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Archaeological impact assessment for refurbishment works at Newcomen Bank, Dublin 2



on behalf of Howley Hayes for Dublin City Council
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Archaeological impact assessment for Newcomen Bank, Castle Street, Dublin 2

1 Introduction

This is an archaeological impact assessment for the proposed refurbishment works to Newcomen Bank, 16 Castle Street, Dublin 2. The rates office, former bank is located on Cork Hill opposite City Hall and the gates of Dublin Castle. Dublin Castle is to the south. Figures 1-4.

Newcomen Bank is one of Dublin's finest eighteenth-century buildings which enjoys a unique setting on Cork Hill opposite City Hall at the entrance to Dublin Castle. Designed by Thomas Ivory in 1781, the former Newcomen Bank's last use was as the rates office. The original building was half the size of the current structure before Ivory's original design was mirrored, and a new portico added to link the two halves together.

The building is 3 storeys over basement with access to roof level. The current basement is extensive and accommodates storerooms with vaulted ceilings and a wine cellar. Vaulted cellars line the perimeter of the south (Castle Street) and east (Cork Hill) boundaries and are accessed by a continuous corridor which is naturally lit by pavement grilles above. Figure 6 & 6.

A service core was added to the rear (west) façade in the late twentieth century, comprising lift and escape stairs allowing access from ground floor to third floor. The escape stairs are accessed off the main stair hall and extend to facilitate access to the roof. It is proposed to build a new lift that will extend down to the basement level along with other refurbishments to the building.

The client is Howley Hayes Architects on behalf of Dublin City Council.

Any recommendations in this report are subject to approval from National Monuments Service and the Dublin City Archaeologist.

2 Proposed works

The refurbishment of Newcomen Bank will include conservation and repair of existing historic fabric, and general upgrades to meet fire safety and accessibility requirements. There are five main phases of works:

Phase 1: Demolition of the existing four storey lift and stair structure to the west façade of Newcomen Bank and construction of a new five storey lift and stair structure. This new lift pit will measure 2.7m x 2.7m and will require excavation to a depth of 1.8m deep below the existing basement floor level. (Previous monitoring for site investigations in room B3 identified organic material at a depth of 75cm below existing basement level). The excavated area will then be infilled and 6 x 210 dia mini piles will be inserted and embedded to bedrock by specialist's contractor design (bedrock estimated 7.5-8m below ground level). Figure 8-10.

Phase 2: The floor slab will be lifted throughout apart from the vaults and perimeter corridor that serves the vaults. Estimated depth 40mm.

Phase 3: Removal of internal building features including walls and existing toilets. Figures 8.

Phase 4: Insertion of new drainage – it is expected this should be housed within about 400mm depth. Figure 12.

Phase 5: Insertion of new water metre (on Castle Street) and is a chamber size of up to 1200mm square, with 200mm/250mm thick walls. Indicative location in Figure 13 - exact location tbc.

2.3 Protection

The building is one of Dublin's finest buildings and is Adamesque neo-classical in design. The principal elevation to the three-storey bank was on Castle Street, with a side elevation to Cork Hill. The original east façade (Cork Hill) was half the width of the south façade (Castle Street). Constructed in Portland Stone, the façades display round-headed windows set into recessed blind arches, and delicate decorative detailing. Caldbeck's extension of 1862 duplicates the existing east façade in composition, materials, and detailing, with the exception of the decorative swags which were moulded in Coade stone.

The site is within the zone of archaeological potential of the RMP (DU018 020 Dublin City) Dublin city centre which is subject to statutory protection under Section 12 of the national Monuments (Amendment) Act 1994. DU018-020620.

The site is also included in an ACA, an Architectural Conservation Area as defined in the Dublin City Development Plan 2022-28., and Castle Street (next to Dublin Castle) and Cork Hill (top of Dame St) are within the heart of historic Dublin.

4 Historical background

Dublin was established as a Viking *Longport* in 841. The location of initial settlement appears to have been ear Kilmainham – Islandbridge, where a cemetery of ninth century date was discovered during the last century (Wilds, 1866-9). In 902 the settlement was captured by an Irish alliance and Dublin was abandoned. However, the dispossessed Vikings returned in 917 and established themselves in a different location, on a spur overlooking the rivers Liffey and Poddle in the vicinity of the present Christ Church cathedral. The Viking town was enclosed by an earthen embankment in the early tenth century and this was modified in four stages, culminating in a stone wall construction c. 1100 (Wallace, 1981, 110-13). It is estimated that the Viking town covered an area of 12 hectares. The earliest settlement within the town was along the riverfront, with expansion towards the present site of the Castle and Christchurch Cathedral.

The coming of the Normans is not affected as an archaeological watershed until the thirteenth century, their innovative impact on the town is clear architecturally from about 1186 when a major building programme commenced at Christchurch Cathedral.

Castle Street

Castle St is in the heart of Viking and Anglo-Norman town and formerly served as the primary link route from the eastern end of the medieval city at Trinity College to Christ Church Cathedral in the west, prior to the opening of Lord Edward Street in the 1880's. Until that time, most traffic came along Dame Street, looped around Cork Hill towards the entrance to Dublin Castle, and continued up narrow Castle Street towards Christchurch Place, then part of Fishamble Street.

Castle St formed one of the main thoroughfares in the medieval town of Dublin. The early town was laid out in an east west axis with a route which extended along a natural ridge. This route, which was intersected by north-south roads, was divided into three main streets, Hight Street, Skinner's Row and Castle St. All lay within the original embanked enclosure and subsequent medieval walls of the city.

In the Viking period Castle Street gave access to an earthen and stone fortification which it replaced in the early thirteenth century by a substantial castle, Dublin Castle. Further east it led directly to Dame's Gate, one of the major gates into the city. On the western side it gave access to Skinner's Row, the core of the city, with the town pillory and the market cross located in this street.

Houses and property boundaries would have been constructed leading north from Castle St towards Copper Alley from the late 10th century onwards. The street was a prestigious area to live in and was intensively occupied in both the Viking and Anglo-Norman period. **Recent excavations on the north side of Castle Street produced a series of Viking post and wattle houses**, superimposed on each other and oriented north-south and previous archaeological excavations in the general area have indicated the existence of well-preserved archaeological strata dating from the late tenth century to the mid - late fourteenth century.

In the medieval period, Castle Street was a hive of activity and commerce, lined with timber-caged houses and shops, home to bookbinders, saddlers, armourers and taverns, flanking the defensive walls of Dublin Castle. In the early years of the 19th century, efforts were made by the Wide Streets Commission, the planning body in the city, to resolve awkward junctions in the medieval core of Dublin, following from its successful campaign of street widening in previous years. This resulted in compulsory purchase orders being made on buildings along the southern side of Castle Street. A man by the name of Thomas O'Brien is recorded in 1812 as purchasing properties along this stretch, including the site of the last intact timber-caged house in the city.

Marie De La Dam & City Hall

City Hall occupies the site of the medieval parish church of St May del Dam's. It dedicated to the Virgin Mary and named #St Marie de la Dam. The earliest reference to the church is a deed of 1179c (Gilbert 1854-9ii) it was assigned to St Patrick's Cathedral in 1219-20. (Mc Neill 1950-42). This church and its parish consisted of the castle and little else which proved to be no protection for the church belfry demolished to provide stone for strengthening the castle defences at the time of the Bruce invasions. The church was closed in the reformation and in 1589 was sold to one George Carew. He later sold his interest to Richard Boyle, first earl of Cork who built on its site a mansion, Cork House which later in some part contained Luca's coffee house (Gilbert 1854-9ii). The City Hall built as the exchange by monies raised by lotteries now covers the site.

At the end of the 16th century the church and graveyard came into be possession of Richard Boyle, first Earl of Cork, and on its site, he built Cork House, the graveyard becoming portion of the garden. This house afterwards changed hands and was used for many purposes, being finally demolished in 1768, a new building or exchange being commenced in the following year. In 1852 the latter taken over by the Corporation for use as a city hall, and it was deep under the basement that these bones were found. We thus see that this graveyard may have been in use for at least four hundred years, from some time in the twelfth century, or possibly earlier, until well on into the sixteenth

City Hall (1914) early in 1913, workmen during some excavations under the City Hall in Dublin came across a number of bones which proved to be human remains.

Newcomen Bank

The former Newcomen Bank is one of Dublin's finest eighteenth-century buildings. It was built in 1781 as a private residence for the banker Sir William Gleadowe Newcomen, and served as a private bank in a period before the emergence of modern banking with the Banking Act of 1821. The building stands close to the former Royal Exchange (now City Hall), built 1779, an important place of business in the period, around which a commercial centre had developed with a concentration of similar private banks, including the La Touche Bank and Burton's Bank, both now disappeared. The prominent location of the banks, strategically placed adjacent to the Castle entrance and the Royal Exchange, highlights their significance in the eighteenth-century urban context. Figure 11.

The Newcomen Bank was designed by architect Thomas Ivory, one of the significant figures in the building of Georgian Dublin. It is an exquisitely made neo-classical building of sharply detailed Portland stone, the material reserved for the best public buildings in the Georgian city. Records show that James Hoban, the Irish architect who went on to design the White House, worked for Ivory on the design for Newcomen.

After the collapse of the bank in 1825 the building was bought by the Hibernian Bank, for whom the architect William Caldbeck created an ingenious design, doubling the Cork Hill façade facing the City Hall, and adding the present entrance with its Ionic portico. In 1886 Lord Edward Street was created to connect Dame Street and Christchurch. Dublin Corporation acquired the building in 1884 and remodelled the north elevation to create a frontage to the new street to the design of Daniel J Freeman (City Architect, 1879-1893).

4.2 Analysis of early cartographic evidence for Castle Street and Cork Hill.

Brooking's map of 1728

A search through cartographic sources indicated the existence of a laneway linking Castle Street with Coper Alley (to the north). This laneway first indicated on a map by **Bernard De Gomme in 1673**, would have originally run through the western side of the site, and was known year later as Pembroke Court. It looks like there was a building on the site of Newcomen Bank at this time, but Brooking's map doesn't show much details apart from a shaded area depicting buildings.

Roque's map of 1756

John Rocque's map of Dublin, 1756, depicts Castle Street linking Dame Street with Fishamble Street, skirting the precinct of Dublin Castle. The prominence and importance of Castle Street in the life of the city is clearly apparent. Many of the houses depicted would have been the last vestiges of timber-frame construction that had survived into the 18th century, as well as newer, brick built, gable-fronted houses erected in the 1600s and early 1700s. Some of the houses shown in Rocque's map were demolished for the construction of the first phase of the Newcomen Bank building. The remainder of the building would have been demolished in the late 19th century to make way for the connection of Dame St and High Street Place with the construction of Lord Edward Street in 1886.

1847 OS Map

Many of the terraced houses and rear gardens seen in Rocque's map immediately north of Dublin Castle have now been removed and the plots have been turned into landscaped areas. Newcomen Bank has now been built.

5 Archaeological potential of the site

There is significant potential for below-ground archaeological remains, structures or artefacts to survive within the proposed study area. This site is on Cork Hill which is located at the bottom of Castle Street. Castle Street was within the core of the medieval walled city. It is bordered on the east by the Castle Steps (built after the 1798 Rebellion to improve security around the castle) and on the south by the medieval graveyard of St Werburgh's.

This part (eastern) of the medieval settlement of Dublin is probably the earliest and previous excavations along the northern side of Castle Street have revealed over 3m of compacted stratigraphy containing Viking Age deposits from the 10th to the 12th century. Human remains dating to the medieval period were identified below the City Hall. An excavation by Archaeological projects Ltd took place on Ship Street - beside Dublin Castle - in March 2020 and investigated a 12th-century medieval quarry. Below Dublin Castle, previous excavations have uncovered parts of the structure of the medieval castle alongside the remains of some of Viking Dublin's original defences. These defences take the form of a stone covered embankment, a section of which has been preserved within the massive circular walls of the thirteenth-century Powder Tower.

In the mid-1990s, Martin Byrne (Arc-Teck) completed two large scale archaeological excavations on adjacent sites at numbers 20-25 and 26-29 Castle Street. The excavations produced remarkable archaeology with stratified deposits up to 3 meters in depth. Several building levels containing the well-preserved remains of at least 20 post and wattle buildings and associated features were identified within the stratigraphy. The site also produced three silver coin hoards which dated the earliest buildings to the 10th century.

Similar stratigraphy and structures would have extended eastwards and possibly beyond the site of the Newcomen bank.

Archaeological monitoring of engineering trial pits

(Please refer to the monitoring report for more details, 2021, Collins & Weldon – licence 21EO121)

A total of seven investigative trial pits were monitored on the site of Newcomen Bank between June and November 2021. The works were carried out by a building contractor on behalf of Howley Hayes Conservation Architects for Dublin City Council. Figures 6 & 7.

The pits were very small only measuring an average of c.60cm by 60cm by 80cm deep. They were all hand excavated by the contractor under archaeological supervision of Aisling Collins & Kevin Weldon (Aisling Collins Archaeological Services, ACAS). Six of the pits were in the basement floor level of Newcomen house with one located in the lift shaft area on the first floor.

Monitoring conclusion

The engineering trial pits were very few and very small and therefore difficult to assess the archaeology.

The monitoring indicated that most of the stratigraphy was excavated and removed from the site during the basement construction of the Bank building in 1781 and again in the later extension built in the 1880s. The new bank building probably required deeper and a more extensive basement levels to provide secure bank vault rooms.

The present Newcomen basement floor levels are located at a depth of between 4m (Castle Street side) and 3m (Cork hill side) below the present street levels. The trial pits revealed post medieval material including old basement floor levels (clay), clay deposits and wall foundations/footings associated with the construction of the bank. The exception to this was in **pit B3** (Figure 7) where a black organic deposit was located at a depth c 75cm below the basement floor or up to 4 meters below the present level of Castle Street (estimated depth). This organic deposit is typical of the type of material associated with Dublin Viking age levels. No dateable artefacts or pottery were recovered from it but it most certainly dates to at least the 13th century and probably earlier.

Further archaeological investigation in this area would be required to ascertain if this deposit is associated with post wattle structures or a fill deposit of a cut feature such as large pit or boundary ditch.

The upper levels of the natural clay or subsoil was located at depths of between 40 to 70 cm below basement floor slab.

In summary, archaeological material is present below the basement floor slabs. This material dates from the 10-13th centuries (at least 30cm deep) and from the late 18th to 19th centuries (maximum depth of up to 50cm).

6 Proposed works, impacts and archaeological mitigation.

Proposed works:

Phase 1: Demolition of the existing four storey lift and stair structure to the west façade of Newcomen Bank and construction of a new five storey lift and stair structure. This new lift pit will measure 2.7m x 2.7m and will require excavation to a depth of 1.8m deep below existing basement floor level. (Previous monitoring for site investigations in room B3 identified organic material at a depth of 75cm below existing basement level). The excavated pit will be infilled and then 6 x 210 dia mini piles will be embedded to bedrock by specialist's contractor design (bedrock estimated 7.5-8m below ground level). Figures 9 & 10.

Phase 2: The floor slab will be lifted throughout apart from the vaults and perimeter corridor that serves the vaults. Estimated depth 40mm.

Phase 3: Removal of internal building features including walls and existing toilets. Figure 8 & 11.

Phase 4: Insertion of new drainage – it is expected this should be housed within about 400mm depth. Figure 12.

Phase 5: Insertion of new water metre (on Castle Street) and is a chamber size of up to 1200mm square, with 200mm/250mm thick walls. Indicative location Figure 13 – exact location tbc.

Impacts:

Phase 1: The excavation for the new lift pit will impact on any archaeology present below basement floor level.

Phase 2: The slab lifting could be an impact on archaeology below if excavation depths must be extended anywhere.

Phase 3: The removal of walls, foundations and internal features could impact on archaeology.

Phase 4: The new drainage will extend 400mm below existing ground level and could impact on archaeology.

Phase 5: Excavation will be required for the new water metre.

Proposed mitigation & recommendations

If there is organic material present in the new lift pit it will have to be archaeologically excavated. A trench box may be required. More testing may be required here.

All basement excavations should be archaeologically monitored including the lifting of floor slab, removal of walls, features, new engineering pits, new drainage/services, manholes internally and externally.

The excavations for the water metre on Castle Street will need to be archaeologically monitored.

Conclusion:

Archaeological material is present below the basement floor slabs. This material dates from the 10-13th centuries (at least 30cm deep) and from the late 18th to 19th centuries (maximum depth of up to 50cm). Additional testing may be required in the new lift pit location prior to construction and if archaeology is present, it will require archaeological excavation.

All construction works in the basement or external area including any enabling works, excavations for service ducts/manholes, water metres, additional engineering pits and the lifting of all or part of all existing floor slabs should be archaeologically monitored.

The archaeologist should be kept informed of any design changes.

The recommendations made in this impact statement are subject to consultation with National Monuments Services & Dublin City Archaeologist.

References and Consultations

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- Lotts, 2017, Public realm design of Castle St and Exchange Court.
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- Sites and Monuments Record*. National Monuments Division: The National Monuments Section of the Department of Environment, Heritage and Local Government.
- Topographical Files*. National Museum of Ireland, Kildare St, D2

Internet Sources:

- www.archaeology.ie
- www.excavations.ie
- www.askaboutireland.ie

Appendix 1: Archaeological Sites and Monuments located in close proximity to Cork Hill/Newcomen Bank (Figure 1)

DU018-020219-

Class: Well

Townland: Dublin South City

Scheduled for inclusion in the next revision of the RMP: Yes

Description: We regret that we are unable to supply descriptive details for this record at present.

