

Appendix 5.4.1

**ARCHAEOLOGICAL ASSESSMENT
AT
23–28 PARNELL SQUARE NORTH
DUBLIN 1**

LICENCE NUMBER: 15E0361

**ON BEHALF OF: DUBLIN CITY COUNCIL & PSQ
DEVELOPMENTS LTD (JOINT APPLICANTS)**

I.T.M.: 715483/735172

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ABSTRACT

Irish Archaeological Consultancy Ltd has prepared this report on behalf of PSQ Developments Ltd, to study the impact, if any, on the archaeological and historical resource of a proposed development, which is located at 23–28 Parnell Square North, Dublin 1 (715483, 735172). The excavation and report were undertaken by David McIlreavy of IAC Ltd under licence 15E0361, as part of a pre-planning assessment of the site.

The proposed development area is located within the zone of archaeological potential for Dublin City (DU020-018), which is a recorded monument. It is clear that the site has been impacted upon by development dating from the 1760s, with the construction of houses fronting onto Parnell Square North and associated features such as basements and mews structures. During the later part of the 20th century the rear of Nos 23-28 was further impacted by the removal of garden plots, returns and outbuildings, when a school was established at the site.

A total of six test trenches and seven sit investigations test pits were investigated across the proposed development area. Excavation revealed a concentration of archaeological activity in Test Trench 2 at the southern end of the sit near the street front. Archaeological features recorded at a depth of 0.8m BCGL consisted of a small pit filled with shell and animal bone, an 18th century wall footing, a deposit of disarticulated human and animal bone, and a possible well feature. This archaeological activity was constrained to the northeast and southwest by Georgian barrel-vaulted cellars. Testing has indicated that a significant portion of the site has been affected by the construction of these cellars. A possible post medieval cess deposits was also identified in this area. Further to the northern part of the site, test pits identified that it may be possible that the backfilled remains of part of the post medieval mews structures are present beneath the highest part of the site.

The human bone disturbed by trenching was retrieved from site and subject to osteological analysis. This indicated that a minimum number of eight people are represented; including five late adolescents or adults of male and female sex, two young children and an infant. There is potential for this deposit of bone to extend beyond the limits of the current test trenches however it is constrained within an 8m area due to the existing basement to the southeast. A sample of bone was been submitted for C14 dating and the results have dated the remains to between 692-961 A.D. These remains may represent clearance from a burial ground in the surrounding area.

The deposit of human remains will be directly impacted upon by the excavation of material for the insertion of the basement level. The impact is considered to be negative and very significant.

The post medieval remains identified outside of the proposed basement area will be impacted upon by ground disturbances associated with the construction of the proposed development. The impacts are considered to be negative and moderate.

The potential remains of a post medieval midden or cess deposit has been identified within the centre of the site, whilst the possible backfilled remains of mews structures have been identified in the northern part of the site. These areas will be impacted upon by ground disturbances associated with the construction of the proposed development. The impacts are considered to be negative and moderate.

It is possible that ground disturbances outside of the footprint of the test trenches may have a direct impact on previously unrecorded archaeological deposits that have the potential to survive beneath the current ground level with no surface expression. This includes the area beneath the modern assembly structure that is located to the rear of Nos 23-28. The impacts are considered to be negative and have the potential to range from moderate to profound significance.

While it is acknowledged that preservation in-situ of archaeological remains is the preferable option wherever possible, the archaeological remains identified within the proposed development area will be impacted upon by the construction of a new basement and associated ground disturbance. As such preservation by record of all archaeological remains is recommended.

The below mitigation measures will be carried out following demolition of the existing assembly hall on site and as a separate works package prior to the mobilisation of the main construction contractor.

The archaeological remains within Trenches 1 and 2, including the post medieval basements and the redeposit of human remains, will be excavated (preserved by record) within an open area measuring 250m² prior to the commencement of construction works.

The archaeological remains within Trench 3 and Test Pit 105 including the post medieval basement remains, will be excavated (preserved by record) within an open area measuring 195m² prior to the commencement of construction works.

The archaeological remains within Test Pit 104, consisting of the post medieval cess deposit, will be excavated (preserved by record) within an open area measuring 95m² prior to the commencement of construction works.

A section at the rear of the proposed development area will be opened and graded down with a mechanical excavator in order to assess the nature and extent of the potential backfilled mews structures. This section may be accompanied by excavation from the floor level in this part of the site

(estimated at 150m² with exposed section). However, due regard will need to be given to the entrance to the site in order to allow continued vehicular access.

Overburden within these areas will be removed by a mechanical excavator under strict archaeological supervision. Mechanical excavation shall cease following the identification of archaeological levels. Recording of the archaeological features will then be carried out by hand by a team of archaeologists under the direction of a licence eligible archaeologist and in consultation with the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht and the Dublin City Archaeologist.

If required the open excavation areas may be increased in size and all archaeological deposits will be recorded to the depth of the natural subsoils.

Full provision will be made available within the construction programme to allow for the resolution of all archaeological features on site.

A minimum of four additional test trenches will be excavated within the site, following the demolition of the assembly hall, in order to assess the nature and extent of any additional archaeological remains that may survive within the proposed development area. This will be carried out as part of the advance archaeological works contract and will be undertaken by a licence eligible archaeologist. Dependant on the results of the testing exercise, further archaeological mitigation may be required, such as preservation by record and/or archaeological monitoring.

It is the developer's responsibility to ensure full provision is made available for the resolution of any archaeological remains, both on site and during the post excavation process, should that be deemed the appropriate manner in which to proceed.

Please note that all recommendations are subject to approval by the National Monument Section of the Heritage and Planning Division, Department of Culture, Heritage and the Gaeltacht and the Dublin City Archaeologist.

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1 INTRODUCTION

1.1 GENERAL

The following report details the results of a programme of archaeological testing undertaken at 23–28 Parnell Square North, Dublin 1 (ITM 715483, 735172) to inform a planning application. This assessment has been carried out to ascertain the potential impact of the proposed development on the archaeological resource that may exist within the proposed development area. The assessment (Licence 15E0361) was undertaken by David McIlreavy of Irish Archaeological Consultancy Ltd (IAC), on behalf of PSQ Developments Ltd.

Test trenching was carried out at over two days between the 18th and 19th June 2018. Excavation was completed using a 13 tonne 360-degree JCB back acting excavator, with a flat, toothless bucket, under strict archaeological supervision. A total of six trenches were mechanically excavated across the proposed development area which measured 49.5 linear metres.

During the course of the works site investigation pits were also subject to archaeological monitoring. A total of seven pits were excavated within the site.

Excavation revealed a concentration of archaeological activity in Test Trench 2 at the southern end of the site near the street front. Archaeological features recorded consisted of a small pit filled with shell and animal bone, an 18th century wall footing, a deposit of disarticulated human and animal bone, and a possible well feature. This archaeological activity was constrained to the northeast and southwest by Georgian barrel-vaulted cellar structures.

1.2 THE DEVELOPMENT

This programme of archaeological testing was carried out as part of a pre-planning assessment of the site. The proposed development includes the construction of a new Dublin City Library and public plaza at Parnell Square North, Dublin 1, comprising in summary:

- The adaptive re-use of Nos. 20-21 & Nos. 23-28 Parnell Square North (all Protected Structures).
- The construction of a new 5-storey over basement extension, with roof gardens, for library and cultural use (c.5,575 sq m gross floor area, and associated demolition of existing 3-storey gymnasium / hall, single storey atrium and 2-storey return, to the rear of Nos. 23-28 Parnell Square North.
- The total Gross Floor Area (existing and new) of the proposed cultural use amounts to c.11,053 sq.m.
- Improvements to the public realm to facilitate a new public plaza, including reconfiguration of vehicular roadway (2-lane), parking and set down areas, street furniture, street art and public lighting, widening

of footpaths, and relocation of Dublin Bikes Station, at Parnell Square North, in the area between Parnell Square West and East and the Garden of Remembrance.

- Modifications to Bethesda Place and Frederick Lane North to facilitate access by service and emergency vehicles to Frederick Lane North.

The overall site area measures c.1.2 ha, and includes Nos. 23 – 28 Parnell Square (Scoil Mhuire) and Nos. 20 – 21 Parnell Square (All Protected Structures). The Georgian houses are located either side of Hugh Lane Gallery (Protected Structure). The site is otherwise generally bounded by Parnell Square North, East & West, the Garden of Remembrance to the south, Bethesda Place, Frederick Lane North and the Sheridan Court Residential Apartments to the North.

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

2.1 BACKGROUND

2.1.1 General

The proposed development area is located on the northern side of Parnell Square to the immediate north of an area that once formed part of the pleasure gardens associated with the Rotunda Hospital. The hospital itself opened in 1759 and possessed the appearance of a large, 18th century country house. In 1764, the great circular room called 'The Rotunda', which could hold 2000 people, was constructed. The hospital was then named after this structure. Today little of the original gardens survive, due to the construction of low-grade ancillary structures associated with the hospital and car parking. The proposed development area is also located within the zone of archaeological notification for Dublin City (DU018-020) although there are no sub-constraints recorded within its immediate proximity.

2.1.2 Prehistoric Period

Despite recent discoveries potentially providing evidence of human activity in Ireland during the Upper Palaeolithic (Dowd and Carden, 2016), the Mesolithic Period (7000–4000 BC) is the earliest time from which there is clear evidence for prehistoric activity in Ireland. During this period people hunted, foraged and gathered food and appear to have had a mobile lifestyle. Evidence for settlement during this period is rare. Although in 2004, Mesolithic fish traps were identified during excavations at Spencer Dock area, c. 1.8km to the east-southeast of the proposed development area (Bennett 2004:0565, Licence Ref.: 03E0654).

No other recorded prehistoric sites or artefacts have been identified within the receiving environment. These include the Neolithic, Bronze Age and Iron Age periods.

2.1.3 Early Medieval Period (AD400–1100)

The name Dublin (Dubhlinn), meaning black pool, is generally taken to refer to the pool or pond that was located directly south-east of the site of the present Dublin Castle located on the southern side of the River Liffey. However, this name has been suggested as referring to an early Christian monastic settlement south of the black pool and Clarke (1990, 58) believes that this interpretation of Dubhlinn would explain why the town has two names – Dubhlinn (for the enclosed ecclesiastical area) and Baile Ath Cliath – a secular settlement that was developed to guard over the 'ford of the hurdles'.

It has been argued that this enclosure, located c. 1.36km south of the proposed development, formed the focus of pre-Viking Dublin (Stout & Stout 1992, 15). Geraldine and Matthew Stout go on to argue that early Christian

Dublin had no particular significance as a population centre, border post or transport hub until the Vikings arrived and took advantage of its position. Ecclesiastical foundations were common across the county at this time and it is unlikely that any of the major route ways would have passed through a settlement where travel was limited to the north by a large tidal river. However, de Courcy (1996: xxviii) suggests that the Slighe Midluachra (one of the great roads of early medieval Ireland), crossed the Liffey at the location of the 'ford of the hurdles', which would have made Dublin a more important settlement due to the traffic passing through.

It is probable that the proposed development area was located within farmland during this period, which surrounded the settlement at Dublin. Whilst there are no recorded sites of this date within the immediate vicinity of the development area, a site which may date to the later part of this period is a burial ground recorded c. 270m east-northeast (DU018-020496), although this may in theory cover a much larger area. In 1897, it was reported in the press that in previous years there had been a discovery of human bones, swords and spears during the construction of houses in North Great George's Street, Summerhill, Gardiners Row and Mountjoy Square (DU018-020496). Previous to this, a 1763 report stated that "Vast quantities of bone" were discovered whilst digging behind the New Gardens (Rotunda Gardens) at Great Britain St (now Parnell St). They were found 2-3ft beneath surface and were also present on Cavendish Row (c. 240m to the southeast) and Granby Row (c. 40m to the northwest of the proposed development area) (RMP file). The remains, which included a large sword and a spear, are thought to relate to the Battle of Clontarf, which took place in 1014 and involved Brian Boru's and the Vikings of Dublin. It seems possible that part of the battle took place in very close proximity to the proposed development area.

The discovery of redeposited human bone during test trenching at the site (see Appendix 2) has been dated to between 692-961 A.D. which would place the remains in the early medieval period. The deposit included at least five late adolescents or adults, two young children and an infant. Both male and females are indicated in the mature remains. This indicates that these remains were not associated with burials resulting from a battle and may instead point to a settlement burial ground in close proximity to the site.

Unfortunately, the fact that the remains are disturbed and within a small redeposit, means that interpretation of same is somewhat limited. It is possible that the remains relate to an Irish population or may be associated with a Viking population. It is unclear as to whether the remains represent pagan or Christian burial practices due to the fact that they are redeposited. There are no definite early medieval or Viking sites within the immediate vicinity of the proposed development area, as much of the focus of occupation at this time was to the south of the River Liffey or at Oxmanstown to the southwest. We cannot state where the remains have come from, only that they may have been found and disturbed during the construction of the houses on Parnell Square North (similar to the reports in antiquity). A number

of teeth are present within the excavated sample, which would enable analysis to take place to ascertain whether the assemblage represents a native or foreign population.

