42A Parkgate Street:

- Archaeological Desk Study (2018)
- Archaeological Monitoring of GI Works (Licence No. 19E0179)
- Consultation with the City Archaeologist (21st May 2019)
- Preparation of an archaeological chapter for inclusion in the EIAR (January 2020)

1.5. Archaeological Context

The proposed development site lies within the zone of archaeological potential for the Historic City of Dublin (RMP No. DU018-020) (Figure 3). There are no specific recorded monuments located within the site boundary. The nearest recorded archaeological feature is the site of a dwelling, RMP DU018-020532,

located on Montpelier Hill, c. 80m to the north. However, the sites location on the south-facing bank of the River Liffey was a significant strategic location throughout the growth and development of the historic city.



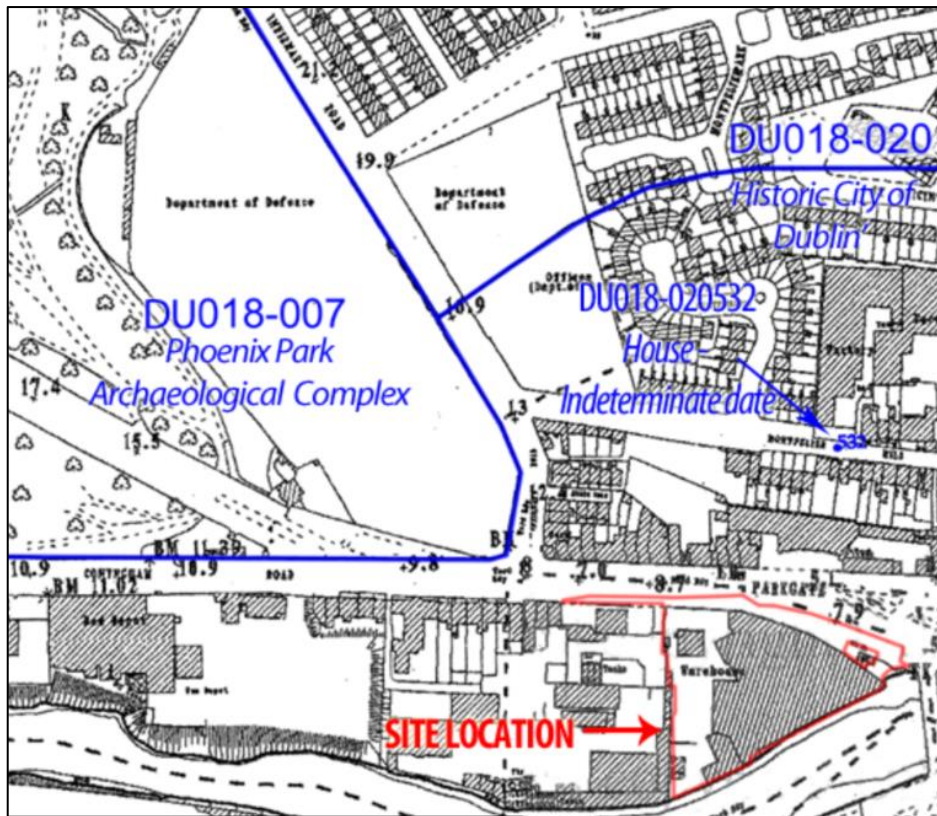


Figure 3 RMP Site Location

The development site does have a medieval archaeological potential as a prominent location between the medieval city centred on Christchurch Cathedral and the known Viking cemeteries around Islandbridge, but this is based on the site's proximity between the two foci of Viking and later medieval settlement. The early post-medieval Down Survey map of c. 1656-1658 records the location of a gallows just to the north of the site described as 'Gallows Green'. The gallows appear to be contemporary as it is depicted with wooden posts. It was most likely located west of Collins Barracks around Montpelier Hill, c. 100m north of the development site.

Cartographic analysis indicates that the usage of the site evolved from open meadow in the 17th and 18th century up to its use for industrial purposes from the early 19th century onwards with the development of the Phoenix Iron Works in the early 1800s. This was followed by the construction of the Kingsbridge Woollen Factory and the Parkgate Printing Works. One of the sites of cities 'Gallows' was located to the north of the site on low hill as illustrated on the Down Survey maps of the area.

The Phoenix Iron Works was established at the beginning of the 1800's as a large iron foundry involved in moulding and casting, some of the fabric of the iron works survives on site today. It was sold and rebuilt as Kingsbridge Woollen Mills in 1880. Much of the current buildings that remain at No. 42 Parkgate Street date from the 1880 (Plates 1 and 2) and reflect the significant reconstruction and rebuilding of the site at that time when much of the Phoenix Iron Works was demolished.



Plate 1 Rooflights c. 1880

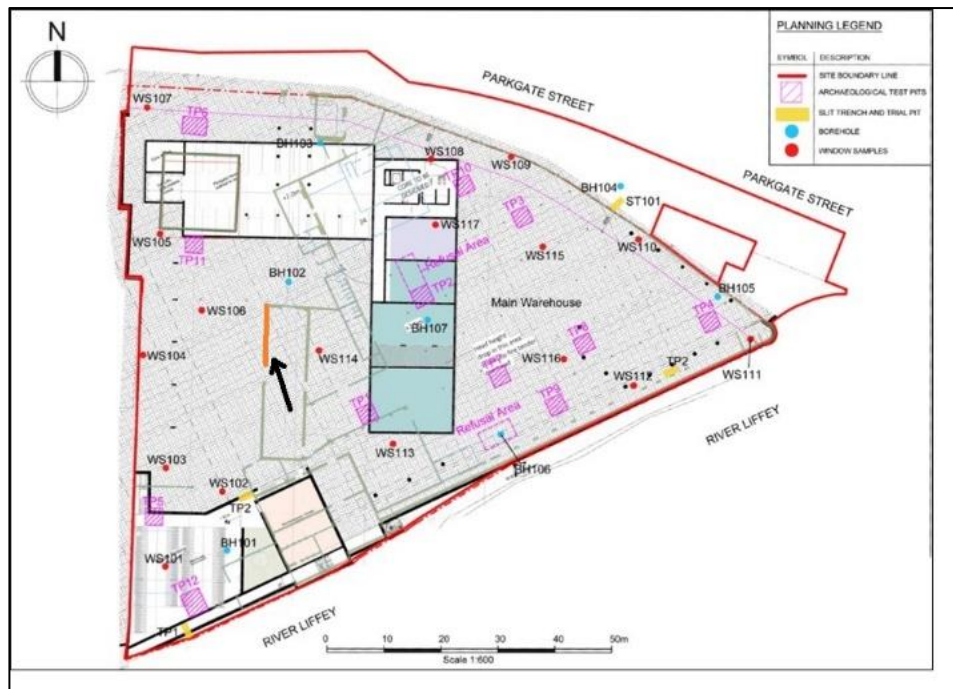


Plate 2 An example of Ironwork within the factory from an engineering partnership formed in 1865

Fragmentary buildings from the iron works also survive as standing buildings (Plate 3, Plan 3 and Figures 4 and 5). During the First World War the woollen mill was converted into a bomb factory (Plate 4 and 5). From the 1920s the factory building was taken over for use as Government Stores. In the 1930s the site was used as a printing factory known as the Parkgate Printing Works (Plate 6). It was bought by the Hickey Fabric Co. in the mid-1970s until it was acquired by Chartered Land Ltd. in 2020.



Plate 3 Wall and Window opes dating to the Phoenix Iron Works



Plan 3 Showing location of wall



Plate 4 Factory workers c. 1914-1918 at the Parkgate Street Dublin National Shell Factory



Plate 5 Canteen c. 1914-1918 at the Parkgate Street Dublin National Shell Factory

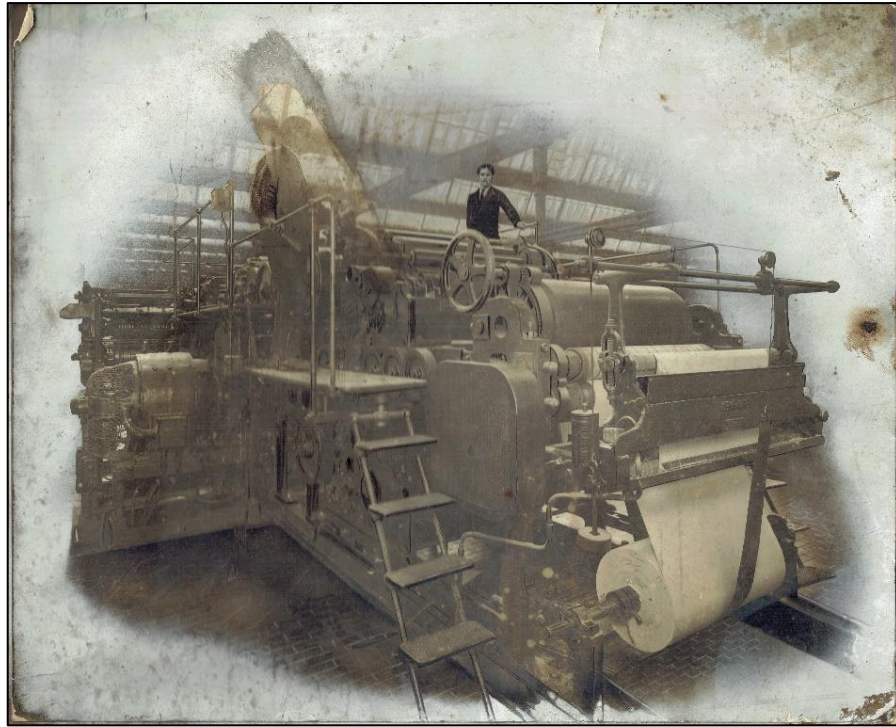


Plate 6 Cahill & Co. Printers c. 194, Parkgate Printing Works



Figure 4 Overlay onto five foot plan, 1847, showing the Royal Phoenix Iron Works

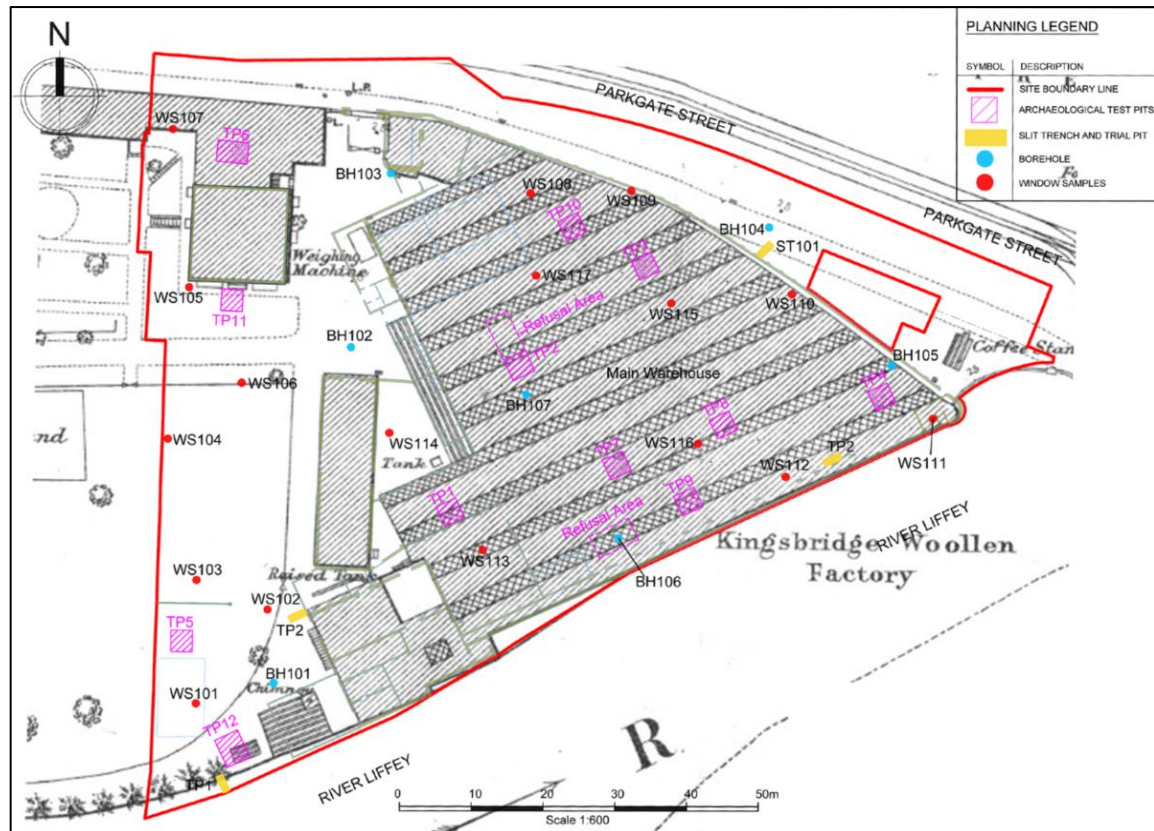


Figure 5 Overlay onto five foot plan, 1889 showing the Kingsbridge Woollen Factory

The proposed development site was occupied by the Royal Phoenix Iron Works, also known as Robinson's Iron Works from the early 1800s. The iron works was located over a large area which extended westwards outside the proposed development area and included a dwelling house, pleasure gardens, foundry workshops, a forge, outhouses and workers cottages (Figures 4 and 5). The owner was Richard Robinson, a native of Hull, an engineer and an iron founder, who had settled in Dublin in 1800. His foundry was responsible for casting King's Bridge (Sean Heuston Bridge), designed by George Papworth to commemorate the visit of George IV to Dublin in 1823; the foundry acquired the designation 'Royal' in this year.

The foundry was also responsible for casting 'new tobacco presses of a rare construction' for Alderman Gardiner in 1843, at a cost of £1000. The presses were 'so constructed as to bring by a species of brass screw a pressure of ten tons weight on a quantity of tobacco without any manual labour whatever' and were worthy of a visit by the Lord Mayor in January 1843.

In 1839, a public exhibition was held at the foundry to raise funds for the Mendicity Institution. An advertisement for the exhibition appeared in the Freeman's Journal on January 8th and announced that

'to such as may not have seen the ordinary process of large Iron Works, Bar Iron heated, slit, and rolled into hoops, or Metal melted, and run into moulds, it is submitted that the sight will prove a most attractive one,

and Parents, during those holiday times, cannot give their Children a greater treat, or a more instructive lesson, than by bringing them to see this truly wonderful exhibition’.

A notice in the same newspaper from three days previously commented on the type of objects produced at the works, ranging from *‘the most delicate and richly finished articles to the largest factory wheels’.*

Robinson died in 1848 and is buried in St Michan's Church of Ireland church. By 1844 he had been succeeded in the business by William Robinson who carried on until 1858 or later. By 1863 the foundry had been taken over by Edward Toomey.

The iron works had been in operation from the early 1800s to approximately 1880. The demise of the site as an iron works was first noted from an advertisement in the Freeman's Journal on 20th July 1878 when there was a sale of machinery, bricks, granite quoins:

‘To iron founders and others. To be disposed of, at the Royal Phoenix Iron Works, several engines and boilers to match, lathes, planning and drilling machines, punching presses and iron rollers, putty mill, scrab (crab?) winches, single and double purchase, shafting, pulleys and wheels, patterns of all descriptions, bellows, hearths, anvils and all tools necessary for smithy purposes. Foundry fixtures of all kinds, tools for boiler shop, viz:- furnace, templets and force pump, steam valves, mill machinery, leather belting and buckets, two sets of three through (throw) pumps, columns and pipes, beams, scales and weights; oil cisterns, tanks, timber, granite, quoins and bricks, with numberless other items. The above will be sold privately in convenient lots to suit purchasers.’

A further advertisement on 24th January 1880 in the Freeman's Journal, cited the sale of extensive premises, plant and stock etc at a site known as the Royal Phoenix Iron Works. The site was described as follows:

‘together with the superior dwellinghouse, out-houses, pleasure grounds, gardens &c., the entire containing 3a 6r 38p statute measure, with a handsome entrance from Parkgate Street, the river Anna Liffey being its boundary in the south.

There are also eight two-storied cottages for workmen, with foundry workshops, forge, &c. where a considerable trade was successfully carried on for many years, there being also a great facility of water carriage up and down the River Liffey for the export and import of heavy articles connected with the trade. The above premises are held under lease for ever at the extremely low rent of £84 per annum, the cottages along producing a rental of £150.

The plant and stock consists of the usual machinery adapted to the trade, comprising steam engines, from 1 to 16 horse power, and several large steam boilers, lathes, planning, drilling, punching and rolling machines, steam hammer anvils, and smiths' tools in general, also a quantity of boilermaker's tools, furnace for bending Figures, levelling blocks, bellows, hearths and troughs, cranes, core boxes, beam ladles, moulding boxes, core barrels, brass furnace, &c for foundry uses; also wheel pattern and

models of all descriptions, crab, winches, double and single purchase pulley, blocks and chains, wrought iron shafting pulleys and wheels, steam gauges and boiler mountings, &c. Sale to commence at 11 o'clock with the machinery; interest of premises at 2 o'clock pm.'