DU018-020130-

Class: Pillory

Townland: Dublin South City

Scheduled for inclusion in the next revision of the RMP: Yes

Description: The Friends of Medieval Dublin Map (1978) shows the site of a pillory at the junction of Castle Street and Christchurch Place where it is shown on Speed's map of 1610 (FMD map (1978, O9, Bradley & King 1987II, 151). There is no visible trace.

Compiled by: Geraldine Stout

Date of upload: 23 November 2012

DU018-020765-

Class: Building

Townland: Dublin South City

Scheduled for inclusion in the next revision of the RMP: Yes

Description: We regret that we are unable to supply descriptive details for this record at present.

DU018-020348-

Class: House - 18th/19th century

Townland: Dublin South City

Scheduled for inclusion in the next revision of the RMP: Yes

Description: We regret that we are unable to supply descriptive details for this record at present.

DU018-020324-

Class: House - 18th/19th century

Townland: Dublin South City

Scheduled for inclusion in the next revision of the RMP: Yes

Description: We regret that we are unable to supply descriptive details for this record at present.

DU018-020141-

Class: Building

Townland: Dublin South City

Scheduled for inclusion in the next revision of the RMP: Yes

Description: Before 1200 the King's Exchange and Royal Mount was located on the SW side of Castle Street (Gilbert 1854-9, I, 1). In 1338 Edward III ordered that dies for coining pence should be transported to the Kings Exchange in Dublin (Gilbert 1854-9, 1, 2; FMD map 1978, 28; Clarke 2002, 23). There are no visible surface remains.

Compiled by: Geraldine Stout

Date of upload: 03 December 2012

DU018-020112-

Class: Inn

Townland: Dublin South City

Scheduled for inclusion in the next revision of the RMP: Yes

Description: Conyngham's Inn stood on the N side of Castle Street, and it obtained its name in the reign of Henry VI, when it was occupied by John Conyngham (Gilbert 1854-9, 1, 14). In 1479 it was granted to the proctors of St. Werburgh's parish to furnish a chanter for the Chapel of St. Martin in St. Werburgh's (Bradley & King 1987, 2, 27; FMD map (1978) M12). There are no visible surface remains.

Compiled by: Geraldine Stout

Date of upload: 21 November 2012

DU018-020068-

Class: Chapel

Townland: Dublin South City

Scheduled for inclusion in the next revision of the RMP: Yes

Description: Clarke (1978) shows the chapel site of St. Martin's to the E of St. Werburghs Church (FMD map 1978, G6). This is the chapel which was burnt down in 1311 during a great fire in Dublin City (Gilbert 1861, I, 28). There are no visible surface remains.

Compiled by: Geraldine Stout

Date of upload: 14 August 2012

DU018-020831-

Class: House - indeterminate date

Townland: Dublin South City

Scheduled for inclusion in the next revision of the RMP: Yes

Description: We regret that we are unable to supply descriptive details for this record at present.

DU018-020830-

Class: Habitation site

Townland: Dublin South City

Scheduled for inclusion in the next revision of the RMP: Yes

Description: We regret that we are unable to supply descriptive details for this record at present.

DU018-020990-

Class: House - medieval

Townland: Dublin South City

Scheduled for inclusion in the next revision of the RMP: Yes

Description: We regret that we are unable to supply descriptive details for this record at present.

DU018-020627-

Class: Habitation site

Townland: Dublin South City

Scheduled for inclusion in the next revision of the RMP: Yes

Description: We regret that we are unable to supply descriptive details for this record at present.

DU018-020591-

Class: Habitation site

Townland: Dublin South City

Scheduled for inclusion in the next revision of the RMP: Yes

Description: We regret that we are unable to supply descriptive details for this record at present.

DU018-020040-

Class: Bridge

Townland: Dublin South City

Scheduled for inclusion in the next revision of the RMP: Yes

Description: Known as Castle Bridge this provided access to Dublin Castle from Castle Street (Bradley & King 1987, 37). Excavations in this area between 1985-6 exposed the outer portion of the Castle moat opposite the outer main entrance, the outer edge of the moat curved in at this point to abut one end of a large rectangular barbican aligned on the entrance (Lynch & Manning 1987, 178) (FMD map 1978, C1, Clarke 2002, 22).

Compiled by: Geraldine Stout

Date of upload: 02 August 2012

DU018-020252-

Class: House - 18th/19th century

Townland: Dublin South City

Scheduled for inclusion in the next revision of the RMP: No

Description: We regret that we are unable to supply descriptive details for this record at present.

DU018-020001-

Class: Town defences

Townland: Dublin South City

Scheduled for inclusion in the next revision of the RMP: Yes

Description: The first defensive works in Dublin have been dated to the tenth century (Clarke 2002, 3-4). This comprised an ovoid enclosure made of earth and timber, which occupied the eastern end of a natural ridge overlooking the confluence of the rivers Poddle and Liffey. It straddled the high ground along Castle

Street/Christchurch Place and included the river frontage at Fishamble Street/Essex Street West. Within this embankment were a series of long narrow properties defined by post and wattle boundary fences with houses fronting onto streets. These earthen defences were revealed during excavations at Christchurch Place which formed the S side of this settlement and Fishamble Street where it acted as a flood barrier prior to the construction of the city wall. The banks were substantial in size; at Ross Road the final phase measured 4m high by 5m wide, surmounted by a timber palisade fence.

Around c. 1015 AD there was a western expansion of the defensive enclosure to include High St. and Nicholas St. This earthen fortification was subsequently replaced by the first Hiberno-Norse stone wall (Wallace 1981, 109-54). The new wall almost tripled the size of the defended area by including settled land on the west, along High street. It was built of massive limestone blocks, quarried locally. The area enclosed extended from Parliament Street and Exchange Street Upper in the East to Bridge Street on the west and from Cook Street on the north to Ross Road and Ship Street in the south. A significant stretch of this wall survives along Cook Street. A section of this wall was identified during excavations at Ross Road.

The Anglo-Norman's expanded into the pre-existing town c. 1170 and immediately began to re-fortify the town's defences and expand outside the line of the Hiberno-Norse wall. The most ambitious programme, was the construction of Dublin Castle. Funds for building and maintaining walls, mural towers and gates were raised by means of periodic murgage grants. Dublins first charter dates from 1221. Over subsequent centuries the city wall was altered, with crenellations and buttresses added (Thomas 1992, 80). It was extended in the thirteenth century to enclose the newly-reclaimed areas outside the early city wall with Buttevant Tower placed in the NE side of the reclaimed area at the junction of the old and new wall and Isolde's Tower in the East.

The Anglo-Norman defences in Dublin consisted of a curtain wall with mural towers and gate houses. It has been suggested that there were breaks in it in the east making direct access to the river possible (Simpson 2000, 55). At Dublin castle a rock cut moat was channelled around the castle and fed by the Poddle river. The city walls survive as isolated sections and sections attached to the mural towers. Recent excavations have revealed them below ground surface level. Dublin castle was built in the angle of the existing city walls (Lynch and Manning 2001, 167-204). A barbican gate and drawbridge gave access directly from the town, midway along the N side. The most impressive section of city wall survives at Cook Street, which contains St. Audeon's Gate Excavations at Woodquay revealed a long section of city wall which is preserved at the Civic Offices. There are upstanding remains of the city wall incorporated into the modern town layout at Lamb Alley and Ship Street Lower (Clarke, Dent and Johnson 2002, 31-2).

Access, in and out of the medieval city, was controlled by gates. These varied greatly in design from those with double-turrets and portcullis, to examples with round and or square turrets or a combination of both. There is little upstanding evidence for these except for St. Audeon's Gate which is heavily restored, and the remains revealed at Dublin Castle during 1985-86 excavations. We are largely dependent on historical sources for morphological

information, in particular that contained in Perrot's descriptive Survey of the perimeter towers and walls (1585) which indicate that the gates on the S side of the settlement were particularly formidable (Gilbert 1891-1944, ii, 558-561). These appear on Speeds map of 1610 and have been mapped by the Friends of Medieval Dublin (Clarke 1978; Clarke 2002; Clarke, Dent and Johnson 2002, 31-2).

The city wall was defended by mural towers. They are historically well documented but there is little upstanding information. Perrot's survey (1585) indicates diversity in size and form. Archaeological excavations have revealed sub-surface remains of mural towers such as Geneval's tower at Ross Road and Isolde's tower in Exchange Street.

(315383 233926) (1). Dublin Castle: Known as 'Cork Tower' this was located at the NW corner of Dublin Castle. Under construction in c. 1228; rebuilt in 1413. It stood three storeys above a dungeon in 1585; collapsed in 1624 and was re-built in 1629. It was demolished during the 18th century (Healy 1973, 16). A large portion of the tower was exposed during excavation in 1985-6 (Lynch and Manning 1987, 178, FMD map 1978, A1; Lynch and Manning, 2001, 169-204; Clarke 2002, D5).

(315482 233964) (2) Dublin Castle: Known as the 'Store House Tower' or the 'Powder Tower' this was formerly located at the NE corner of Dublin Castle. Excavations in 1985-86 uncovered most of the base of the circular tower, sitting on bedrock associated with 14th century layers producing pottery and coins. It overlay a section of rampart that enclosed the Viking town. A section of medieval wall abutted the Powder Tower (Lynch and Manning 1987, 178; Healy 1973, 16, FMD map 1978, A2).

(315500 233910) (3) Dublin Castle: Stands at the SE corner of Dublin Castle. Various known as the 'Record Tower', the 'Black Tower' and the 'Wardrobe Tower'. Under construction c. 1228; restored and re roofed c. 1566. It is a massive circular tower, three storeys high. Battlements were added in 1819 (FMD map, 1978, A3). Extant in modified form 2002 (Lynch and Manning 2001, 169-204, Clarke 2002, 22, D15).

(315460 233880) (4) Dublin Castle: This was a small turret which was located mid-way along the S curtain wall. It was three storeys high in 1585; demolished c. 1766 and a polygonal tower erected on the site (Healy 1973, 17, FMD map, 1978, A4, Clarke 2002, 22, D12).

(315434 233922) (5) Dublin Castle: Tower abutting W side of Bermingham tower, square tower, early 13th (Lynch and Manning 186, 18) little square tower, 3 storeys 1585. Lowest courses extant below ground level 2002, Clarke 2002, 22, D19).

(315338 233832) (6) Ship St. Little: Known as 'Stanhurst's Tower' after James Stanhurst, recorder of Dublin, who owned the adjoining property. The remains still survive on the N side of Ship Street. They are round outside the city wall; square inside the wall and stand three storeys high (H c. 14.5m, T c. 1.8m). It was refaced in the

19th century and has a thick base batter. A section of city wall survives either side of it (Healy 1973, 18, FMD map 1978, A6). This S stretch of town wall (L 85m, H 5m) leads up to the boundary of Dublin Castle. It is built of coursed masonry and battered towards the extra-mural street level, which is on the fosse site (Thomas 1992, 2, 80; Clarke, Dent and Johnson 2002, 32). Extant in modified form 2002 (Clarke 2002, 21, D 18)

(315181 233797) (7) Ross Road: Substantial remains of Geneval's Tower was recorded during excavations in 1992. Remains comprise a rectangular structure attached on either side to the sections of city wall. It probably had an outer element. This replaced an earlier stone wall built in the early 12th century which had itself succeeded a Viking bank of 10th century date (Healy 1973, 18, FMD map 1978, A7; Clarke 2002, 21; D 9 Walsh 1994, 16-17; Walsh 2001, 112).

(315044 233797) (8) No.10 John Dillon Street: Known as the Round Tower or Sarsefield's Tower. The position of this tower is indicated on a deed map of 1780 which locates the site behind No. 10 John Dillon Street. It was a relatively low half round tower (H 4.5m) and was filled with earth. In 1585 it was held by Sir Willaim Sarsefield (Healy 1973, 19; FMD map 1978, A8) (Clarke 2002, 21, D 16).

(314966 233871) (9) Lamb Alley; Known as Sedgraves Tower as Christopher Sedgrave occupied the tower in 1585 (Healy 1973, 19). It was two storeys high and formerly accessible by a stair which ran from the town wall (FMD map 1978, A9, Clarke 2002, 21, D17).

(314941-233894) (10) Lamb Alley: Known as the Watch tower or Fagan's Tower because the sentry stood there watching over Newgate Gaol. This building was located on the N side of Lambe Alley (FMD map 1978, A 10). It had an upper chamber accessible by stairs (H 7.5m). In 1618 Alderman Thaddy Duff was given a lease at an annualrate of two shillings (Healy 1973, 19).

(314859 233981) (11) Bridge St. Upper/St Augustine St.: Clarke mentions the former existence of a corner tower c. 1260. It was still there in the 14th century and was probably used as a masshouse in the early 17th century (Lennox 1989, 185, Clarke 2002, 21). Known as Fitzsymon's Tower in 1585 or 'Brown's castle' after Richard Brown who was Lord mayor in 1614, 1615 and 1620. It stood midway between Bridge Street Upper and St Augustine Street. It was square in plan and four storeys high. It is described as the tower at the corner of the old town wall, that is the earlier town wall which lay along the S side of Cook Street. During the Thirteenth century it was granted to John Garget and later Roger Esseburn. In 1492 it was held by Reynold Talbot and in 1585 by Nicholas Fitzsimons (Healy 1973, 20; FMD map 1978, A11). No visible surface trace.

(314808 234120) (12) St Augustine St: Formerly located at the rear of the Brazen Head Hotel in Bridge Street and known as Harbard's Tower. It was two storeys high with the upper storey vaulted (H c. 10m, Wall T 1.65m). It was held in 1584 by Thomas Cheyvers; in 1585 by William Harbard; in 1598 by the widow Harbard and in 1605 by Christopher Cosgrave (Healy 1973, 20, FMD map 1978, A12). Shown on Speeds map 1610 (Clarke 2002, 21,

D10)

(314838 234143) (13) Merchant's Quay: Known as William Usher's House, this fortified building was situated at the NW corner of the city wall where it bordered the river Liffey (Healy 1973, 20). This was built c. 1310 by Geoffrey de Mortone to prevent access to the city wall. In 1317 restoration works took place and a roof passage to the wall was reserved for the public (FMD map 1978, A13).

(315126 234113) (14) Merchant's Quay/ Winetavern Street/Wood Quay: In the 13th century a tower is mentioned here when it was granted to John le Warre (FMD map 1978, A 14; Clarke 2002, 21, D14). Known as 'Prickett's tower' after the occupier in 1585 (Healy 1973, 21). At this time, it was a rectangular tower (ext. dims. L9m, Wth 8.4m, wall H 10.2, T 1.02m). It had a timber loft and a turret on its E side. Probably damaged in the gunpowder explosion of March 1597 (De Courcy 1996, 314-15). No visible surface trace at ground level.

(315257 234127) (15) Exchange Street Lower/Wood Quay: Known as 'Fyans Castle', this tower was situated on the quay wall of the river at the junction of Winetavern Street and Wood Quay. It was first mentioned in 1305. It was granted to John Marcus in 1455 (Healy 1973, 21). In 1585 it was granted to Alderman Richard Fyand (De Courcy 1996, 170). Described by Perrot in 1585 as a square tower, four stories high (L 11.9m, Wth 6.25m, H 13m, wall T 1.25m). Lit by loopholes in the lower stories and windows in other stories (op cit). Shown on Speeds map of Dublin, 1610 (Gillespie 1973, 33; Clarke 2002, 21, D 8).

(315323 234130) (16) Essex Quay/Exchange Street Lower: Known as Casey's tower, after the occupier in 1604 (Healy 1973, 21). This was a small round tower, two storeys high, situated nearly opposite St Michael and John's church. It was granted in 1471 to Robert Fitzsymon on condition that he repaired it with stone and lime and roofed it with oak and slates. Perrots survey of 1585 describes it as a small round tower with a timber loft and two rooms (L 3.75m, Wth 4.37m, wall T 0.93m, wall H 6.7m). In 1726 it was described as a ruin with its S side facing onto Blind Quay (De Courcy 1996, 160). No visible surface remains at ground level (FMD map 1978, A 16).

(315367 234138) (17) Exchange St Lower: Known as Isolde's Tower this mural defence occupied the NE corner of the Medieval walled town of Dublin which projects onto the river Liffey. The city Quay wall abutts the tower on the E and W sides. Excavations in 1993 exposed the base of a circular tower (int. dims. 4.68m, H 2.2m, Wall T 3.9m). This had been built on a plinth; the wall faced internally and externally with large blocks of mortared masonry (Simpson 1994, 21-2). This tower had been demolished in the late 17th century and a property built over it. The finds included medieval and post-medieval pottery, glass fragments, metal leather and human bones (FMD map 1978, A17; Healy 1973, 21). Surviving remnants of the lower courses of Isolde's tower have been conserved. The lowest courses are extant below ground level (Clarke 2002, 21; Clarke, Dent and Johnson 2002, 33, 37).

DU018-020934-

Class: House - Viking/Hiberno-Norse

Townland: Dublin South City

Scheduled for inclusion in the next revision of the RMP: Yes

Description: We regret that we are unable to supply descriptive details for this record at present

DU018-020935-

Class: House - medieval

Townland: Dublin South City

Scheduled for inclusion in the next revision of the RMP: Yes

Description: We regret that we are unable to supply descriptive details for this record at present.

DU018-020509-

Class: House - 16th/17th century

Townland: Dublin South City

Scheduled for inclusion in the next revision of the RMP: Yes

Description: We regret that we are unable to supply descriptive details for this record at present.