It is unlikely that the Battle of Clontarf of 1014 A.D. took place in the modern district of Clontarf. The Annals of the Four Masters say it was fought 'from Tulcainn to Ath Cliath' and while one may expect that isolated encounters of small groups occurred during the day over a wide area this description is the simplest and the most accurate definition of the battlefield. *Tulcainn* was the River Tolka and *Ath Cliath* was probably located at the *Droichet Dubhgail* the bridge that crossed the Liffey at this time. We are told in the Annals of Loch Ce that Brian Boruma faced the allies on the slope of Crinan Hill; however, the precise location of Crinan Hill is unknown today. One record of 1339 places it south of Ballybough Road, but by deduction from other records of 1192 and 1324, it is possible that it extended from Ballybough Road to Drumcondra Road, c. 1.2km northeast of the proposed development area. It has been suggested (De Courcy 1996) that the main action of the battle took place in the area bounded by O'Connell Street, Dorset Street, Drumcondra Road, the River Tolka, Ballybough Road and the North Strand, to the immediate east of the proposed development area.

The battlefield may have included the area of proposed development and the Parnell Square area, as the ground slopes significantly from north to south. Alternatively, casualties of the battle may have been buried in the area, on the edge of the battlefield. If a burial ground had been established within the vicinity of the proposed development area prior to the battle, then it may have acted as a marker in the landscape to encourage burials in close proximity. This has to be considered as pure speculation based on the fact that none of the skeletons survive from antiquity and the excavated remains do not have an original context.

2.1.4 Medieval Period (AD1100–1600)

The beginning of the medieval period was characterised by political unrest that originated from the death of Brian Borumha in 1014 at the Battle of Clontarf. Diarmait MacMurchadha, deposed King of Leinster, sought the support of mercenaries from England, Wales and Flanders to assist him in his challenge for kingship. Norman involvement in Ireland began in 1169, when Richard de Clare and his followers landed in Wexford to support MacMurchadha. Two years later de Clare (Strongbow) inherited the Kingdom of Leinster and by the end of the 12th century the Normans had succeeded in conquering much of the country (Stout and Stout 1997, 53).

Medieval development that took place on the lands to the north of the River Liffey was restricted to the medieval suburb at Oxmantown and St. Mary's Abbey. Oxmantown has been described as a transpontine suburb, similar to Southwark in London, being reached by a bridge from the original city. The suburb extended from the Liffey to the open space of Oxmantown Green (the

area west of Blackhall Place) in the west and the walled enclosure of St. Mary's Abbey in the east. It possessed all the attributes of a medieval town; an urban street plan, markets, a quay, street gates, religious houses and a parish church (Clarke 1990, 48).

Oxmantown, derived from villa Ostmanorum meaning town or settlement of the Ostmen is traditionally described as the refuge of the Vikings who were ejected from Dublin by the Anglo-Normans in 1171-2 (Clarke 1990, 48). However recent research has suggested that with the building of the bridge in the early 11th century, the founding of St Michan's Church at around the same time and the slightly later establishment of St. Mary's Abbey, a settlement had already been created before the Anglo-Norman invasion. The edge of Oxmantown is located c. 200m to the southwest of the proposed development area.

2.1.5 Post-medieval Period (AD1600-1900)

The appointment of James Butler, Marquis of Ormond, as Lord Lieutenant of Ireland in 1662 provided the stimulus that was necessary to develop the city. Under Ormond's command the Royal Hospital at Kilmainham was built and the Phoenix Park was walled as a deer park, effectively enclosing the city on its west side. The developer Henry Jervis began construction of the north side quays and constructed Essex (now Grattan) Bridge to this new suburb of Capel Street.

The Georgian period (18th century) saw the beginning of large-scale reconstruction and development of Dublin city by the Wide Street Commissioners (WSC) and private developers. The construction of the quays along the north and south banks of the Liffey, begun by Jervis, were completed in early 18th century.

The role of the Gardiner family in the development of the north eastern section of the city has been well documented. Luke Gardiner was responsible for the original layout of Drogheda Street and had played a lead role in the development of Henrietta Street, Dorset Street and other areas stretching across to Henry Street and Drogheda Street. His second son also named Luke continued to develop the estate up until the time of his death in 1798. Gardiner's Row was erected by 1769; Eccles Street in 1772; Temple Street in 1773; North Great George's Street in 1776 and Gardiner Place and Mountjoy Square in 1790. Rutland (now Parnell) Square had been completed by 1792 while Fitzgibbon Street, North Fredrick Street, Blessington Street, Great Charles Street and Belvedere Place had all been completed by the early 19th century.

Within Parnell Square, it was the houses along its eastern side that were completed to begin with. The original six houses that formed Cavendish Row, at the lower part of the street were extended to a terrace of 16. The houses along Parnell Sq. North, including 23-28, were constructed between 1758 and

1766. In 1786 an act decreed that railings were to be erected in place of the walls that surrounded the Rotunda Gardens – in accordance with the wishes of local residents. It was also around this time that the name Rutland Square was adopted.

The historic mapping of the proposed development area shows that prior to the construction of all three sides of Parnell Square, the northern section (to the northwest of the Rotunda Gardens) was open fields – as depicted on John Rocque’s Map of 1760. Subsequent mapping shows terraced buildings fronting onto Parnell Square North with much of the rear plots occupied by outbuildings and mews. Today none of these outbuildings, or any of the returns associated with the surviving Georgian structures survive.

2.1.6 Post AD 1900

No 25 Parnell Square is of great significance during the period leading up to the War of Independence. It was here on 9 September 1914 that a meeting held by Supreme Council of the Irish Republican Brotherhood (IRB), with selected others, agreed to rise up against the British before the First World War finished. Those in attendance included Eamonn Ceannt, Thomas Clarke, James Connolly, Arthur Griffith, John MacBride, Sean MacDermott, Sean McGarry, William O'Brien, Seán T. O'Kelly, Pdraig Pearse, and Joseph Plunkett.

The buildings surrounding the proposed development site also played important roles in the organisation for the 1916 Rising. No 41, formerly the Irish National Forester’s Hall was used for drilling by the IRB and Irish Volunteers. Éamon de Valera assembled the 3rd Battalion of the Volunteers here immediately prior to the 1916 Rising. Similarly, the building at No 46 was used to assemble the 2nd Battalion of the Volunteers under Thomas MacDonagh on the eve of the 1916 Easter Rising.

2.2 SUMMARY OF PREVIOUS ARCHAEOLOGICAL FIELDWORK

A review of the Excavations Bulletin (1970–2017) has shown that no previous archaeological investigations have been carried out within the proposed development area. Investigations carried out within the surrounding area are summarised below.

In 1996, test excavations were carried out at 29 Parnell Square (Bennett 1006:108, Licence Ref.: 96E225), c. 50m southwest of the proposed development area. Nothing of archaeological significance was identified. Further investigations were carried out at the rear of 20/21 Parnell Square in 2004, c. 40m southwest of the proposed development, which resulted in the identification of an 18th century well (Bennett 2004:0570, Licence Ref.: 04E0035). Excavations at a site on Dorset Street/ Granby Row located c. 45m west-northwest of the proposed development site, revealed the substructure of the 18th century Bethesda Chapel which formerly stood on the site (Bennett 2005:435, Licence Ref.: 05E1098). More post medieval remains

were identified in the form of red brick cellars during the monitoring of slit trenches along Parnell Square East, c. 170 southeast of the proposed development area (Bennett 2009:315, Licence Ref.: 08E956).

2.3 CARTOGRAPHIC ANALYSIS

Bernard De Gomme's Map of Dublin, 1673

Despite the early date of this map, it shows a large amount of detail within the landscape surrounding Dublin City. Abbey Parks and Abbey Green is shown to the southwest of the proposed development area, which represents the remains of the landscape associated directly with St. Mary's Abbey. The approximate location of the proposed development area is shown as open land with hills marked within the immediate vicinity.

John Rocque's 'An Exact Survey of the City and Suburbs of Dublin, 1756

This is the first detailed depiction of the proposed development area, which is shown as open fields to the north of the 'New Garden' and the Rotunda Hospital. To the west Dorset Street is marked and a large amount of construction has taken place either side of the road. To the southwest of the development area, small plots that appear to be under cultivation are depicted. To the east of the New Gardens, the buildings fronting onto Cavendish Road (now Parnell Square East) are shown as present.

'A New Plan of Dublin' from Wilson's Dublin Directory, 1760

This map shows what is now Parnell Square North, but it is labelled on this map as 'Paradise Row', rather than 'Palace Row' as shown on the map below. No buildings are shown as fronting onto the street, although the New Gardens are shown to the southeast.

Bernard Scalé's 'An Accurate Survey of the City and Suburbs of Dublin by Mr Rocque with Additions and Improvements', 1773 (Figure 4)

By the time of this map the buildings that occupy the proposed development area are shown on the northern side of Parnell Square, although the street is named as Palace Row. Six buildings are marked within the proposed development area. These all have narrow garden plots shown to the rear of the structures, all of which possess outbuildings that are likely to represent mews buildings. To the immediate northwest of the proposed development area, a small lane is marked as 'Stable Lane'. These small lanes were designed to provide access to the stables at the rear of the properties. To the immediate north of the lane, a piece of open ground is shown, which is marked as 'Barley Fields'.

'A New Plan of Dublin' from Wilson's Dublin Directory, 1801

This map shows the proposed development area as fully developed and Charlemont House to the immediate east-northeast of the site is labelled. The lane that services the rear of the site is also marked. The square is now named as 'Rutland Square'. There are no major changes to note within the cartography of later maps by Campbell (1811) and Taylor (1816), which relates to the proposed development area.

Ordnance Survey Map, 1847, scale 1:1560 (Figure 5)

This map clearly depicts the six houses within the proposed development area, all of which are shown to have rear returns of varying sizes, with the exception of the corner building, which was presumably abutted by its mews building and accessed from Granby Row. The remaining five buildings all possess mews buildings to the rear of their garden plots, with the eastern two the largest. The lane to the north of the proposed development area is still shown as providing access to the mews buildings. To the immediate east-northeast of the site, Charlemont House is shown with large outbuildings to the rear.

Nos 23 and 27 possess rear returns that travel the full length of the garden plot, which then attach to the mews buildings. Steps are shown as accessing the mews structures associated with Nos 24 and 26, indicating a topography perhaps similar as to what is present within the site today, with the mews structures located slightly upslope from the main houses. This may also indicate that some or all of the structures possessed two storeys.

During the course of archaeological testing as part of this assessment, a number of basement or cellar structures were identified to the rear of the main houses fronting onto Parnell Square North (which retain their main basement level). These may have been associated with No. 23 and No. 26. Whilst not marked within this map, it is clear that basement structures extended beneath the returns and garden plots of the main houses and were in addition to the main basement level extant beneath the existing houses.

Ordnance Survey Maps, 1864/ 1891, scale 1:1560

By the time of the 1864 map the main houses fronting onto the square remain changed in terms of their footprint. The mews structures are also unchanged, although the steps leading to the mews associated with No. 24 are no longer marked. By the time of the 1891 map, no changes have occurred, although the steps into the mews structure associated with No. 24 are once again present.

Ordnance Survey Map, 1909, scale 1:2500

By the time of this map, there are a number of changes to note, which relate to Nos 23-27. The footprint of the main houses remains unchanged. However, some development has been carried out to the rear of the structures. The mews structure associated with No. 23 has been reduced in size by c. 50 percent, although the return to the rear of the house is still present. Two additional small buildings are marked in the rear garden plot. No. 24 remains

unchanged with the return present, along with the mews structure as shown within the 1847 mapping. The plot containing No. 25 is now shown as fully developed with the house merging into the mews structure to the rear. No. 26 remains unchanged. No. 27 retains its return but this now runs back to two buildings within the rear plot, rather than the mews structure marked on the 1847 map.

3 ARCHAEOLOGICAL TESTING

3.1 GENERAL

Test trenching took place on 18th and 19th July 2018 using a 13 tonne 360-degree back acting excavator equipped with a flat, toothless bucket under strict archaeological supervision. Six trenches were excavated within the proposed development area (Figures 2, 3a and 3b). Two of the test trenches (Test Trench 5 and 6) were located on the high ground at the rear of the proposed development area, the remainder were concentrated towards the street fronting buildings to the south. All investigated deposits were preserved by record, this was by means of written, drawn and photographic records.

Site investigation works were also monitored at the time. A total of seven test pits were excavated within the proposed development area.

The test trenches were excavated to determine, as far as reasonably possible, the location, extent, date, character, condition, significance and quality of any surviving archaeological remains threatened by the proposed development. Test trenching was also carried out to clarify the nature and extent of existing disturbance and intrusions and to assess the degree of archaeological survival in order to formulate further mitigation strategies. These are designed to reduce or offset the impact of the proposed development scheme.

3.2 TESTING RESULTS

Six test trenches, totalling 49.5 linear metres, were excavated across the proposed development area, which was followed by the monitoring of site investigation pits. Only two of these trenches were excavated to subsoil level due to constraints such as areas affected by cellar developments and by the identification of archaeology in Test Trench 2.

Three areas were not available for testing, one was occupied by the site security offices, another by a skip for site rubbish, and the third comprised the access ramp connecting the rear to fore of site (Plate 1). Immediately to the rear of the buildings fronting on to Parnell Square North, modern basements and cellars could be discerned to extend for a distance of 2.5m from the building footprint.