These advertisements would appear to indicate that the site, its machinery and buildings were stripped clean prior to its sale. There is also evidence to suggest that many of the buildings on the site were demolished (as indicated by a comparison of the 1864 and 1889 Ordnance Survey maps), being replaced sometime after 1882 by new factory buildings for the Kingsbridge Woollen Mills, established by Edward C. Guinness (owner of the Guinness brewery and 1st Earl of Iveagh). Thom's Directories record the valuation for the Royal Phoenix Iron Works falling from £130 in 1870 and 1880 to just £10 in 1882. By 1886, under the direction of Guinness, the valuation had risen to £405. Guinness intended the mills to create employment for the daughters of Guinness workers, though the endeavour failed as the mills were closed down in less than a decade due to serious economic difficulties.

The Kingsbridge Mills, a woollen manufacturer, occupied the site for a decade. Another manufacturer, Phoenix Park Works, was in operation on the site from approximately 1900 to 1910, though the specific type of manufacture is unknown.

While in the possession of the Phoenix Park Works, the strongly walled site was used as a location for a bomb-making factory during the First World War (listed in Thom's Directory from 1917-1920 as the 'Dublin National Shell Factory'). The munitions were carried down the river in barges that were loaded at a jetty beside the factory. The following two years saw the site taken over for use as Government Stores.

By 1924 a printing works was set up on site around ten years later (under the auspices of Cahill Printers), by which time the original site had been subdivided, with the Lucan Dairy Depot occupying the western half (i.e. the area now outside of and separate from the proposed development site). The printing works remained in operation until the mid-1970s when Hickey's Fabrics, took up residence.

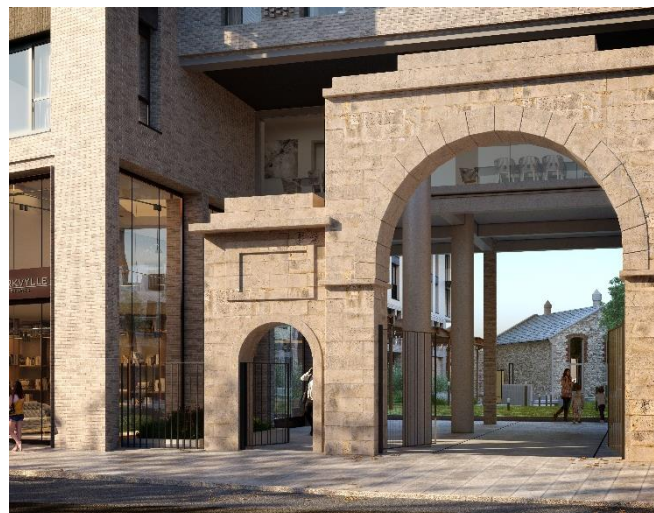


Illustration 2 View of Stone Arch Entrance into private communal courtyard

2. ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

2.1. Introduction

Cartographic analysis indicates that the usage of the site evolved from open meadow in the 18th century to the use of the site for industrial purposes from the early 19th century onwards (e.g. the Phoenix Iron Works in the early 1800s, followed by Kingsbridge Woollen Factory and the Parkgate Printing Works). The topography of the site has been altered in relatively modern times (19th century) with the construction of industrial building adjacent to the River Liffey.

2.2. Activity during the Prehistoric Period

The earliest archaeological site in the wider landscape is a megalithic structure that now stands within the Zoological Gardens in the Phoenix Park, c. 900m north-west. This is the closest known prehistoric site. It was originally uncovered in a sandpit close to Chapelizod not far from Knockmary in the Phoenix Park. A human skeleton was found within the tomb.

There is also a Linkardstown-type burial of late Neolithic date at Knockmary, in the Phoenix Park. The site was excavated in the early 19th century and comprised a mound overlying a central cist that contained two crouched skeletons. These were accompanied by a shell necklace, flint knife and bone toggle. Four small cists were also discovered dating from the Early Bronze Age, containing cremated bones and food vessels, two of which were bowls. Although this site lies over 3km west of the subject site, this evidence suggests continuity of occupation in the prehistoric period, in the general Phoenix Park area.

Further evidence of continued occupation in the area, north of the river, during the prehistoric period can be found in the topographical files of the National Museum of Ireland, which record two Bronze Age axes and a bronze pin dated to the Iron Age, all found in the Phoenix Park. South of the river, there is additional Bronze Age activity. A pit burial is recorded within the grounds of the former Infirmary of the Royal Hospital. It was uncovered during archaeological testing and was found to contain a tripartite Food Vessel cremation (Licence No. 02E0067).

2.3. Viking Settlement

It is probable that the location of the Early Christian monastery of Cill Mhaighneann was adapted in the 9th century by Vikings and used as a longphort. The term longphort was first coined in 840 and it described the defended Viking ship encampments that were generally defined by an earthwork. The longphort also doubled as the place where trading and campaigning took place. O'Brien points to the concentration of the recorded Viking activity west of the River Camac. She suggests the possibility of a 9th- century Viking settlement, in the land between the Camac and the Liffey rivers, located on the same ridge as St.

Maighneann's original monastery. Briggs and Graham-Campbell have also identified the monastic site as the possible focus of early Norse settlement. This area lies on the south bank of the River Liffey, to the southwest of the proposed development site (Figure 6).

An examination of the location and context of all Viking material recovered since the 19th century has demonstrated the presence of two Viking cemeteries, one near the early monastic foundation in Kilmainham, the second further west in the vicinity of the War Memorial Park at Islandbridge. It has been suggested that the spread of Viking burials was extensive, stretching at least from Memorial Park/Islandbridge in the west to Heuston Station to the east, a distance of 1.5km but confined to the natural gravel ridge, bordered by the Liffey on the north and the Camac River to the south. Two Viking brooches have also been discovered within Phoenix Park, which indicate that there is a possibility of recovering such isolated remains within the proposed development area. These burial sites and stray finds illustrate the extent of Viking activity along both the south and north banks of the Liffey, which also points to an interaction between both banks during the Viking settlement of the area.

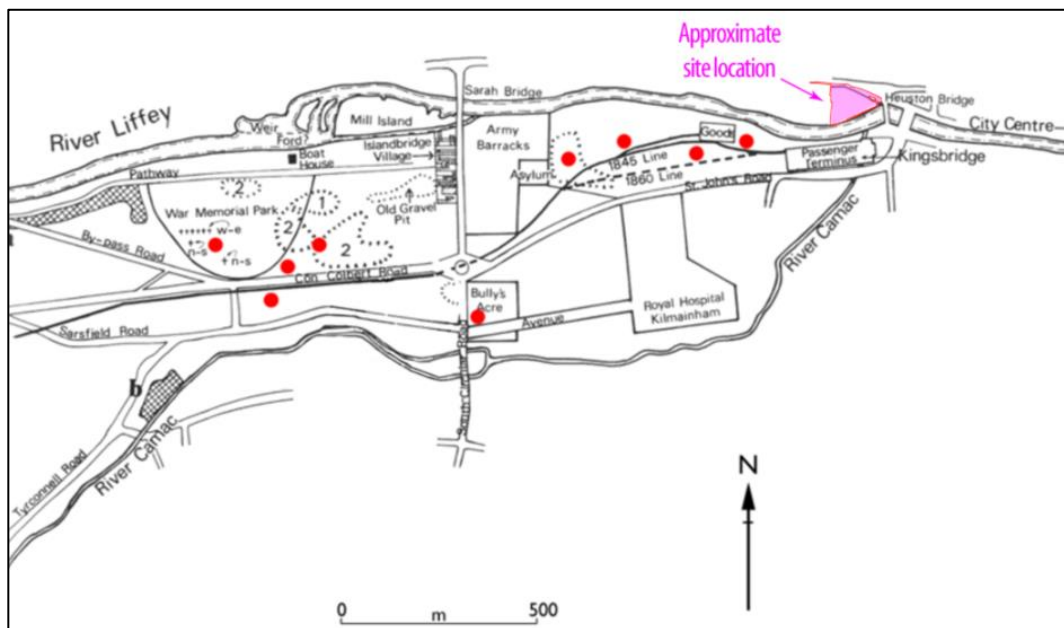


Figure 6 Map showing the locations (in red) of Viking material recovered in the 19th century (after O'Brien 1998)

2.4. Islandbridge

Activity spanning both sides of the Liffey becomes more tangible with the arrival of the Anglo-Normans in 1169 and a number of new religious orders from the continent. One such order was the Knights Hospitallers of Saint John of Jerusalem, a military and religious organisation founded in the wake of the crusades. Granted land in Kilmainham by Richard de Clare (Strongbow), the knights founded a new priory in c. 1174, close to the site of the old monastic buildings associated with Cill Mhaighneann. The priory was given lands

from the Tyrrells of Castleknock, leaving it with landed possessions of over five hundred acres. Its possessions included a moiety (portion) of the River Liffey that reached as far as Conyngham Road and the entrance to the Phoenix Park in Parkgate Street, this became the source of numerous disputes between the local inhabitants and the priory.

The knights, during their occupation at Kilmainham, are reputed to have erected a six-arch bridge to connect their land on both sides of the river, near the ford of 'Kilmehanoc'. A reference to 'the bridge of Kylmaynan' in 1261 in the White Book of the City of Dublin offers evidence that the bridge was in existence from at least that time. The bridge is mentioned again during the reign of Henry VIII, so it appears to have continued in use until the 16th century. This same bridge is also believed to have given Islandbridge its name. In 1577, Lord Deputy Sidney erected a new stone bridge at Islandbridge to replace the original six-arched bridge.

2.5. Phoenix Park

During the Suppression of the Monasteries in the mid-16th century, the Crown acquired the lands owned by the Knights Hospitallers of St John of Jerusalem, which had formerly belonged to the Templars. These lands were in turn ceded to Sir Richard Sutton in 1611, who proceeded to sell them to Sir Edward Fisher. The name 'Phoenix' is first documented in 1619 and originally referred to a spring located within the grounds of the park called Fionn-Uisce meaning 'clear water' (rendered phonetically, the Irish words became 'feenisk', which was anglicised to 'phoenix'). It was initially applied by Sir Edward Fisher to his residence on Thomas Hill. In 1618 the Phoenix House and surrounding grounds were once more purchased by the Crown as a residence for the Irish Viceroy.

The Duke of Ormond instigated plans to enclose the lands of Inchicore, Island Bridge and Kilmainham as part of the Phoenix Park. It was hoped that the establishment of such a park would demonstrate how fashionable Dublin was becoming and encourage the English nobility to come to live in Dublin. But his decision was reversed when he established the Royal Hospital near the ruinous priory in Kilmainham, and the Park was reduced to its present limits. Islandbridge at this time became the scene of a considerable amount of development and was renowned for its market gardens and nurseries. Once plans for the Phoenix Park were finalised, Sir John Temple conducted the construction of the perimeter wall along the line of the road to Chapelizod in 1680. He did so in exchange for the lands between Conyngham Road and the River Liffey.

By 1734 the park residence had fallen out of use and was replaced by the Magazine Fort, which was constructed to secure the munitions necessary for the defence of the city. In the middle of the 18th century, the Park had become popular as a recreation ground for the citizens of Dublin, and shrubs and trees were planted and formal gravel walks were laid down. As such a public amenity it became the location for a series of commemorative monuments the most visible of which is the Wellington Monument. The Wellington Monument was built to commemorate the military successes of the Iron Duke, Arthur Wellesley, and it

remains a popular landmark. Although the foundation stone was laid in June 1817, the monument was not completed until June 1861, nine years after the duke's death.

2.6. Parkgate Street

Further development of the area surrounding Parkgate Street occurred with the advent of railway industry in the 19th century and the subsequent growth of residential development. To the west of the site lies the Liffey Viaduct, a section of the railway system that centres on Heuston Station. This railway bridge was constructed in 1877 and was linked to the longest railway tunnel in the city at the time, being a half-mile in length. The tunnel ran in a north-south direction under the Phoenix Park and its location is marked by a stone arch in the wall of the park itself, c. 700m to the west of the proposed site.

In 1786 the Wide Streets Commissioners were given the power to alter and widen the road westward from Barrack Street (now Benburb Street) to Island Bridge. The western part of the improved road was named Conyngham Road, while the eastern part – from the Phoenix Park gate to Temple Street West – is first named as Park Gate Street on a map produced by Sherrard for the commissioners of the Royal Barracks in 1790. It is also so-named on Wilson's Directory, Plan of Dublin in 1804.

Sean Heuston Bridge had replaced the ferry crossing from Steevens Hospital to the north side of the River Liffey in 1828; the commemorative plaque marks the date of the royal visit in 1821, when funds were made available to design and build the bridge. The structure is a single-span seven-ribbed cast iron arched bridge designed by George Papworth. The bridge was initially named as Kings Bridge, but was also known as Sarsfield Bridge, and now as Sean Heuston Bridge.

The River Camac discharges into the River Liffey directly opposite the proposed development site. Prior to the building of Heuston railway station, the confluence of the River Camac and Liffey was, at high tide, a broad expanse of water, as shown on many views drawn by 18th century artists of the Liffey from Phoenix Park. The terminus building for Heuston Station was built over the channel of the River Camac, burying it in the culvert through which it now flows, beneath the station and into the Liffey.

The Viceregal Stream (also known as the Finisk Stream) (Doyle 2008) is shown on Rocque's map (1760) (Figure 10) flowing along the eastern boundary of Phoenix Park through the area now occupied by the northeastern corner of No 42A Parkgate Street and issuing into the Liffey opposite the discharge point for the River Camac.

2.7. Previous Archaeological Investigations in the vicinity of Parkgate Street (Figure 7)

Archaeological testing (Licence No. 98E0188; Halpin 1988) in advance of the development immediately west of the site (now the TII offices), did not reveal any features of archaeological significance. Post-medieval soils were identified, which lay directly on natural riverine silts and clays, and were probably the result of localised agricultural activity. There was also some evidence of reclamation from the river where introduced material was laid down.

Monitoring of drilling pits associated with the laying of a gas main from the junction of Infirmary Road / Parkgate Street along Conyngham Road (Licence No. 08E0483, Frazer 2008) did not reveal any archaeological features or remains.

Archaeological investigation to the north of the proposed development at 15/16 Parkgate Street (Licence No. 97E0217) revealed no archaeological features. The site lay upon a natural ridge overlooking the River Liffey and the assessment concluded that the terracing of the slope of the south-facing gravel ridge would have destroyed any pre-existing topsoil levels of archaeological potential. Remarkably, a small, naturally occurring cave was identified on the site in glacial gravel and sand deposits dating back to the last ice age (Corlett 1997). A second cavern, comprising a series of chambers, was found during the investigation in advance of an extension to the Aisling Hotel (Reid 1996); this cavern appeared to have been artificially enhanced for use.

Archaeological monitoring was carried out at the Criminal Courts Complex on the north side of Parkgate street (Licence No. 07E0488, Myles and McNerney 2007). It followed a built heritage survey and documentary research into the above-ground structures, including a masonry wall along the Parliamentary Boundary, precinct walls of the Phoenix Park along Infirmary Road and Parkgate Street, Porter's Lodge, a Laundry Building, a drinking fountain, and the site of a chemical factory and a Research and Production Plant, which was in place from 1942–47. Whilst no archaeological features were identified, the possibility of the site having being a Viking 'longport' could not be discounted due to the significant truncation at subsoil level (this had been suggested on the basis of the course of the stream depicted on Rocque's map in relation to the Liffey and on the immediate topography).

The insertion of two 0.5m deep drainage trenches was archaeologically monitored at the rear of a house at 50 Montpelier Hill, a late 18th century building that may incorporate elements of an early 18th century warehouse (Licence No. 02E1755; Simpson 2002). The excavation of the trenches revealed the remains of a brick surface or floor outside the house, at the south-east corner. This lay just beneath the existing concrete of the yard and presumably relates to a return which is depicted on the 1847 OS map.

Archaeological testing to the north of the site on 12-24 Montpelier Hill (Licence No. 95E0197; Murphy 1995) did not reveal any archaeological features; the only finds recovered were of 18th century date or later.



Figure 7 Previous Archaeological Investigation in vicinity

2.8. Cartographic Analysis

2.8.1. Early maps: Down Survey, c. 1656 and an 1682 Map of the Strand

The 1656 Down Survey Parish Map of Kilmainham is the earliest cartographic source (Figure 8). It is possible to identify the approximate location of the proposed development site on this early map source using the course of the Liffey and the outlet for the Camac river as topographical pointers. Other features depicted on the map include a bridge crossing upstream on the Liffey (Sarah Bridge, now Island Bridge), which is flanked by two mills.

At this time there was no bridge crossing the river at the site of the present Sean Heuston Bridge. The road to 'Maynoth from Dublin' appears to terminate at the bridge, though a route of some sort continuing along the north bank is likely. The bridge itself provided access to the network of principal roads on the south side of the river. A large house is shown on the map and represents the substantial residence built by Sir Edward Fisher in the former lands of Kilmainham Priory (now the Phoenix Park) is depicted on the map and named 'Phoenix' (this is the site of the present Magazine fort, DU018-007012).

The early map of 1682 (Figure 9) shows that the site as part of Sir John Temple's land. Sir John Temple was the Solicitor General of Ireland, he was responsible for building the wall the originally enclosed the Phoenix Park.