DU018-020963-

Class: House - 16th/17th century

Townland: Dublin South City

Scheduled for inclusion in the next revision of the RMP: Yes

Description: We regret that we are unable to supply descriptive details for this record at present.

DU018-020080-

Class: Church

Townland: Dublin South City

Scheduled for inclusion in the next revision of the RMP: Yes

Description: City Hall occupies the site of the Medieval Parish church of St. Mary del Dame's. The earliest reference of the church is in a deed of c. 1179 (Gilbert 1854-9, II, 1). It was assigned to St Patricks Cathedral in 1219-20 (Mc neill 1950, 42). Richard Boyle, Earl of Cork built a mansion on the site in the 16th century later known as Cork House (Gilbert 1854-9, II, 3). This was subsequently replaced by the Royal Exchange, now City Hall (UASCD, VolVIII, 2, 117; FMD map (1978, F9). The Purcell tomb in St Werburgh's church (DU018-379----) was thought to be originally from here. Compiled by: Geraldine Stout Date of upload: 19 November 2012

DU018-020091-

Class: Water mill - unclassified

Townland: Dublin South City

Scheduled for inclusion in the next revision of the RMP: Yes

Description: The 'Dame's Mills' were located in an island of the Poddle River whose water was dammed to produce a flow and the mills derived their name from this feature in 1562 William Foster was employed by the City to build the arches over the water that ran into the Damys mills and in 1609 Jacob Newman became a tenant of the Damas mills (De Courcy 1996, 112). There were two mills in this area in the 16th century belonging

to St Mary's Abbey at the Dissolution (Gilbert 1884, 2, 58, Bradley & King 1987, 1, 39). Clarke has located the mills to the junction of Crane Lane and Dame Street (FMD map 1978, N1). There are no visible surface remains (Clarke 2002, 20 G2). Compiled by: Geraldine Stout Date of upload: 20 November 2012

DU018-020382-

Class: Bridge

Townland: Dublin South City

Scheduled for inclusion in the next revision of the RMP: Yes

Description: We regret that we are unable to supply descriptive details for this record at present.

Appendix 2: Archaeological Finds from surrounding vicinity**National Museum of Ireland topographical files for Castle Street and Cork Hill****NMI Topographical Files: 1881:66**

Reg No 1881:66

Find Object Bone Cone (single-edged)

NMI Topographical Files: 1944:256

Reg No 1944:256

Find Object Bronze Hand Bell

NMI Topographical Files: 1979:68

Reg No 1979:68

Find Object Iron Sword w/Silver Inlay (Viking type)

NMI Topographical Files: Wk20

Reg No Wk20

Find Object Wooden Box

NMI Topographical Files: WK27; WK63

Reg No WK27; WK63

Find Object 2 Iron Jew's Harp

NMI Topographical Files: WK27; WK63

Reg No WK27; WK63

Find Object 2 Iron Jew's Harp

NMI Topographical Files: 1974:96

Reg No 1974:96

Find Object Cut Antler Tine

NMI Topographical Files: 1939:1009

Reg No 1939:1009

Find Object Small Stone Axe

NMI Topographical Files: 1913HumanRemains

Reg No 1913HumanRemains

Find Object Human Bones

Appendix 3: Previous excavations in the surrounding vicinity

Castle street, Cork Hill and Dublin Castle

Excavation Licensed Sites: 95E0034

Excavation Number 95E0034
 Site Address 37-42 Castle Street/1-3 Christchurch Place, Dublin
 Planning Application
 Licencee Clare Byrne
 Excavation Type Archaeological Assessment
 Archaeology Found Yes
 Consultancy Martin & Clare Byrne Archaeological Consultants
 Excavation.ie ID
 Excavation.ie Link
 Client Bolton Enterprises Ltd

Excavation Licensed Sites: 94E0066

Excavation Number 94E0066
 Site Address 20-25 Castle Street, Dublin
 Planning Application
 Licencee Martin Byrne
 Excavation Type Archaeological Re-Evaluation
 Archaeology Found Yes
 Consultancy
 Excavation.ie ID
 Excavation.ie Link
 Client Bolton Enterprises Ltd.

County: Dublin **Site name:** 10–13 Castle Street, Dublin**Sites and Monuments Record No.:** DU018–020 **Licence number:** 07E0387**Author:** Linzi Simpson, Margaret Gowen & Co. Ltd, 27 Merrion Square, Dublin 2.**Site type:** Urban, post-medieval, 17th–19th-century**ITM:** E 715269m, N 733943m**Latitude, Longitude (decimal degrees):** 53.343146, -6.268943

The development site at 10–13 Castle Street is located on the southern side of street within the core of the medieval walled city. It is bordered on the east by the Castle Steps (built after the 1798 Rebellion to improve security around the castle) and on the south by the medieval graveyard of St Werburgh's. This end of the medieval settlement (eastern) of Dublin is probably the earliest and previous excavations along the northern side of the street have revealed over 3m of compacted stratigraphy containing Viking Age deposits from the 10th to the 12th century. The site measures c. 30m north–south by 15m wide at the southern end, widening to 20m at the northern end, but only the eastern side, an open carpark, was available for testing, which took place in June 2007.

The site is bordered on the eastern side by a large wall (the western boundary of the Castle Steps). It stands 2.8m in height high at the northern end, reducing to 1.1m in height at the southern, and has the remains of an

infilled ope at the northern end, possibly a fireplace, which had been filled with modern yellow brick. Rocque's 1756 map of Dublin depicts a series of small dwellings fronting on to what was then a laneway called 'Cole Alley', subsequently replaced by the Castle Steps. The eastern boundary wall can be dated stylistically to the late 17th/early 18th century and was originally presumably part of these structures, although there were no window or door features. This may indicate that this wall represents the rear (east) of the buildings rather than the front. The southern boundary wall, bordering the graveyard (1.1m lower in level than the site), can also be dated to the late 17th/early 18th century in date and was originally part of a brick building, which presumably also fronted on to Cole Alley. It stands 1.1m in height by 0.5m in width and is of brick, but this has been concrete rendered. The northern boundary is a modern concrete wall standing 2.8m in height, while the western walls form the side wall of a warehouse and is rendered in concrete.

Two trenches were excavated to a depth of 4m by a mini digger (restricted by height of gate) at the southern and northern end of the site and these revealed deep deposits of rubble and post-medieval clay, although neither trench was bottomed. Several cellar walls were also found in situ. The remainder of the site remains untested, but there is a high risk that the cellar deposits noted at the eastern half (the carpark) of the site do not extend westwards, as Rocque's map of 1756 shows the central area of the site, to the rear of the houses fronting on to Castle Street and Cole Alley, as undeveloped. Further work on this site is anticipated.

County: Dublin **Site name:** 32-34 CASTLE STREET, DUBLIN
Sites and Monuments Record No.: N/A **Licence number:** 91E079ext.
Author: Alan Hayden, Archaeological Projects Ltd, 25a Eaton Square, Terenure, Dublin 6W.
Site type: Urban medieval
ITM: E 715270m, N 733979m
Latitude, Longitude (decimal degrees): 53.343470, -6.268915

A test-trench excavated on this site in 1991 showed that organic deposits of Hiberno-Norse age survived here (Excavations 1991, 12). Two boreholes were also undertaken for engineering purposes at that time but were not monitored by an archaeologist. They showed that archaeological deposits over 4m thick occurred at a depth of between 2.3m and 6.5m below ground level.

Monitoring of the drilling of eight 900mm-diameter shell and auger piles, two at each corner of the site, was undertaken between 6 and 11 March 1997. Monitoring of the excavation of pile-cap pits, which were restricted to a depth of 2.2m to avoid the surviving archaeological deposits, and general site clearance to a depth of 1m was undertaken between 13 and 27 March 1997. The latter activities did not penetrate deep enough to encounter medieval deposits.

Rich organic archaeological deposits occurred in all eight piles. It was not possible to precisely measure the depth from which individual drill-loads were taken but a rough estimate was made. Each drill-load was examined individually, and any finds retrieved. Archaeological deposits occurred between 6.5m and 2.5m below modern ground level.

The four piles at the rear (north) end of the site all contained remains of medieval buildings in the form of clay floors, layers of ash, chewed-up large structural posts and pieces of post-and-wattle fencing. In contrast, the piles at the front of the site only contained organic material and a lesser number of timbers. This suggests that the houses on the site were set back from the street front, possibly linked to it by pathways. The fragments of houses uncovered are likely to date from the 10th to the 12th century.

Finds included a single sherd of a 12th-century Wiltshire jug, a number of iron points, a knife and an arrowhead, bronze pins, a composite antler comb, bone pins and sewing needles, fragments of wooden stave-built vessels, leather shoes and whetstones.

County: Dublin **Site name:** CITY HALL, CORK HILL, DUBLIN
Sites and Monuments Record No.: N/A **Licence number:** 98E0576
Author: Helen Kehoe, 11 Norseman Place, Stonybatter, Dublin 7.
Site type: Medieval-town wall
ITM: E 715387m, N 734024m
Latitude, Longitude (decimal degrees): 53.343848, -6.267143

The City Hall was built originally as the Royal Exchange by the merchants of Dublin to the design of architect Thomas Cooley. Construction commenced in August 1767 and was completed in 1779. The Royal Exchange

was subject to major alterations in 1851, when it was taken over by Dublin Corporation in order to create new offices. The last major structural alteration carried out on the City Hall to date was in 1926, when the woodwork supporting the dome was found to be badly affected by dry rot.

During the excavation for a proposed lift shaft, a blackstone wall emerged at 2.1m down from present street level (or 1.8m from first-floor level, 6.23m OD). This portion of blackstone wall extended north-south for 2.45m, and a width of 1.1m was exposed, co-linear with the north-eastern structural wall of the City Hall. The southern end of the wall had been demolished during the construction of a deep service trench; its northern end extended into the north section face.

This portion of wall remains appears to form part of the town wall that enclosed medieval Dublin. The condition of the wall was good, comprising faced regular blackstones 0.3m x 0.3m, with thinner, long slabs between them, all bonded by a yellow/white, gritty mortar.

The material excavated out for the service ducts and the overall ground reduction was uniform throughout, consisting of a brown, shell-concentrated clay with some 18th-century inclusions. It would appear that the ground had been built up to create a building surface for the construction of the Royal Exchange in 1769. This clay layer was at least 3.8m deep, as verified during the excavation for the lift ram.

The original floor level of the vaulted basement was 6.413m OD (i.e., with present street level). This floor level was reduced by 0.65m all over the basement area. The material was uniform throughout, consisting of a redeposited, brown clay infill with shell concentrations, animal bone, clay pipe stem, black- and creamware sherds and one 18th-century wig curler. A broken vertex of human skull was retrieved from the fill thrown down over an old manhole trench, at a depth of 1.8m from the existing basement level. There were no significant changes in the overall stratigraphy of the deposits excavated out for the insertion of ducts and services.

The section of blackstone wall co-linear with the internal east wall of City Hall appeared to extend onwards into its northern section, following the geographical position of the eastern side of the town wall, which extended towards present-day Parliament Street up to the now-demolished Dames Gate entrance.

County: Dublin **Site name:** Clock Tower, Dublin Castle
Sites and Monuments Record No.: N/A **Licence number:** 91E0092
Author: Rosanne Meenan, Roestown, Drumree, Co. Meath.
Site type: Urban medieval
ITM: E 715386m, N 733794m
Latitude, Longitude (decimal degrees): 53.341783, -6.267241

Six boreholes were dug at this site located south of the River Poddle which formed the Castle moat here. Evidence for dumping in the medieval period was exposed in the borehole closest to the Poddle. The others were located on higher ground to the south and showed evidence for re-deposition of boulder clay during the building of 19th-century sheds.

County: Dublin **Site name:** Assay Office, Dublin Castle, Dublin
Sites and Monuments Record No.: DU018-020 **Licence number:** 06E0530
Author: Franc Myles, Margaret Gowen & Co. Ltd, 27 Merrion Square, Dublin 2.
Site type: Urban, medieval/post-medieval
ITM: E 715371m, N 733917m
Latitude, Longitude (decimal degrees): 53.342886, -6.267428

Built between 1847 and 1864 and extended to the south with a basement in 1872, the Assay Office originally functioned as a canteen and bar for the NCOs garrisoned in Dublin Castle. Since 1925 it has been occupied by the Company of Goldsmiths of Dublin. The brief involved deepening the existing cellar, excavating through the sub-floor deposits of the primary structure and opening up an area outside and to the west of the standing building, located just inside the Ship Street gate of the castle. This work took place between September and Christmas.

The Assay Office is located on a perceptible slope, with ground levels at 7.6m OD to the south, dropping to 6.4m OD 16m to the north over the extent of the site. The southern culvert of the Poddle extends a further 16m to the

north and was recorded by Linzi Simpson (Excavations 1994, No. 61, 94E0074), while Tim Coughlan had monitored services trenches immediately to the west of the Assay Office the previous year. In addition, that year Simpson undertook work under the southern extension to the Clock Tower Building, prior to its conversion to the Chester Beatty Library. She found that extensive late- or post-medieval quarrying had removed the medieval occupation and surface deposits, but there was no indication as to the extent of this activity.

The archaeological brief was somewhat complicated by the new design, which involved the underpinning of the exterior walls of the building along with the complete removal of the spine wall that divided the primary structure and its southern extension.

It was envisaged that subsoil would be located just over the formation level for the new structure (located at 4.495m OD), with the possibility of checking it for evidence of the early Hiberno-Norse occupation of the area. This, however, was not to be and subsoil was never located, even in a test-pit mechanically dug to 2.7m below formation, which reached 1.8m OD.

The strata recorded in the test-pit were sampled for environmental residues and they are being examined at the time of writing. They consisted in the main of well-stratified, organic deposits containing leather scraps in abundance along with marine shell and pottery, which on initial examination appears to consist of Dublin-type coarseware and the ubiquitous Leinster cooking ware. A deposit of pure silt, 0.12m in thickness at 3.05m OD, possibly represents the western edge of the Black Pool, which deepened further east over the area now occupied by the Castle Gardens.

Cutting this material was a previously unknown channel running east-west, parallel but uphill from the Poddle, with a width of 4.2m and a depth of at least 1.2m. The southern side of the channel was initially recorded in the basement and the yellow material was assumed to be subsoil. However, further excavation, confirmed by a section provided by an underpin trench, indicated that the material sealed a waterlogged organic deposit and further excavation was stymied by the volume of water pouring in from all sides. Excavation in the exterior trench indicated that the channel was associated with two different and quite substantial layers of redeposited subsoil (which may once have formed banks) and there was evidence along the northern side of the feature for a formal revetment, presumably of timber, owing to the edge being vertical.

Clarke illustrates a watercourse emerging from the centre of what is now the Castle Gardens, which join the Poddle at the King's Mills under the Lower Yard, just to the north-east of the Chapel Royal. It is tempting to interpret the feature as a western continuation of this millrace that may have come off the Poddle just before the break of slope in front of the Pool Gate on Bride Street. The pottery recovered suggested a deliberate backfilling, possibly as early as the 14th century, and the line of the watercourse was certainly visible into the early 18th century, when a brick latrine was constructed through the softer fill, with the harder redeposited material at either side. The line of the watercourse may well have acted as a property boundary at a later stage in the medieval period, on the basis of a bank of redeposited material with timber uprights, recorded in the basement trench (but not in the exterior trench). The timber may represent a barrier to stop livestock straying down to the marshy banks of the Poddle.

The redeposited material to the north of the channel was sealed by the demolition material probably associated with the structures on Buckridge's Court, a small street depicted on Rocque's map (1756) that extended into what is now the castle precinct, prior to the construction of the Ship Street barracks in the first decades of the 19th century. A single coin was recovered from this material, which is now undergoing conservation at ArchCon Labs. The material to the south exhibited a more gradual slope and was sealed by late medieval garden soils, which merged into the fill of the channel. This material produced sherds of medieval pottery, scraps of leather, animal bone and metal objects, along with a fragment of a line-impressed square floor tile. This was an Eames and Fanning type L4 and depicted a lion rampant sinister in a pointed quatrefoil frame, apparently the most numerous types found in Ireland, with other examples found at Swords Castle, where it is the dominant motif on the pavement. It has also been found more locally in the Castle itself and in Ship Street and St Patrick's Cathedral.

The 18th-century latrine was similar to those excavated by the writer in Smithfield (Excavations 2003, 581,

00E0272) and was constructed as two chambers, with access via stone steps in the north-eastern corner. The walls were supported on timbers and the brickwork was indicative of the period, the bricks being handmade and held together in a lime mortar with a high sand content. There were no seepage holes present and no characteristic lenses of ash or sand to mask the smell. Aficionados will know that the collection of waste from the city's latrines was privatised in the 18th century, the material being regularly removed by scavengers and brought to lay-stalls, where it was stockpiled and then brought downriver to be used as landfill in the reclamation of the area between Trinity College and Ringsend and across the river at East Wall. It is thus difficult, if not impossible, to accurately date such structures from their contents and the earliest sherds recovered in this instance were of the North Devon variety, which would probably not have been produced before c. 1680. The latrine certainly pre-dates the military occupation of the area and was doubtless associated with one of the properties on Buckridge's Court.

The relatively shallow formation level of the new structure, although truncating medieval deposits, did little to elucidate the topographical entity from which the city receives its name. The recovery of evidence for a formal channel separate to that of the Poddle is, however, of some significance, as is the material purposefully placed on either side of it. The F240 material on the northern side of the channel survived to a maximum depth of 1.43m and had definitely been cut by the feature. This contained as much stone as it did clay and may have been compacted by the stable block of the General Officer Commanding, which was directly above it. Hopefully, the coin recovered from the material will provide some indication as to the date of its deposition.