TRENCH 1 (Plate 2 and 3)

LENGTH	10.5m
DEPTH	0.4m (subsoil was not exposed)
WIDTH	1.2m
ORIENTATION	Northwest-southeast
STRATIGRAPHY FROM PRESENT GROUND LEVEL	
0.0–0.2m	Tarmacadam surfaces (C1)
0.2–0.4m	Rubble material including brick, degraded mortar and stone

	(C2). This material was packed around a probable late 18th / early 19th century barrel-vaulted cellar.
ARCHAEOLOGICAL FEATURES	
<p>The location of Test Trench 1 was heavily affected by the construction of a probable late 18th / early 19th century barrel-vaulted cellar, which most likely extended from the present street fronting buildings. The cellar vault was recorded for a total length of 8.5m. The rubble material surrounding the cellar vault is considered to be contemporary with construction of the latter. The insertion of modern services has adversely affected the structural integrity of the cellar structure, and a clear breach in the vault is visible on the western side of the trench.</p> <p>This trench was not reduced to subsoil level because of concerns about the stability of the cellar vault.</p>	

Test Pit 7 was excavated to the immediate east of Trench 1 and measured c. 4m by 0.8m. Post medieval overburden was noted to a depth of 1.4m. At this depth natural subsoil was identified, which consisted of a compact mid brown sandy clay. Excavation of the pit continued through geological deposits to a depth of 4m, where a very firm black clay was identified (natural geology).

TRENCH 2 (Plate 4, 5, 6 and 7)

LENGTH	14m
DEPTH	1.4m (max)
WIDTH	1.2m
ORIENTATION	East northeast-west southwest
STRATIGRAPHY FROM PRESENT GROUND LEVEL	
0.0–0.2m	Tarmacadam surface (C1)
0.2–0.4m	Rubble material including brick, degraded mortar and stone (C2)
0.4–0.8m	<p>Compact grey-yellow clay with stone inclusions (C3). This layer is considered to be a levelling deposit laid down in the mid-18th century, as part of the construction of the houses at Parnell Square North. C3 abuts a mortared stone wall (C4), extending northwest-southeast (Plate 4). The wall is not considered to be a load bearing structural feature, and most likely represents a property boundary associated with No. 29 Parnell Square North. No foundation trench was recorded for C4, and it appears to have been constructed directly on the underlying layer.</p> <p>A probable well feature was also recorded within C3. This feature, partially extending from the northern baulk had been excavated into the C3 layer (Plate 5). The feature was not excavated but would appear to have been lined with in</p>

	<p>both brick and stone (C5). C5 was filled with a dark grey silty clay with frequent rubble inclusions (C6). A ranging rod could be inserted into the C6 material to a depth of c. 1.8m.</p> <p>Both features described above are considered to be mid-18th century in date.</p>
0.8–1.4m	<p>Compact dark-grey clay with occasional shell inclusions (C7). One piece of late 17th century pottery was identified within this layer.</p> <p>A concentration of disarticulated human and animal bone (C8) was also identified within this layer (Plate 6). No identifiable containing cut was identified, but the bone elements were all contained within an area 1.2 x 1.5m, which may suggest that they were deposited within a pit feature. The bone elements had a maximum identifiable depth of 0.3m</p>
1.4m	<p>Compact light grey clay (C9). One feature of archaeological potential was identified cutting this layer. Whilst only partially represented in the test trench, it would seem to represent a sub circular pit (C10) at least 1m in diameter, with steep sides and a bowl-shaped base (Plate 7). The maximum exposed depth of the feature was 0.2m.</p> <p>The pit fill was comprised of a dark grey clay with significant shell inclusions and an element of cow horn (C11). No datable artefacts were recovered from the feature.</p>

ARCHAEOLOGICAL FEATURES

Two archaeological features were identified within Test Trench 2.

The first of these comprised a concentration of disarticulated human and animal bone (C8). This feature was identified in C7, which also contained a sherd of late 17th century ceramic. Whilst no identifiable cut for a containing pit was recorded within the test trench, further excavation of this area may identify such information. The feature extends to the southeast, although because of the substantial basement developments associated the street fronting houses, cannot extend for any more than c. 8m in this direction.

The second feature (C10), recorded as cut into the C9 layer, may be considered a domestic waste pit. However, the inclusion of cow horn within the C10 fill of the pit may be suggestive of some tannery or horn working activity in the immediate vicinity.

Test Pit 106 was excavated to the southeast of the eastern end of Trench 2 and measured c. 7.9m by 1.4m. Post medieval and modern demolition debris were identified to a depth of 1.4m. Here natural subsoil was identified, which

consisted of moderately to firmly compacted greyish brown sandy clay. Excavation of the pit continued through geological deposits to a depth of 4m, where a very firm black clay was identified (natural geology).

TRENCH 3 (Plate 8)

LENGTH	5m
DEPTH	1.6m
WIDTH	1.2m
ORIENTATION	Northwest–southeast
STRATIGRAPHY FROM PRESENT GROUND LEVEL	
0.0–0.2m	Tarmacadam surfaces (C1)
0.2–0.6m	Rubble material including brick, degraded mortar and stone (C2)
0.6–1.6m	Compact grey-yellow clay with stone inclusions (C12). This layer is considered to be a levelling deposit laid down during the construction of the houses on Parnell Square North. One piece of late 17th century Staffordshire slipware was recovered from this layer.
1.6m	Mid brown sandy clay. Natural geology.
ARCHAEOLOGICAL FEATURES	
No features of archaeological significance were recorded within this test trench.	

Test Pit 104 was excavated to the south of Trench 3 and measured 4m by 1.4m. A probable demolition layer containing brick, concrete, glass and modern ceramics, was identified to a depth of 1.55m. Between 1.55m and 2.4m dark grey deposit was noted containing some sherds of post medieval pottery, shells, wood fragments and animal bones. This is likely to represent a midden associated with the post medieval houses. Between 2.4m and 4m the deposits became water-logged due to the ingress of ground water. No items of archaeological significance were identified and natural sub-soil was not identified.

TRENCH 4 (Plate 9 and 10)

LENGTH	10m
DEPTH	1.65m
WIDTH	1.2m
ORIENTATION	Northwest-southeast
STRATIGRAPHY FROM PRESENT GROUND LEVEL	
0.0–0.2m	Tarmacadam surfaces (C1)
0.2–0.45m	Rubble material including brick, degraded mortar and stone (C2)
0.45–1.65m	Compact grey-yellow clay with stone inclusions (C12). This

	<p>layer is considered to be a levelling deposit laid down during the construction of the houses on Parnell Square North.</p> <p>The southern 5m of the trench were severely impacted by the construction of a probable late 18th / early 19th century vaulted cellar (Plate 9). The apex of the vault had collapsed, although it did reveal that the vault was composed entirely of red brick (C13), supported by mortared stone vertical walls (C14).</p> <p>The eastern face of the test trench had been severely impacted by the construction of a red brick wall (C15) recorded to a depth of 1.65m. It is considered that this face represents foundations of a building noted on the historic mapping for the site.</p>
ARCHAEOLOGICAL FEATURES	
Evidence for post medieval basements was identified within this trench.	

Test Pit 103 was excavated between Trench 3 and Trench 4. A levelling deposit similar in nature to C12 was identified to a depth of 1.8m. Here natural subsoil was identified, which consisted of compacted mid brown sandy clay. Excavation continued through the natural geology to a depth of 3m. Compact black clay was identified at a depth of 2.6m.

Test Pit 105 was excavated to the southeast of Trench 4 and measured 4.1m by 1m. The wall of a red brick cellar was identified 0.4m below the current ground level and as such excavation was stepped out slightly to avoid impacting on same. Post medieval construction deposits likely associated with the construction of the cellar were identified to a depth of 3.1m. Here the subsoil was encountered, which consisted of a compact black clay.

TRENCH 5 (Plate 11)

LENGTH	5m
DEPTH	1.5m
WIDTH	1.2m
ORIENTATION	Northeast–southwest
STRATIGRAPHY FROM PRESENT GROUND LEVEL	
0.0–0.2m	Tarmacadam surfaces (C1)
0.2–0.45m	Sand and degraded mortar (C16)
0.45–1.5m	Compact grey-yellow clay with stone inclusions (C17).
1.5m	Compact mid brown sandy clay. Natural geology (see notes on Test Pit 101 below)
ARCHAEOLOGICAL FEATURES	
No features of archaeological significance were recorded within this test	

trench.

Test Pit 101 was excavated to the north of Test Trench 5 and measured 2.2m by 0.7m. A compact mid brown sandy clay was identified in this pit at a depth of 0.9m. This was interpreted as natural geology during the excavation of the Test Trench 5. However, whilst excavation continued through this layer, at a depth of 1.7m a dark brown/black sandy clay was identified, which contained animal bone, shells, glass, fragments of wood and some sherds of post medieval pottery. This deposit continued to a depth of 2.4m, when excavation ceased. A red brick and stone wall was identified close to the base of the pit, which was left in-situ. Considering the raised elevation of this part of the site, it would suggest that the mews structures that once occupied this part of the site were scarpd into the slope and possessed two storeys. Following their demolition, it is possible that the ground floor level was backfilled to create the current step at the rear of the proposed development area.

TRENCH 6 (Plate 12)

LENGTH	5m
DEPTH	1.5m
WIDTH	1.2m
ORIENTATION	Northeast-southwest
STRATIGRAPHY FROM PRESENT GROUND LEVEL	
0.0–0.2m	Tarmacadam surfaces (C1)
0.2–0.7m	Sand and degraded mortar, lenses of rubble (C16)
0.7–1.5m	Compact grey-yellow clay with stone inclusions (C17).
1.5m	Compact mid brown sandy clay. Natural geology (see notes on Test Pit 102 below)
ARCHAEOLOGICAL FEATURES	
No features of archaeological significance were recorded within this test trench.	

Test Pit 102 was excavated to the east of Test Trench 6 and measured 2.7m by 1.2m. Beneath the tarmacadam surface a demolition layer was identified containing some red brick and stone inclusions. This was present to a depth of 2.35m. Here a dark brown deposit containing red brick and some wood fragments was identified, which continued to a depth of 3.4m. Within this deposit the remains of a red brick and stone wall were identified, similar in form that identified in Test Pit 101. As a result, excavation ceased. This would again suggest that the earlier interpretation of the subsoil in Trench 6 was incorrect and would support the theory that the mews structures possessed two storeys, which would fit in with the topography of the site.

Archaeological Features

Two archaeological features of significance were identified as a result of test trenching at the proposed development site. Both features were recorded within Test Trench 2. In addition, a possible post medieval midden or cess pit was identified during the monitoring of site investigation works, within Test Pit 104.

The first feature consisted of a concentration of disarticulated human and animal bone (C8). Whilst no cut for a containing pit could be identified within the test trench, the relatively constrained area of the remains is certainly suggestive that they were deposited within such as feature. The concentration of this material extends to the southeast.

The second feature consisted of a pit feature (C10) containing significant shell concentrations and one element of cow horn. The pit was not fully exposed within the test trench, but it would appear to be subcircular in plan with a diameter of at least 1m, and a recorded depth of 0.2m.

The midden or cess deposit possessed no identifiable cut, but did contain sherds of post medieval pottery, fragments of wood and was found to be water-logged beneath a certain depth.

Osteoarchaeological analysis

An osteological report has been prepared describing the results of the analysis which is included in Appendix 2. The following represents a summary of the analysis and results.

A total of 864 fragments of human skeletal remains were retrieved from a deposit exposed in Test Trench 2. The remains were washed and subject to full osteological analysis by a specialist, Maeve Tobin. This involved visually inspecting the bone and sorting into skeletal regions, following which detailed analysis of each fragment was carried out in order to ascertain information regarding the individuals they represent (e.g. sex, age at death, pathology, etc.). A full catalogue of the remains has been created with the analysis results.

Given that the remains were disarticulated and commingled in the deposit it was not possible to make conclusive statements about individual health however the assessment indicated that a minimum number of eight people are represented. These include at least five late adolescents or adults, two young children and an infant. Both male and females are indicated in the mature remains. All regions of the body were represented equally with no evidence for preferential selection or exclusion of bones in the deposit. Some evidence for non-specific infection and degenerative joint disease was noted but nothing out of the ordinary for a historic population. It is likely that these remains represent clearance of a nearby burial area, given the profile of individuals represented. The remains were heavily fragmented with none of

the larger limb bones surviving intact, however several vertebrae and smaller bones of the hands and feet were complete indicating that the remains were not intentionally damaged to avoid recognition of body parts during clearance. Further skeletal remains, both disarticulated and intact burials, may survive outside of the investigated areas. A fragment of mid-shaft adult humerus (5g) has returned a two-sigma calibrated date of AD 692–961 (UBA 38764) indicating activity between the 8th and 10th centuries AD.

3.3 CONCLUSIONS

A total of six test trenches were investigated across the proposed development area. Excavation revealed a concentration of archaeological activity in Test Trench 2 at the southern end of the site near the street front. Archaeological features recorded at a depth of 0.8m BCGL consisted of a small pit filled with shell and animal bone, an 18th century wall footing, a deposit of disarticulated human and animal bone, and a possible well feature. This archaeological activity was constrained to the northeast and southwest by Georgian barrel-vaulted cellars. Testing has indicated that a significant portion of the site has been affected by the construction of these cellars. Evidence for mortared stone boundary walls and a well relating to the initial development of Parnell Square North were also uncovered, however, the foundation trench/footprints of these structures have not significantly affected the archaeological potential of the area.