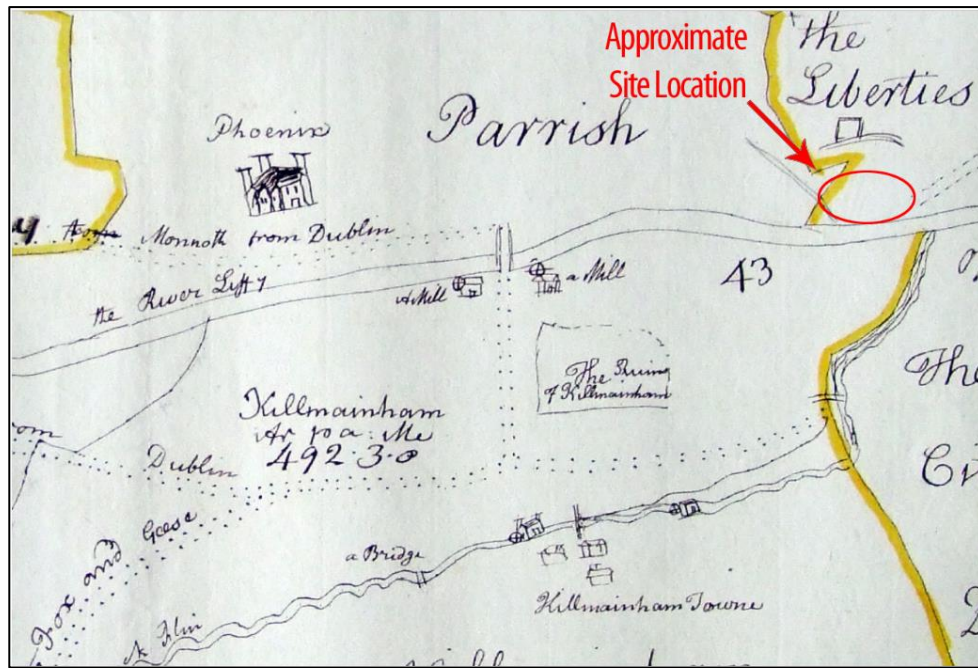


Figure 8 Down Survey c.1656



Figure 9 1682 map of the strand from Parkgate (shown) to the wall of Lord Lowther's Garden (not shown)

2.8.2. Rocque's map of County Dublin, 1760

On Rocque's map, the area of open land to the south of the Phoenix Park is named as 'Long Meadows'. Rocque's map also shows a small channel (known now as the Viceregal Stream) leading from the bend of the River Liffey towards the 'road from Chapel Izzod'. It appears to be culverted beneath the road and presumably represents the tail end of a stream that flows down from the park and feeds into the River Liffey.

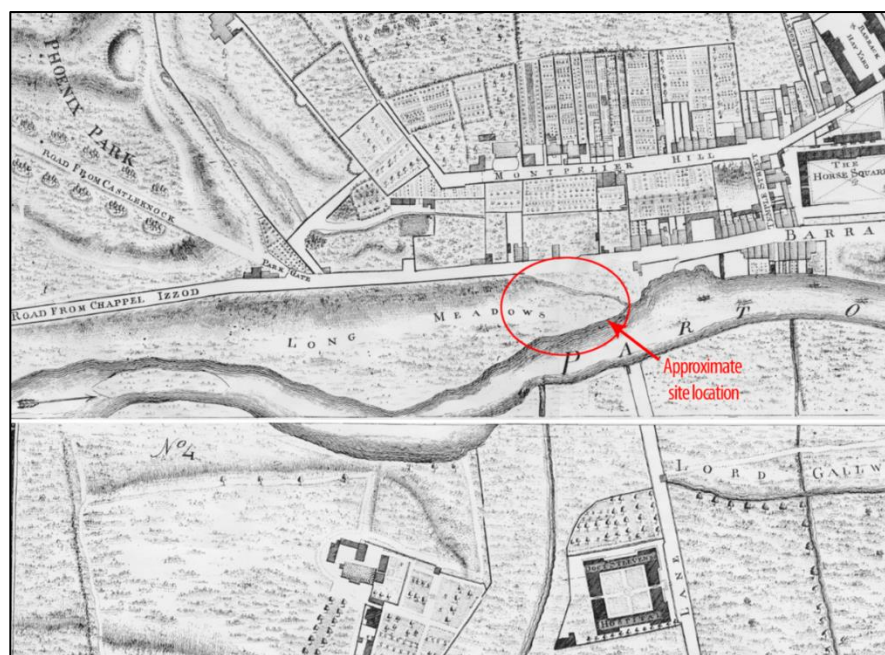


Figure 10 Rocque's map of County Dublin, 1760

2.8.3. Ordnance Survey six-inch map (1843 & 1847) and 25-inch map (1907)

By the time of the first edition Ordnance Survey (OS) 1843 six-inch map (Figure 11), the Royal Phoenix Iron Works occupy a large plot on the north river bank, accessed via an entrance onto Parkgate Street (the proposed development site forms the eastern half of the original iron works site). A significant development in the vicinity is King's Bridge, which was erected in 1828.

The works can be seen in greater detail on the 1847 (Figures 12 and 4). The eastern half of the plot appears to house the majority of the iron works buildings, with gardens and open space dominating the western half.

The Kingsbridge Woollen Factory replaces the iron works on the 1889 OS map (Figure 5) and in later editions the site was in use as a printing works. The 1889 map also shows the tram lines running along Parkgate Street and across King's Bridge (Figure 13).

The 1943 revised OS map shows that the original iron works site was now in use for two separate industries, with the printing works in the eastern half (within the proposed development site) and the Lucan Dairy Depot in the western half (outside the proposed development site).

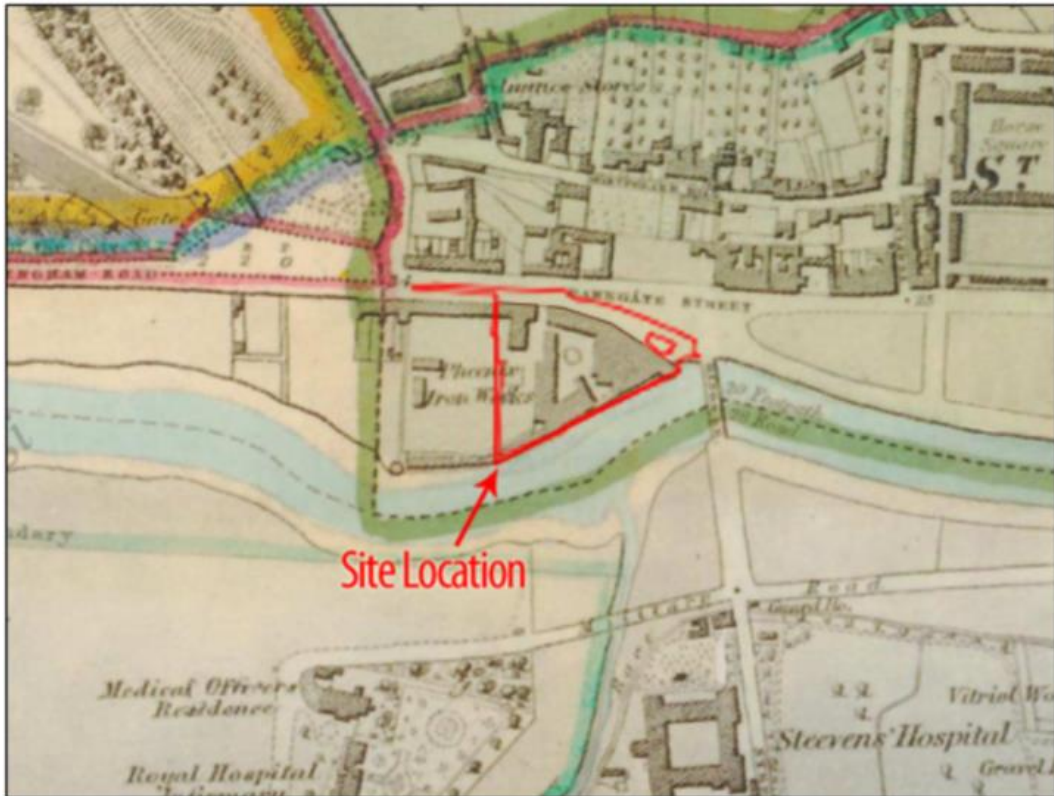


Figure 11 First edition OS map, 1843 (scale 1:10,560)

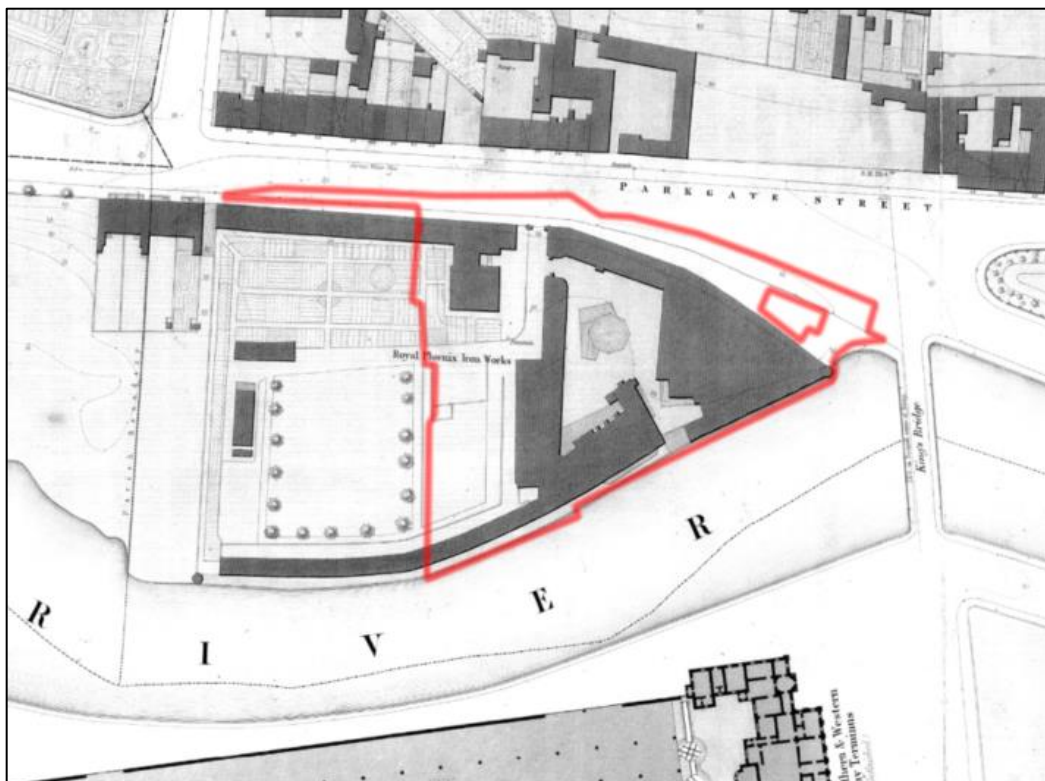


Figure 12 Ordnance Survey 1847, 5-foot plan showing the Royal Phoenix Iron Works

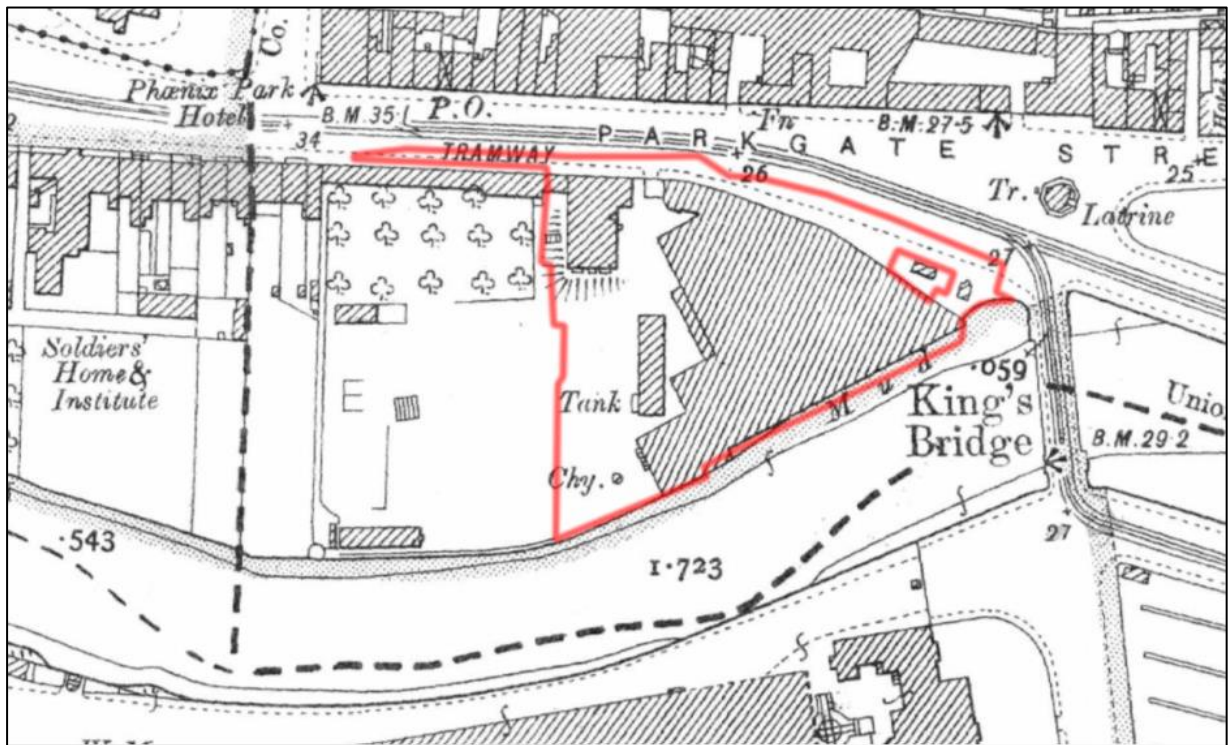


Figure 13 Revised edition OS map (1839) (scale 1:2500)

3. INDUSTRIAL HERITAGE SITES

The site is listed in the Dublin City Industrial Heritage Record (DCIHR) and is recorded as forming an important component within the city's industrial heritage. This record is extracted as follows.

Table 1 Parkgate Printing works in the Dublin City Industrial Heritage Record

Reference	DCIHR 18 10021
Site function	Iron Works
Location	Parkgate Street
Name	Parkgate Printing works {Royal Phoenix Iron Works}
Description	
<p>Former Royal Phoenix Ironworks originally built c.1800, rebuilt c.1880 and converted to printing works c.1920. Site now functioning as commercial premises. Site comprises variety of single-storey double-height brick buildings to southwest corner having differing roof profiles with some lit by rooflights and having brick corbelled chimneystacks and Flemish bonded brick walls. Two-storey smooth-rendered building adjoining to northwest with hipped slate roof and curved southwest corner containing large opening now functioning as window. Square-headed window openings with painted stone sills and replacement timber windows; tripartite window to ground floor west elevation; flat-roofed extension links buildings to main structures. Two-storey random coursed stone structures to southwest of site having pitched slate roofs, cast-iron rainwater goods and roof vents, dressed limestone quoins and segmental-headed window openings with brick block-and-start surrounds and replacement windows. Site bounded to north by painted Flemish bond brick wall with denticulated recessed panels and stone quoins; bounded to riverside (south) by random rubble stone wall having ashlar limestone turret with cornice to east and square tower with cut limestone quoins, pyramidal slate roof and segmental-headed openings with brick surrounds to west. Ashlar limestone entrance to northwest surmounted by cornice and stepped parapet and having round-arched gateway with dressed limestone voussoirs to north and concrete to arch to south; round-headed blocked openings to east of gateway formally giving access to interior or northwest building.</p>	
Appraisal	
<p>The Royal Phoenix Ironworks, also known as Robinsons Ironworks, appear to have been a substantial operation on the north bank of the Liffey and have left notable legacies on the riverscape with the parapet on Sarah Bridge (1816) and Sean Heuston Bridge (1827-28) both cast there. Of particular note is the site's solid riverside boundary wall with associated turret and tower which belie the buildings original function, though it was used in World War 1 as a bomb-making factory. With its brick northern boundary wall, ashlar entrance and largely intact early structures, the site forms an important component within the city's industrial heritage.</p>	

4. RESULTS OF ARCHAEOLOGICAL TESTING

4.1. Methodology

Archaeological testing took place from the 6th-13th of February 2020 over a 6-day period. Twelve test pits measuring approximately 3m x 3m were opened to provide a better understanding of the extent of industrial remains from the Phoenix Iron Works period of the site (19th century) and to ascertain if there was any evidence for earlier deposits or archaeological layers/ strata.

Test excavation (Plan 1) was undertaken throughout the site in areas that had been previously identified in the Site Investigation Works (Kealy S, 2019) as being free from contaminants (Plan 2).

Due to height and width restrictions within the warehouse, a small mechanical excavator could only access the interior test pits. This limited the depth of the investigation works to 2.8m. Test pits (TP) located inside the upstanding building (1, 2, 4, 7, 8, 9 and 10) were excavated with the assistance sub-5 tonne tracked excavator fitted with a 1m toothless grading bucket.

A 12.5 tonne tracked machine with a 2m grading bucket was used for the excavation of the exterior test pits (5, 6, 11 and 12) in the yard.