The F192 redeposited subsoil to the south of the channel had a more gradual slope and a distinctive yellow hue and may be the same material as that recorded by Coughlan in a services trench uphill to the south. If this is the case, it represents quite a substantial deposition of earth that cannot be explained away glibly. One explanation is that it represents the initial upcast from the quarrying activity recorded by Simpson just to the south, which was spread downhill towards the Poddle for convenience, or perhaps to consolidate what might have been marshy ground. What is evident, however, is the depth of material, at least 2.7m of stratified organic deposits, which survives under the Assay Office. This compares with Coughlan's sections uphill, where the yellow material directly overlies the subsoil, except over an 8m stretch where an intervening 'soft wet grey clay' was recorded.

If the shallow nature of the new formation level precluded a satisfactory assessment of the lay of the land in the early medieval period, it is hoped the environmental evidence from the early deposits will inform the topographical analysis of the site and indicate some of the activities that were being undertaken on the southern banks of the Poddle opposite the castle in the early years of its occupation.

References

Clarke, H.B. 2002 Medieval Dublin c.840–c.1540. Loose map in H.B. Clarke, Dublin Part 1, to 1610, Irish Historic Towns Atlas No. 11. Dublin. Eames, E.S. and Fanning, T. 1988 Irish medieval tiles. Dublin

County: Dublin **Site name:** Dublin Castle, Dublin
Sites and Monuments Record No.: N/A **Licence number:** 94E0074
Author: Linzi Simpson, 45 Wyattville Place, Loughlinstown, Co. Dublin.
Site type: Urban post-medieval
ITM: E 715370m, N 733850m
Latitude, Longitude (decimal degrees): 53.342289, -6.267461

The site lay within the grounds of Dublin Castle, to the south of the Clock Tower building. It formed part of an area known, in the medieval sources, as 'the poll' and was thought to form part of the 'Black Pool' from which Dublin (Dubh lin) took its name. In advance of construction work on the Clock Tower building, it was decided to excavate a long trench in an attempt to identify the location of the pool. The excavation took place between June 13-30, 1994, on behalf of the Office of Public Works.

The Pool

The pool was formed by the action of the Poddle river, approaching from the south, meeting with the tidal waters of the Liffey. Previous excavations at Dublin Castle have revealed Viking fortifications on the northern bank of the pool, on a high ridge. The Anglo-Norman castle, which was constructed in the early 13th century, replaced the earlier Viking fortification.

The 'Poll' area was well-developed prior to the Anglo-Norman arrival at Dublin. To the west of the site lay the early church site of St Michael le Pole with its associated round tower and graveyard. In addition, documentary sources indicate that this area was held by the Mac Torcaill family, rulers in Dublin until the Anglo-Norman invasion in 1170. After the invasion the Poddle was re-channelled in an artificial watercourse and the area was settled. Excavations at Ship St. located structures dating from the 13th century onwards.

In the mid-18th century, the area was developed as a military barracks, part of which still occupies the site.

The Excavation

The trench measured 17.5m east-west by 5m north-south and was 7m deep. Bedrock was encountered at 2.96m O.D. and it was evident that all the overlying layers were re-deposited in the post-medieval period. As a result, no medieval archaeological deposits were located in situ although one deposit did produce a medieval sherd of Dublin Cooking Ware.

The Quarry

The bedrock exposed represents an extensive quarry pit. One large deposit, approx. 0.5m in depth, comprised small fragments of chipped limestone interpreted as quarry waste. Several other deposits also had a high concentration of chippings. When the quarry went out of use the area was then backfilled with a series of clays interleaved with layers of domestic refuse. The clays varied in colour and type and, while none were water-deposited, some showed evidence of water action in the form of lenses of sand, silt and pebbles. There were two main phases of deposition. However, the pottery finds indicate a similar date for both phases, sometime in the late 17th/early 18th century.

The quarrying effectively removed any medieval deposits which may have survived at the site.

Post-medieval

Buildings

Several solid post-medieval walls were located during clearance of the site, constructed of large limestone blocks measuring, on average, 0.2m by 0.6m. These were identified as representing the foundations of the Royal Exchequer's Office depicted on the Ordnance Survey of 1837.

County: Dublin **Site name:** DUBLIN CASTLE – DUBH LINN GARDENS

Sites and Monuments Record No.: DU018-020; DU018-020004 **Licence number:**—

Author: Linzi Simpson, Margaret Gowen & Co. Ltd, 27 Merrion Square, Dublin 2.

Site type: Post-medieval

ITM: E 715826m, N 734698m

Latitude, Longitude (decimal degrees): 53.349805, -6.260308

Non-licensed monitoring was carried out in the northeastern corner of the Dubh linn garden, Dublin Castle. The garden lies within the precinct of Dublin Castle, to the south of the main castle complex, and is thought to be the site of the ancient 'Dubh-linn' or Black Pool of Dublin. The presence of a pool in this location was suggested by the discovery of an inlet on the southern side where the remains of a 9th-century Viking settlement and burial-ground was found, the earliest Viking settlement in Dublin (Simpson 2005). The tidal River Poddle fed the pool and a series of mills are recorded along the course, south of the castle and further to the north-east. This area was never developed, probably because it was wet and marshy, and it was formally laid out as a garden in 1633 by the Lord Deputy, Sir Thomas Wentworth. This garden is depicted on de Gomme's map of Dublin of 1678.

The new development was confined to the northeast corner of the present garden, which was redeveloped as a new memorial space by the Office of Public Works. This work involved the removal of an original terraced garden with pond, which was constructed in 1994; a set of photographs from this work are included in the report as an appendix (provided by Ana Dolan, OPW). The monitoring programme established that there was significant disturbance to the ground-movement works in the 1990s but that this was confined to the upper 1m only. Below this level the infill layers of the pool were identified and consist of black silty clays. The upper levels of silts were mixed with brick and mortar, the type suggesting this activity can be dated to the 18th century.

What is clear is that there was no attempt to backfill with dry rubble in the north-east corner of the garden as one might expect if the ground was to be used for building. This, and the complete absence of earlier walls or drains, etc., helps confirm the cartographic evidence that there were no buildings in this location, which formed the core of the original garden as depicted by Rocque. No medieval features or artefacts were uncovered during the works and there was no evidence of any landscape features that could be associated with the 17th-century garden laid out by Wentworth.

Reference Simpson, L. 2005 Viking warrior burials: is this the Longphort. In Seán Duffy (ed.), *Medieval Dublin VI*, 11–62.

County: Dublin **Site name:** DUBLIN CASTLE STATE APARTMENTS
Sites and Monuments Record No.: DU018-020 **Licence number:** 11E0137
Author: Melanie McQuade
Site type: Masonry walls of possible medieval–18th-century date
ITM: E 715350m, N 733980m
Latitude, Longitude (decimal degrees): 53.343459, -6.267721

A series of four masonry wall foundations, from three different phases of construction, were discovered during monitoring of the excavation of a lift pit (4.9m by 3.35m) in the State Apartments. These were subsequently investigated by hand excavation. The earliest wall had an arched foundation and was constructed of limestone blocks bonded with lime mortar. It was 0.9m wide and 0.8m high and was on the same alignment as the 16th-century wall that delimited the presence chamber and the closet (illustrated on the 1673 plan of the castle). The location of the wall did not exactly correspond with that illustrated on the plan, however, suggesting that it may be an earlier medieval wall. The northern end of this wall was truncated during the next phase of building, which was represented by a wall constructed of masonry and brick. This wall corresponds with one illustrated on Robinson's map of 1684 and it remains measured 0.4m wide by 1.25m high. The eastern end of this wall had been truncated during the third building phase, which was represented by two abutting walls of masonry and red brick construction. These walls are illustrated on Alfray's map of 1767. The larger of the two walls was 1.2m wide and c. 1.1m high. The abutting wall was 0.9m wide and 1.1m high.

The earliest wall was preserved in situ. The upper courses of the late 17th-century wall and the mid-18th-century walls were removed, and they were reduced by c. 0.4m in height in order to allow for the construction of the lift. Finds recovered during excavation include sherds of 17th- and 18th-century pottery (North Devon gravel-tempered ware, Sgraffito, red-glazed and black-glazed earthenware). Numerous sherds of painted window glass were also recovered. This glass awaits specialist analysis but was almost certainly from one of the castle buildings, possibly the chapel that was reportedly located beneath the state apartments (Maguire 1974).

Reference

Maguire, J.B. 1974 Seventeenth-century plans of Dublin Castle. *Journal of the Royal Society of Antiquaries of Ireland* **104**, 5–14.

Archaeological Development Services Ltd, The Print House, 22–23 South Cumberland Street, Dublin 2

County: Dublin **Site name:** Dublin Castle
Sites and Monuments Record No.: DU018-020 **Licence number:** 11E0137 ext.
Author: Melanie McQuade
Site type: Urban post-medieval
ITM: E 714853m, N 734468m
Latitude, Longitude (decimal degrees): 53.347950, -6.274998

Works undertaken to improve access to the Revenue Stamping Building in the Lower Courtyard of Dublin Castle were monitored. A series of trenches were excavated to investigate the depth of foundations of the Stamping Building and adjacent perimeter wall, as well as to determine the position and depth of the culverted River Poddle. The main area of excavation was located on the western side of the Stamping Building and was an average of 0.6m deep. Subsoil was not exposed at this level and the excavated material mainly comprised rubble. On the western end of the site was a deposit of soft black organic silt containing fragments of animal bone and shell (012). This deposit extended for c. 2m by 2.5m and was 0.45m deep. It overlaid similar, but firmer clay. A copper alloy pin was recovered from deposit (012).

The location of the Poddle culvert was determined by geophysical survey. The culverted river runs in an east-west direction at the southern end of the site and connects to a manhole at the western end of the Stamping Building. From this point it runs diagonally across the site in a northern direction. Monitoring demonstrated that for most of the length of this area, the Poddle is divided into two culverted channels, which lie 1.3–1.4m below present ground but at the northern end a single culvert lies at 0.5–0.6m.

Wall footings of an earlier boundary wall and the 19th-century stables that occupied this area were identified on the northern end of the site. No such remains were exposed on the southern end of the site, where the construction of the Stamping Building had caused much more ground disturbance.

The earlier boundary wall was a substantial east-west orientated masonry structure (005) that extended the entire width (9m) of the works area. It was parallel to and c. 4m from the current boundary wall along the south side of Dame Lane. Wall (005) was constructed of regularly coursed blocks of limestone and granite, bonded with lime mortar. It was 1m wide and at least 0.8m high. Abutting its northern face was a north-south-aligned masonry and brick-built wall. This wall was 0.65m wide and was truncated to the north by the existing boundary wall.

In the centre of the site, extending from the southern face of the early boundary wall (005) was a north-south-orientated rubble wall (011). Wall (011) was constructed of stone and red brick bonded with lime mortar and measured 2.2m long, 0.35m wide and 0.34m high. Running eastwards from the northern end of wall (011) and abutting the southern face of wall (005) was masonry wall (010). This wall was truncated to the east by the Stamping Building and its remains measured 4.2m long by 0.6m wide. A surface of crushed red brick occupied the area delimited by walls (011) and (010).

Abutting the western end of the boundary wall (005) and extending south-eastwards from it was a masonry wall (004) measuring 6.5m long, 0.7m wide and over 0.9m high. The southern end of wall (004) abutted an east-west masonry wall (032), 1.4m of which was exposed within the excavation area. This wall was 1m wide and over 0.4m high. Adjoining its southern face was a north-south-aligned masonry wall (033) that was 3.3m long, 0.65m wide and 0.22m high. Within the room defined by walls (033) and (032) was a surface of crushed red brick and crushed lime mortar with red brick fragments. The latter partially sealed an east-west-aligned masonry wall footing (034) that measured 2.2m long by 0.75m wide. Part of a crushed red brick surface was exposed along the southern side of this wall.

The truncated remains of a rectangular structure were uncovered c. 12m south of wall (034). The structure was at least 6.3m by 7m and had a concrete floor that was probably a later addition. The external walls were constructed of rough-cut limestone blocks bonded with lime mortar. The northern and western walls had been faced internally with red brick and there was an internal wall of red brick construction.

A north-north-west/south-south-east-aligned masonry wall was located c. 9m north-west of the rectangular structure and a 1.7m-long stretch of this wall was uncovered in a drainage trench. The wall was 0.5m wide and 0.5m high. Another stone wall footing was located 1m further north and a 1m by 0.3m stretch of this wall was exposed. A mortared red brick surface was uncovered to the north of this wall and extended beyond the end of the drainage trench.

An 11.3m by 9.4m area was excavated in the car park on the western side of Palace Street, adjacent to the southern side of the Treasury building. The remains of a red brick and gravel surface set into lime mortar were uncovered at a depth of 0.3m at the south-east end of the dig area and extended under Palace Street. Black organic clay lay at 0.4m and was cut by a brick drain.

A 0.6m-wide service trench was excavated across Palace Street, from the south-east corner of the Chapel Royal towards the south-west corner of the Stamping building. The trench was c. 0.2m deep and the remains of a cobbled surface were uncovered towards its eastern end.

The construction works did not necessitate the removal of any of the exposed structural remains. These were covered with heavy-gauge plastic and a layer of '804' gravel.

ADS Ltd., Unit 4, The Print House, 22-23 South Cumberland Street, Dublin 2

County: Dublin **Site name:** Dublin Castle, Lower Yard

Sites and Monuments Record No.: None **Licence number:** None

Author: Alan R. Hayden

Site type: Ice house

ITM: E 715422m, N 733946m

Latitude, Longitude (decimal degrees): 53.343137, -6.266647

Monitoring of the excavation of a shallow service trench in the south-west corner of the Lower Yard of the castle revealed the remains of the early 19th-century ice house, the upper part of which was demolished at the beginning of the 20th century. The services were laid in another trench dug skirting around the remains of the ice house. Cobbled surfaces, a large drain and the coal holes of two coal cellars attached to the Chapel Royal were also noted.

County: Dublin **Site name:** Record Tower, Dublin Castle
Sites and Monuments Record No.: DU018-020488 **Licence number:** None
Author: Alan R. Hayden
Site type: Medieval castle
ITM: E 715421m, N 733937m
Latitude, Longitude (decimal degrees): 53.343056, -6.266665

The removal of 20th-century render from the north-west side of the Record Tower was monitored. It revealed parts of a number of blocked opes including the doorway of late 17th/early 18th-century passageway that led through the tower to the forerunner of the Chapel Royal.

County: Dublin **Site name:** Dublin Castle
Sites and Monuments Record No.: N/A **Licence number:** —
Author: Ann Lynch, National Parks & Monuments Branch, Office of Public Works
Site type: Pre-Norman Habitation, Medieval/Post-Medieval Castle, 18th-Century Habitation
ITM: E 715371m, N 733917m
Latitude, Longitude (decimal degrees): 53.342886, -6.267428

Excavations, in advance of restoration work, commenced in April '85 and will continue until Spring of '86. Current excavations are concentrated in the area outside the NW. corner tower of the castle. Remains of the corner tower (rebuilt in the 17th century) have been exposed underlying the existing 18th-century castle building. The extent of the surrounding moat (c. 22m. wide) has been defined. The moat was filled in and levelled off in the later 17th century and subsequently sold for housing purposes. The remains of these 18th-century houses have been recorded in detail. A small area outside the edge of the moat is producing evidence of pre-Norman occupation, e.g. wattle structures and a decorated bone comb with Runic inscription (possibly 10th – century). The number of finds recorded to date is c. 35,000 – these include fine collections of 17th and 18th-century ceramics and glass, in addition to the earlier medieval material. (For more recent information on this excavation and on the work carried out at the same location by C. Manning see I.A.P.A. Newsletter No. 3, Spring 1986.)

County: Dublin **Site name:** Dublin Castle, Royal Exchange Ward
Sites and Monuments Record No.: N/A **Licence number:** —
Author: Ann Lynch, National Parks & Monuments Branch, Office of Public Works, Dublin, and Conleth Manning, National Parks & Monuments Branch, Office of Public
Site type: Pre-Norman habitation, medieval/post-medieval castle
ITM: E 715826m, N 734698m
Latitude, Longitude (decimal degrees): 53.349805, -6.260310

Excavations began here in April 1985 and continued until February 1987.

Birmingham Tower

Excavation was carried out here between Autumn 1985 and Summer 1986. Part of a possible late 12th-century enceinte wall, which had been modified in the early 13th century to form part of the curtain wall, was found close to the SW corner tower (the Birmingham Tower). The Birmingham Tower itself was rebuilt in the 18th century and is still in use, but the excavations did reveal the foundations of a square tower projecting from its base and contemporary with it. The function of this extra tower is uncertain but it may have formed part of the medieval town defences, since the 13th-century town wall crosses the moat and abuts the tower at this point. A considerable stretch of the town wall was exposed. An arch had been incorporated in the wall, where it crosses the moat, presumably to allow access from the River Dodd which bounds the castle on its southern side. This arch was blocked up by the end of the 13th century. The deposits recorded in the moat range in date from the 13th -18th centuries. *Genealogical Office site*

An area between the Genealogical Office and Castle Street was excavated during the four months of December '85 to March '86. This area coincided with the outer portion of the castle moat opposite the main entrance. The outer edge of the moat was found to kick in at this point to abut one end of a large rectangular barbican aligned on the main entrance which, itself, was outside the area available for excavation. Only the lower part of the barbican survived and there was a drawbridge pit in it about mid-way across the moat. There was evidence for later medieval repair to the west face of the barbican and post-medieval buttressing work in the drawbridge area.