The human bone disturbed by trenching was retrieved from site and subject to osteological analysis. This indicated that a minimum number of eight people are represented; including five late adolescents or adults of male and female sex, two young children and an infant. A fragment of mid-shaft adult humerus (5g) has returned a two-sigma calibrated date of AD 692–961 (UBA 38764) indicating activity between the 8th and 10th centuries AD. There is potential for this deposit of bone to extend beyond the limits of the current test trenches however it is constrained within an 8m area due to the existing basement to the southeast.

Site Investigation test pits were also monitored. A post medieval midden or cess deposit was identified in Test Pit 104, along with the edge of a Georgian cellar in Test Pit 105. Test Pits 106 and 107 were excavated in proximity to Trenches 1 and 2 and identified natural geology at a depth of 1.4m. At the rear of the site, which is the most elevated part of the proposed development area, Test Pits 101 and 102 were excavated to a significant depth (2.4m and 3.4m). At the base of the pits sections of red brick and stone walls were identified, along with back fill containing post medieval debris. This area was formerly occupied by mews structures associated with the Georgian houses that front onto Parnell Square North. The results of testing suggest that the mews structures possessed two storeys in order to counter the natural sloping topography. A ground floor may have been located at garden level with steps up to a first floor level containing stables and carriages, which could then access Stable Lane. When these structures were demolished, it appears that

part of the ground floor may have been backfilled and the current extant 'step' in the site was created.

4 IMPACT ASSESSMENT AND MITIGATION STRATEGY

Impacts can be identified from detailed information about a project, the nature of the area affected and the range of archaeological resources potentially affected. Archaeological sites can be affected adversely in a number of ways: disturbance by excavation, topsoil stripping; disturbance by vehicles working in unsuitable conditions; and burial of sites, limiting access for future archaeological investigation.

4.1 IMPACT ASSESSMENT

- The proposed development area is located within the zone of archaeological potential for Dublin City (DU020-018), which is a recorded monument. It is clear that the site has been impacted upon by development dating from the 1760s, with the construction of houses fronting onto Parnell Square North and associated features such as basements and mews structures. During the later part of the 20th century the rear of Nos 23-28 was further impacted by the removal of garden plots, returns and outbuildings, when a school was established at the site.
- Substantial excavations will be required as part of the proposed development with an estimated 9000m³ of material to be taken from the site. The proposed basement level is shown in Figure 3b.
- The excavation of test trenches and site investigation test pits within the plot to the north of Nos 23-28 has revealed archaeological deposits within the southern side of the site. These include post medieval basements and a redeposit of early medieval human remains and a possible pit.

These deposit of human remains will be directly impacted upon by the excavation of material for the insertion of the basement level. The impact is considered to be negative and very significant.

The post medieval remains identified outside of the proposed basement area will be impacted upon by ground disturbances (ground reduction and the insertion of piles and excavation of pile caps) that are associated with the construction of the proposed development. The impacts are considered to be negative and moderate.

The potential remains of a post medieval midden or cess deposit has been identified within the centre of the site, whilst the possible backfilled remains of mews structures have been identified in the northern part of the site. These areas will be impacted upon by ground disturbances (ground reduction and the insertion of piles and excavation of pile caps) that are associated with the construction of the proposed development. The impacts are considered to be negative and moderate.

It is possible that ground disturbances outside of the footprint of the test trenches may have a direct impact on previously unrecorded archaeological deposits that have the potential to survive beneath the current ground level with no surface expression. This includes the area beneath the modern gymnasium structure that is located to the rear of Nos 23-28, along with any excavations associated with establishment of the public realm infrastructure,. The potential impacts are considered to be negative and have the potential to range from moderate to profound significance.

4.2 MITIGATION

We recommend the following actions in mitigation of the impacts above.

- While it is acknowledged that preservation in-situ of archaeological remains is the preferable option wherever possible, the archaeological remains identified within the proposed development area will be impacted upon by the construction of a new basement and associated extensive ground disturbances. As such preservation by record of all archaeological remains will be carried out.
- Please note that the below measures may be further informed by a programme of additional archaeological testing that will be carried out within the proposed development area prior to the grant of any planning permission.
- The below mitigation measures will be carried out following demolition of the existing gymnasium structure on site and as a separate works package prior to the mobilisation of the main construction contractor.
- The archaeological remains within Trenches 1 and 2, including the post medieval basements and the redeposit of human remains, will be excavated (preserved by record) within an open area measuring 250m² prior to the commencement of construction works (Figure 6). Post excavation analysis of the remains will include the isotopic analysis of suitable dental remains in order to analyse the geographical origin of the human remains.
- The archaeological remains within Trench 3 and Test Pit 105 including the post medieval basement remains, will be excavated (preserved by record) within an open area measuring 195m² prior to the commencement of construction works (Figure 6).
- The archaeological remains within Test Pit 104, which includes the post medieval cess deposit, will be excavated (preserved by record) within an open area measuring 95m² prior to the commencement of construction works (Figure 6).

- A section at the rear of the proposed development area will be opened and graded down with a mechanical excavator in order to assess the nature and extent of the potential backfilled mews structures. This section may be accompanied by excavation from the floor level in this part of the site (Figure 6, estimated area 150m² including exposed section). However, due regard will need to be given to the entrance to the site in order to allow continued vehicular access.

Overburden within these areas will be removed by a mechanical excavator under strict archaeological supervision. Mechanical excavation shall cease following the identification of archaeological levels. Recording of the archaeological features will then be carried out by hand by a team of archaeologists under the direction of a licence eligible archaeologist and in consultation with the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht and the Dublin City Archaeologist.

If required the open excavation areas may be increased in size and all archaeological deposits will be recorded to the depth of the natural subsoils.

Full provision will be made available within the construction programme to allow for the resolution of all archaeological features on site.

A minimum of four additional test trenches will be excavated within the site, following the demolition of the gymnasium, in order to assess the nature and extent of any additional archaeological remains that may survive within the proposed development area. This will be carried out as part of the advance archaeological works contract and will be undertaken by a licence eligible archaeologist.

Dependant on the results of the testing exercise, further archaeological mitigation may be required, such as preservation by record and/or archaeological monitoring. As such, full provision within the construction programme will be made available in order to ensure works are completed prior to construction commencing.

It is the developer's responsibility to ensure full provision is made available for the resolution of any archaeological remains, both on site and during the post excavation process, should that be deemed the appropriate manner in which to proceed.

Please note that all recommendations are subject to approval by the National Monument Section of the Heritage and Planning Division, Department of Culture, Heritage and the Gaeltacht and the Dublin City Archaeologist.

5 REFERENCES

Bennett, I. (ed.) 1987-2014 Excavations: Summary Accounts of Archaeological Excavations in Ireland. Bray. Wordwell.

Bradley, J 1992 'The topographical development of Scandinavian Dublin.' In F H A Aalen and K Whelan (eds). Dublin City and County: from Prehistory to Present. Dublin: Geography Publications.

Chartered Institute for Archaeologists 2014a Standards & Guidance for Archaeological Excavation

Chartered Institute for Archaeologists 2014b Standards & Guidance for an Archaeological Watching Brief (Monitoring)

Chartered Institute for Archaeologists 2014c Standards & Guidance for Field Evaluation

Clarke, H.B 1990. "The topographical development of early Medieval Dublin", in Clarke (ed.) Medieval Dublin: the making of a Metropolis. Dublin.

Clarke, H.B 2002 Dublin Part I, to 1610. Irish Historic Towns Atlas No. 11 Royal Irish Academy, Dublin

De Courcy, J.W 1996 The Liffey in Dublin Gill & Macmillan, Dublin

Department of Arts, Heritage, Gaeltacht and the Islands. 1999a Framework and Principles for the Protection of the Archaeological Heritage. Dublin. Government Publications Office.

Department of Arts, Heritage, Gaeltacht and the Islands. 1999b Policy and Guidelines on Archaeological Excavation. Dublin. Government Publications Office.

Dowd, M. and Carden, R. 2016 First evidence of a Late Upper Palaeolithic human presence in Ireland. Quaternary Science Reviews 139, 158–63.

Dublin City Development Plan 2016-2022

Environmental Protection Agency. 2015 (Draft) Advice Notes on Current Practice (in the preparation of Environmental Impact Statements). Dublin. Government Publications Office.

Environmental Protection Agency. 2017 (Draft) Guidelines on the Information to be Contained in Environmental Impact Statements. Dublin. Government Publications Office.

Lennon, C. 2008 Dublin Part II, 1610-1756. Irish Historic Towns Atlas No. 19 Royal Irish Academy (in association with Dublin City Council), Dublin

McQuade, M. 2008 Gone Fishin'. Archaeology Ireland, 22 (1), 8–11.

National Monument Service, Department of Culture, Heritage and The Gaeltacht.

Sites and Monuments Record, County Dublin.

National Museum of Ireland. Topographical Files, County Dublin

Pearson, P. 2000. The Heart of Dublin. Resurgence of an Historic City. Dublin.

Stout, S & Stout, G 1992 Patterns in the Past: County Dublin 5000BC to 1000AD. In Aalen F.H.A & Whelan K (eds) 1992 Dublin City and County: From Prehistory to Present Dublin: Geography Publications

Stout, G & Stout, M 1997 Early Landscapes: from Prehistory to Plantation In Aalen, F.H.A et al (eds) 1997 Atlas of the Irish Rural Landscape Cork University Press

CARTOGRAPHIC SOURCES

Bernard De Gomme's Map of Dublin, 1673

John Rocque's 'An Exact Survey of the City and Suburbs of Dublin, 1756

'A New Plan of Dublin' from Wilson's Dublin Directory, 1760

Bernard Scalé's 'An Accurate Survey of the City and Suburbs of Dublin by Mr Rocque with Additions and Improvements', 1773

'A New Plan of Dublin' from Wilson's Dublin Directory, 1801

Ordnance Survey Maps of County Dublin 1837, 1847, 1864, 1891, 1909

ELECTRONIC SOURCES

www.excavations.ie – Summary of archaeological excavation from 1970–2017.

www.archaeology.ie – DoCHG website listing all SMR sites with aerial photographs.

www.osiemaps.ie – Ordnance Survey aerial photographs dating to 1995, 2000 & 2005 and 6-inch/25-inch OS maps.

www.heritagemaps.ie – The Heritage Council web-based spatial data viewer which focuses on the built, cultural and natural heritage around Ireland and off shore.

www.googleearth.com – Aerial photographs of the proposed development area.

APPENDIX 1 CONTEXTS

CONTEXT NO.	TRENCH NO.	DESCRIPTION
1	1,2,3, 4, 5 and 6	Tarmacadam
2	1, 2, 3 and 4	Rubble material including brick, degraded mortar and stone
3	1 and 2	Compact grey-yellow clay with stone inclusions
4	2	Mortared stone wall
5	2	Brick and stone well lining
6	2	Dark grey silty clay with frequent rubble inclusions
7	2	Dark-grey clay with occasional shell inclusions
8	2	Disarticulated human and animal bone
9	2	Compact light grey clay
10	2	Sub circular pit cut
11	2	Dark grey clay with frequent shell inclusions
12	3 and 4	Compact grey-yellow clay with stone inclusions
13	4	Red brick vault
14	4	Mortared stone supporting wall of C13
15	4	Red brick foundation wall
16	5 and 6	Sand and degraded mortar
17	5 and 6	Compact grey-yellow clay with stone inclusions

APPENDIX 2 OSTEOARCHAEOLOGICAL ANALYSIS

1. Introduction

The following report details the osteological analysis of disarticulated human remains retrieved during test investigations at Parnell Square North in Dublin City by David McIlreavy in June 2018 (Licence 15E0361). The analysis was undertaken by Maeve Tobin of Irish Archaeological Consultancy Ltd. The remains were retrieved from a single deposit of mixed material exposed within Test Trench 2. The deposit contained commingled disarticulated human remains and animal bone. A fragment of mid-shaft adult humerus (5g) has returned a two-sigma calibrated date of AD 692–961 (UBA 38764) indicating activity between the 8th and 10th centuries AD.

1.1 Methodology

Prior to analysis the bone samples were removed from the surrounding matrix as part of post-excavation processing. The material was analysed according to the standards laid out in the guidelines produced by the IAI (Buckley, Ó’Donnabhaín and Reilly 2004), the Cifa (Mitchell and Brickley 2017) and Buikstra & Ubelaker (1994).

Each element was examined macroscopically and an attempt was made to identify the bone to four main skeletal elements, i.e. skull, trunk, upper limb and lower limb. Identified elements were separated and recorded in detail. A full inventory of all the remains was maintained and a discussion of the results are included in this report.

Where possible biological sex was assessed using morphological assessments skeletal features as described in Bass (1967), Buikstra & Ubelaker (1994), as well as metrical analysis of post-cranial elements (Bass 1995). Where possible age was assessed using standard techniques as described in Buikstra & Ubelaker (1994), White (2000) and Schwartz (1995) including changes to the auricular surface and pubic symphysis. Non-metric traits described by Buikstra & Ubelaker (1994) and Finnegan (1978) were recorded. The dentition was inventoried using Buikstra & Ubelaker (1994) and Van Beek (1983); dental pathologies were recorded using Brothwell (1981) and White (2000).