A number of test pits were moved slightly to adjust for internal walls, columns and environmental issues. For example, TP 1 was moved slightly north as the original positioning encountered a wall, TP 2 and TP 9 were adjusted due to the thickness of the concrete slab encountered.

A range of post medieval archaeological deposits dating to the 19th century were uncovered during testing. The table below (Table 2) provides a synopsis of the finds from each of the twelve test pits, in addition to their respective dimensions and depths.

Table 2 Summary of Findings from Test Pits 1-12

Test Pit	Dimensions	Findings
Test Pit 1	3m x 3m, depth 2.5m <i>Plate:7</i>	A series of 19 th century deposits were exposed, those found between depths 0.62m to 1.36m contained significant amounts of industrial waste material, the basal deposit exposed was not natural subsoil and contained 18 th to 19 th century material. Also exposed was a granite foundation plinth set into concrete possibly associated with the Knightsbridge Woollen Factory.
Test Pit 2	3m x 3.2m, depth 2.6m <i>Plate 8-9</i>	A series of 19 th and 20 th century deposits were exposed. It is likely that the identified industrial deposits are associated with the Phoenix Iron Works (c. 1800-1878). Natural subsoil was not exposed in this test pit. In the north of the pit the remnants of a rather insubstantial red brick wall oriented roughly east-west was exposed, this wall dates from the 19 th century and was constructed when the iron works was already active.
Test Pit 3	3m x 3m, depth 2.65m	A series of deposits of likely 19 th or 20 th century origin were revealed. At a much higher level than other test pits, a clay rich deposit without

Test Pit	Dimensions	Findings
	<i>Plate:10</i>	inclusions of man-made material was uncovered, this may be natural subsoil.
Test Pit 4	2.97m x 3.1m, depth 2.6m <i>Plate:11</i>	A substantial loose and friable deposit was revealed which contained 18 th and 19 th materials including slag associated with the Phoenix Iron Works. Under this layer, at 2.15m below floor level, a compact sticky clay rich layer of redeposited material was uncovered. Natural subsoil was not exposed in this pit.
Test Pit 5	3m x 3m, depth 3.6m <i>Plate:12-13</i>	A 19 th century heat impacted working surface, presumably associated with the Phoenix Iron Works was revealed. Beneath this were a number of substantial layers that contained industrial waste. At a depth of 2.32m, sandy clay associated with the river began to be exposed, this deposit contained 18 th to 19 th century pottery. Under this thick layer at depth of 3.5m were river gravels, these gravels also contained occasional late post- medieval pottery fragments.
Test Pit 6	4.3m x 3m, depth 3.3m <i>Plate:14-15</i>	Two concrete services were exposed, just beneath these services were 19 th century limestone walls oriented parallel to the north wall of Parkgate House, these walls are presumably associated with the early stages or initial construction of the Phoenix Iron Works. Substantial layers of clay rich redeposited 18 th or 19 th century material was uncovered until at 3.15m below surface level. At this depth a silty estuarine clay that contained small snail shells was revealed.
Test Pit 7	3.1m x 3m, depth 2m <i>Plate:16-17</i>	A 19 th century heat affected working surface composed of what appears to be casting sand was exposed. This overlies a number of dump deposits containing various building materials including a cut granite block which may be in-situ. Excavation of this test pit was terminated when two large intact pipes were revealed, these appear to be 19 th century and must have been in place before the casting sand working surface came into use. The pipes are oriented roughly north-south.
Test Pit 8	2.9m x 3m, depth 2.7m <i>Plate:18-22</i> <i>Plan 4</i>	A complex of substantial stone walls were uncovered. These walls were faced with roughly hewn limestone calp blocks and cored with rubble and mortar, the walls formed two large rectangular voids that had been backfilled with demolition rubble and broken red tiles, it should be noted that the most westerly wall (Wall A) was not keyed into the abutting walls (Walls B and D) Within the northern faces of both voids were two “holes” located below metal bands bonded to the wall, the east most hand “hole” was associated with a square section metal rod that functioned as a crank for air/water flow control. Neither void was fully bottomed with the maximum depth excavated being 2.7m.
Test Pit 9	3.1m x 3m, depth 2.42m <i>Plate:23</i>	A number of 19 th century industrial waste deposits were uncovered. These overlay a heat impacted possible working surface, at a similar level, remnants of a rather thin wall that ran roughly east-west was also revealed. It can be seen that a pure black waste deposit post-dates the wall as it built up against it. The walls size and its relationship to the industrial waste indicates it may have been a non-structural division within the Phoenix Iron Works. Under the working surface, at a depth of 1.26m to 2.42m, were 18 th or 19 th century clay rich deposits. Beneath this was revealed a smooth clay which is possibly natural a natural subsoil.
Test Pit 10	3m x 3m, depth 2.45m <i>Plate:24-25</i>	A thin deposit of 19 th century dump material was uncovered which overlay a thin sand rich working surface. Beneath this was a layer of 18 th or 19 th material. Possible natural subsoil was exposed at a depth of 2.3m

Test Pit	Dimensions	Findings
Test Pit 11	3m x 3m, depth 2.8m <i>Plate:26</i>	Approximately half of this test pit was taken up by a substantial modern concrete pad that follows the line of the current yard and associated red brick and concrete wall. In the north half of the test pit deposits excavated were the typical 19 th century, clay rich, slag free deposits found typically at lower levels throughout the site. The lack of industrial waste and working surfaces points to this area not being used for intensive industrial activity. Natural subsoil was not uncovered in this test pit.
Test Pit 12	3.5m x 4.2m, depth 3.3m <i>Plate:27</i>	A working surface that may be associated with the similar surface found in test pit 5, was revealed at 0.95m below ground level. Beneath this layer, more 19 th century industrial waste deposits were removed, a stained clay rich redeposit containing 18 th to 19 th century material was revealed at 1.7m deep, as well as a deposit of red brick occurred at a depth of 2.4m. A layer of possible natural clay subsoil that was odious was uncovered to a depth of 2.95m. Between 2.95m and 3.3m, highly odious, sandy river gravel was exposed. Overall the sequence of the deposits in this test pit resembles those found in pit 5, however the appearance and strong odour of the lowest deposits may indicate contamination.

4.1.1. Test Pit 1

Test pit 1 is located within a wide hallway/ loading dock leading to the main factory floor (Plan 1). It was excavated to a maximum depth of 2.5m and measured 3m x 3m in dimensions. This test pit revealed early modern/ post medieval deposits likely to be associated with the Phoenix Iron Works (c. 1800-1878).

A relatively substantial foundation plinth, <C3>, was exposed, (Plate 7) acting as a support for a beam on which the current wall was laid. This concrete plinth was capped by a reused cut granite block. This plinth was bedded into deposits that contain 18th or 19th century materials and may have been associated with the Knightsbridge Woollen Factory (Figure 5). The plinth lies at 0.15m BGL and extends to approximately 1.2m deep. Natural subsoil was not reached in this test pit.

Table 3 Test Pit 1 (Ground Level: 4.23m OD)

Context	Depth	Description	Interpretation
C1	0–0.15m	Concrete slab forming present surface	20 th century floor
C2	0.15–0.62m	Loose demolition layer, composed of crushed concrete, angular limestone fragments, red brick, sandy gravel	20 th century sub-floor
C4	0.62–1.12m	Loose, dark brown, gravelly clay, with inclusions of red brick and containing occasional willow pattern ceramic and slag	19 th century dump deposit
C5	1.12–1.3m	Loose layer of crushed mortar with red brick inclusions and occasional fragments of oyster shell, appears to be the remnants of a surface	Early 19 th century surface
C6	1.3–1.36m	A thin layer of compact, hard back clay containing deposits of aquamarine vitrified bright industrial by-product	19 th century surface
C7	1.36–1.89m	Loose, dark brown, gravelly clay, with inclusions of red brick, containing frequent oyster shell and slate, and with occasional animal bone. Within this context at 1.88m deep	19 th century deposit

		there is a thin layer of broken slates approximately 0.1m thick	
C8	1.89–2.5m+	Compact, grey/green clay containing frequent mortar, broken slate, hand-made red brick and small red brick fragments, including animal bone and oyster shell	18 th to 19 th century layer of dumped material

4.1.2. Test Pit 2

Test pit 2 is located within the former factory/warehouse building (Plates 8 and 9). It was excavated to a depth of 2.6m and measured 3m x 3.2m in dimensions. Beneath the demolition rubble, post-medieval industrial deposits were recorded at a depth of 0.7m and extended to a depth of 2.6m BGL.

On the north edge of the test pit a red brick wall, <C15>, was exposed to a depth of 0.95m BGL. This consisted of standard sized unfrosted brick of 19th to 20th century type. The wall was oriented east-northeast to west-southwest across the test pit. At its west-southwest extent it was only 2 bricks wide (Plate 3). In the east-northeast, it was more substantial being approximately 4 bricks wide, this may form a pad. The wall extended for 3m and varied in width from 0.4m to 0.22m, it was approximately 0.35m in thickness. The wall appears to have been built on top of materials that contain slag. It may have been a non-structural division, constructed some point after the Phoenix Iron Works had been active for a period or it is associated with the later Knightsbridge Woollen Mills or possibly associated with a temporary structure as shown on the 1847 OS map (Figure 4).

Natural sub-soil was not reached in this test pit indicating the raising and levelling of this riverside area during the 18th and 19th century.

Table 4 Test Pit 2 (Ground Level – 4.23m OD)

Context	Depth	Description	Interpretation
C1	0–0.3m	Concrete slab forming the present ground surface	20 th century floor
C2	0.3–0.7m	Loose demolition layer, composed of crushed concrete, angular limestone fragments, red brick, sandy gravel	20 th century sub-floor
C9	0.7–1m	Loose deposit of crushed mortar, small angular limestone pebbles, red brick fragments, containing more mortar and silty material than C2 above. Pale in colour with dark patches where silty	20 th century Dumping and bedding deposit
C10	1–1.3m	Layer of dark to black with occasional orange patches, extremely loose fine-grained material with a nearly pure composition. Appears to be industrial waste	19 th century Industrial waste dump deposit
C11	1.3–1.45m	Resembles C9 towards the top of this deposit but comes onto a more compact dark brownish grey silty clay which still contains significant amounts of industrial waste	19 th century Industrial waste dump deposit
C12	1.45–1.6m	Resembles the lower portions of C11, however it has a more reddish colour and a significant presence of slag	19 th century Industrial waste dump deposit

Context	Depth	Description	Interpretation
C13	1.6–2.1m	Moderately compact, mid grey, silty clay with mortar flecking, occasional stones, infrequent oyster shell. The deposit contained a piece of transfer printed pottery and a clay pipe stem. In the west of the pit at 1.7m depth, there was a looser ashy, mortar rich deposit with a pink colour that may indicate burning/heat exposure, which contained two pieces of likely 18 th century transfer printed and painted pottery	18 th to 19 th century layer of dumped material
C14	2.1–2.6m+	Compact, mid to dark grey black, in areas resembling black boulder clay, however this deposit contained frequent slate and oyster shell as well as occasional slag and black and creamware pottery	18 th to 19 th century layer

4.1.3. Test Pit 3

Test pit 3 is located within the former factory/warehouse building (Plate 10). It was excavated to a depth of 2.65m and measured 3m x 3m in dimensions. This test pit did not reveal any strong evidence for industrial activity associated with the iron works, 19th or 20th century deposits of building material and rubble were encountered. Unlike other test pits natural sub-soil appears to have been reached quite quickly at a depth of 1.28m, this may indicate potential for undisturbed pre-19th century archaeology.

Table 5 Test Pit 3 (Ground Level: 4.27m OD)

Context	Depth	Description	Interpretation
C1	0–0.2m	Concrete slab forming present surface	20 th century floor
C2	0.2–0.55m	Loose demolition layer, composed of crushed concrete, angular limestone fragments, red brick, sandy gravel	20 th century sub-floor
C16	0.55–0.85m	Loose, light grey, silty fine sandy deposit	20 th century fill
C17	0.85–1.28m	Loose, dark grey, stony clay with frequent gravel in parts similar to C2	20 th century fill
C18	1.28–2.65m+	Very compact at top, dark grey / brown sandy clay with a silt component. It includes frequent sub-angular to angular limestone (sized 0.04 to 0.15m). Towards the bottom of the test (at c. 2.4m) this layer became softer and pebbles began to replace the larger more angular stones. No inclusions were present	Interpreted as natural boulder clay

4.1.4. Test Pit 4

Test pit 4 is located within the former factory/warehouse building (Plate 4). It was excavated to a depth of 2.6m and measured 3.1m x 2.97m in dimensions. Within (C2), a concrete pad was exposed in the southwest corner of the test pit. Beneath, (C2), a deep deposit of early modern fill material from demolition activities was encountered for 2m. Natural sub-soil was not reached in this test pit indicating the raising and levelling of this riverside area.

Table 6 Test Pit 4 (Ground Level: 4.25m OD)

Context	Depth	Description	Interpretation
C1	0–0.1m	Concrete slab forming present surface	20 th century floor
C2	0.1–0.95m	Loose demolition layer, composed of crushed concrete, angular limestone fragments, red brick, sandy gravel	20 th century sub-floor
C19	0.95–2.15m	Friable crumbly / gritty silty sand with crushed red brick and mortar flecks. The deposit also contained a sherd of black-ware pottery, oyster shell, and small lumps of slag	18 th to 19 th century fill / layer
C20	2.15–2.6m+	A very compact deposit containing a substantial amount of sub-angular stones, with a soft slightly tacky mid brown-grey silty clay component. This deposit contained inclusions of mortar	18 th to 19 th century layer

4.1.5. Test Pit 5

Test pit 5 is in the yard (Plates 12 and 13), north of an upstanding shed and south of external wall division. It was excavated to a depth of 3.6m and measured 3m x 3m in dimensions.

After the bedding surfaces for the modern yard surface were stripped away, a 19th century crushed red brick working surface was revealed, this showed evidence of burning. Under the working surface, between 0.64m and 2.32m deep were 19th century industrial deposits. At lower levels the deposits were estuarine in nature, being composed of alluvial/estuarine clays overlying river gravels. The river gravels found at the lower level are probably no earlier than the late 18th or 19th century and were disturbed, containing pottery sherds.

Table 7 Test Pit 5 (Ground Level: 3.46m OD)

Context	Depth	Description	Interpretation
C1	0–0.1m	Concrete slab forming present surface	20 th century surface
C2	0.1–0.34m	Loose demolition layer, composed of crushed concrete, angular limestone fragments, red brick, sandy gravel	20 th century hard-core
C21	0.34–0.51m	Thin, moderately loose, black stained gravel deposit	20 th century layer
C22	0.51–0.64m	Compact, relatively level possible surface composed of crushed red brick, red brick fragments and small limestone slabs, evidence of burning	19 th century working surface
C23	0.64–0.83m	Soft, grey brown, silty deposit with an area towards top of dark grey. Did not contain many inclusions	19 th century dump deposit
C24	0.83–1.06m	Soft, grey, silt deposit. Did not contain many inclusions	19 th century dump deposit
C25	1.06–1.26m	Deposit of dark brown to black, orange mottled gravel, silt, clay with slag, the deposit included red brick and a small sherd of transferware pottery	19 th century dumped deposit
C26	1.26–1.45m	Soft, mid grey-brown silty rich deposit with few inclusions	Late 18 th - 19 th century
C27	1.45–c. 1.75m	In the eastern end of the test pit only. Deposit made up of small water rolled stones, red brick, animal bone and clay tobacco pipe	Late 18 th / 19 th century

Context	Depth	Description	Interpretation
C28	1.45–2.32m	Sandy gravelly silty clay, dark and wet with considerable quantities of slag, also contained transfer print pottery	Late 18 th / early 19 th century dump deposit containing slag
C29	2.32–3.50m	Grey brown to yellow, sandy clay, lacustrine/river alluvial tidal flat clay, contains transfer print pottery	Late 18 th / early 19 th century riverine deposits
C30	3.5–3.6m+	River gravels, contained transfer print pottery	Late 18 th / early 19 th century riverine deposits

4.1.6. Test Pit 6

Test pit 6 is located between the northern external boundary wall with Parkgate Street and Parkgate House. It was excavated to a depth of 3.3m and measured 4.3m x 3m in dimensions (Plates 14-15). Once the yard surfaces were removed a sandy deposit associated with two modern encased services that were oriented north to south was revealed in Test Pit 6.

Uncovered at a depth of 0.45m were two east-west oriented, limestone calp walls. These walls are parallel to Parkgate House (built c. 1820) and the Parkgate Street boundary wall, they were separated by a distance of 2.14m. The wall furthest from Parkgate House is referred to as Wall F <C36>. It is composed of 7 courses of roughly hewn black limestone calp blocks bonded together with lime mortar, the wall was 1.2m high. The upper 0.35m of Wall F was either cased or formed of concrete with a single course of 19th to 20th century red brick overlying this. Wall F had courses composed of roughly 0.08m to 0.12m high in 0.8m long slabs.

The wall closest to Parkgate House is referred to as Wall G <C37>. From the top of Wall G to its plinth was 0.57m, and from top to base measured 0.68m, the plinth extending from the wall was 0.08m wide and tapered under to the base of the foundation trench. Wall G was made of courses of stones roughly 0.1m to 0.2m high and 0.35m to 0.45m long.