Powder Tower site

Excavation at this site began in July '86, after the demolition of Blocks 8, 9 and 10, and continued to the end of January '87. The area involved is the north-east corner of the medieval castle. Most of the base of the massive circular corner tower here, known as the Powder Tower, was uncovered. Within the tower a rich 14th-century layer produced pottery, coins and a large amount of scrap iron and bronze. At a lower level within the tower pre-Norman layers were found and clear traces of the eastern ramparts of the Viking town. The earliest of these was a bank with dry-stone facing built on the shore of the Poddle estuary

A section of the medieval city wall was uncovered where it crossed the moat and abutted the Powder Tower. This wall originally had a large open arch spanning the moat at this point, through which the sea could flow at high tide. The moat was partly rock-cut here and the foundations of the tower were found to be sitting on the rock. In late medieval times the arch was blocked up and this blocking wall was built on about 1.5m of moat fill

A 21m-long section of the foundation of the north curtain wall was also uncovered and a long narrow strip of Viking-age material immediately inside it. This wall was founded on the boulder clay but its sloping base continued down the inner face of the moat where it rested on a quarried ledge of rock.

Corke tower site

A further area of Viking-age deposits was uncovered in the extreme north-west corner of the modern castle complex, outside the medieval moat and adjoining the area excavated by Dr Ann Lynch in 1985-86. This was found only after the building contractor had moved onto the site and had to be excavated as a salvage operation during August and September '86. Large portions of three successive rectangular post and wattle houses of the usual Dublin type were excavated as well as part of a timber-lined pit. The finds uncovered include a saw frame made from a curving piece of antler and the cross beam of a light, wooden loom

County: Dublin **Site name:** Assay Office, Dublin Castle, Dublin
Sites and Monuments Record No.: N/A **Licence number:** 03E1517
Author: Margaret Gowen, Margaret Gowen & Co. Ltd, 2 Killiney View, Albert Road Lower, Glenageary, Co. Dublin
Site type: Urban medieval, post-medieval
ITM: E 715334m, N 733852m
Latitude, Longitude (decimal degrees): 53.342315, -6.268001

The Assay Office lies within the Dublin Castle complex, outside the moat of the Anglo-Norman castle on its south-western side. It is close to the Ship Street Gate and adjacent to the 'Clock Tower' building (the Chester Beatty Library) on its western side. The location is close to the supposed location of the Dubh linn, the 'black pool' of Dublin. The Assay Office building was constructed in 1872 as a canteen for non-commissioned officers and privates from the Ship Street Barracks.

The proposed development involves the reduction of the present basement floor level and the construction of a new basement, both outside and to the west of the building and beneath the northern portion of the existing building that currently does not have a basement. Monitoring of four engineering trial holes took place in September 2003. Test-pits 1-3 were opened inside the basement to the rear (southern side) of the building. These pits all revealed roughly the same profile. A 0.3m+ deposit of organic silt, probably of medieval origin, underlies a 0.35m deposit of crushed red-brick rubble in a similar silt matrix. The crushed rubble may be derived from 18th-century buildings cleared to make way for the first phase of barracks development in the 19th century or may be specific to the 1872 redevelopment of the site. Sterile grey boulder clay appears to have been reached in all three pits at a depth of c. 0.65-0.7m below basement floor level (4.69-4.64m OD).

A single deep pit was opened externally on the building's northern side. The remains of filled-in, demolished basements were revealed, underneath which the organic silt of possible medieval origin was again present at 4.2-4.5m OD approximately.

An excavation will be conducted as part of the site preparation works.

County: Dublin **Site name:** Carnegie Trust Building, 21-25 Lord Edward St., Dublin
Sites and Monuments Record No.: N/A **Licence number:** 94E0087
Author: Martin Byrne, 19 Monread Gdns., Naas, Co. Kildare.
Site type: Medieval urban
ITM: E 715310m, N 734013m

Latitude, Longitude (decimal degrees): 53.343766, -6.268302

The site, owned by the Eastern Health Board, is situated on the southern side of the street, between the Dublin Corporation Rates Office (formerly Newcomen Bank) and the recently constructed 'Castlegate' apartment

complex. It is proposed to renovate and alter the existing building. This work will include the provision of a fire escape stairs on either end of the building. Outline planning permission was granted by Dublin Corporation in May 1994, subject to a number of conditions, one of which dealt specifically with the archaeological potential of the site.

Accordingly, two test pits were excavated by hand on June 11 and 14, 1994, to the west and east of the existing building in order to evaluate the surface level of undisturbed archaeological deposits. The trenches measured 1m x 1m and 1.2m x 1m respectively. There was evidence from both test pits that the building was constructed with a 'stepped' foundation which had caused extensive disturbance (up to 1.8m in depth) to archaeological deposits when it was inserted in the 1920s. As a consequence, the surface level of undisturbed archaeological deposits are located at 8.69m OD and 8.72m OD respectively. It is probable, however, that this degree of disturbance is only confined to the area of the foundations and that the level of undisturbed archaeology is actually higher in other areas across the site (see No. 59 above, 20-25 Castle St., for comparative levels for the rear of the site).

County: Dublin **Site name:** CITY HALL, CORK HILL, DUBLIN

Sites and Monuments Record No.: N/A **Licence number:** 98E0576

Author: Helen Kehoe, 11 Norseman Place, Stonybatler, Dublin 7.

Site type: Medieval-town wall

ITM: E 715387m, N 734024m

Latitude, Longitude (decimal degrees): 53.343848, -6.267143

The City Hall was built originally as the Royal Exchange by the merchants of Dublin to the design of architect Thomas Cooley. Construction commenced in August 1767 and was completed in 1779. The Royal Exchange was subject to major alterations in 1851, when it was taken over by Dublin Corporation in order to create new offices. The last major structural alteration carried out on the City Hall to date was in 1926, when the woodwork supporting the dome was found to be badly affected by dry rot.

During the excavation for a proposed lift shaft, a blackstone wall emerged at 2.1m down from present street level (or 1.8m from first-floor level, 6.23m OD). This portion of blackstone wall extended north-south for 2.45m, and a width of 1.1m was exposed, co-linear with the north-eastern structural wall of the City Hall. The southern end of the wall had been demolished during the construction of a deep service trench; its northern end extended into the north section face.

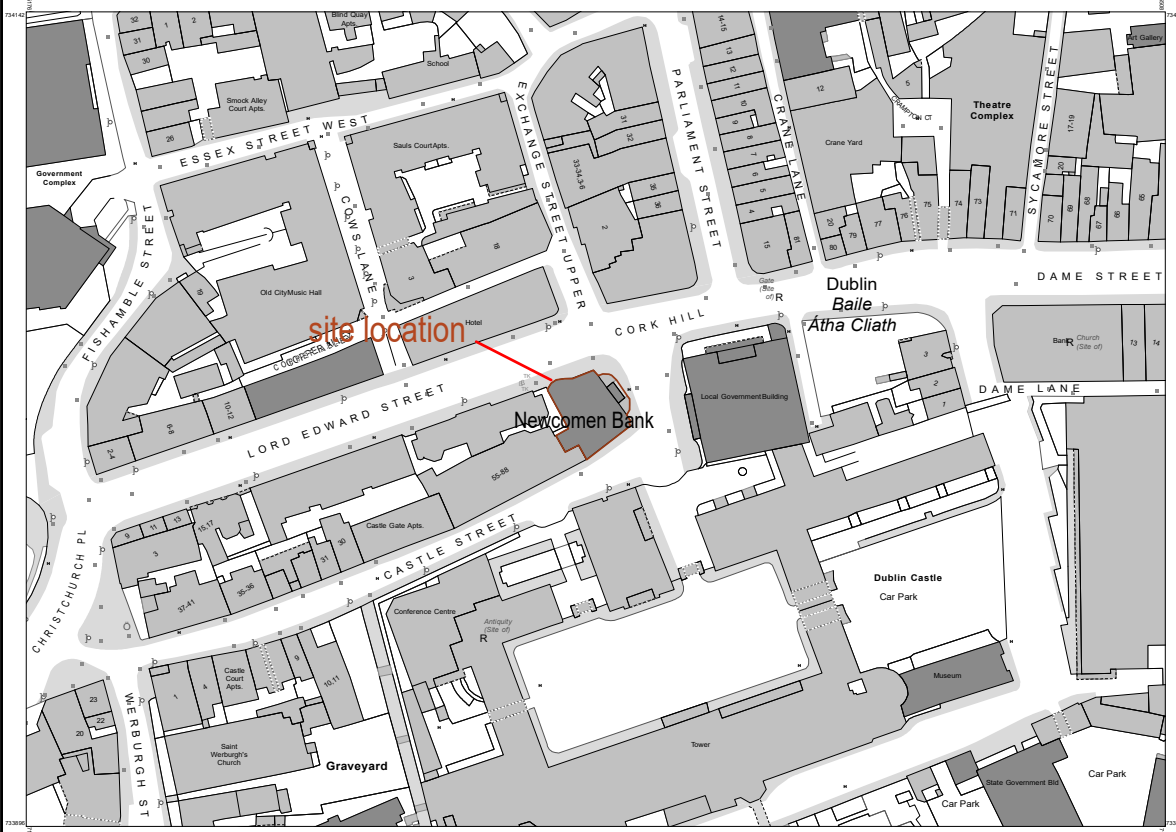
This portion of wall remains appears to form part of the town wall that enclosed medieval Dublin. The condition of the wall was good, comprising faced regular blackstones 0.3m x 0.3m, with thinner, long slabs between them, all bonded by a yellow/white, gritty mortar.

The material excavated out for the service ducts and the overall ground reduction was uniform throughout, consisting of a brown, shell-concentrated clay with some 18th-century inclusions. It would appear that the ground had been built up to create a building surface for the construction of the Royal Exchange in 1769. This clay layer was at least 3.8m deep, as verified during the excavation for the lift ram.

The original floor level of the vaulted basement was 6.413m OD (i.e. with present street level). This floor level was reduced by 0.65m all over the basement area. The material was uniform throughout, consisting of a redeposited, brown clay infill with shell concentrations, animal bone, clay pipe stem, black- and creamware sherds and one 18th-century wig curler. A broken vertex of human skull was retrieved from the fill thrown down over an old manhole trench, at a depth of 1.8m from the existing basement level. There were no significant changes in the overall stratigraphy of the deposits excavated out for the insertion of ducts and services.

The section of blackstone wall co-linear with the internal east wall of City Hall appeared to extend onwards into its northern section, following the geographical position of the eastern side of the town wall, which extended towards present-day Parliament Street up to the now-demolished Dames Gate entrance.

Planning Pack Map



CENTRE COORDINATES:
ITM 715342,734019

PUBLISHED: 25/01/2021 **ORDER NO.:** 50167456_1

MAP SERIES: 1:1,000 **MAP SHEETS:** 3253-10

Drawing No.: L-000
Drawing Title: Site Location Map
Site Boundary

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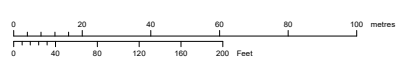
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ACAS Aisling Collins Archaeology Services

Project Name: **NEWCOMEN BANK**

Figure 1: **Site Location**

Address: **16 Castle Street Dublin 2** Client Ref.: **Howley Hayes/DCC**

Date: **14/6/2023** Scale: **As indicated** Dwg by/amended: **Kevin Weldon**

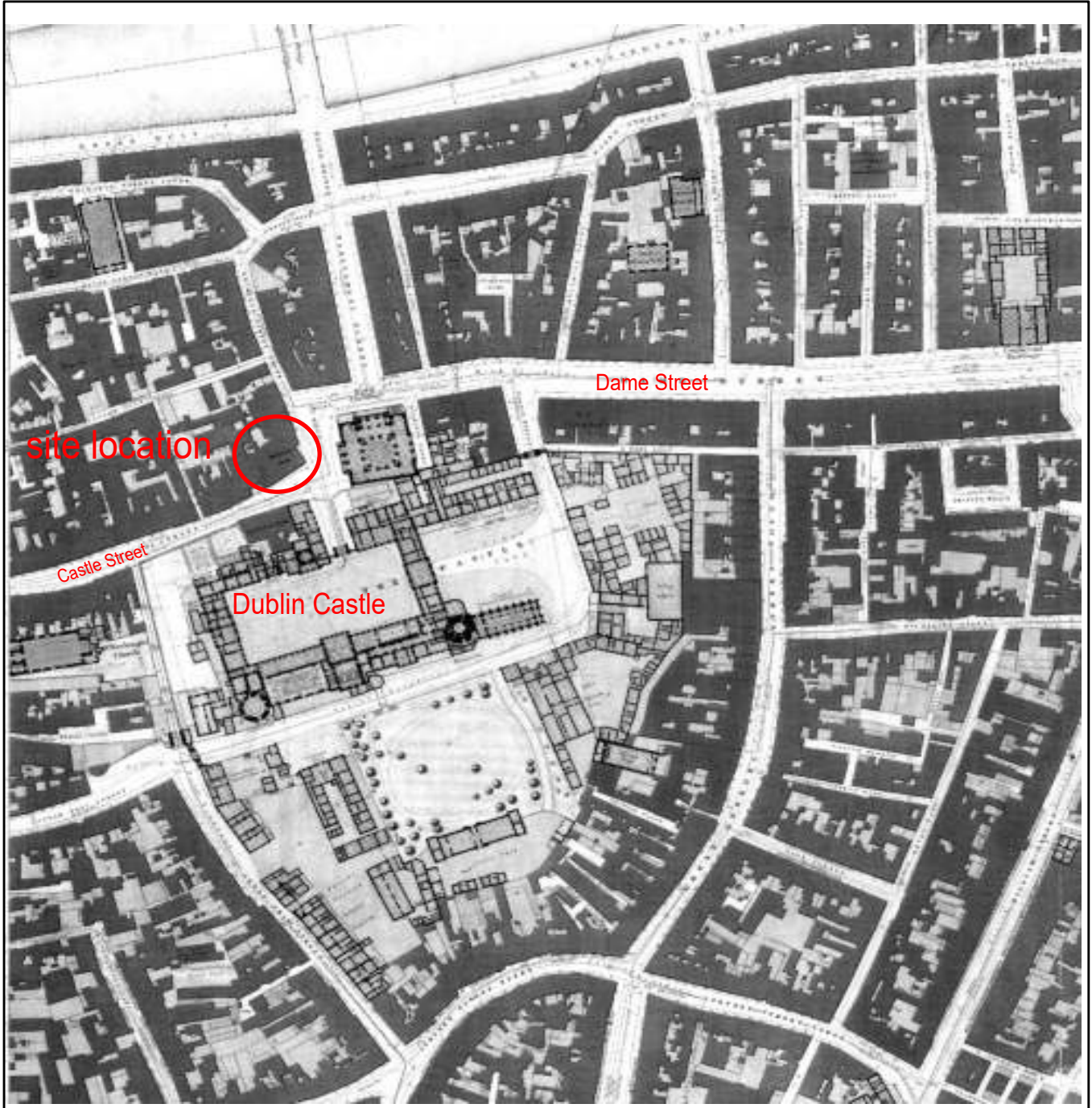


Project Name
NEWCOMEN BANK

Figure 2
Site location - Rocque map dated 1756

Address 16 Castle Street Dublin 2	Client Ref. Howley Hayes/DCC
--------------------------------------	---------------------------------

Date 14/6/2023	Scale As indicated	Dwg by/amended ; Kevin Weldon
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Newcomen bank (south facing facade c 1850)