The dental remains were examined and recorded using an individual two-digit number. The first digit represents the location in the mouth (1–4) and the second digit represents the element (1–8). For deciduous dentition a similar method is followed however the quadrants of the mouth are numbered 5–8. In addition, incidences of calculus, caries lesions, hypoplastic defects, and abscesses were recorded using Ortner (2003) and White (2000).

TABLE 1: Layout of numbering system for dental analysis

UPPER RIGHT QUADRANT					UPPER LEFT QUADRANT						
<i>Juvenile</i>	<i>55</i>	<i>54</i>	<i>53</i>	<i>52</i>	<i>51</i>	<i>61</i>	<i>62</i>	<i>63</i>	<i>64</i>	<i>62</i>	<i>Juvenile</i>

18	17	16	15	14	13	12	11	21	22	23	24	25	26	27	28
48	47	46	45	44	43	42	41	31	32	33	34	35	36	37	38
<i>Juvenile</i>			<i>85</i>	<i>84</i>	<i>83</i>	<i>82</i>	<i>81</i>	<i>71</i>	<i>72</i>	<i>73</i>	<i>74</i>	<i>75</i>	<i>Juvenile</i>		
LOWER RIGHT QUADRANT								LOWER LEFT QUADRANT							

1.2 Preservation

Skeletal preservation depends upon a number of factors, including the age and sex of the individual as well as the size, shape and robusticity of the bone. Burial environment, post-depositional disturbance and treatment following excavation can also have a considerable impact on bone condition. Preservation was assessed using a grading system of five categories: very poor, poor, moderate, good and excellent. Excellent preservation implied no bone surface erosion and very few or no breaks, whereas very poor preservation indicated complete or almost complete loss of the bone surface due to erosion and severe fragmentation.

The preservation of remains retrieved from Parnell Sq. North was heavily impacted by the level of fragmentation and historic disturbance. Despite this a large portion of the bone fragments were rated as moderate or good condition which aided in the identification to specific element and features.

1.3 Demography

The remains appeared to represent all broad age categories within the population, ranging from infant, young child, adolescent, and adult. Sexually diagnostic elements of the skull and pelvis and indicative metrics from long bones suggest the presence of males and females; although without confirmation of other known associated skeletal elements it was not possible to make definitive statements about sex prevalence.

2 OSTEOLOGICAL ANALYSIS

2.1 Identification

Of the 864 fragments submitted for analysis it was possible to identify 84% (n=728 fragments) of the remains to skeletal element. The largest quantity of fragments were identified as elements of the vertebrae and ribs (34.2%, N=295), although all regions of the body were well represented. No complete long bones were present, although 55 elements were recorded as complete, comprising lumbar vertebrae, patellae, tarsals, metacarpals, metacarpals and phalanges of the hands and feet. While it is unsurprising that the small bones of the hand and feet survive complete, the presence of complete vertebrae suggest that there was no significant effort to crush the bone so that it was unrecognisable.

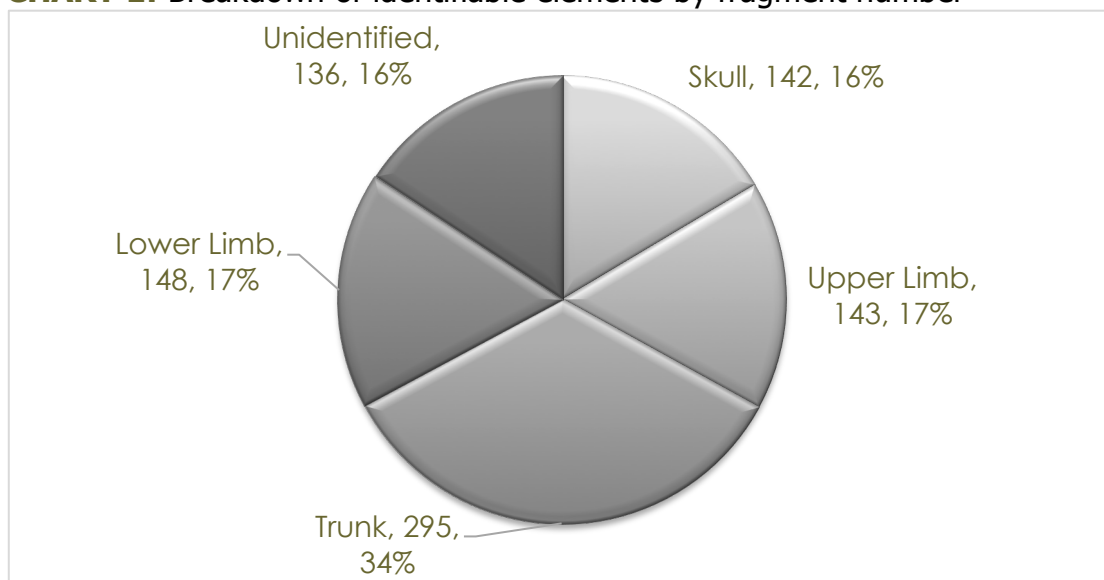
TABLE 2: Breakdown of bone type, number and size by element

BONE ELEMENT	NO. OF FRAGMENTS	MAX. FRAGMENT SIZE	NO. COMPLETE BONES
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BONE ELEMENT	NO. OF FRAGMENTS	MAX. FRAGMENT SIZE	NO. COMPLETE BONES
FRONTAL	27	71mm	
OCCIPITAL	26	80mm	
PARIETAL	44	79mm	
TEMPORAL	11	76mm	
SPHENOID	3	43mm	
ZYGOMATIC	5	49mm	
MANDIBLE	11	86mm	
MAXILLA	6	49mm	
LOOSE TEETH	9		6
SCAPULA	33	114mm	
CLAVICLE	17	144mm	
HUMERUS	27	193mm	
RADIUS	9	195mm	
ULNA	21	242mm	
CARPALS	9	26mm	
METACARPALS	13	69mm	5
HAND PHALANGES	13	46mm	10
RIBS	116	136mm	
STERNUM	1	37mm	
VERTEBRAE	139	80mm	10
INNOMINATE	39	113mm	

BONE ELEMENT	NO. OF FRAGMENTS	MAX. FRAGMENT SIZE	NO. COMPLETE BONES
FEMUR	31	240mm	
TIBIA	42	205mm	
FIBULA	15	117mm	
PATELLA	4	47mm	3
TARSALS	23	83mm	10
METATARSALS	28	77mm	5
FOOT PHALANGES	6	29mm	6
UNIDENTIFIED FRAGMENTS	136	-	
TOTAL	864	240mm	55

CHART 1: Breakdown of identifiable elements by fragment number



2.1.1 The skull

A total of 142 fragments, or 16.4% of the total assemblage, were identified as representing the skull. The majority of these (n=108) comprised of cranial vault fragments, including frontal, parietal, occipital and temporal. The

remaining elements represented the facial bones (zygomatic, mandible and maxilla) and dental remains. None of these elements, with the exception of the teeth, were complete. The largest fragment size comprised an almost complete adult occipital bone measuring *c.* 80mm in width; the non-expression of a nuchal crest suggestive of a female sex.

The frontal remains represented at least four adult individuals, of which two were identified as possible female and two as possible males. A large quantity of parietal fragments were identified (n=44) however it was only possible to accurately side 9 of these fragments. They ranged in depth and development representing adults and juveniles. Temporal remains largely comprised of the petrous portion (n=7), all of which relate to mature individuals. The occipital was largely represented by vault fragments (rather than the robust basilar portion) although the variance in thickness suggests both mature and juvenile remains.

Mandibular fragments accounted for one of the more complete skeletal elements, which indicated a MNI of three adults or late adolescents. Maxillary remains were, understandably, more fragmented although this too indicated the presence of at least three mature individuals. In all eight fragments of mandibular body and four maxillary fragments contained 16 *in-situ* teeth. In addition, nine loose teeth were present, which largely comprised molars and incisors. All of the dental remains were permanent dentition, largely displaying mild to severe wear. Only three of the teeth displayed slight calculus on the lingual and distal surfaces. One of the larger mandibular fragments, identified as a possible male (protruding mental eminence) displayed evidence for moderate periodontal disease. While a complete dental arcade is required to make estimations of age the dentition present suggest at least one late adolescent or young adult and one middle adult.

2.1.2 Trunk

A total of 295 bone fragments, or 34.2% of the total assemblage, were identified as trunk remains. The majority of these (n=139) comprised vertebral fragments. The cervical vertebrae were represented by a partial adult C1, C2 and C6/7, and a right infant neural arch fragment from a C6 or C7. The thoracic vertebrae (n=36) were heavily fragmented, and as such were difficult to identify to specific element. The remains of the damaged centra suggest the presence of immature remains, of a young child and adolescent. The lumbar vertebrae (n=20) were much more complete, with 6 complete vertebrae noted representing at least two adult individuals. The sacrum was also partially represented by several large fragments of S1 centra and spinous process of S1-4.

Of the rib cage, 116 fragments of ribs were noted. None of the elements were complete and although they largely representing fully matured elements, some minor evidence for juvenile individuals were also noted (n=3). Given the presence of partial heads and tubercles it was possible to side 13 ribs as right and 11 as left. One of the left elements was the first rib.

Only a single fragment of mature sternum (corpus) was identified, although this is not surprising given the general survival rates for this element from known excavated cemeteries.

2.1.3 Upper Limb

A total of 143 bone fragments, or 16.5% of the total assemblage, were identified as upper limb remains. The majority of these comprised fragments of the scapula, humerus and ulna. The fragments from the upper limb were largely in moderate condition with low levels of surface wear.

Of the scapular remains (n=33) the majority of fragments represent undiagnostic blade however six complete or partial glenoid fossa, six partial acromion process and three partial or complete coracoid process were noted. It was possible to get complete dimensions from two glenoid fossa suggesting at least one male identity.

The clavicle was represented by 17 fragments displaying the medial and lateral articulations. It was not possible to garner any metrical data although all of the remains appeared mature.

The long bones of the upper limbs were well represented with humerus (n=27), radius (n=9) and ulna (n=21) suggesting the presence of at least four adults, one young child and one infant. Metrics were possible regarding four humeral heads, three distal humeral epiphyses and one radial head; suggestive of male and female individuals. The hands and wrists were represented by a small number of largely complete elements, including 9 carpals, 14 metacarpals and 13 proximal phalanges; all but five elements relate to mature remains with some evidence for bones of a young child.

2.1.4 Lower Limb

A total of 148 bone fragments, or 17.2% of the total assemblage, were identified as lower limb remains. Although all long bone fragments were assigned to an element, some of the mid-shaft fragments remain un-sided, given the fragment size.

The pelvis or innominate was represented by 39 fragments representing ilium, ishium and pubis (to a lesser degree). These elements represent at least two young children, a middle adult and a young adult. While heavily fragmented and abraded the partial remains of four auricular surface, five sciatic notches, three pubic symphysis and six acetabulum were present for recording. It was only possible to make sex estimation for one element, that representing a female.

The femur is represented by 31 fragments which reflect a MNI of three adults and two juveniles. Metrical assessment of semi-complete femoral heads suggest two females are represented and a possible male. These elements

are heavily fragmented when compared with the upper limb long bones, hindering analysis. The tibia is the most represented long bone of the lower limb with 42 fragments present. This element identified a minimum number of five individuals also but differentiates from the femur in the age range. The tibial remains suggest the presence of at least four adults and a late adolescent. Two of the tibial shafts displayed evidence for infection, although this is a common occurrence in archaeological populations. The fibula was less well represented however given the slender nature of the bone it is subject to more pressure than the tibia or femur. A total of 15 fibula fragments were noted, largely relating to un-sided mid-shaft, although at least two adults are represented. It was not possible to gain any metrical data from the tibia or fibula which would indicate sexual identity. No evidence for degeneration of the joints in the lower limbs was noted.

Four largely complete patellae (MNI=2) were identified in the assemblage, all of which appear to represent late adolescent or adult individuals. The very low identification rate for patellae is unusual however the composition of trabecular bone would make the element prone to crushing and fragmentation.

The feet and ankles were represented by a relatively large number (n=58) of complete or partial elements. These included 23 tarsals (9 calcaneus, 7 talus, 3 navicular, 1 cuboid and 3 cuniforms), 28 metatarsals (MT1–5) and 6 proximal phalanges. The talar bones indicate two juveniles (young child) with one calcaneus of equal age. Some of the metatarsals and phalanges indicate partial fusion of the heads and proximal epiphyses suggestive of an adolescent age range.

2.2 Minimum Number of Individuals (MNI)

Taking all of the above data on board the minimum number of individuals recorded in the remains is 8; which includes five late adolescents or adults, two young children juveniles and 1 infant (Table 3). The most re-occurring skeletal elements are the proximal ulna, proximal tibia, clavicle, and calcaneus. Ageing and sexing of the mature remains was limited by the fragmentation and condition of the remains, however at least two females and two males are indicated, with one young adult and one middle adult suggested. These identifications cannot be confirmed due to the commingled nature of the remains, however, they provide some insight to the potential demography of this assemblage. Juvenile remains are represented by cranial vault, upper limb (ulna), lower limb (femur, tibia and tarsals) and torso (ribs and vertebrae). Identifiable infant remains comprised of a perinatal humerus and cervical vertebra.