Both walls appear to be typical 19th century limestone calp walls. The full width of these walls was not uncovered within the bounds of the test pit. These walls lay above pre 19th century redeposited material. The lowest deposit revealed in this test pit at 3.15m to 3.3m BGL was an estuarine deposit with no visible inclusions apart from very small intact snail shells.

Table 8 Test Pit 6 (Ground Level: 4.61m OD)

Context	Depth	Description	Interpretation
C1	0–0.45m	Concrete slab forming present surface	20 th century surface
C2	0.45–0.57m	Loose demolition layer, composed of crushed concrete, angular limestone fragments, red brick, sandy gravel	20 th century sub-floor

Context	Depth	Description	Interpretation
C31	0.57–0.9m	Sandy deposit surrounding concrete foundation and services	Late 20 th century
C32	0.9–1.95m	Within box formed by services and walls. Silty clay with some sand, inclusions of red brick and some animal bone, a relatively clean deposit	19 th to 20 th century
C33	1.95–2.45m	Tan coloured, silty clay, with infrequent inclusions of red brick and shell	18 th to 19 th century redeposited material
C34	2.45–3.15m	Dark grey, silty clay with rare inclusions of red brick fragments, mortar fragments, and shell	18 th to 19 th century redeposited material
C35	3.15–3.3m+	Orange flecked, dark tan silty clay, contains occasional very small intact snail shells	Estuarine deposit

4.1.7. Test Pit 7

Test pit 7 is located within the former factory/warehouse building (Plates 16 and 17). It was excavated to a depth of 2m and measured 3.1m x 3m in dimensions.

Test pit 7 exposed a 19th century heat affected working surface composed of what appears to be casting sand. This overlies a number of industrial deposits containing various building materials including a cut granite block which may be in-situ. Excavation of this test pit was terminated when two large intact pipes were revealed, these appear to be 19th century and were oriented roughly north-south.

The working surface is was likely associated with the later activities of the Phoenix Iron Works, possibly resulting from a similar phase of activity as the surfaces uncovered in test pit 1 and test pit 5, (C5) and (C22).

Table 9 Test Pit 7 (Ground Level: 4.23m OD)

Context	Depth	Description	Interpretation
C1	0–0.12m	Concrete slab forming present surface	20 th century floor
C2	0.12–0.48m	Loose demolition layer, composed of crushed concrete, angular limestone fragments, red brick, sandy gravel	20 th century sub-floor
C38	0.48–0.56m	Course, yellow sand that forms a level surface with some occasional small red brick fragments, evidence of oxidization shown by occasional orange mottling. Likely a layer of casting sand	19 th century sandy surface
C39	0.56–1.26m	Compact, brown-grey gravelly mortar flecked clay with inclusions of limestone blocks of size 0.27m	19 th century dump deposit
C40	1.26m	Horizontal granite block (<i>in situ</i>). 0.5m long and 0.11m deep, in the section face	19 th century block
C41	1.26–1.65m	Compact, grey gravelly clay with inclusions of mortar fragments and red brick flecks	19 th century layer

C42	1.65–2m+	Two buried iron pipes oriented north / south, spaced 1m apart. Between these pipes, excavation continued to a depth of 2m with the material removed resembling a darker deposit of the material found between 1.26–1.65m	19 th century pipes and backfill
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4.1.8. Test Pit 8

Test pit 8 is located within the former factory/warehouse building (Plan 1). It was excavated to a depth of 2.7m and measured 2.9m x 3m in dimensions. A complex of substantial stone wall was uncovered at a depth of 0.52m (Plates 18 and 19). These walls are labelled A – E (Wall A - <C44>, Wall B - <C45>, Wall C - <C46>, Wall D - <C47>, Wall E <C48>) (Plan 4).

The walls created two rectangular voids which had been backfilled with 19th century demolition rubble, neither void was fully bottomed with the maximum depth excavated being 2.7m. At this point wall foundations were not visible.

Wall A <C44>, oriented north-northeast to south-southwest, was only visible in the overcut western side of the test pit. It was constructed of roughly hewn black limestone calp blocks. This wall was not keyed into Walls B and Wall D (Plate 20). Wall B, Wall D, Wall E, are constructed of roughly hewn black limestone calp blocks bonded by limestone mortar. These are coursed with blocks up to 0.52 x 0.32 x 0.2m wide and mixed with shallower courses 0.04 x 0.23 x 0.2m deep, in total 12 courses were exposed. The outer edge of Wall B was also exposed revealing a width of 1.2m with an inner core of mortar and rubble.

Wall B <C45>, oriented east-southeast to west-northwest, has “vents” on either side of Wall C, these are approximately 0.28m wide and located at a depth of 1.91m and 1.94m BGL (Plate 21). Above each “vent” is a vertical iron bond (Plate 22), in-line with the eastern hole is an iron rod 0.29m long, with a square section 0.035m. It is set in a Dublin stock brick (0.9 x 0.21 x 0.7m), rotating this crank, reveals it to have been part of mechanism to open or close the “hole”. This possibly indicates they functioned as “flues” for either water or more likely due to the metal working nature of the site to control air flow.

Wall C <C46>, is oriented north-northeast to south-southwest, it appears to be contemporary with Wall B and Wall D and is keyed into them with smaller stones measuring 0.1 x 0.37 x 0.2m and 0.03 x 0.17 x 0.12m up to 0.22 x 0.22m in size. Wall C has a width of 0.6m and a length of 0.68m. Wall D <C47>, oriented east-southeast to west-northwest, is parallel to Wall B.

Wall E <Contest 48>, oriented north-northeast to south-southwest, is parallel to Walls A and C, located mostly under the eastern edge of the test pit. It is constructed of roughly hewn black limestone calp blocks. This wall was keyed into Walls B and Wall D and had a slight step out at the mid-point of its currently exposed depth.

The substantial nature of the walls point to the large scale industrial nature of the site and may be why they have survived.

Table 10 Test Pit 8 (Ground Level: 4.23m OD)

Context	Depth	Description	Interpretation
C1	0–0.06m	Concrete slab forming present surface	20 th century floor
C2	0.19–0.54m	Loose demolition layer, composed of crushed concrete, angular limestone fragments, red brick, sandy gravel	20 th century sub-floor
C43	0.54–2.7m+	The fill within the two voids formed by the walls, demolition rubble including iron stained red brick, burnt clay, and red tiles	19 th century rubble dump

4.1.9. Test Pit 9

Test pit 9 is located within the former factory/warehouse building (Plan 1). It was excavated to a depth of 2.42m and measured 3.1m x 3m in dimensions. Industrial waste deposits and a possible working surface were revealed at a depth of 0.94m to 1.22m, within this layer at a depth of 1.16m the remnants of a wall, <C56>, was exposed. This wall runs east to west through the middle of the test pit. The remains are made up of a layer of mortar bedding with indents likely for brick. Deposit (C50) is confined to the north indicating that the wall was at least partially upstanding when it was deposited.

Under these deposits at a depth of 1.26m to 2.42m were 18th or 19th century clay rich deposits. Beneath this was revealed a smooth clay which is possibly natural.

Table 11 Test Pit 9 (Ground Level: 4.23m OD)

Context	Depth	Description	Interpretation
C1	0–0.1m	Concrete slab forming present surface	20 th century Floor
C2	0.1 –0.6m	Loose demolition layer, composed of crushed concrete, angular limestone fragments, red brick, sandy gravel	20 th century sub-floor
C49	0.6 –0.94m	Mid grey brown, loose silty sand, with occasional mortar flecks, small fragments of red brick, and occasional stones	19 th to 20 th century layer
C50	0.94–1.22m	Compact but loose and crumbly when chipped off, black, sandy silty material with lots of very fine nodules/grit/very small pebbles approximately 1mm – 5mm. Most likely industrial waste from a type of heated/burning process. Located mostly to the north of the pit	19 th century Industrial waste deposit
C51	0.94–1.22m	As layer recorded above, but oxidized orange reddish brown, located exclusively on the north side of the trench	19 th century Industrial waste
C52	1.22– 1.26m	Very compact, forms a surface made up of heat affected stones, slag, and materials like layer immediately above. Appears to have been heavily impacted by heat	19 th century layer
C53	1.26–1.72m	Green-grey tan, compact clay with gravel and a lot of stone present (dia. 0.08m), also contains substantial amounts of red brick and mortar	18 th to 19 th century dump deposit

Context	Depth	Description	Interpretation
C54	1.72–2.42m	Mid grey, compact, silty gravelly clay, with some mortar flecking and small pebbles, contains no red brick and less stone than the layer above	18 th to 19 th century dump deposit
C55	2.42m+	Tan-black, patchy, smooth clay	Possible natural subsoil

4.1.10. Test Pit 10

Test pit 10 is located within the former factory/warehouse building (Plan 1). It was excavated to a depth of 2.45m and measured 3m x 3m in dimensions. Loose demolition material and layers and a sand rich, working surface were uncovered. Between 0.47m to 2.3m there was number of 18th or 19th century deposits, at close to the limit of excavation of the test pit between 2.3m to 2.45m possible natural subsoil was revealed.

Table 12 Test Pit 10 (Ground Level: 4.27m OD)

Context	Depth	Description	Interpretation
C1	0–0.08m	Concrete slab forming present surface	20 th century floor
C2	0.08–0.25m	Loose demolition layer, composed of crushed concrete, angular limestone fragments, red brick, sandy gravel	20 th century sub-floor
C57	0.25–0.45m	Mid to dark brown, soft, silty clay with red brick inclusions	19 th to 20 th century layer
C58	0.45–0.47m	Light pinkish grey, compact, mix of sand and mortar that forms a thin level surface	19 th century Surface
C59	0.47–0.8m	Mid grey-brown, silty clay, with red brick inclusions	19 th century layer
C60	0.8–1.52m	Slightly compact, dark brownish grey boulder clay, containing decayed limestone pebbles, and occasional inclusions of red brick, mortar and animal bone	18 th to 19 th century dump / redeposit
C61	1.52–2.30m	Compact, black brownish grey boulder clay containing decayed limestone pebbles sized 0.02 to 0.03m, contained rare inclusions of mortar, a solitary oyster shell and a 17 th or 18 th century piece of red glazed earthenware	Pre-19 th century Layer of redeposit/dumped material
C62	2.30–2.45m+	Very sticky, grey black boulder clay, a gravelly clay with black mottling due to presence of decayed round limestone pebbles	Possibly natural subsoil

4.1.11. Test Pit 11

Test pit 11 is located a metre to the south of Parkgate House (Plan 1). It was excavated to a depth of 2.8m and measured 3m x 3m in dimensions. Approximately half of this test pit was taken up by an upright wall made of concrete and red brick, it was 0.2m thick. This was associated with a thick slab of concrete, approximately 0.3m thick and located 0.8m below the surface. These features make up the south half of the test pit (Plate 26). In the north area of the pit, 19th century garden soils were exposed.

The lack of industrial waste and working surfaces points to this area not being used for intensive industrial activity, this is likely due to being located directly south of Parkgate House and likely to be part of a garden (Figure 4 and 5).

Table 13 Test Pit 11 (Ground Level: 3.9m OD)

Context	Depth	Description	Interpretation
C1	0 – 0.1m	Concrete slab forming present surface	20 th century Surface
C63	0.1m – 1.7m	Soft, mid grey brown, clayey silty with inclusions of red brick, mortar and stones	20 th century Layer
C64	1.7m – 2.3m	Soft, mid to dark grey brown, clayey silt with dark mottling of stained gravel. Contains inclusions of red brick, mortar and stones	19 th to 20 th century deposit
C65	2.3m – 2.8m+	Soft, dark grey clay, with inclusions of mortar flecking, red brick and shell	19 th century Deposit

4.1.12. Test Pit 12

Test pit 12 is located 2.4m north of Parkgate House (Plan 1). It was excavated to a depth of 3.3m and measured 3.5m x 4.2m in dimensions. Once the initial 20th century deposits were removed, 19th century industrial waste deposits were uncovered. Under this deposit at depth 0.95m to 1.10m a probable working surface was exposed. This surface may be associated with working surface found to the north in Test Pit 5. Beneath this surface more 19th century industrial deposits were encountered.

Odious deposits of redeposited clay, rich in 19th century material and a deposit of red brick were encountered at a depth of 2.4m. A thick layer of possible natural clay was uncovered at a depth of 2.95m. Between 2.95m and 3.3m sandy river gravel was exposed, this was highly odious and possibly contaminated.

Table 14 Test Pit 12 (Ground Level: 3.66m OD)

Context	Depth	Description	Interpretation
C2	0–0.4m	Loose demolition layer, composed of crushed concrete, angular limestone fragments, red brick, sandy gravel	20 th century surface
C67	0.4–0.8m	Burgundy, sticky plastic clay, with mortar, red brick and slag	20 th century redeposited clay
C68	0.8m – 0.95m	Black, gritty sandy deposit with bright orange patches, contains slag and clinker	19 th century industrial waste deposit
C69	0.95–1.10m	Very compact, crushed mortar, red brick, stone, probable mortar floor	19 th century floor surface
C70	1.10–1.70m	Brown and grey, gravely clay, with lots of burnt sand and clinker	19 th century industrial waste dumping deposit
C71	1.70–2.40m	Tan grey, mottled, sandy clay, with considerable staining	18 th to 19 th century redeposited layer

Context	Depth	Description	Interpretation
C72	2.40–2.50m	A deposit of loose red bricks	18 th to 19 th century red brick deposit
C73	2.50–2.95m	Compact black grey, fine, stone free clay. Odious	Odious riverine clay
C74	2.95–3.3m+	River gravel, grey blue, sandy river gravel, stained and odious	Odious river gravel

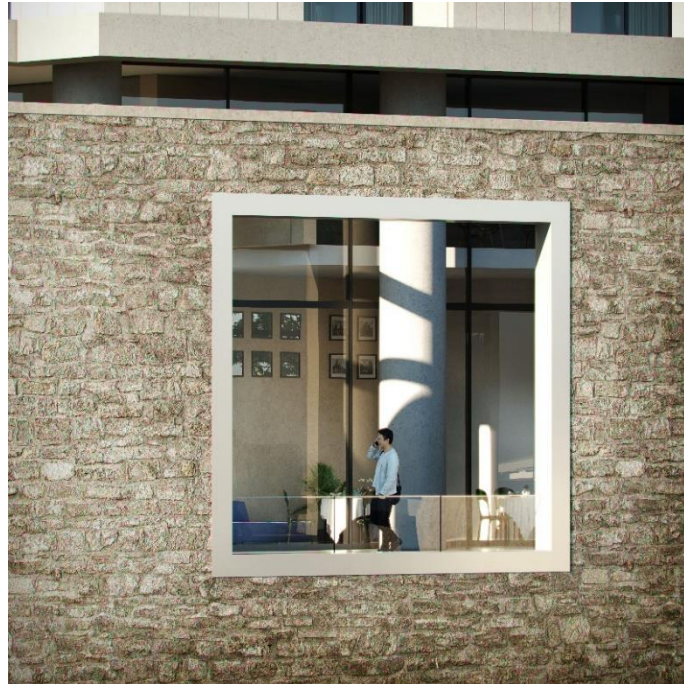


Illustration 3 View of proposal showing restored Quay Wall with new opening and walkway behind

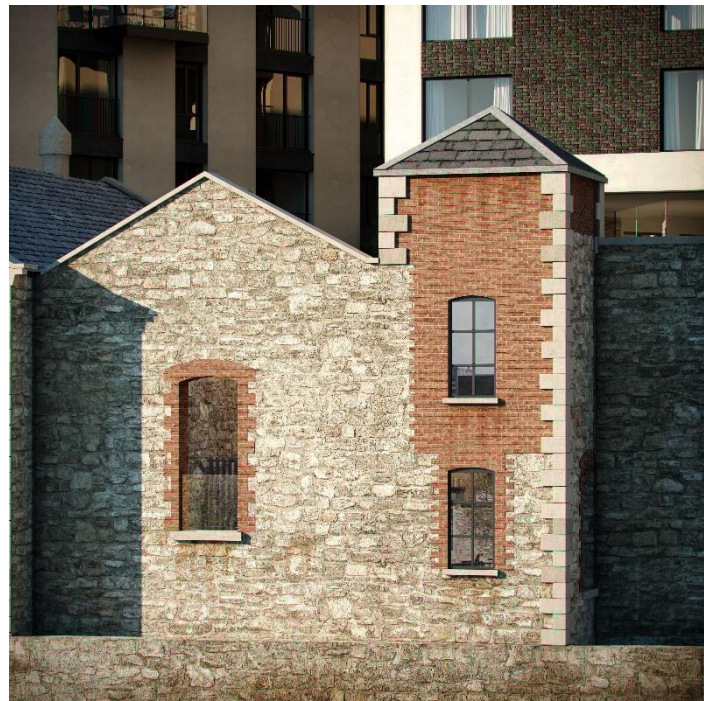


Illustration 4 View of proposal showing restored Quay Wall and River buildings

5. CONCLUSIONS AND RECOMMENDATIONS

5.1. Findings

Twelve archaeological test trenches were excavated at the site. The trenches were roughly located throughout the site footprint (Plans 1 and 2). The archaeological deposits identified in the test trenches consisted of late 18th and early 19th century episodes of site infilling where the ground level was raised on the southern half of the site along the northern bank of the River Liffey. This occurred inside a contemporary quay wall that is likely to have been constructed at that time (c. 1800) as part of the construction works associated with the building of the Phoenix Iron Works. Substantial walls and deposits of iron slag and clinker or industrial waste from the iron foundry survive throughout the site under the present Victorian (1880) factory floor.