ACAS
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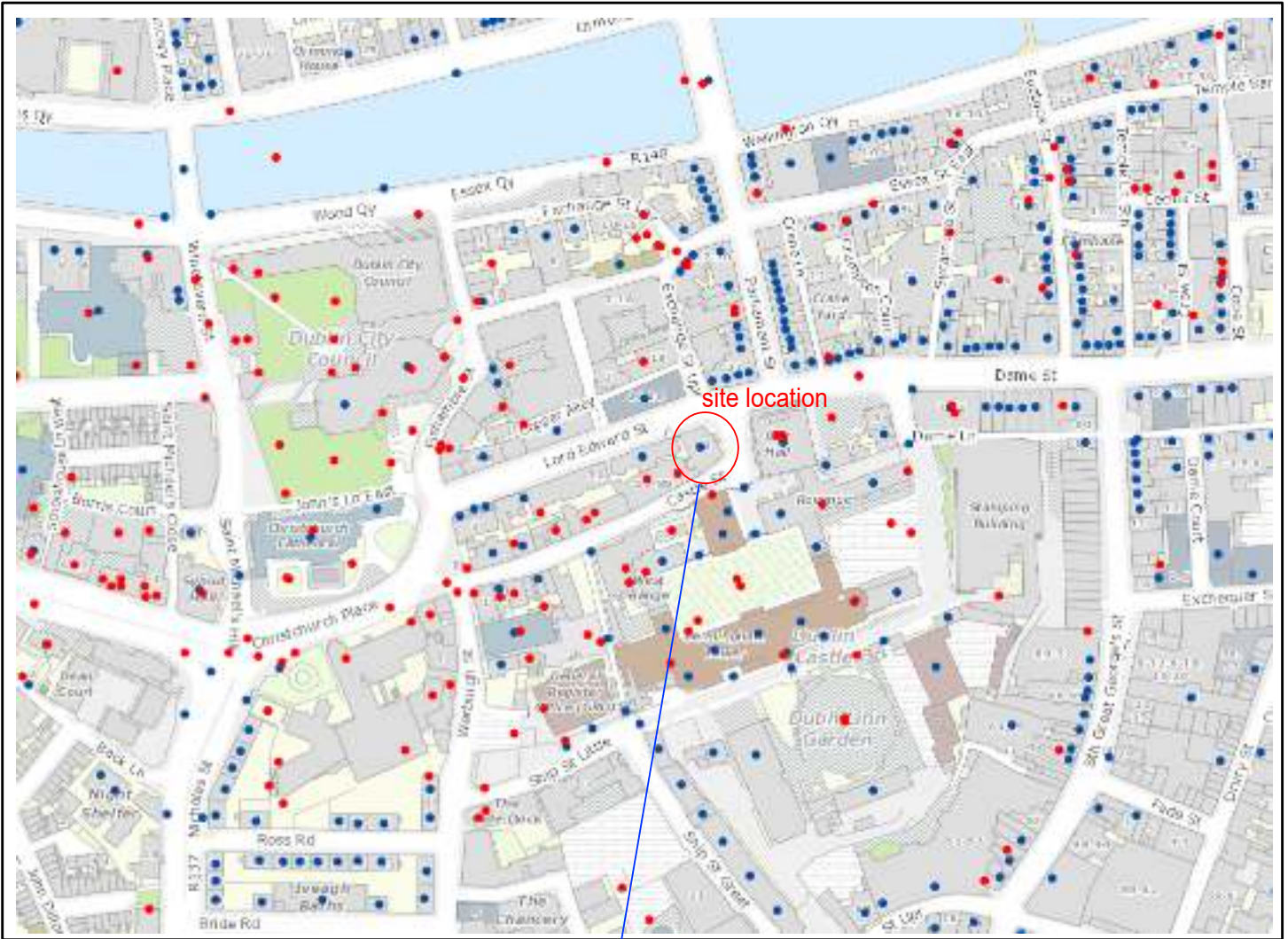
Project Name
NEWCOMEN BANK

Figure 3
 Site location - Ordnance survey 1847

Address 16 Castle Street Dublin 2	Client Ref. Howley Hayes/DCC
--------------------------------------	---------------------------------

Date 14/6/2023	Scale As indicated	Dwg by/amended ; Kevin Weldon
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RMP MAP



- National monuments service (record of monuments & places) zones of notification
- national inventory of architectural heritage
- archaeological sites
- zone of notification

ACAS
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Project Name
NEWCOMEN BANK

Figure 4
National Monuments Service - record of monuments & places map (RMP map)

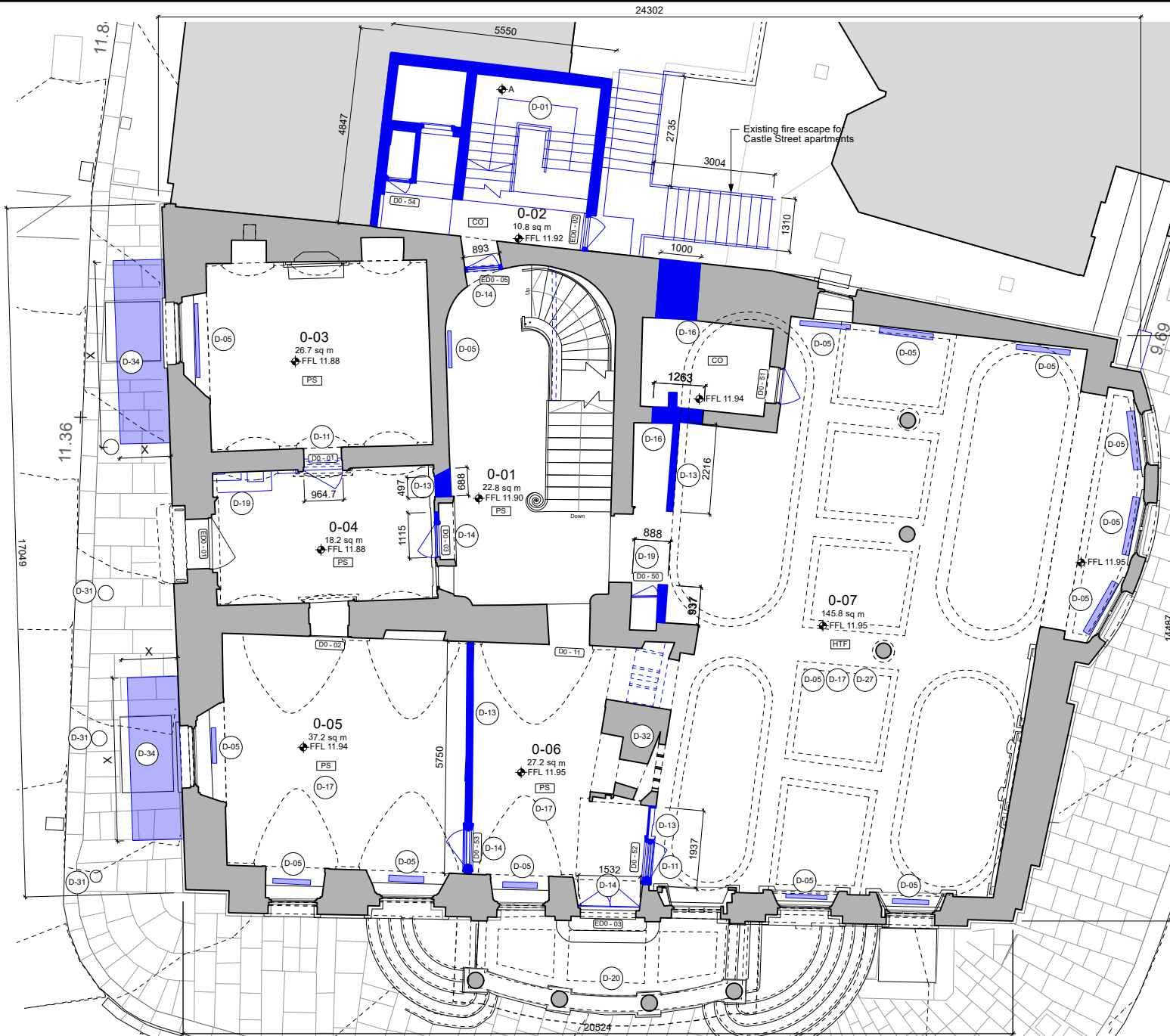
Address
16 Castle Street Dublin 2

Client Ref.
Howley Hayes/DCC

Date
14/6/2023

Scale
As indicated

Dwg by/amended ;
Kevin Weldon



NOTES

- D-01 Demolish existing service core.
- D-02 Reopen previous opening in existing masonry wall.
- D-03 Create new opening in existing masonry wall.
- D-04 Decommission and remove existing plantroom and associated ductwork. Take down and remove metal stud partitions including plasterboard ceiling.
- D-05 Remove all redundant electrical storage heaters & associated fixtures and fittings.
- D-06 Remove modern cement plaster / tanking system.
- D-07 Remove plywood sheeting and screed from top of existing stone steps. Graft repairs needed Remove concrete from lower part of flight - Bottom 4 steps.
- D-08 Remove modern sanitary ware, cubicles and associated plumbing.
- D-09 Floor throughout main basement - Remove screed, DPM, carefully lift granite paving and set aside for reuse. Remove concrete slab and excavate for new floor.
- D-10 Historic granite flagstone floor to vaults and in corridor - allow for lifting and relaying stone paving (to make level with internal floor and facilitate drainage). Allow for specialist cleaning in line with specification S-001
- D-11 Doors of some age to be carefully removed and stored for reuse in a different location within the building.
- D-12 Remove modern concrete block wall.
- D-13 Non-historic internal plasterboard stud partitions/build outs to be removed.
- D-14 Non-historic door to be removed. Refer to door survey and schedule for further information.
- D-15 Timber doors of some age to be upgraded to 30 minute fire rated doors. Refer to door survey and schedule for further information.
- D-16 Create new opening in concrete safe wall. To provide a new opening required for fire escape.
- D-17 Remove timber access floors to ground floor rooms 0-05, 0-06 & 0-07.
- D-18 All modern floor coverings to be removed. Historic floors to be inspected underneath modern coverings.
- D-19 Remove modern internal joinery/cupboards.
- D-20 Remove temporary enclosure to portico.
- D-21 Remove ceiling over lobby.
- D-22 Allow for carefully taking down and repositioning to another room.
- D-23 Widen existing opening in masonry wall.
- D-24 Carefully take down existing timber staircase and set aside for reuse.
- D-25 Remove modern wired glazed screen on landing.
- D-26 Create new opening in slate roof covering for new dormer access hatch.
- D-27 Timber floorboards to be lifted to facilitate routing of services throughout and installation of fire rated boards between the timber joists to upgrade fire ratings within the floors. See attached method statement.
- D-28 Existing fireplaces to be retained and protected throughout the demolition works. Existing enclosed to be opened up for inspection where required. Refer to HHC photographic survey.
- D-29 Existing fireplace to be opened up and made good.
- D-30 Carefully remove late twentieth century fixtures, electrics, comms, light fittings and services to decorative plaster, plain plaster or plasterboard ceilings. Note only minimal repairs required to plaster ceilings. All necessary repairs to be carried out by a specialist plasterwork contractor.
- D-31 Existing coal holes to be retained.
- D-32 Existing wall containing remnants of historic fireplace.
- D-33 Take down existing masonry wall for the provision of a new part K compliant staircase.
- D-34 Open up basement areas to the cellars. Carefully lift existing paving and set aside for reuse in basement where replacement stone is required. Open up historic areas/basement lightwells to provide natural light and ventilation into the basement.

GENERAL NOTES

- Refer to repair specifications for further information on the repair and conservation of existing fabric.
- Refer to photographic survey for further information on the condition of the building.
- All existing doors to be retained unless otherwise noted.
- All existing windows to be retained unless otherwise noted.

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Project Name NEWCOMEN BANK		Figure 5	
Address 16 Castle Street Dublin 2		Client Ref. Howley Hayes/DCC	
Date 14/6/2023	Scale As indicated	Dwg by/amended: Kevin Weldon	

Use figured dimensions only. Do not scale drawings. Check all dimensions on site. Read in conjunction with specification and consultants drawings. Report any discrepancies to the architect before putting work in hand. Copyright of this drawing is vested in the architect and may not be reproduced, in whole or part, without prior consent.

Floor Finishes	
TT	Modern Timber Floor
HTF	Historic Timber Floor
PS	Portland Stone
CS	Cement Screed Finish
CT	Ceramic Tiles
GF	Granite Flagstone
PF	Plywood Floor Finish

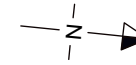
Rev	Date	Description	Dn.	Chk.
/	22.03.23	Preliminary Draft Issue	AS	ALO
A	22.05.23	Preliminary Draft Issue	AS	ALO
B	26.05.23	Preliminary Draft Issue	AS	ALO

PRELIMINARY DRAFT

Newcomen Bank basement floor plan

Trial Hole in lift core on ground floor.

test pit lift shaft



Brick vaults below Castle Street

Lift Shaft

CASTLE STREET

test pit B7

test pit B3

test pit B2

test pit B17

B-16

B-15

B-12

B-13

B-14

B-01

B-05

B-10

test pit B11

B-11

basement 11

B-07

B-06

B-09


test pit B6

DAME STREET

Brick vaults below Street

CORK HILL

LEGEND

 Trial hole in floor to investigate base of wall. It is assumed that the floor screed has been poured onto a black plastic membrane on top of the existing stone flag floors. Screed to be broken out locally and membrane cut back. Once stone flag joints are revealed a number of flags should be identified and marked for temporary removal to allow a trial hole measuring approximately 600x600mm by 900mm deep. Flags to be removed carefully in single intact pieces and replaced in original positions once architect and engineer have inspected and instructed reinstatement.
Note: Archaeologist supervision required.

USE FIGURED DIMENSIONS ONLY.
DO NOT SCALE DRAWINGS.
READ IN CONJUNCTION WITH SPECIFICATION AND CONSULTANTS DRAWINGS.
REPORT ANY DISCREPANCIES IN DRAWINGS TO ARCHITECT BEFORE PUTTING WORK IN HAND.
CHECK ALL DIMENSIONS ON SITE.
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REV.	NOTES	DATE	INITIALS
	DRAFT		

HOWLEY HAYES
19 Rock Hill, Blackrock, Co. Dublin
Newcomen Bank Building
CLIENT: Dublin City Council
DRAWING TITLE: Basement Floor Plan -
PROJECT STAGE: Preliminary
JOB NO: 0569
DATE: 14/6/2023

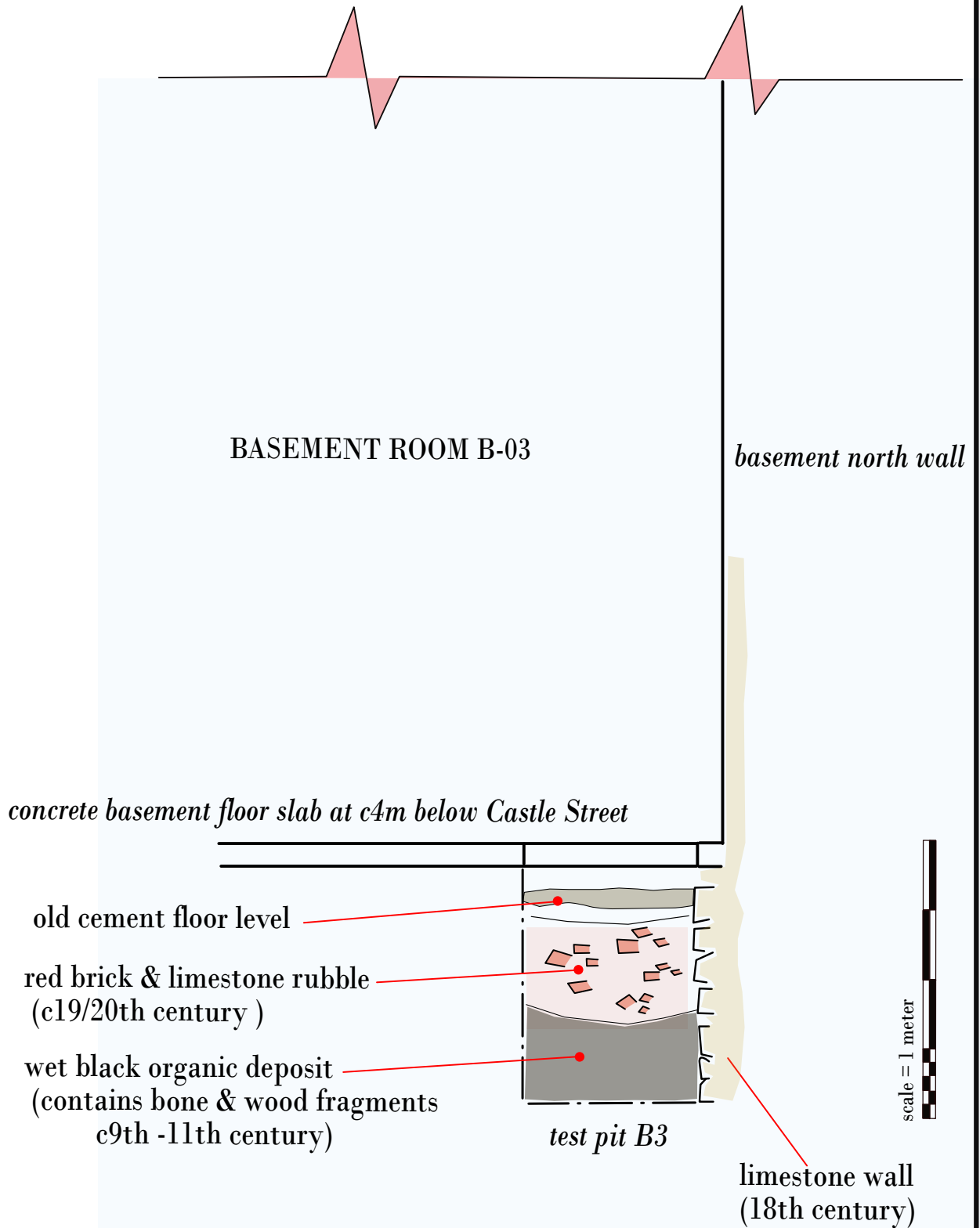
ACAS
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Project Name: **NEWCOMEN BANK**