TABLE 3: Minimum Number of Individuals (MNI) by element

ELEMENT	ADULT/ LATE ADOLESCENT			JUVENILE/ YOUNG ADOLESCENT			INFANT		
	L	M	R	L	M	R	L	UNSIDED	R
Frontal (orbits)		4	4						
Occipital (Cruciate Em.)		2			2				
Occipital (Pars basilaris)	1		1						
Temporal (Petrous)	4		3						
Zygomatic	3		2						
Maxilla			3						
Mandible	1		1						
Medial clavicle	1		4			1			
Lateral clavicle	3		4	1					
Scapula (Glenoid)	1		2			2			
Scapula (Acromion)	2		2	1		1			
Sternum (Corpus)		1							
Prox. Humerus	4		1						
Dist. Humerus	3		2				1		
Prox. Radius	1		1						
Prox. Ulna	5		4	1		1			
Dist. Ulna			2						
Prox. Femur	3		1	2					
Dist. Femur	2		1		1				
Prox. Tibia	3		3		2				
Dist. Tibia	1		5		1				
Prox. Fibula			2						
Dist. Fibula			2						

ELEMENT	ADULT/ LATE ADOLESCENT			JUVENILE/ YOUNG ADOLESCENT			INFANT		
	L	M	R	L	M	R	L	UNSIDED	R
Patella	2		2						
Ilium (Aur. Surface)	1		1	1		2			
Pubis (Pub. Sym.)	1		2						
Ishium	2		2						
Capitate	1		1						
Lunate			2						
Hamate	2								
Triquetral	1		1						
Pisiform			1						
Metacarpal 1			1						
Metacarpal 2			1						
Metacarpal 3	2								
Metacarpal 4			1						
Metacarpal 5	2		1						
Proximal Hand Phalanges		1			1				
Middle Hand Phalanges		1							
Calcaneus	5		2			1			
Talus	2		3			2			
Navicular	1		1			1			
Cuboid	1								
First Cuneiform	1		1						
Second Cuneiform	1								
Metatarsal 1	2								
Metatarsal 2	3		2						
Metatarsal 3			3						
Metatarsal 4	2		2						

ELEMENT	ADULT/ LATE ADOLESCENT			JUVENILE/ YOUNG ADOLESCENT			INFANT		
	L	M	R	L	M	R	L	UNSIDED	R
Metatarsal 5	2		2						
Proximal Foot Phalanges		4							

2.3 Pathology/ Trauma

Of the 864 fragments of bone only 8 displayed evidence for pathology or trauma. The affected elements include the cranial vault, ribs, tibia and lumbar vertebrae. These findings are discussed below but any meaningful interpretation or diagnosis of individual health is restricted by the disarticulated nature of the remains.

2.3.1 Infection

Infectious disease was a primary cause of death in past populations. The re-emerging nature of infection is aided by poverty, climate and the trade and migratory patterns of humans and animals (Roberts and Manchester 2005, 165). Factors in determining a person's vulnerability to infection include age, sex, genetic predisposition, nutritional factors, and immune status. For the purposes of osteological analysis it is possible to differentiate between non-specific infection such as Osteomyelitis, Periostitis, Sinusitis, and Endocranial changes and specific infection such as Tuberculosis, Leprosy, and Treponemal disease. The only recorded evidence for ill health was non-specific infection, indicated by moderate periostitis (pitting) on two tibial mid-shafts (lateral and posterior surfaces). It appeared that the infection had healed by the time of death, although it is not possible to say in this case what the implications of this may have been.

2.3.2 Metabolic Disease

These can be loosely defined as being caused by the deficiency or excess of both dietary elements and hormones (Roberts and Manchester 2005, 221) and are often seen as indicators of stress. Only a small portion of these significantly alter the composition of bone to allow the proper identification during osteological analysis including anaemia, Vitamin B and C deficiency to name a few.

The most frequently recorded metabolic disease in archaeological populations is iron deficiency anaemia; indicated by changes in the orbits (*cribra orbitalia*) and the cranial vault (*porotic hyperostosis*). The presence of the condition has been considered evidence that a past population suffered chronic or episodic malnutrition. Evidence for healed *porotic hyperostosis* was noted on two

fragments of mature parietal bone however none of the orbital remains (MNI 4) displayed an evidence for *cribra orbitalia*.

2.3.3 Degenerative Joint Disease (DJD)

The term joint disease encompasses a large number of conditions with different causes, which all affect the articular joints of the skeleton. Factors influencing joint disease include physical activity, occupation, workload and advancing age, which manifest as degenerative joint disease and osteoarthritis. Alternatively, joint changes may have inflammatory causes, such as septic or rheumatoid arthritis. Different joint diseases affect the articular joints in a different way, and it is the type of lesion, together with the distribution of skeletal manifestations, which determines the diagnosis.

Two lumbar vertebra, from a mature individual, indicated evidence for schmorls nodes on the inferior centra. Given the disarticulated nature of the remains it is not possible to discuss the extent or significance of the disease for the individual. No evidence for any degeneration of other joints on the upper or lower limbs was noted.

2.4 Non-metric traits

Non-metric traits are additional sutures, facets, bony processes, canals and foramina, which occur in a minority of skeletons and are believed to suggest hereditary affiliation between skeletons. The origins of non-metric traits have been extensively discussed in the osteological literature and it is now thought that while most non-metric traits have genetic origins, some can be produced by factors such as mechanical stress or environment. While there are hundreds of non-metric traits currently known only a selection of 8 cranial and 11 post-cranial traits were examined in this study. None of the recordable traits were observed in these remains however the high level of fragmentation means that the available specimens were low.

3 DISCUSSION & CONCLUSIONS

Disarticulated human bone was retrieved during archaeological test trenching at Parnell Square North in Dublin City. A total of 864 fragments of human skeletal remains were retrieved from a deposit exposed in Test Trench 2. The remains were washed and subject to full osteological analysis by the author. This involved visually inspecting the bone and sorting into skeletal regions, following which detailed analysis of each fragment was carried out in order to ascertain information regarding the individuals they represent (e.g. sex, age at death, pathology, etc.).

Given that the remains were disarticulated and commingled in the deposit it was not possible to make conclusive statements about individual health, however, the assessment indicated that a minimum number of eight people are represented. These include at least five late adolescents or adults, two young children and an infant. Both male and females are indicated in the mature remains. All regions of the body were represented equally with no

evidence for preferential selection or exclusion of bones in the deposit. Some evidence for non-specific infection and degenerative joint disease was noted but nothing out of the ordinary for a historic population. It is likely that these remains represent clearance from a burial area in the surrounding area, given the profile of individuals represented. A sample of bone was submitted for radiocarbon dating which indicates activity between the 8th and 10th centuries AD, a period of significant development for the area.

The systematic use of charnel pits is a regular feature of densely filled medieval and post-medieval urban graveyards, due to demand for space (Tarlow 2011). It is possible that in this case burials may have been disturbed during historic construction in the area and the bones deposited together. Further investigation would be required to determine the nature of the disturbance and the context of the deposition. The layer containing bone at Parnell Sq. North has only been partially excavated to facilitate testing and it is possible that further skeletal remains may survive outside of the investigated trench. There was no apparent order to the deposition of the bone. The remains were heavily fragmented with none of the larger limb bones surviving in-tact, however several vertebrae and smaller bones of the hands and feet were complete indicating that the remains were not intentionally damaged to avoid recognition of body parts during clearance.

4 REFERENCES

Mitchell, P.D. and Brickley, M. 2017 Updated Guidelines to the Standards for Recording Human Remains. Reading, CIfA.

Buckley, L., O' Donnabháin, B. and Reilly, E. 2004 The Treatment of Human Remains: Technical Paper for Archaeologists. Guidelines prepared by Institute of Archaeologists Ireland.

Buikstra, J.E. & Ubelaker, D.H. (eds) 1994 Standards for Data Collection from Human Skeletal Remains. Arkansas Archaeological Survey Research Series No. 44.

Roberts, C. & Manchester, K. 2005 The Archaeology of Disease (3rd Edition). United Kingdom, Sutton Publishing.

Scheuer, L & Black, S. 2004 The Juvenile Skeleton. London, Elsevier Academic Press.

Schwartz, J.H. 1995 Skeleton Keys: an introduction to Human Skeletal Morphology, Development and Analysis. Oxford, Oxford University Press.

Tarlow, S. 2011 *Ritual, Belief and the Dead in Early Modern Britain and Ireland*. Cambridge University Press, London.

Van Beek, C. 1983 Dental Morphology: An illustrated Guide. Wiltshire, Wright.

White, T. D. 2000 Human Osteology (2nd Edition). London, Academic Press.

** A full inventory of the disarticulated remains has been compiled by the author.*

APPENDIX 3 RADIOCARBON DATING RESULTS - QUB

The "Measured radiocarbon age" is quoted in conventional years BP (before AD 1950). The error is expressed at the one-sigma level of confidence. The "Calibrated date range" is equivalent to the probable calendrical age of the sample material and is expressed at the one Sigma (68.3% probability) and two-Sigma (95.4% probability) level of confidence.

Calibration dataset: intcal13.14c

Calibration programme*: CALIB REV7.0.0 (Copyright 1986-2013 M Stuiver and PJ Reimer) *To be used in conjunction with: Stuiver, M., and Reimer, P.J., 1993, Radiocarbon, 35, 215-230.

CONTEXT	SAMPLE TYPE	IDENTIFICATION	WEIGHT	QUB LAB NUMBER	C14 RESULT BP	95.4% PROBABILITY
Dsk 1	Human Bone	Mid-shaft adult humerus	5g	UB 38764	1196 ± 41	AD 692–961

References for calibration datasets:

Reimer PJ, Bard E, Bayliss A, Beck JW, Blackwell PG, Bronk Ramsey C, Buck CE, Cheng H, Edwards RL, Friedrich M, Grootes PM, Guilderson TP, Haflidason H, Hajdas I, Hattä© C, Heaton TJ, Hogg AG, Hughen KA, Kaiser KF, Kromer B, Manning SW, Niu M, Reimer RW, Richards DA, Scott EM, Southon JR, Turney CSM, van der Plicht J.

IntCal13 and MARINE13 radiocarbon age calibration curves 0-50000 years calBP

Radiocarbon 55(4). DOI: 10.2458/azu_js_rc.55.16947

Comments:

* This standard deviation (error) includes a lab error multiplier.

** 1 sigma = square root of (sample std. dev.^2 + curve std. dev.^2)

** 2 sigma = 2 x square root of (sample std. dev.^2 + curve std. dev.^2)
where ^2 = quantity squared.

[] = calibrated range impinges on end of calibration data set

0* represents a "negative" age BP

1955* or 1960* denote influence of nuclear testing C-14

NOTE: Cal ages and ranges are rounded to the nearest year which may be too precise in many instances. Users are advised to round results to the nearest 10 yr for samples with standard deviation in the radiocarbon age greater than 50 yr.

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¹⁴CHRONO Centre
Queens University
Belfast
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Radiocarbon Date Certificate

Laboratory Identification: UBA-38764
Date of Measurement: 2018-09-07
Site: 15E0361 Parnell Square North
Sample ID: Disarticulated Deposit
Material Dated: bone, antler or tooth root
Pretreatment: Collagen
Submitted by: IAC

Conventional ¹⁴C
Age: 1196±41 BP
using AMS
Fraction corrected δ¹³C

38764
UBA-38764

Radiocarbon Age BP 1196 +/- 41
Calibration data set: intcal13.14c
% area enclosed cal AD age ranges

68.3 (1 sigma)	cal AD 773– 882
95.4 (2 sigma)	cal AD 692– 748
	762– 901
	920– 961

Reimer et al. 2013
relative area under
probability distribution

1.000
0.115
0.815
0.069

APPENDIX 4 LEGISLATION PROTECTING THE ARCHAEOLOGICAL RESOURCE

PROTECTION OF CULTURAL HERITAGE

The cultural heritage in Ireland is safeguarded through national and international policy designed to secure the protection of the cultural heritage resource to the fullest possible extent (Department of Arts, Heritage, Gaeltacht and the Islands 1999, 35). This is undertaken in accordance with the provisions of the European Convention on the Protection of the Archaeological Heritage (Valletta Convention), ratified by Ireland in 1997.

THE ARCHAEOLOGICAL RESOURCE

The *National Monuments Act 1930 to 2014* and relevant provisions of the *National Cultural Institutions Act 1997* are the primary means of ensuring the satisfactory protection of archaeological remains, which includes all man-made structures of whatever form or date except buildings habitually used for ecclesiastical purposes. A National Monument is described as 'a monument or the remains of a monument the preservation of which is a matter of national importance by reason of the historical, architectural, traditional, artistic or archaeological interest attaching thereto' (National Monuments Act 1930 Section 2). A number of mechanisms under the National Monuments Act are applied to secure the protection of archaeological monuments. These include the Register of Historic Monuments, the Record of Monuments and Places, and the placing of Preservation Orders and Temporary Preservation Orders on endangered sites.

OWNERSHIP AND GUARDIANSHIP OF NATIONAL MONUMENTS

The Minister may acquire national monuments by agreement or by compulsory order. The state or local authority may assume guardianship of any national monument (other than dwellings). The owners of national monuments (other than dwellings) may also appoint the Minister or the local authority as guardian of that monument if the state or local authority agrees. Once the site is in ownership or guardianship of the state, it may not be interfered with without the written consent of the Minister.