- Sub-surface remains of the late 18th and early 19th century redevelopment of the site as an Iron Works or foundry exist within the proposed application area. These deposits are between 0.5m-3m deep and survive below the existing factory floor and externally below ground in the yard. Much of the fabric of the Kingsbridge Woollen Mills (1880) survives above ground and forms part of the fabric of the existing upstanding factory on site.
- It is possible that other previously unknown archaeological features pre-dating the industrial features exist within the application area and survive as deeply buried sub-surface archaeological horizons relating to Viking or earlier activity. These features may survive below the areas developed in the late 18th and 19th century. The ability to locate and identify Viking 'boulder clay or lacustrine' archaeology in deep test trenches in urban stratified sites is limited and the excavation of further test trenches is unlikely to further define the pre-industrial archaeological potential of the site.
- On Rocque's map of 1760, a stream traverses the north-eastern corner of what is now the application area. This stream known as the Viceregal Stream and no evidence of this watercourse or culvert was revealed during test excavation.
- While test excavation revealed the presence of subsurface features associated with the Phoenix Iron Works (c. 1800-1878) and the Kingsbridge Woollen Mills (1880-1890). It was also noted that there are remnants of upstanding structures relating to these industrial phases, that will require recording in order to ascertain how they relate to the below ground features.

5.2. Development Design

Chartered Land Ltd propose a mixed use residential and office scheme of 481 rented residential units, 3,698 square meters of commercial office space. There is also 444 square meters of café/ restaurant floor space and 214square meters of retail space. The development is contained within three Building Blocks (A, B and C). A new public square is provided, along with a public riverside walk and private amenity courtyard. The

residential units are served by amenity and management areas including a reception area, a post room, a quiet room, gym, business suites, lounge and TV rooms and other bookable rooms. In addition to the above amenity facilities are miscellaneous support facilities including sub/switch room, refuse and waste management areas, electric meters, administrative areas and cycle parking areas. At basement / undercroft level further bicycle parking is provided, as well as car parking.

To facilitate the proposed development, a number of structures on site will be demolished, including Parkgate House. All structures contained within the Record of Protected structures will be retained, restored and adapted. This includes the riverside stone wall, the turret at the eastern end of the site, the square tower on the riverfront and the entrance stone arch on the Parkgate Street frontage. For the purpose of the EIAR a Conservation Architect has assessed the specific architectural issues and potential on the site.

It is also proposed to retain the larger of the two gabled industrial buildings on the river front for use as the residents gym and part of the smaller gabled building. All other structures are proposed for demolition, it is proposed to retain some of the large cast iron structural elements from the Woollen Mills factory of c. 1880 for use in the new development.

The development proposal will include works to the river wall (a Protected Structure). This is to provide opes to allow light into the newly formed open spaces and create new river walk.

The signature architectural element of the proposed development will be the 29-storey residential tower, which is sited at the east end of the site near Heuston Bridge where the site naturally angles (known as Block A). The tower will be generally triangular and slender in form. The building is accessed off Parkgate Street with a central core serving 29 floors of accommodation. All the apartments will benefit from panoramic views over the city.

The proposal will contain significant areas of public open space with the aim to bring vitality to the public realm. The plan orientates the primary open space on a north-south axis centred on the protected 'Gateway' arch off Parkgate Street with a scale, quality and sense of place providing a high-quality urban space.

A second public open space is formed between Block B (in the centre of the site orientated north / south) and the residential tower (Block A) that sits on the prominent corner at Heuston Bridge and provides a further public connection from Parkgate Street to the river. The rejuvenation of the public realm at street level is further reinforced with a mix of active uses of residential amenity, office and café/ restaurant with a viewing terrace giving a new dynamic perspective and interface with the city and a view across the river to Heuston Station. Block C is located along the western boundary of the site parallel to Block B. Block B and C are linked along the Parkgate street front.

5.3. Development Impact

The foundation design specification is preliminary and subject to further detail design detail which is being prepared by ARUP Consulting Engineers. The proposal is to construct 3 principal building blocks on the site supporting framed concrete buildings (Blocks A, B and C).

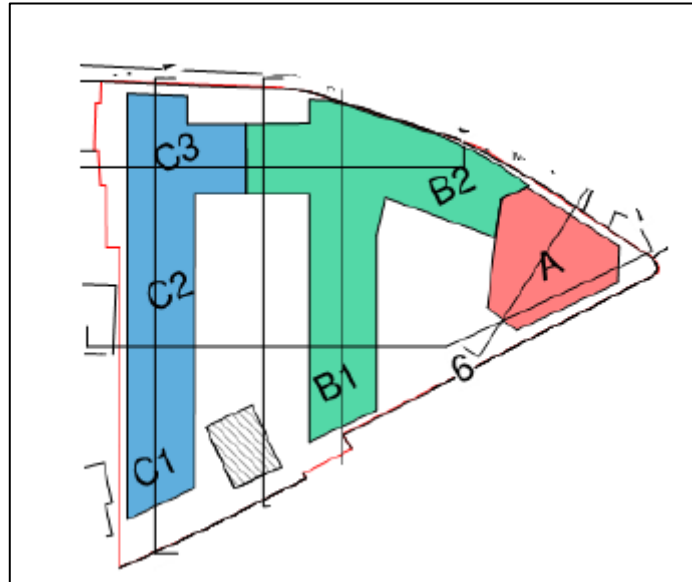


Figure 14 Building Layout, Block A, B and C

These buildings are supported on piles drilled to bedrock across the site, ground investigation works suggest that rock head ranges from 6.7-9.7m below existing ground levels. Piling will require a piling platform of 600mm of crushed concrete or imported stone. Piles for Blocks B and C will be 600mm diameter Continuous Flight Augered (CFA) piles. These piles are estimated to be 9m in total length and less below the basement/undercroft.

Piles for Block A will be 900mm diameter rock socketed bored piles with their permanent casing in rock and temporary casing in overburden. The rock socketed bored pile will be formed by either odex or rotary/rock auger technique. Piles are estimated to be 9m in total length.

It is anticipated that pairs of 600mm diameter piles are used across the site at 1800mm intervals under Blocks B and C. With 20 x 900mm diameter piles proposed under Block A at 2800mm intervals. Pile groups support pile caps under columns and piled raft foundations under stability cores. All cores will be founded on a 1200mm raft slab.

Approximate % of total piles per block as follows, Block A 15%, Block B 45% and Block C 40%

Different pile sizes not accounted for here, this is a comparison of number of piles for each block. The number of piles required will be adjusted following pile testing however this will have little effect on the above.

Block A

This block refers to the proposed tower, located at the south-eastern corner of the site. The pilecaps for the 900mm bored piles are 1.2m x 3.9m and 1.2m x 3.7m x 3.9m. The depth of the pile cap will be in the region of 1650mm (Figure 15).

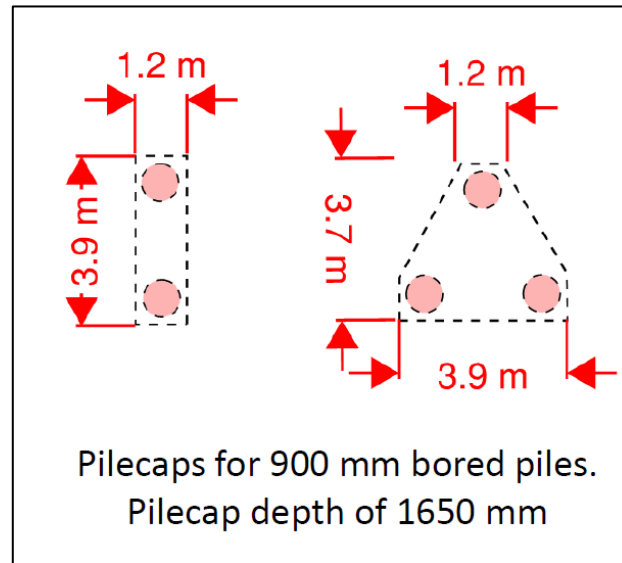


Figure 15 Pilecaps for Block A

Block B and C

Blocks B and C form the majority of the ground works on site. The pilecaps for the 600mm CFA piles are 2.7 x 2.7m, 4.5m x 2.7m, 4.5m x 4.1m x 2.7m and 4.5m x 4.5m (Figure 16).

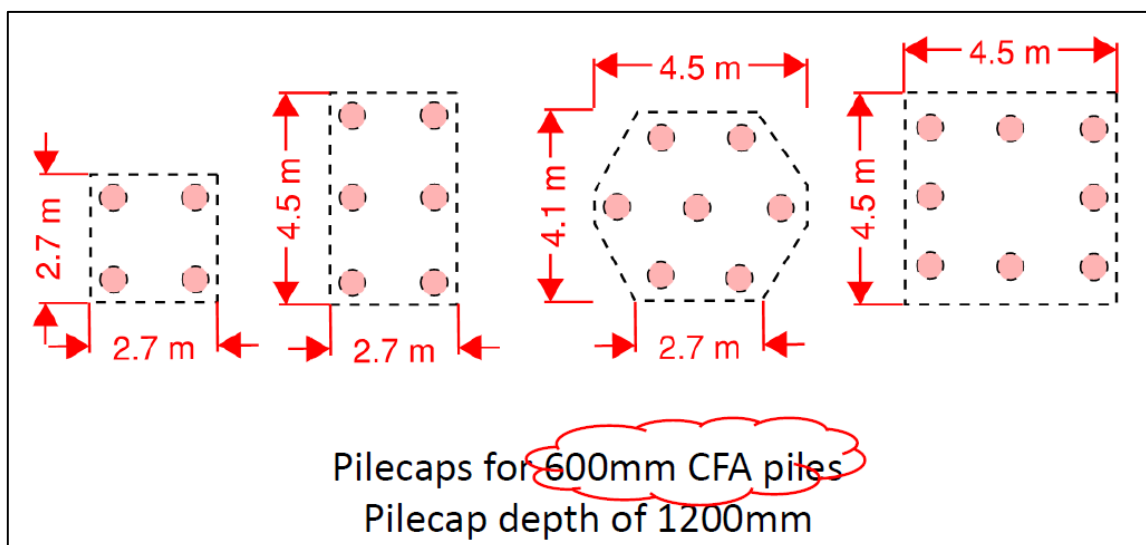


Figure 16 Pilecaps for Blocks B and C

An undercroft/ basement structure is proposed under Block B and partially under Block C. The undercroft structure will consist of a reinforced concrete suspended base slab and retaining walls, supported on piles. The proposed undercroft floor level is set below the existing ground level by approximately 1m at lowest excavation level on the south end of the site adjacent to the river and is set below ground level by approximately 3.2m at the highest excavation on the north end of the site up adjacent to Parkgate Street.

A reinforced concrete ramp will be provided for vehicular access, which is approximately 7m wide and 30m in length. The basement / undercroft is c. 60m north / south under Block B and is 15m wide, it is also L-shaped with a further 50m long section along the Parkgate Street frontage that is c. 15m wide.

A further basement area adjacent to the quay wall at the southwest corner of the site is proposed for the storage of bicycles.

The following figures show the piling and column layout as well as the extent of the proposed basement areas on site (Figure 17 and 18). The basement layout is also overlaid with the test pit location (Figure 19). Piling will have an impact on any in-situ archaeological remains, as given their depths the piles will cut down through intact archaeological material. In addition to these interventions, there will also need to be trenches for services, utilities and drainage etc.



Figure 17 Substructure Floor Plans showing piling layout



Figure 18 Substructure Floor Plan showing the basement and columns

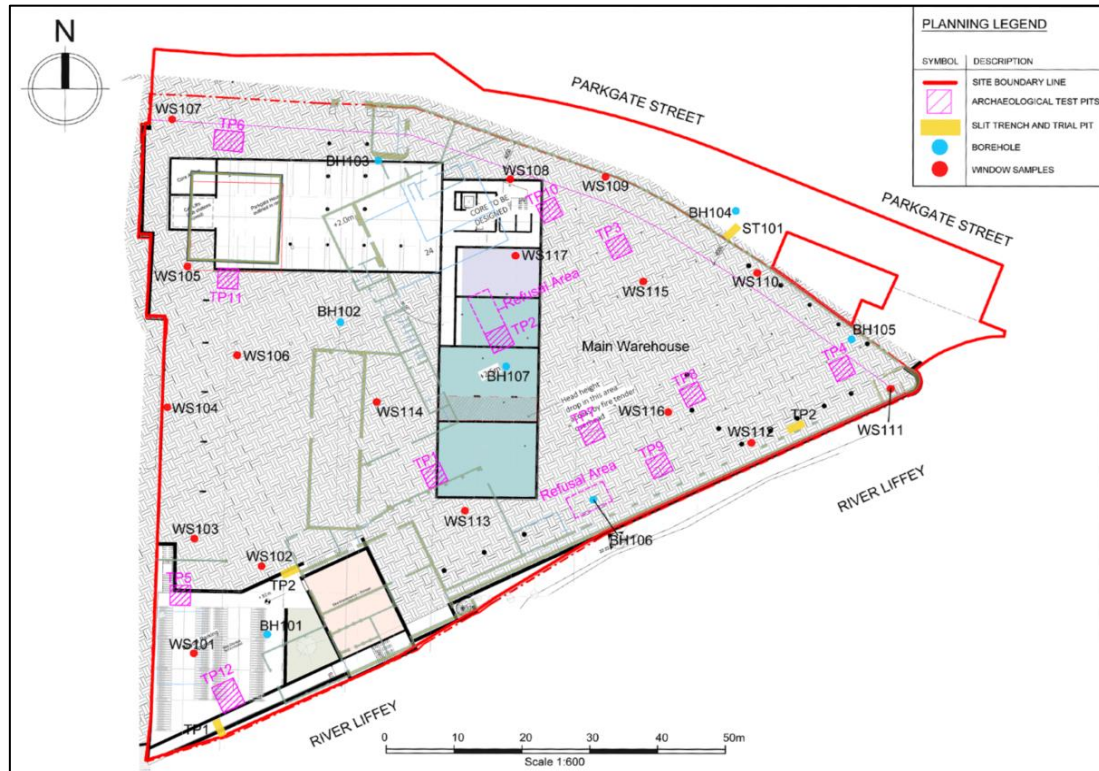


Figure 19 Overlay of existing site with test pit locations onto the proposed basement layout

5.4. Recommendations

Based upon development design and the impact of a dense piling layout and having considered the archaeological findings, it is recommended that the Dublin City Council (subject to planning approval) attach a condition requiring that archaeological excavation be carried out within the basement / undercroft footprint of the proposed development (part of Block B and C) (Figures 17 and 18) and also that archaeological excavation be carried out under Block A (Figure 14).

Further to this, archaeological monitoring should be carried out on the remainder of the site where any sub-surface works associated with the ground floor foundations of the proposed development requires reduction. This will involve having the ground-breaking element of the development works monitored by an archaeologist. Should archaeological material be then identified, further archaeological excavation shall proceed.

Archaeological excavations should focus on the remains of the Phoenix Iron Works and on the natural boulder clay / lacustrine levels. It is noted that significant ground contamination with heavy metal *etc.* exists on the site and this may restrict the manual excavation of some deposits based on health and safety concerns. The presence of these contaminated deposits has led to a development design leaving these fills *in situ* which has a consequent reduction in the area requiring archaeological excavation.

All archaeological works have to be undertaken under license to the National Monuments Service in the Department of the Culture, Heritage and the Gaeltacht (DoCHG). Monitoring and excavation should be undertaken by a qualified archaeologist as required under National Monuments Legislation. Archaeological monitoring should focus on the excavation for foundations, basement and services.

The specific foundation design is evolving and accordingly the full detail and sequence of works will be fully developed as part of the construction management plan. Research, monitoring and testing has informed the archaeological mitigation, allowing an approach to be developed in terms of excavation and recording. However, the specific scale of the archaeological excavation required is subject to the final foundation design that should be presented in the archaeological method statement that would accompany any license application to carry out further predevelopment archaeological excavations at the site.

Prior to the demolition of existing buildings on site, a full photographic and descriptive record of the upstanding remains in relation to the Phoenix Iron Works (c. 1800-1878) and Kingsbridge Woollen Factory (1880-1890) should take place in order to add to the archaeological record and further understand the subsurface industrial remains. As part of the EIAR process, these structures have been discussed and assessed in Chapter 12 Architectural Heritage (Section 12.4.1) for the proposed development. Mapping from this chapter, shows the extent of upstanding structures that predate the 1837 First edition Ordnance Survey map (Figure 20 (Figure 12.1)).