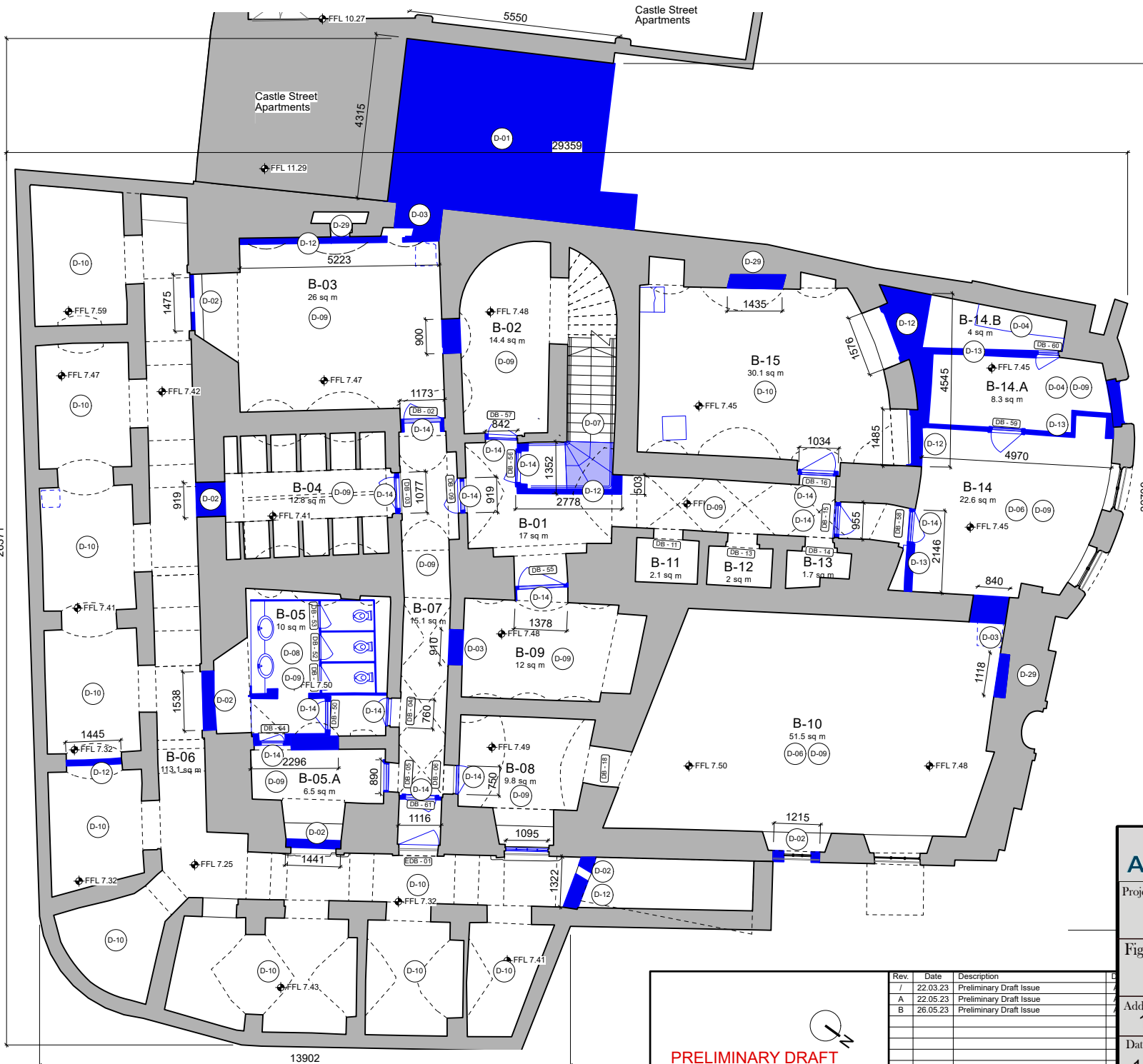
Figure 6: **Newcomen Bank - basement floor plan showing test pit locations**

Address: 16 Castle Street Dublin 2	Client Ref.: Howley Hayes/DCC
Date: 14/6/2023	Dwg by/amended: Kevin Weldon
Scale: As indicated	

TEST PIT B3 - EAST ACING PROFILE A-A



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Project Name		NEWCOMEN BANK
Figure 7		Newcomen Bank - test pit B3 profile A-A
Address	16 Castle Street Dublin 2	Client Ref. Howley Hayes/DCC
Date	14/6/2023	Dwg by/amended ; Kevin Weldon
	Scale As indicated	



NOTES

- D-01 Demolish existing service core.
- D-02 Reopen previous opening in existing masonry wall.
- D-03 Create new opening in existing masonry wall.
- D-04 Decommission and remove existing plantroom and associated ductwork. Take down and remove metal stud partitions including plasterboard ceiling.
- D-05 Remove all redundant electrical storage heaters & associated fixtures and fittings.
- D-06 Remove modern cement plaster / tanking system.
- D-07 Remove plywood sheathing and screed from top of existing stone steps. Graft repairs needed Remove concrete from lower part of flight - Bottom 4 steps.
- D-08 Remove modern sanitary ware, cubicles and associated plumbing.
- D-09 Floor throughout main basement - Remove screed, DPM, carefully lift granite paving and set aside for reuse. Remove concrete slab and excavate for new floor.
- D-10 Historic granite flagstone floor to vaults and in corridor - allow for lifting and relaying stone paving (to make level with internal floor and facilitate drainage). Allow for specialist cleaning in line with specification S-001
- D-11 Doors of some age to be carefully removed and stored for reuse in a different location within the building.
- D-12 Remove modern concrete block wall.
- D-13 Non-historic internal plasterboard stud partitions/build outs to be removed.
- D-14 Non-historic door to be removed. Refer to door survey and schedule for further information.
- D-15 Timber doors of some age to be upgraded to 30 minute fire rated doors. Refer to door survey and schedule for further information.
- D-16 Create new opening in concrete safe wall. To provide a new opening required for fire escape.
- D-17 Remove timber access floors to ground floor rooms 0-05, 0-06 & 0-07.
- D-18 All modern floor coverings to be removed. Historic floors to be inspected underneath modern coverings.
- D-19 Remove modern internal joinery/cupboards.
- D-20 Remove temporary enclosure to portico.
- D-21 Remove ceiling over lobby.
- D-22 Allow for carefully taking down and repositioning to another room.
- D-23 Widen existing opening in masonry wall.
- D-24 Carefully take down existing timber staircase and set aside for reuse.
- D-25 Remove modern wired glazed screen on landing.
- D-26 Create new opening in slate roof covering for new dormer access hatch.
- D-27 Timber floorboards to be lifted to facilitate routing of services throughout and installation of fire rated boards between the timber joists to upgrade fire ratings within the floors. See attached method statement.
- D-28 Existing fireplaces to be retained and protected throughout the demolition works. Existing enclosed to be opened up for inspection where required. Refer to HHC photographic survey.
- D-29 Existing fireplace to be opened up and made good.
- D-30 Carefully remove late twentieth century fixtures, electrics, comms, light fittings and services to decorative plaster, plain plaster or plasterboard ceilings. Note only minimal repairs required to plaster ceilings. All necessary repairs to be carried out by a specialist plasterwork contractor.
- D-31 Existing coal holes to be retained.
- D-32 Existing wall containing remnants of historic fireplace.
- D-33 Take down existing masonry wall for the provision of a new part K compliant staircase.
- D-34 Open up basement areas to the cellars. Carefully lift existing paving and set aside for reuse in basement where replacement stone is required. Open up historic areas/basement lightwells to provide natural light and ventilation into the basement.

GENERAL NOTES

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Project Name: **NEWCOMEN BANK**

Figure 8: **proposed basement demolition plan (areas in blue)**

Address	16 Castle Street Dublin 2	Client Ref.	Howley Hayes/DCC
Date	14/6/2023	Dwg by/amended ;	Kevin Weldon
Scale	As indicated		

Rev.	Date	Description
/	22.03.23	Preliminary Draft Issue
A	22.05.23	Preliminary Draft Issue
B	26.05.23	Preliminary Draft Issue

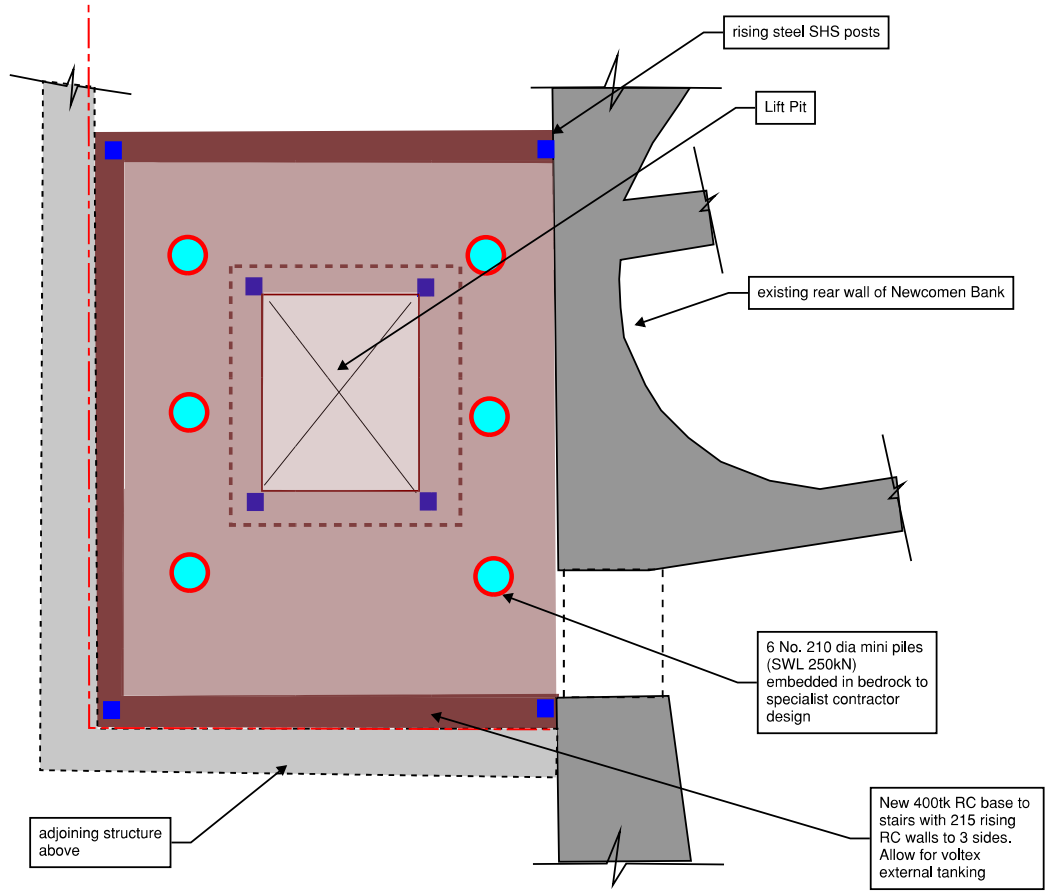
PRELIMINARY DRAFT



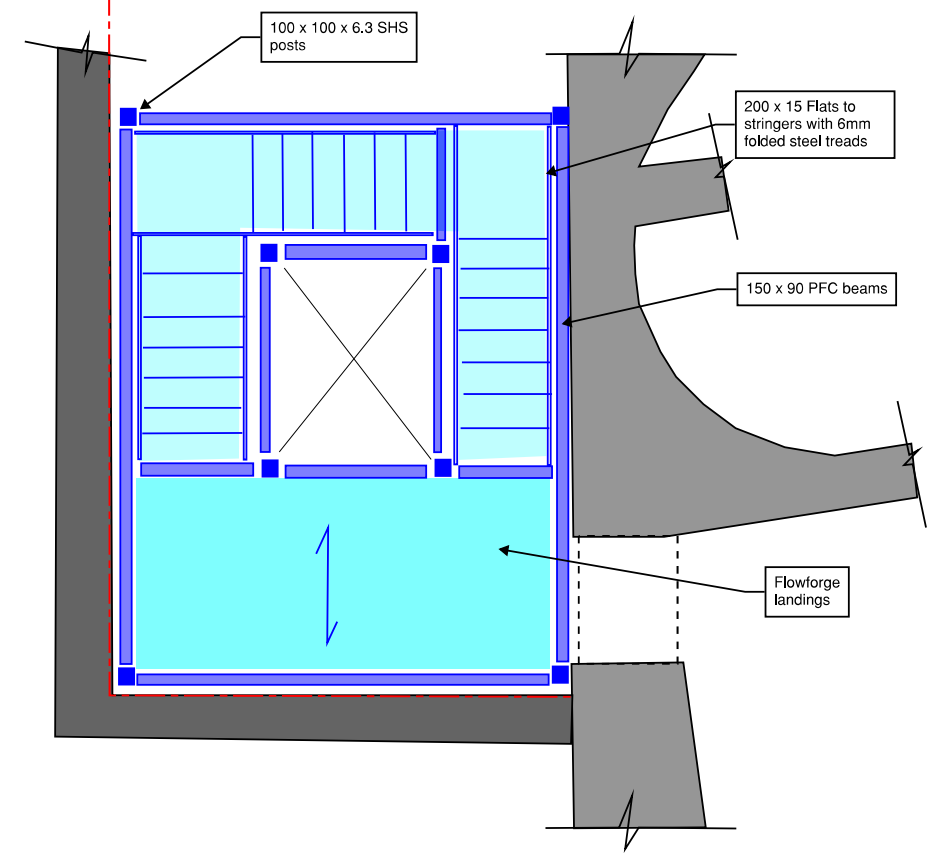
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13902

27709



BASEMENT LEVEL PLAN

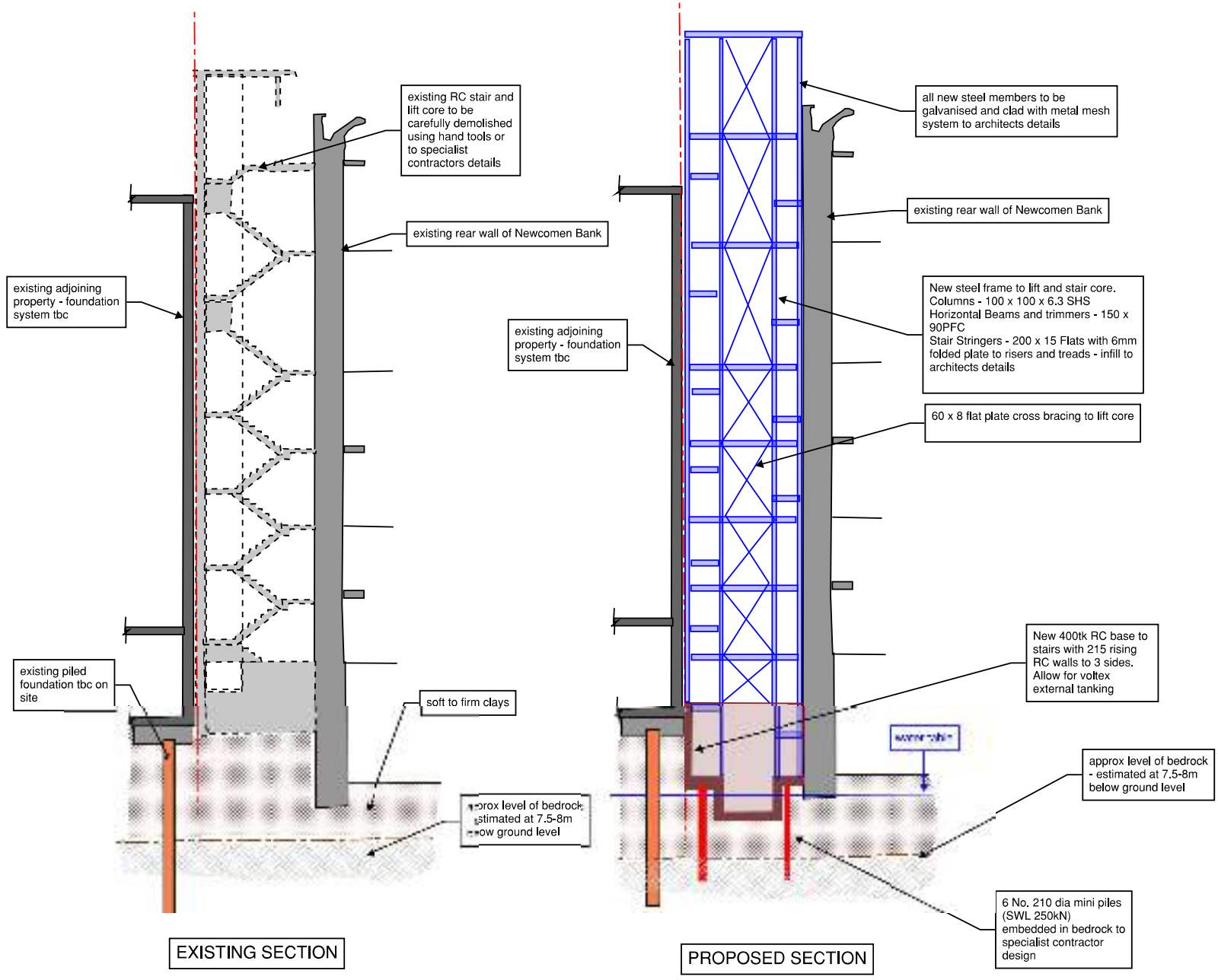


TYPICAL FLOOR LEVEL

GENERAL NOTES

ACAS		
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Project Name NEWCOMEN BANK		
Figure 9 proposed Lift plan		
Address 16 Castle Street Dublin 2		Client Ref. Howley Hayes/DCC
Date 14/6/2023	Scale As indicated	Dwg by/amended ; Kevin Weldon

Project Name Newcomen Bank	Project No: 2020	
New Rear Stairs & Lift System - Plans		
Scale: NTS	Drawing No: SK09	Drawn By: KOM



Assumed demolition process is to carefully take down the walls and stair-flights & landings using a combination of hydro-demolition and saw cuts to form small sections that can be safely removed from site.