REGISTER OF HISTORIC MONUMENTS

Section 5 of the 1987 Act requires the Minister to establish and maintain a Register of Historic Monuments. Historic monuments and archaeological areas present on the register are afforded statutory protection under the 1987 Act. Any interference with sites recorded on the register is illegal without the permission of the Minister. Two months notice in writing is required prior to any work being undertaken on or in the vicinity of a registered monument. The register also includes sites under Preservation Orders and Temporary Preservation Orders. All registered monuments are included in the Record of Monuments and Places.

PRESERVATION ORDERS AND TEMPORARY PRESERVATION ORDERS

Sites deemed to be in danger of injury or destruction can be allocated Preservation Orders under the 1930 Act. Preservation Orders make any interference with the site illegal. Temporary Preservation Orders can be attached under the 1954 Act. These perform the same function as a Preservation Order but have a time limit of six months, after which the situation must be reviewed. Work may only be undertaken on or in the vicinity of sites under Preservation Orders with the written consent, and at the discretion, of the Minister.

RECORD OF MONUMENTS AND PLACES

Section 12(1) of the 1994 Act requires the Minister for Arts, Heritage, Gaeltacht and the Islands (now the Minister for Culture, Heritage and the Gaeltacht) to establish and maintain a record of monuments and places where the Minister believes that such monuments exist. The record comprises a list of monuments and relevant places and a map/s showing each monument and relevant place in respect of each county in the state. All sites recorded on the Record of Monuments and Places receive statutory protection under the National Monuments Act 1994. All recorded monuments on the proposed development site are represented on the accompanying maps.

Section 12(3) of the 1994 Act provides that 'where the owner or occupier (other than the Minister for Arts, Heritage, Gaeltacht and the Islands) of a monument or place included in the Record, or any other person, proposes to carry out, or to cause or permit the carrying out of, any work at or in relation to such a monument or place, he or she shall give notice in writing to the Minister of Arts, Heritage, Gaeltacht and the Islands to carry out work and shall not, except in case of urgent necessity and with the consent of the Minister, commence the work until two months after giving of notice'.

Under the National Monuments (Amendment) Act 2004, anyone who demolishes or in any way interferes with a recorded site is liable to a fine not exceeding €3,000 or imprisonment for up to 6 months. On summary conviction and on conviction of indictment, a fine not exceeding €10,000 or imprisonment for up to 5 years is the penalty. In addition, they are liable for costs for the repair of the damage caused.

In addition to this, under the European Communities (Environmental Impact Assessment) Regulations 1989, Environmental Impact Statements (EIS) are required for various classes and sizes of development project to assess the impact the proposed development will have on the existing environment, which includes the cultural, archaeological and built heritage resources. These document's recommendations are typically incorporated into the conditions under which the proposed development must proceed, and thus offer an additional layer of protection for monuments which have not been listed on the RMP.

THE PLANNING AND DEVELOPMENT ACT 2000

Under planning legislation, each local authority is obliged to draw up a Development Plan setting out their aims and policies with regard to the growth of the area over a five-year period. They cover a range of issues including archaeology and built heritage, setting out their policies and objectives with regard to the protection and enhancement of both. These policies can vary from county to county. The Planning and Development Act 2000 recognises that proper planning and sustainable development includes the protection of the archaeological heritage. Conditions relating to archaeology may be attached to individual planning permissions.

APPENDIX 5 IMPACT ASSESSMENT & THE CULTURAL HERITAGE RESOURCE

POTENTIAL IMPACTS ON ARCHAEOLOGICAL AND HISTORICAL REMAINS

Impacts are defined as 'the degree of change in an environment resulting from a development' (Environmental Protection Agency 2003: 31). They are described as profound, significant or slight impacts on archaeological remains. They may be negative, positive or neutral, direct, indirect or cumulative, temporary or permanent.

Impacts can be identified from detailed information about a project, the nature of the area affected and the range of archaeological and historical resources potentially affected. Development can affect the archaeological and historical resource of a given landscape in a number of ways.

- Permanent and temporary land-take, associated structures, landscape mounding, and their construction may result in damage to or loss of archaeological remains and deposits, or physical loss to the setting of historic monuments and to the physical coherence of the landscape.
- Archaeological sites can be affected adversely in a number of ways: disturbance by excavation, topsoil stripping and the passage of heavy machinery; disturbance by vehicles working in unsuitable conditions; or burial of sites, limiting accessibility for future archaeological investigation.
- Hydrological changes in groundwater or surface water levels can result from construction activities such as de-watering and spoil disposal, or longer-term changes in drainage patterns. These may desiccate archaeological remains and associated deposits.
- Visual impacts on the historic landscape sometimes arise from construction traffic and facilities, built earthworks and structures, landscape mounding and planting, noise, fences and associated works. These features can impinge directly on historic monuments and historic landscape elements as well as their visual amenity value.
- Landscape measures such as tree planting can damage sub-surface archaeological features, due to topsoil stripping and through the root action of trees and shrubs as they grow.
- Ground consolidation by construction activities or the weight of permanent embankments can cause damage to buried archaeological remains, especially in colluviums or peat deposits.

- Disruption due to construction also offers in general the potential for adversely affecting archaeological remains. This can include machinery, site offices, and service trenches.

Although not widely appreciated, positive impacts can accrue from developments. These can include positive resource management policies, improved maintenance and access to archaeological monuments, and the increased level of knowledge of a site or historic landscape as a result of archaeological assessment and fieldwork.

PREDICTED IMPACTS

The severity of a given level of land-take or visual intrusion varies with the type of monument, site or landscape features and its existing environment. Severity of impact can be judged taking the following into account:

- The proportion of the feature affected and how far physical characteristics fundamental to the understanding of the feature would be lost;
- Consideration of the type, date, survival/condition, fragility/vulnerability, rarity, potential and amenity value of the feature affected;
- Assessment of the levels of noise, visual and hydrological impacts, either in general or site specific terms, as may be provided by other specialists.

APPENDIX 6 MITIGATION MEASURES & THE CULTURAL HERITAGE RESOURCE

POTENTIAL MITIGATION STRATEGIES FOR CULTURAL HERITAGE REMAINS

Mitigation is defined as features of the design or other measures of the proposed development that can be adopted to avoid, prevent, reduce or offset negative effects.

The best opportunities for avoiding damage to archaeological remains or intrusion on their setting and amenity arise when the site options for the development are being considered. Damage to the archaeological resource immediately adjacent to developments may be prevented by the selection of appropriate construction methods. Reducing adverse effects can be achieved by good design, for example by screening historic buildings or upstanding archaeological monuments or by burying archaeological sites undisturbed rather than destroying them. Offsetting adverse effects is probably best illustrated by the full investigation and recording of archaeological sites that cannot be preserved *in situ*.

DEFINITION OF MITIGATION STRATEGIES

ARCHAEOLOGICAL RESOURCE

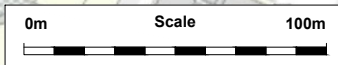
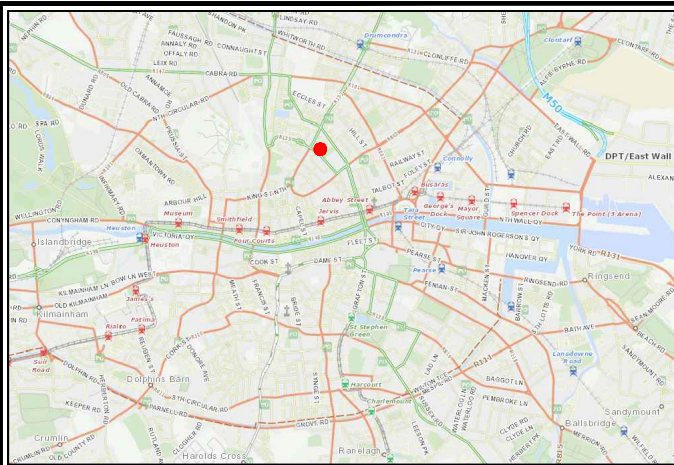
The ideal mitigation for all archaeological sites is preservation *in situ*. This is not always a practical solution, however. Therefore, a series of recommendations are offered to provide ameliorative measures where avoidance and preservation *in situ* are not possible.

Full Archaeological Excavation involves the scientific removal and recording of all archaeological features, deposits and objects to the level of geological strata or the base level of any given development. Full archaeological excavation is recommended where initial investigation has uncovered evidence of archaeologically significant material or structures and where avoidance of the site is not possible. (CIfA 2014b)

Archaeological Test Trenching can be defined as 'a limited programme... of intrusive fieldwork which determines the presence or absence of archaeological features, structures, deposits, artefacts or ecofacts within a specified area or site on land or underwater. If such archaeological remains are present test trenching defines their character and extent and relative quality.' (CIfA 2014a)

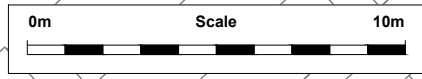
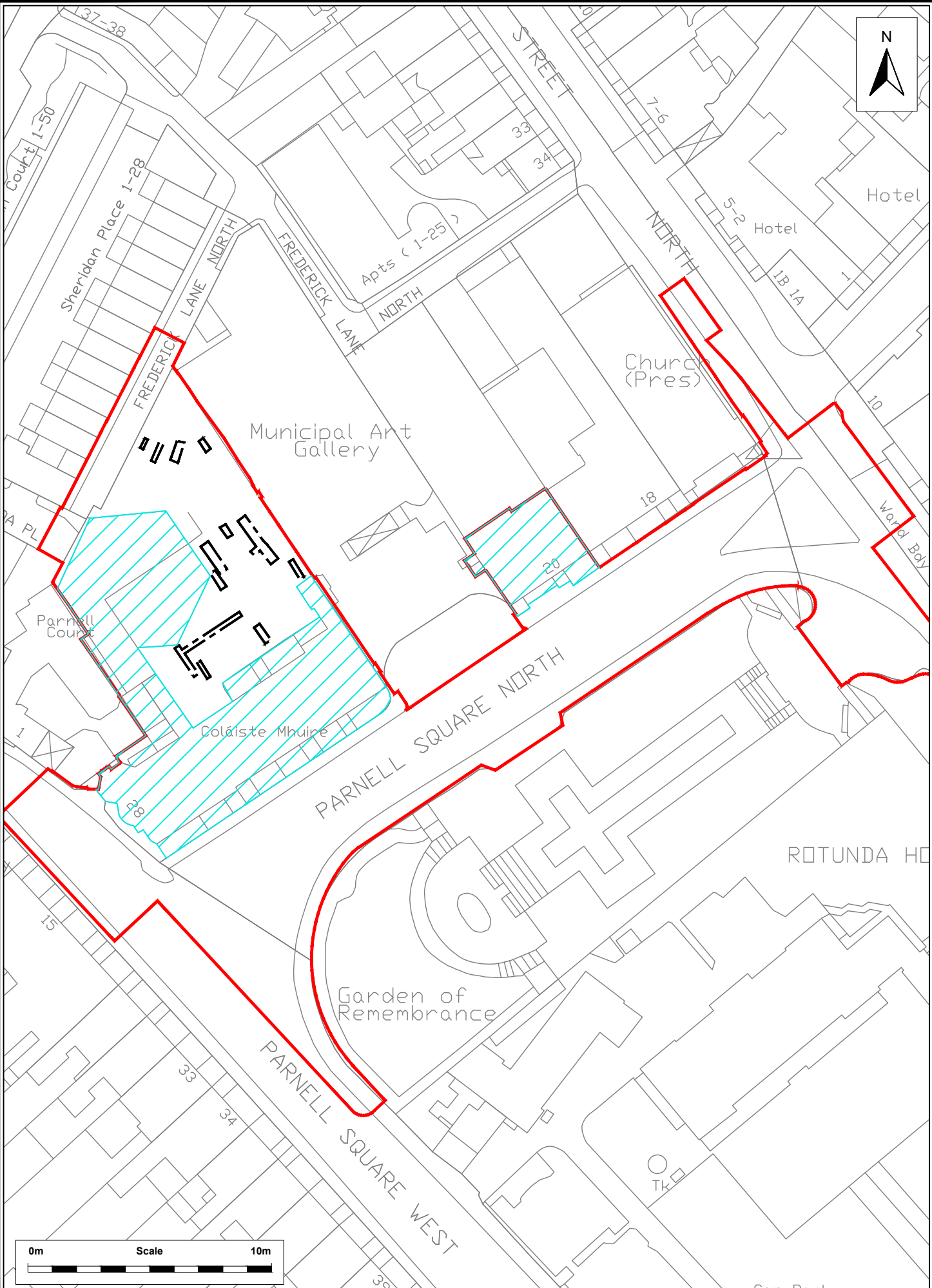
Archaeological Monitoring can be defined as a 'formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons within a specified area or site on land or underwater, where there is possibility that archaeological deposits may be

disturbed or destroyed. The programme will result in the preparation of a report and ordered archive.’ (CIfA 2014c)