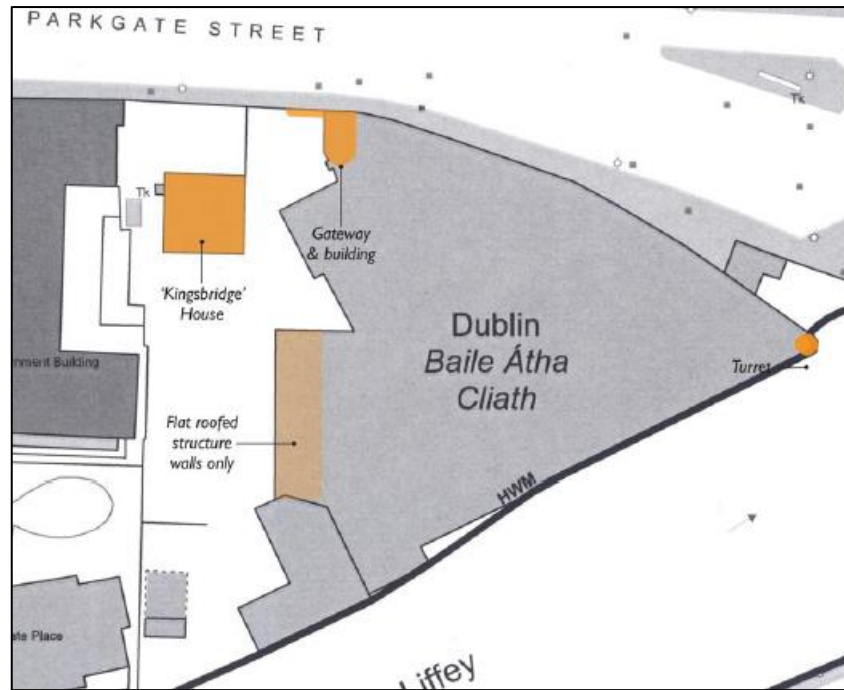


Figure 20 Mapping extract from Chapter 12 Parkgate Street EIAR Architectural Heritage, Figure 12.1 showing structures on the site that predate the 1837 First edition Ordnance Survey map. Most of the other structures date from the mid-1880s.

These works should be accommodated within a designated window for archaeological work established within the demolition and ground works construction contract with a suitable programme for archaeological work which must be accommodated within the construction programme.

It is recommended that the programme of archaeological works would commence in advance of the main construction stage at the site clearance/ ground reduction/demolition stage. Once existing structures and the ground slab have been cleared from the site, a systematic programme of investigation/ excavation could take place to establish the nature and extent of the surviving sub-surface structures. It is envisaged that this could take place on a phased basis, utilising the existing ground slab as a working platform to investigate adjacent areas.

All recommendations are subject to the approval of the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht and the City Archaeologist for Dublin. This suggested strategy does not prejudice recommendations made by the National Monuments Service, the Dublin City Archaeologist and the planning authority who may make additional recommendations.

The developer will make provision to allow for and fund whatever archaeological work may be required at the site and the post excavation requirements in accordance with the National Monuments Legislation (1930–2004; Appendix 1).



Illustration 5 View of Proposal along Parkgate Street looking east.

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APPENDIX 1 NATIONAL MONUMENTS LEGISLATION

All archaeological sites have the full protection of the national monuments legislation (Principal Act 1930; Amendments 1954, 1987, 1994 and 2004).

In the 1987 Amendment of Section 2 of the Principal Act (1930), the definition of a national monument is specified as:

any artificial or partly artificial building, structure or erection or group of such buildings, structures or erections,

any artificial cave, stone or natural product, whether forming part of the ground, that has been artificially carved, sculptured or worked upon or which (where it does not form part of the place where it is) appears to have been purposely put or arranged in position,

any, or any part of any, prehistoric or ancient

(i) tomb, grave or burial deposit, or

(ii) ritual, industrial or habitation site,

and

any place comprising the remains or traces of any such building, structure or erection, any cave, stone or natural product or any such tomb, grave, burial deposit or ritual, industrial or habitation site...

Under Section 14 of the Principal Act (1930):

It shall be unlawful...

to demolish or remove wholly or in part or to disfigure, deface, alter, or in any manner injure or interfere with any such national monument without or otherwise than in accordance with the consent hereinafter mentioned (a licence issued by the Office of Public Works National Monuments Branch),

or

to excavate, dig, plough or otherwise disturb the ground within, around, or in the proximity to any such national monument without or otherwise than in accordance...

Under Amendment to Section 23 of the Principal Act (1930), a person who finds an archaeological object shall, within four days after the finding, make a report of it to a member of the Garda Síochána...or the Director of the National Museum...

The latter is of relevance to any finds made during a watching brief.

In the 1994 Amendment of Section 12 of the Principal Act (1930), all of the sites and 'places' recorded by the Sites and Monuments Record of the Office of Public Works are provided with a new status in law. This new status provides a level of protection to the listed sites that is equivalent to that accorded to 'registered' sites [Section 8(1), National Monuments Amendment Act 1954] as follows:

The Commissioners shall establish and maintain a record of monuments and places where they believe there are monuments and the record shall be comprised of a list of monuments and such places and a map or maps showing each monument and such place in respect of each county in the State.

The Commissioners shall cause to be exhibited in a prescribed manner in each county the list and map or maps of the county drawn up and publish in a prescribed manner information about when and where the lists and maps may be consulted.

In addition, when the owner or occupier (not being the Commissioners) of a monument or place which has been recorded, or any person proposes to carry out, or to cause or permit the carrying out of, any work at or in relation to such monument or place, he shall give notice in writing of his proposal to carry out the work to the Commissioners and shall not, except in the case of urgent necessity and with the consent of the Commissioners, commence the work for a period of two months after having given the notice.

The National Monuments Amendment Act 2004

The National Monuments Amendment Act enacted in 2004 provides clarification in relation to the division of responsibilities between the Minister of Environment, Heritage and Local Government, Finance and Arts, Sports and Tourism together with the Commissioners of Public Works. The Minister of Environment, Heritage and Local Government will issue directions relating to archaeological works and will be advised by the National Monuments Section and the National Museum of Ireland. The Act gives discretion to the Minister of Environment, Heritage and Local Government to grant consent or issue directions in relation to road developments (Section 49 and 51) approved by An Bord Pleanála and/or in relation to the discovery of National Monuments

14A. (1) The consent of the Minister under section 14 of this Act and any further consent or licence under any other provision of the National Monuments Acts 1930 to 2004 shall not be required where the works involved are connected with an approved road development.

(2) Any works of an archaeological nature that are carried out in respect of an approved road development shall be carried out in accordance with the directions of the Minister, which directions shall be issued following consultation by the minister with the Director of the National Museum of Ireland.

Subsection 14A (4) Where a national monument has been discovered to which subsection (3) of this section relates, then

- (a) the road authority carrying out the road development shall report the discovery to the Minister
- (b) subject to subsection (7) of this section, and pending any directions by the minister under paragraph (d) of this subsection, no works which would interfere with the monument shall be carried out, except works urgently required to secure its preservation carried out in accordance with such measures as may be specified by the Minister

The Minister will consult with the Director of the National Museum of Ireland for a period not longer than 14 days before issuing further directions in relation to the national monument.

The Minister will not be restricted to archaeological considerations alone but will also consider the wider public interest.

APPENDIX 2. CONTEXT REGISTER

Context	Test Pit	Description
C1	TP1-TP11	Concrete slab forming present surface
C2	TP1-TP10, TP12	Loose demolition layer, composed of crushed concrete, angular limestone fragments, red brick, sandy gravel
<C3>	TP1	A large rectangular cut granite block inset into a pile of concrete. Appears to form a foundation pad.
C4	TP1	Loose, dark brown, gravelly clay, with inclusions of red brick and containing occasional willow pattern ceramic and slag
C5	TP1	Loose layer of crushed mortar with red brick inclusions and occasional fragments of oyster shell, appears to be the remnants of a surface
C6	TP1	A thin layer of compact, hard back clay containing deposits of vitrified bright aquamarine industrial by-product
C7	TP1	Loose, dark brown, gravelly clay, with inclusions of red brick, containing frequent oyster shell and slate, and with occasional animal bone. Within this context at 1.88m deep there is a thin layer of broken slates approximately 0.1m thick
C8	TP1	Compact, grey/green clay containing frequent mortar, broken slate, hand-made red brick and small red brick fragments, animal bone and oyster shell
C9	TP2	Loose deposit of crushed mortar, small angular limestone pebbles, red brick fragments, containing more mortar and silty material than C2 above. Pale in colour with dark patches where silty
C10	TP2	Layer of dark to black with occasional orange patches, extremely loose fine-grained material with a nearly pure composition. Appears to be industrial waste
C11	TP2	Resembles C9 towards the top of this deposit but comes onto a more compact dark brownish grey silty clay which still contains significant amounts of industrial waste
C12	TP2	Resembles the lower portions of C11, however it has a more reddish colour and a significant presence of slag
C13	TP2	Moderately compact, mid grey, silty clay with mortar flecking, occasional stones, infrequent oyster shell. The deposit contained a piece of transfer printed pottery and a clay pipe stem. In the west of the pit at 1.7m depth, there was a looser ashy, mortar rich deposit with a pink colour that may indicate burning/heat exposure, which contained two pieces of likely 18 th century transfer printed and painted pottery.
C14	TP2	Compact, mid to dark grey black, in areas resembling black boulder clay, however this deposit contained frequent slate and oyster shell and occasional slag and black and creamware pottery.
<C15>	TP2	Wall H. A red brick wall in the north side of the pit, oriented east-northeast to west-southwest. In its west-southwest extent is only 2 bricks wide, in the east-northeast it is more substantial being approximately 4 bricks wide. It may form a pad. Composed of unfrogged red brick of standard 19 th /20 th century size. Length 3m, width 0.4 to 0.22m, thickness up to 0.35m approximately.
C16	TP3	Loose, light grey, silty fine sandy deposit.
C17	TP3	Loose, dark grey stony clay with frequent gravel in parts similar to C2
C18	TP3	Very compact at top, dark grey / brown sandy clay with a silt component. It includes frequent sub-angular to angular limestone (sized 0.04 to 0.15m). Towards the bottom of the test pit (c. 2.4m) this layer became softer and pebbles began to replace the larger more angular stones. No inclusions were present.

Context	Test Pit	Description
C19	TP4	Friable, crumbly / gritty silty sand with crushed red brick and mortar flecks., The deposit also contained a sherd of black-ware pottery, oyster shell, and small lumps of slag
C20	TP4	A very compact deposit containing a substantial amount of sub-angular stones, with a soft slightly tacky mid brown-grey silty clay component. This deposit contained inclusions of mortar
C21	TP5	Thin, moderately loose, black stained gravel deposit
C22	TP5	Compact, relatively level possible surface composed of crushed red brick, red brick fragments and small limestone slabs, evidence of burning
C23	TP5	Soft, grey brown, silty deposit with an area towards the top of dark grey. Did not contain many inclusions
C24	TP5	Soft, grey silt deposit. Did not contain many inclusions
C25	TP5	Deposit of dark brown to black, orange mottled gravel, silt, clay with slag, the deposit included red brick and a small sherd of transferware pottery
C26	TP5	Soft, mid grey-brown silty rich deposit with few inclusions
C27	TP5	In the eastern end of the test pit only. Deposit made up of small water rolled stones, red brick, animal bone and clay tobacco pipe
C28	TP5	Sandy gravelly silty clay, dark and wet with considerable quantities of slag, also contained transfer print pottery
C29	TP5	Grey brown to yellow, sandy clay, lacustrine/river alluvial tidal flat clay, contains transfer print pottery
C30	TP5	River gravels, contained transfer print pottery
C31	TP6	Sandy deposit surrounding concrete foundation and services
C32	TP6	Within box formed by services and walls. Silty clay with some sand, inclusions of red brick and some animal bone, a relatively clean deposit
C33	TP6	Tan coloured, silty clay, with infrequent inclusions of red brick and shell
C34	TP6	Dark grey, silty clay with rare inclusions of red brick fragments, mortar fragments, and shell
C35	TP6	Orange flecked, dark tan silty clay, contains occasional very small intact snail shells
<C36>	TP6	Wall F. Composed of 7 courses of roughly hewn black limestone calp blocks bonded together with lime mortar, the wall had a height of 1.2m. The upper 0.35m of wall F was either cased or formed of concrete with a single course of 19 th to 20 th century red brick overlying this. Wall F had courses composed of roughly 0.08m to 0.12m high and 0.8m long slabs
<C37>	TP6	Wall G. From the top of Wall G to its plinth was 0.57m, and from top to base measured 0.68m, the plinth extending from the wall was 0.08m wide and tapered under to the base of the foundation trench. Wall G had a blockier construction than Wall F being made of courses of stones rough 0.1m to 0.2m high and 0.35m to 0.45m long
C38	TP7	Course, yellow sand that forms a level surface with some occasional small red brick fragments, evidence of oxidization shown by occasional orange mottling. Likely a layer of casting sand
C39	TP7	Compact, brown-grey gravelly mortar flecked clay with inclusions of limestone blocks of size 0.27m
C40	TP7	Horizontal granite block (in situ). 0.5m long and 0.11 deep, in the section face
C41	TP7	Compact, grey gravelly clay with inclusions of mortar fragments and red brick flecks
C42	TP7	Two buried iron pipes oriented north – south, spaced 1m apart. Between these pipes, excavation continued to a depth of 2m with the material removed resembling a darker deposit of the material found between 1.26 – 1.65m
C43	TP8	The fill within the two voids formed by the walls, demolition rubble including iron stained red brick, burnt clay, and red tiles

Context	Test Pit	Description
<C44>	TP8	Wall (Wall A TP8) oriented north-northeast to south-southwest that was only visible in the overcut western side of the test pit. It was constructed of roughly hewn black limestone calp blocks. This wall was not keyed into Walls B and Wall D
<C45>	TP8	Wall (Wall B TP8) oriented east-northeast to west-northwest, constructed of roughly hewn black limestone calp blocks bonded by strong limestone mortar, these are coursed with blocks up to 0.52 x 0.32 x 0.2m wide and mixed with shallower courses 0.04 x 0.23 x 0.2m deep, 12 courses were exposed. This wall has “holes” on either side of Wall C, these are approximately 0.28m wide and located at a depth of 1.91m and 1.94m below surface level, above each “hole” is a vertical iron bond, in-line with the eastern hole is an iron rod of length 0.29m, with a square section of 0.035m, it is set in a Dublin stock brick (0.9 x 0.21 x 0.7m), rotating this crank reveals it to have been part of mechanism to open or close the “hole”, indicating they functioned as “flues”
<C46>	TP8	Wall (Wall C TP8) constructed of roughly hewn black limestone calp blocks bonded by strong limestone mortar, oriented north-northeast to south-southwest, it appears to be contemporary with Wall B and Wall D and is keyed into them with smaller stones measuring 0.1 x 0.37 x 0.2m and 0.03 x 0.17 x 0.12m up to 0.22 x 0.22m in size. Wall C has a width of 0.6m and a length of 0.68m
<C47>	TP8	Wall (Wall D TP8) oriented east-northeast to west-northwest, parallel to Wall B. Constructed of roughly hewn black limestone calp blocks bonded by strong limestone mortar, these are coursed with blocks up to 0.52 x 0.32 x 0.2m wide and mixed with shallower courses 0.04 x 0.23 x 0.2m deep, 12 courses were exposed
<C48>	TP8	Wall (Wall E TP8), oriented north-northeast to south-southwest, parallel to Walls A and C, located mostly under the eastern edge of the test pit. It was constructed of roughly hewn black limestone calp blocks. This wall was keyed into Walls B and Wall D, this wall had a slight step out at the mid-point of its currently exposed depth
C49	TP9	Mid grey brown, loose silty sand, with occasional mortar flecking, small fragments of red brick, and occasional stones
C50	TP9	Compact but loose and crumbly when chipped off, black, sandy silty material with lots of very fine nodules/grit/very small pebbles approximately 1mm – 5mm. Most likely industrial waste from a type of heated/burning process. Located to the north of the pit
C51	TP9	As layer recorded above but oxidized orange reddish brown, located exclusively on the north side of the trench
C52	TP9	Very compact, forms a surface made up of heat affected stones, slag, and materials similar to layer immediately above. Appears to have been heavily impacted by heat
C53	TP9	Green-grey tan, compact clay with gravel and a lot of stone present (dia.0.08m), also contains substantial amounts of red brick and mortar
C54	TP9	Mid grey, compact, silty gravelly clay, with some mortar flecking and small pebbles, contains no red brick and less stone than the layer above
C55	TP9	Tan-black patchy, smooth clay
<C56>	TP9	Wall I. The remains of a wall, width approximately 0.26m, length oriented east to west through middle of test pit is 3m. These remains are composed of a layer of mortar, which served as bedding for the wall, indents in the mortar can be observed that appear to have been formed by now absent bricks The black industrial waste deposit, C50, in section reveals that the wall was at least partially upstanding when it formed, this is shown by how

Context	Test Pit	Description
		the deposit formed against what would have been the north face of the now absent wall
C57	TP10	Mid to dark brown, soft, silty clay with red brick inclusions
C58	TP10	Light pinkish grey, compact, mix of sand and mortar that forms a thin level surface.
C59	TP10	Mid grey-brown, silty clay, with red brick inclusions
C60	TP10	Slightly compact, dark brownish grey boulder clay, containing decayed limestone pebbles, and occasional inclusions of red brick, mortar and animal bone
C61	TP10	Compact, black brownish grey boulder clay containing decayed limestone pebbles sized 0.02 to 0.03m, contained rare inclusions of mortar, a solitary oyster shell and a 17 th or 18 th century piece of red glazed earthenware
C62	TP10	Very sticky, grey black boulder clay, a gravely clay with black mottling due to presence of decayed round limestone pebbles
C63	TP11	Soft, mid grey brown, clayey silty with inclusions of red brick, mortar and stones
C64	TP11	Soft mid to dark grey brown clayey silt with dark mottling of stained gravel. Contains inclusions of red brick, mortar and stones
C65	TP11	Soft, dark grey clay with inclusions of mortar flecking, red brick, and shell
<C66>	TP11	Approximately half of test pit 11 was taken up by an upright wall made up of concrete and red brick, 0.2m thick, this was associated with a thick slab of smoothed concrete 0.3m thick and located 0.8m below surface, which makes up the southern 1.75m of the south of the pit wall and slab share this context number
C67	TP12	Burgundy, sticky plastic clay, with mortar, red brick and slag
C68	TP12	Black, gritty sandy deposit with bright orange patches, contains slag and clinker
C69	TP12	Very compact, crushed mortar, red brick, stone, probable mortar floor
C70	TP12	Brown and grey, gravely clay, with lots of burnt sand and clinker
C71	TP12	Tan grey mottled, sandy clay, with considerable staining
C72	TP12	A deposit of loose red brick
C73	TP12	Compact black/grey, fine, stone free clay. Odious.
C74	TP12	River gravel - grey blue, sandy river gravel, stained and highly odious.