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Project Name
NEWCOMEN BANK

Figure 10
proposed new lift - section plan

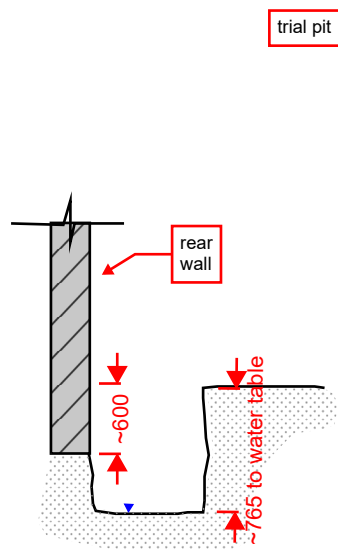
Address
16 Castle Street Dublin 2

Client Ref.
Howley Hayes/DCC

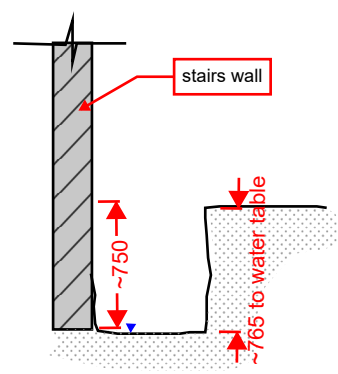
Date
14/6/2023

Scale
As indicated

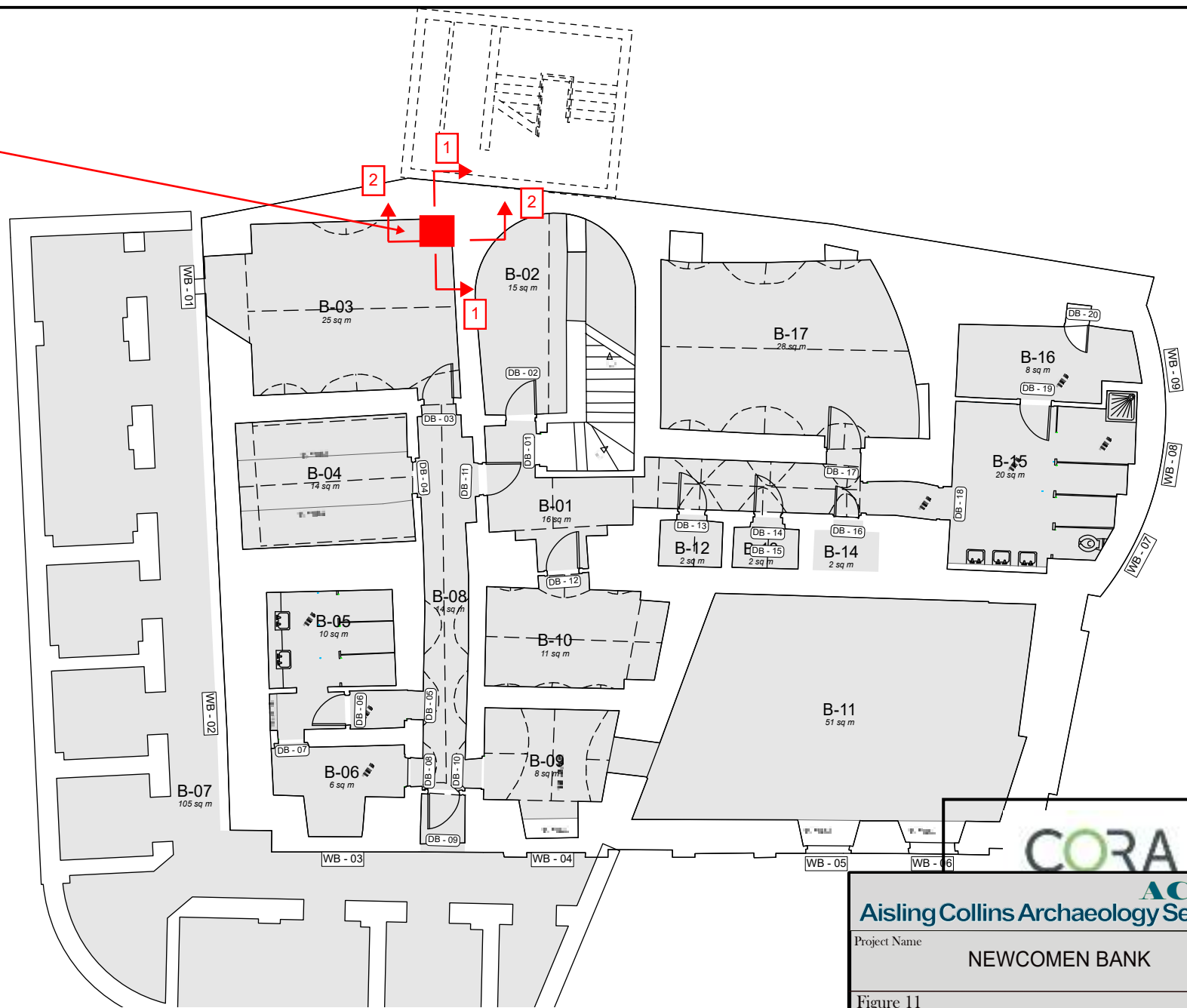
Dwg by/amended ;
Kevin Weldon




SECTION 1-1



SECTION 2-2



CORA

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Project Name		
NEWCOMEN BANK		
Figure 11		
opening up floor plans in basement		
Address		Client Ref.
16 Castle Street Dublin 2		Howley Hayes/DCC
Date	Scale	Dwg by/amended ;
14/6/2023	As indicated	Kevin Weldon

REVISION SCHEDULE				
REV. NO.	REV. DESCRIPTION	REV. DATE	DRAWN	CHECKED
PRE1	PRELIMINARY	28/04/2023	BF	KOM



DRAINAGE LEGEND	
	FOLL SEWER (EXISTING/PUBLIC)
	FOLL SEWER (EXISTING/PRIVATE)
	FOLL SEWER (NEW)
	FOLL SEWER MANHOLE (NEW)
	FOLL SEWER MANHOLE (EXISTING/PUBLIC)
	FOLL SEWER MANHOLE (EXISTING/PRIVATE)

- DRAINAGE NOTES:**
1. READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS AND ENGINEERS DRAWINGS.
 2. ALL WATER SERVICES MANHOLES, PIPE MATERIALS AND OTHER FEATURES SHALL COMPLY WITH THE LOCAL AUTHORITY AND IRISH WATER CODES OF PRACTICE FOR THE RELEVANT ASSET.
 3. WHERE COVER TO PIPES IS LESS THAN 1.2M IN ROADS, 1.0M IN PUBLIC AREAS AND 0.8M IN GRASS/LOD AND SCAPED AREAS, SURROUND THE PIPE UP TO 150MM WITH 100MM CONCRETE AND LARGER PIPES WITH 150MM CONC.
 4. BACK-FILL TRENCHES IN ROADS WITH MOT STONE COMPACTED IN LAYERS.
 5. CLOSE ROAD GULLIES IN THE DIRECTION OF TRAFFIC FLOW.
 6. ADJUST FOUNDATION DEPTHS, AS NECESSARY, ADJACENT TO SEWERS TO AVOID UNDERMINING OF THE FOUNDATIONS.
 7. DO NOT SET OUT FROM THIS DRAWING. SETTING OUT TO BE DONE FROM ARCHITECT'S

NOTE:
POP UPS, GULLIES AND OTHER FEATURES TO BE COORDINATE WITH PROJECT STAKEHOLDERS, EXTERNAL LANDSCAPING AND FINAL LEVELS TO BE CONFIRMED.

IMPORTANT NOTE:
LEVELS AND LAYOUT OF EXISTING DRAINAGE TO BE CONFIRMED PRIOR TO COMMENCEMENT OF CONSTRUCTION WORK. CONTRACTOR TO ALLOW FOR ANY INVESTIGATION WORK REQUIRED.

NOTE:
EXISTING FOLL SEWER TO BE RETAINED, SUBJECT TO SUITABILITY. CONTRACTOR TO ALLOW FOR CAMERA SURVEY OF EXISTING NETWORK. ALL NEW CONNECTIONS TO BE FORMED STRICTLY ACCORDANCE WITH IRISH WATER DETAILS.

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Project Name
NEWCOMEN BANK

Figure 12
basement - new drainage plan

Drawing Stage:	Project Details:
PRELIMINARY	Site Address: NEWCOMEN AVENUE, DUBLIN 02
	Client: DUBLIN CITY COUNCIL
	Architect: HOWLEY HAYES COONEY
	M&E Designer: -
	Contractor: -

Notes

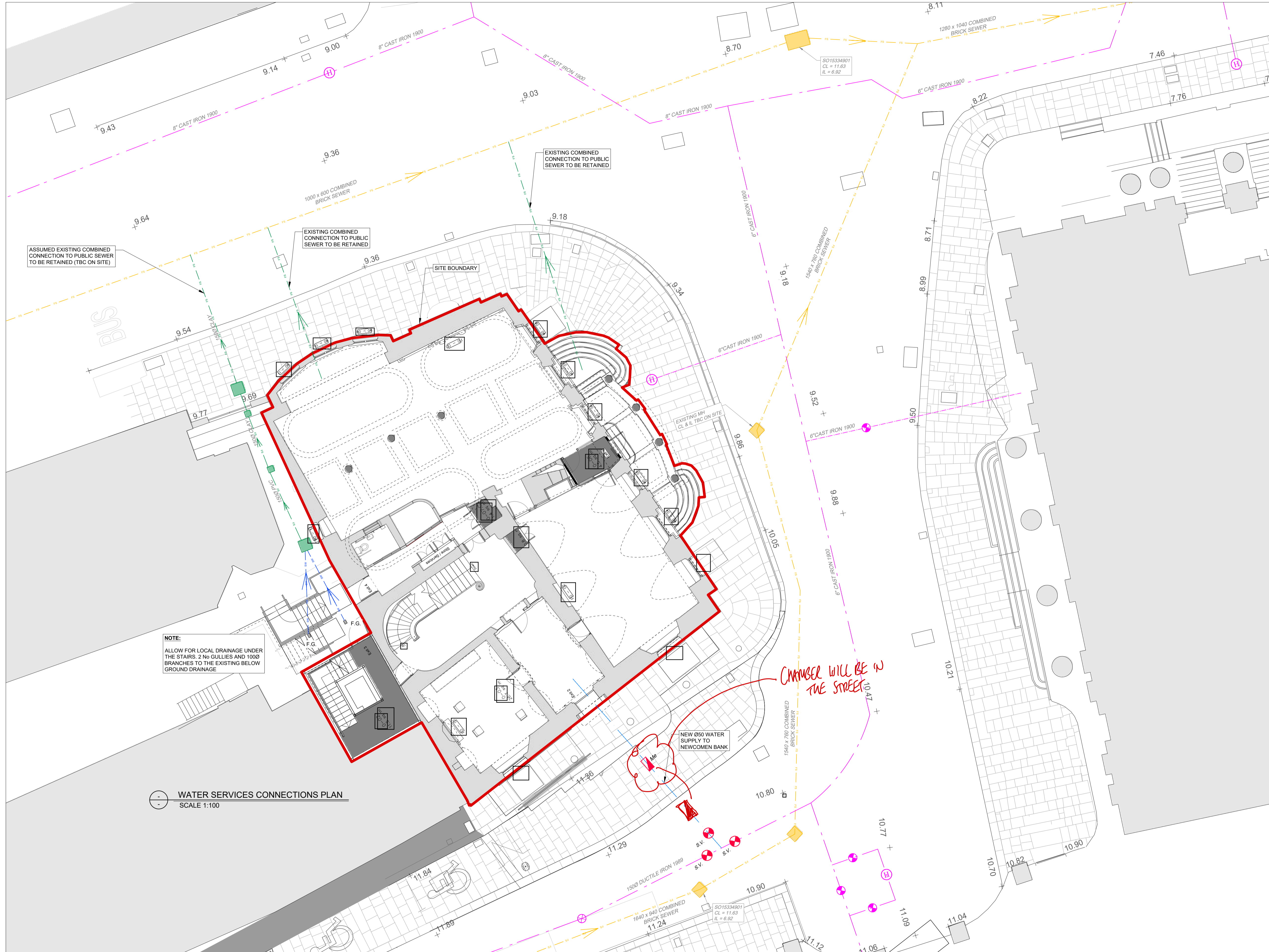
DRAFT

Drawn by: BF
Checked by: KOM

Project Name: NEWCOMEN BANK

Drawing Title: PROPOSED BASEMENT DR

Address	Client Ref.
16 Castle Street Dublin 2	Howley Hayes/DCC
Date	Dwg by/amended;
14/6/2023	Kevin Weldon
Scale	
As indicated	



REVISION SCHEDULE				
REV. NO.	REV. DESCRIPTION	REV. DATE	DRAWN	CHECKED
PRE1	PRELIMINARY	25/05/2023	BF	KOM
PL1	PRELIMINARY	01/06/2023	BF	KOM

DRAINAGE LEGEND	
	FOUL SEWER (EXISTING/PUBLIC)
	FOUL SEWER (EXISTING/PRIVATE)
	PUBLIC WATERMAIN (EXISTING)
	PROPOSED Ø50 WATERMAIN (NEW)
	EX FSMH FOUL SEWER MANHOLE (EXISTING/PUBLIC)
	S.V. NEW SLUICE VALVE
	M ₀ NEW METER
	SLUICE VALVE OPEN (EXISTING)
	SLUICE VALVE CLOSED (EXISTING)
	HYDRANT (EXISTING)

- DRAINAGE NOTES:**
1. READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT'S AND ENGINEER'S DRAWINGS.
 2. ALL WATER SERVICES MANHOLES, PIPE MATERIALS AND OTHER FEATURES SHALL COMPLY WITH THE LOCAL AUTHORITY AND IRISH WATER CODES OF PRACTICE FOR THE RELEVANT ASSET
 3. WHERE COVER TO PIPES IS LESS THAN 1.2M IN ROADS, 1.0M IN PUBLIC AREAS AND 0.8M IN GRASSED/LANDSCAPED AREAS, SURROUND THE PIPE UP TO 150MM WITH 100MM CONCRETE AND LARGER PIPES WITH 150MM CONC.
 4. BACK-FILL TRENCHES IN ROADS WITH MOT STONE COMPACTED IN LAYERS.
 5. CLOSE ROAD GULLIES IN THE DIRECTION OF TRAFFIC FLOW.
 6. ADJUST FOUNDATION DEPTHS, AS NECESSARY, ADJACENT TO SEWERS TO AVOID UNDERMINING OF THE FOUNDATIONS.
 7. DO NOT SET OUT FROM THIS DRAWING. SETTING OUT TO BE DONE FROM ARCHITECT'S DRAWINGS.
 8. MANHOLE COVERS AND FRAMES SHALL COMPLY WITH THE LA STANDARD PATTERN WITH MIN OPENING OF 600MM & WITH CLOSED KEYWAYS. HEAVY DUTY TYPE A MANHOLES IN ALL TRAFFICKED AREAS AND MEDIUM DUTY TYPE B ELSEWHERE, TO BS EN124. TYPE C MAY BE USED IN ENCLOSED PRIVATE GARDENS.
 9. DOUBLE GULLIES, WITH SEPARATE CONNECTIONS TO MAIN, TO BE PROVIDED AT LOW POINTS AND AT THE ENDS OF CUL DE SACS. MAXIMUM RUN OF PIPE 15M. MINIMUM PIPE DIAMETER 150MM. MAXIMUM GULLY SPACING FOR ROADS UP TO 7M WIDE TO BE 50M UNO.
 10. MANHOLES ON HOUSE DRAINS TO BE IN PRIVATE PROPERTY. HOUSE DRAINS SHALL NOT PASS THROUGH PROPERTY THEY DO NOT SERVE.
 11. RECORD DRAWINGS OF THE AS CONSTRUCTED WORK SHALL BE MADE AVAILABLE TO CORA AT THE END OF THE PROJECT.

IMPORTANT NOTE:
LEVELS AND LAYOUT OF EXISTING DRAINAGE TO BE CONFIRMED PRIOR TO COMMENCEMENT OF CONSTRUCTION WORK. CONTRACTOR TO ALLOW FOR CCTV CAMERA SURVEY OF EXISTING NETWORK. ALL NEW CONNECTIONS TO BE FORMED STRICTLY IN ACCORDANCE WITH IRISH WATER DETAILS

NOTE:
EXISTING FOUL SEWER TO BE RETAINED - SUBJECT TO SUITABILITY. CONTRACTOR TO ALLOW FOR CCTV CAMERA SURVEY OF EXISTING NETWORK. ALL NEW CONNECTIONS TO BE FORMED STRICTLY IN ACCORDANCE WITH IRISH WATER DETAILS

NOTE:
ALLOW FOR LOCAL DRAINAGE UNDER THE STAIRS. 2 No GULLIES AND 1000⁰ BRANCHES TO THE EXISTING BELOW GROUND DRAINAGE.

CHAMBER WILL BE IN THE STREET

WATER SERVICES CONNECTIONS PLAN
SCALE 1:100

Drawing Stage:
PLANNING

Project Details:	
Site Address:	NEWCOMEN AVENUE, DUBLIN 02
Client:	DUBLIN CITY COUNCIL
Architect:	HOWLEY HAYES COONEY
M&E Designer:	-
Contractor:	-

Notes

DRAFT

Drawn by:	Checked by:	Approved by:	Date:
BF	KO'M	KO'M	25/05/2023
Project Name:	Scale:	Project Number:	
NEWCOMEN BANK BUILDING	A.S. @ A1	2050	
Drawing Title:	Project:	Originator:	Zone:
WATER SERVICES CONNECTIONS PLAN	NBB	CORA	ZZ

CORA CONSULTING ENGINEERS

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10 Lower Mount Street,
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Level:	Type:	Discipline:	Drawing No:	Stage:	Revision:
00	DR	C	004	PL	PL1