IAC Archaeology

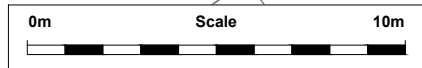
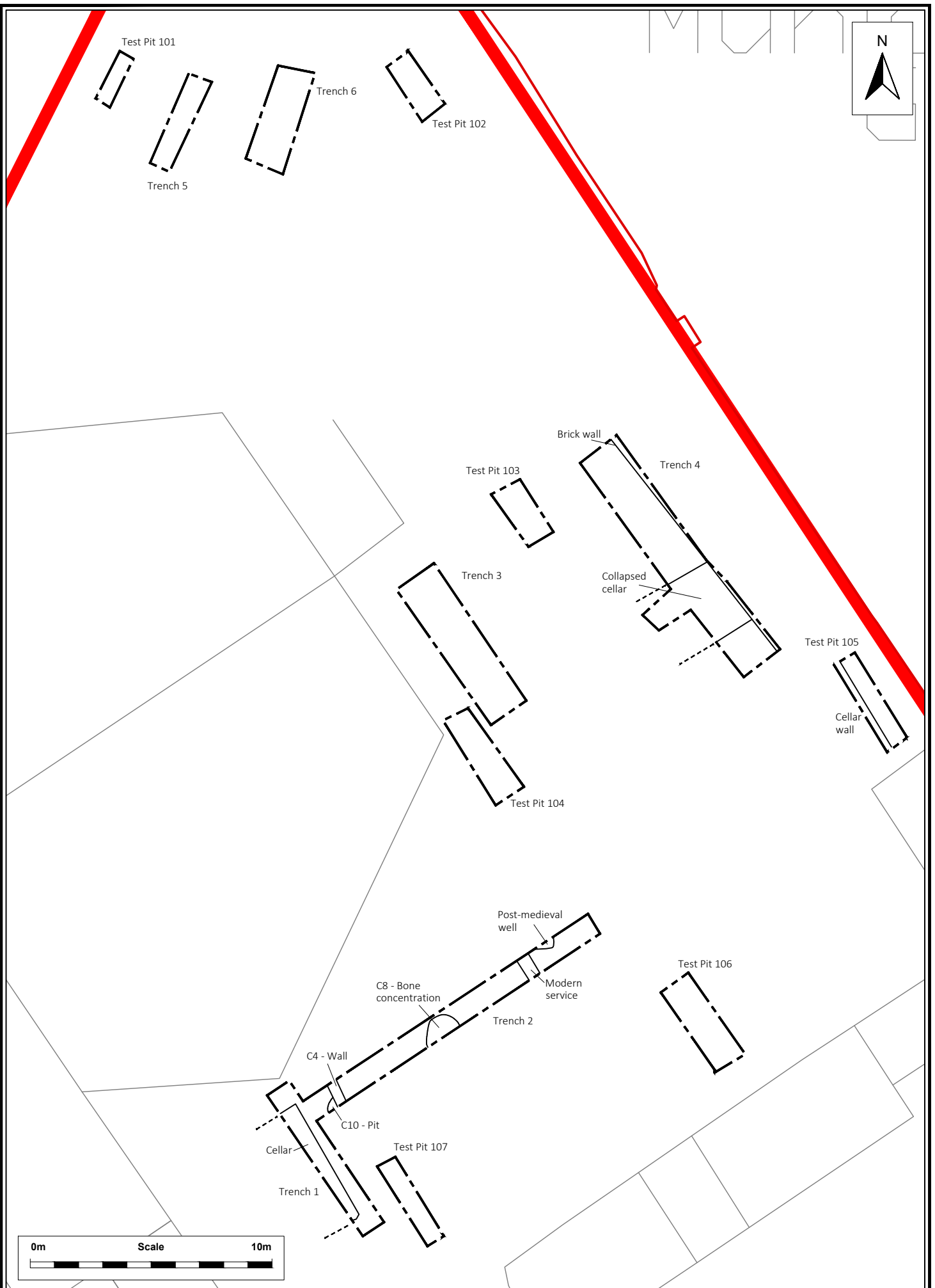
Title	Site location	Scale	1:2,500@A4	Drawn by	DM
Project	23-28 Parnell Square North, Dublin 1	Date	26/09/18	Checked by	DM ¹
Client	Dublin City Council	Job no.	J2941	Fig.	1
				Rev.	-



IAC Archaeology

Title	Location of test trenches and test pits
Project	23-28 Parnell Square North, Dublin 1
Client	Dublin City Council

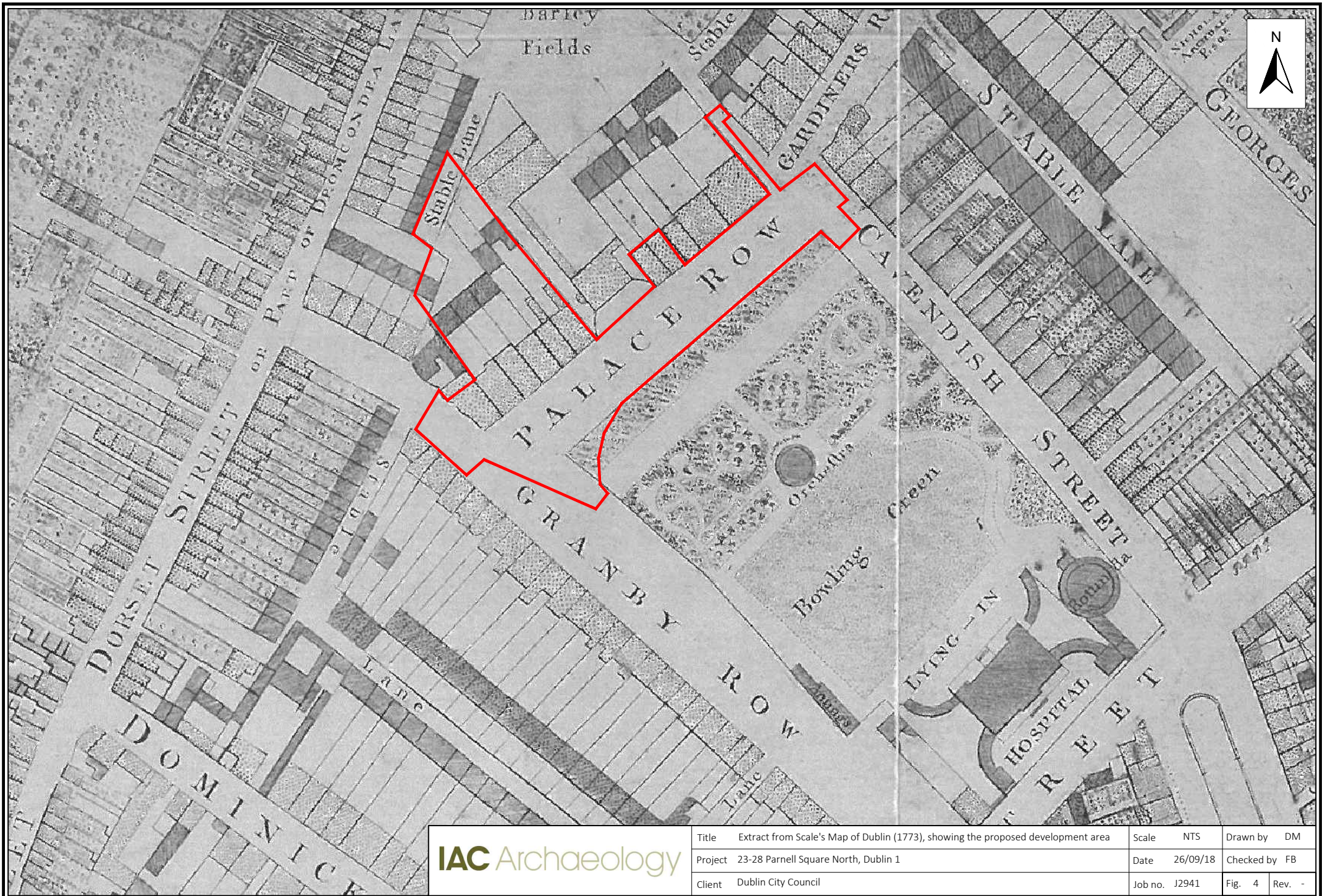
Scale	1:200@A4	Drawn by	DM
Date	15/08/18	Checked by	DM ¹
Job no.	J2941	Fig.	2
		Rev.	-



Title	Detail of test trenches and test pits	Scale	1:200@A4	Drawn by	DM
Project	23-28 Parnell Square North, Dublin 1	Date	04/20/18	Checked by	DM ¹
Client	Dublin City Council	Job no.	J2941	Fig.	3a
				Rev.	-



Title	Detail of test trenches and test pits showing proposed basement layout	Scale	1:250@A4	Drawn by	DM
Project	23-28 Parnell Square North, Dublin 1	Date	04/20/18	Checked by	DM ¹
Client	Dublin City Council	Job no.	J2941	Fig.	3b
				Rev.	-



IAC Archaeology

Title	Extract from Scale's Map of Dublin (1773), showing the proposed development area	Scale	NTS	Drawn by	DM
Project	23-28 Parnell Square North, Dublin 1	Date	26/09/18	Checked by	FB
Client	Dublin City Council	Job no.	J2941	Fig.	4
				Rev.	-

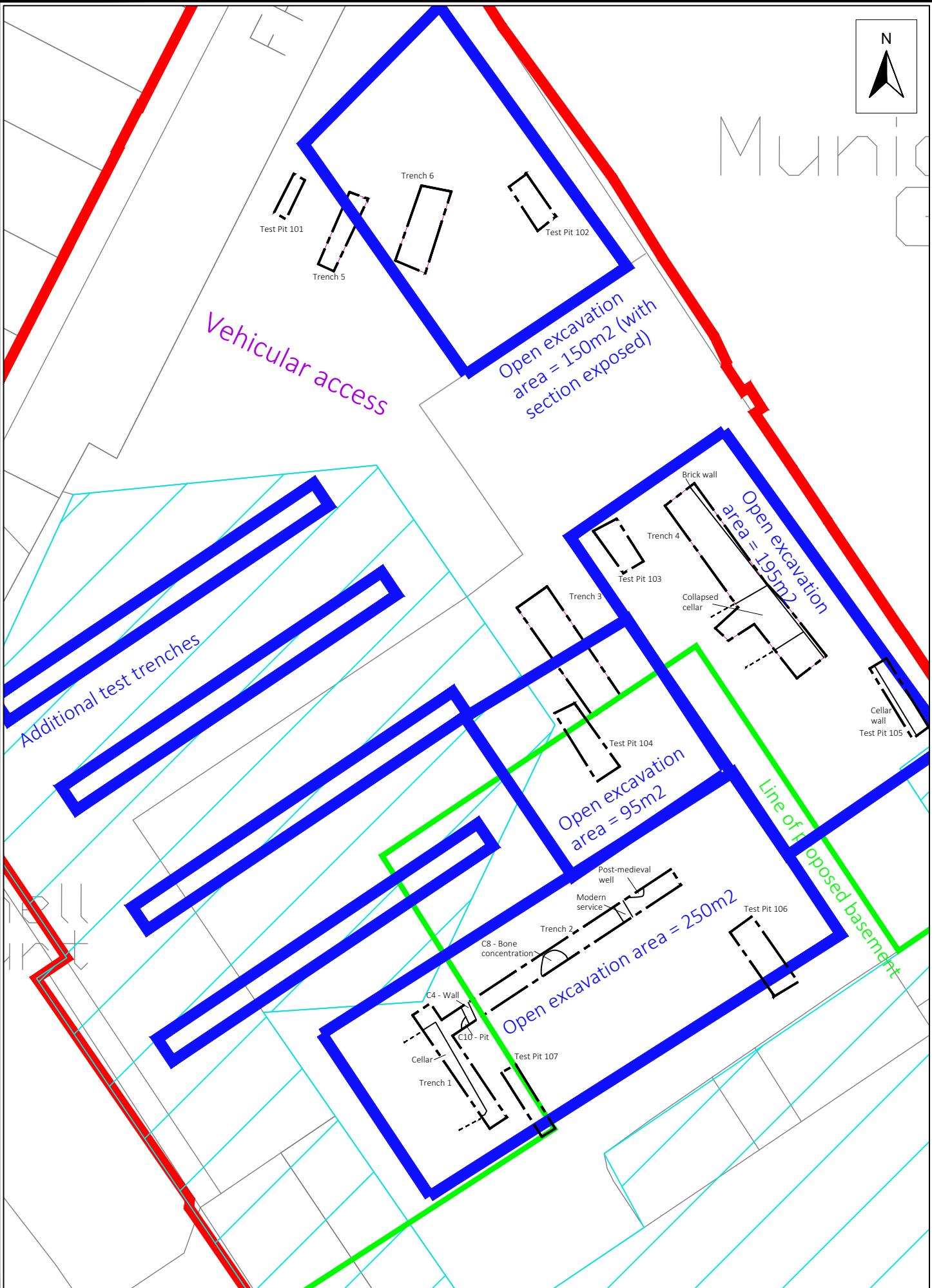


IAC Archaeology

Title	Detail from the 1847 OS map, relating to the proposed development area	Scale	NTS	Drawn by	DM
Project	23-28 Parnell Square North, Dublin 1	Date	26/09/18	Checked by	FB
Client	Dublin City Council	Job no.	J2941	Fig.	5
				Rev.	-



Municipal



Title	Proposed archaeological advanced works locations	Scale	1:250 @ A4	Drawn by	DM
Project	23-28 Parnell Square North, Dublin 1	Date	26/09/18	Checked by	FB
Client	Dublin City Council	Job no.	J2941	Fig.	6
				Rev.	-