APPENDIX 3. PLATES



Plate 7 Test Pit 1, view to west-southwest



Plate 8 Test Pit 2 view to east-northeast



Plate 9 Test Pit 2 showing wall, view to northwest



Plate 10 Test Pit 3 view to east-northeast



Plate 11 Test Pit 4, view to west-northwest



Plate 12 Test Pit 5, top of heat affected redbrick surface, view to east



Plate 13 Test Pit 5 showing industrial layers, view to southeast



Plate 14 Test Pit 6 Wall F, view to north



Plate 15 Test Pit 6 Wall G and concrete encased services, view to south



Plate 16 Test Pit 7 showing sand surface, view to east-northeast



Plate 17 Test Pit 7 showing deposits and services, view to south-southeast

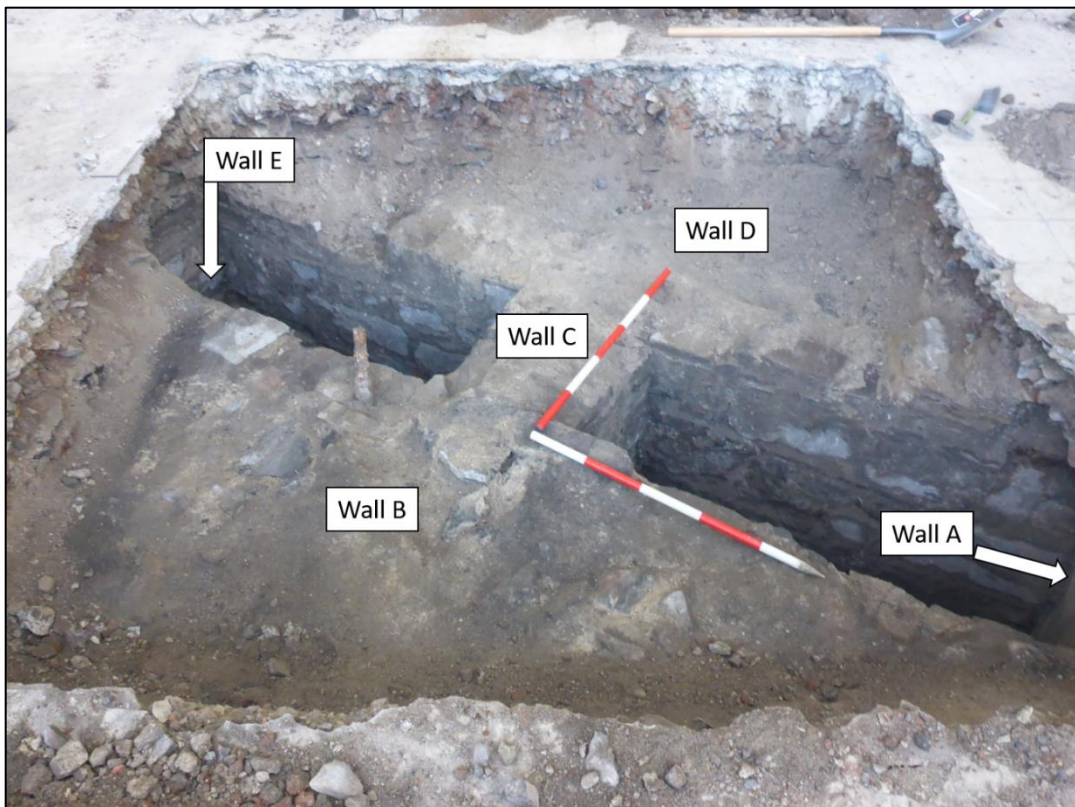


Plate 18 Test Pit 8 showing walls (A-E) and voids, view to south-southeast



Plate 19 Test Pit 8 looking southeast showing the possible limestone flue structure, view to southeast



Plate 20 Test Pit 8 showing that Wall A and B are not tied in, view to northwest



Plate 21 Test Pit 8 showing air flue at the base of the ranging rod, view to north-northwest



Plate 22 Test Pit 8 showing iron bands on either side of Wall C and the lever/crank to open/close the flues, view to northeast



Plate 23 Test Pit 9 showing 19th century post medieval layers, view to east-northeast



Plate 24 Test Pit 10 Compact sandy surface, view to southeast



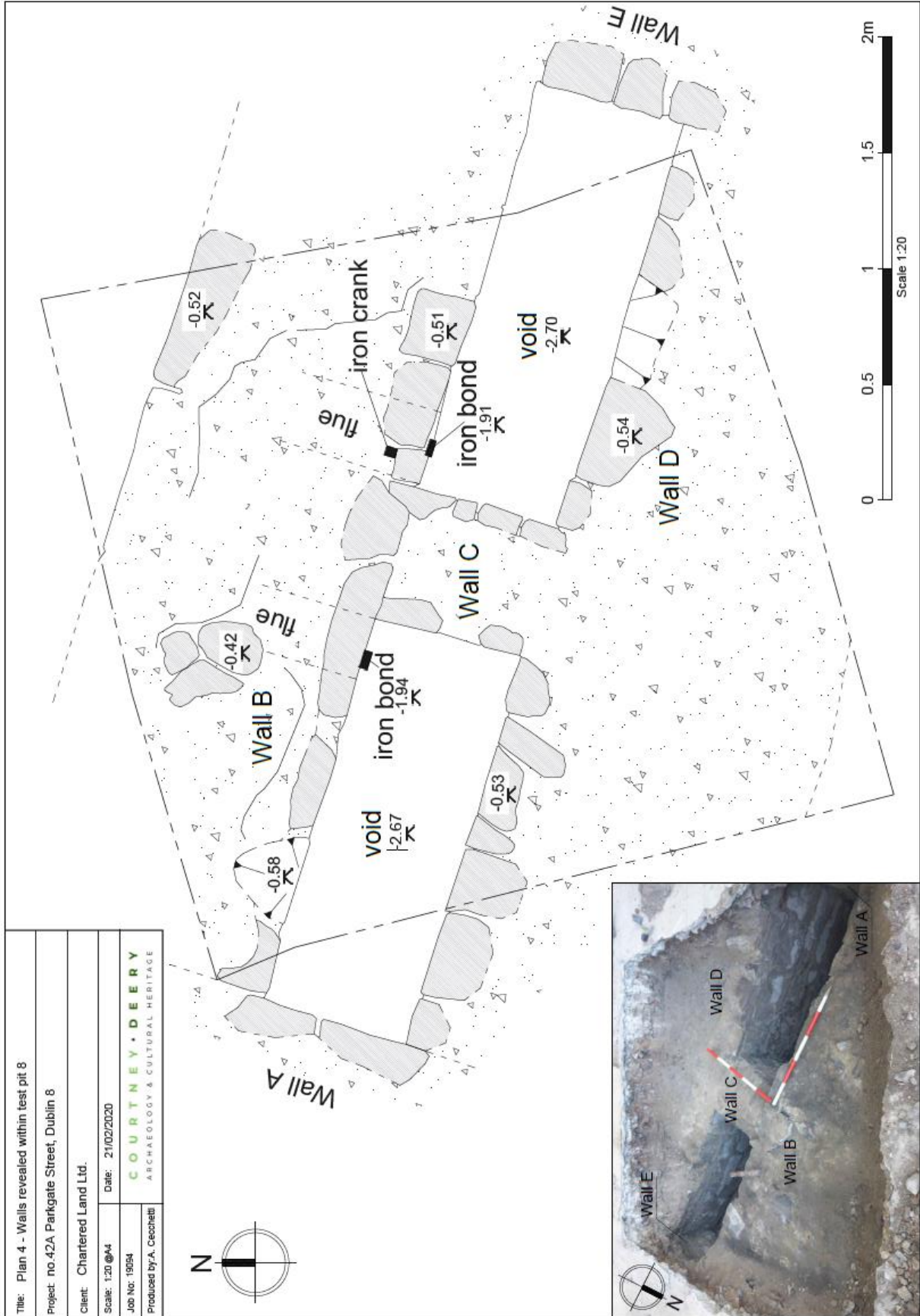
Plate 25 Test Pit 10 Section face, view to north-northeast



Plate 26 Test Pit 11 Section and original concrete surface, view to west



Plate 27 Test Pit 12 Section face, view to west-southwest



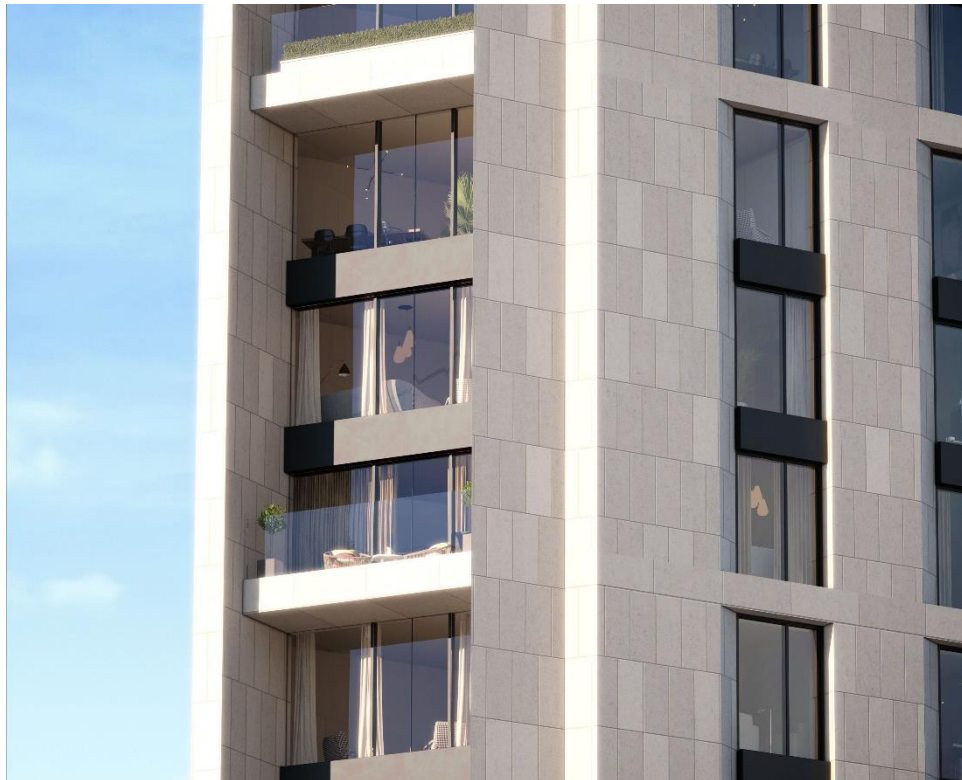
APPENDIX 4 ILLUSTRATIONS OF THE PROPOSED DEVELOPMENT



View from Frank Sherwin Bridge



Close up vignette of Tower and Office



Close up vignette of tower looking west



View from Benburb Street 1



View From Benburb Street 2



Close up Vignette of Tower and office



Close up vignette of restored Stone Arch leading to Communal Courtyard



View from Parkgate St looking into entrance to public square



View from Parkgate St into public square



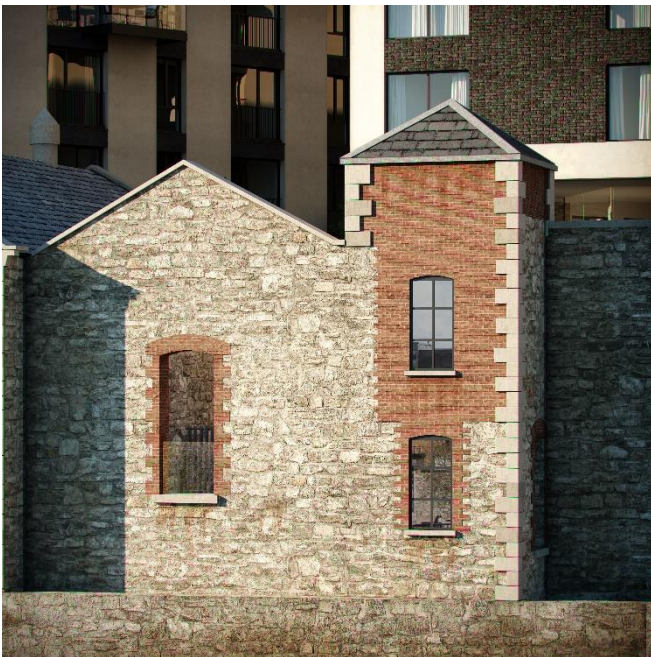
View from Parkgate St looking east



Close up vignette of 5th floor of office.



View from across the Liffey at Heuston Station



Close up vignette of restored Quay wall buildings



Close up vignette of Quay wall opening



Close up vignette of tower at Quay Wall turret



Close up vignette of the residential courtyard buildings



Close up vignette of the tower and Block B facing south



View of Residential Communal Courtyard



View of Public Courtyard



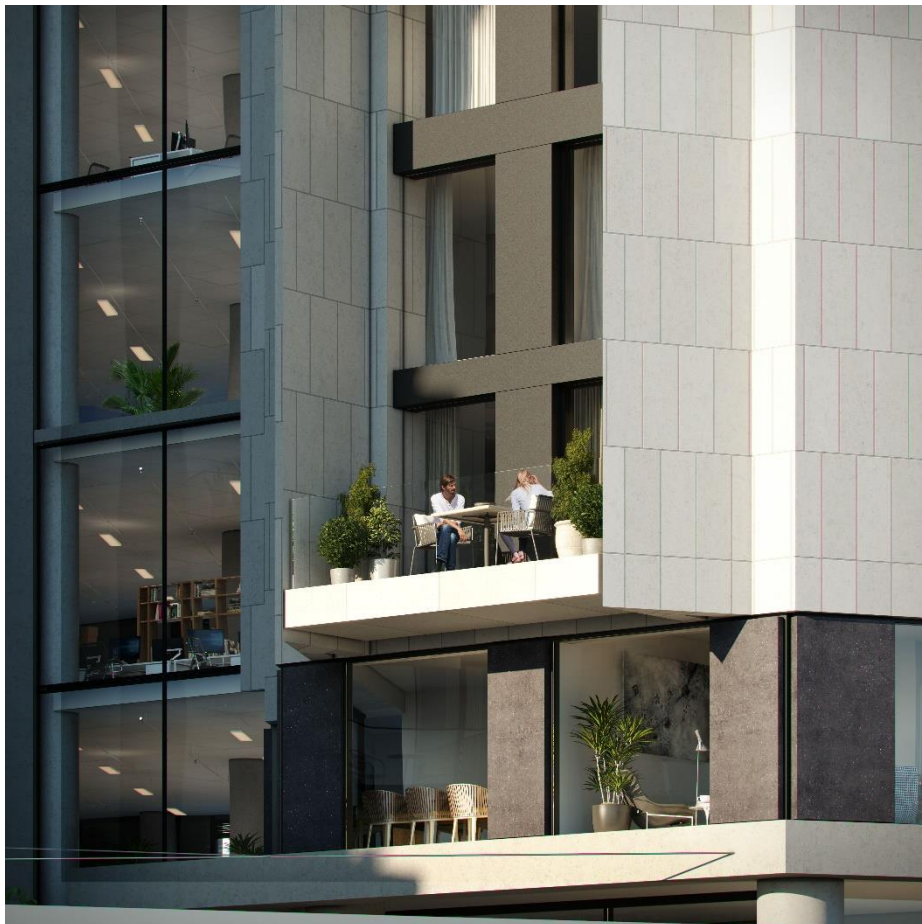
Evening time view of scheme from Frank Sherwin bridge



View from Heuston Station



Close up vignette of Tower showing balcony facing south



Close up vignette of Tower showing balcony facing west

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