IAC Archaeology

ARCHAEOLOGICAL ASSESSMENT
AT
SANDY ROAD,
GALWAY,
COUNTY GALWAY

ON BEHALF OF:
LAND DEVELOPMENT AGENCY (LDA)

AUTHOR: MATT BROOKS

MARCH 2022

IAC PROJECT REF.: J3929

IRISH ARCHAEOLOGICAL CONSULTANCY LTD
ARCHAEOLOGY & CONSERVATION CONSULTANTS

T: (01) 201 8380 **E:** archaeology@iac.ie
Dublin I Belfast IAC.ie

DOCUMENT CONTROL SHEET

DATE	DOCUMENT TITLE	REV.	PREPARED BY	REVIEWED BY	APPROVED BY
01.03.2022	Archaeological Assessment At Sandy Road, Galway, County Galway	0	Matt Brooks	Jacqui Anderson	Faith Bailey

ABSTRACT

This report has been prepared on behalf of Land Development Agency (LDA), to study the impact, if any, on the archaeological and historical resource of potential future development at Sites 1, 2 and 3, Sandy Road, Galway (Figure 1; ITM 530667, 726523). The report was undertaken by Matt Brooks of IAC Archaeology.

The sites are located within the townlands of Townparks and Ballinfoile, County Galway. There are no archaeological sites located within the three development areas however there are six monuments within 250m of the site. The nearest site consists of a designed landscape - folly (GA082-084), located c. 4m to the south of Site 2.

Analysis of aerial photographic record available for the area failed to identify any previously unknown archaeological features in the area. The coverage clearly shows modern development within the three sites since 1995. The level of ground disturbance and landscaping was confirmed during the field inspection for the assessment. The channel of the Terryland River retains some archaeological potential, but the three sites are considered to be low with regards to archaeological potential.

It is highly likely that previous ground disturbances would have led to the removal of any archaeological features or deposits that may have been present within the three sites. As such, there is no predicted impact upon the archaeological resource as a result of future development going ahead.

It is recommended that a revised archaeological assessment (based on this report) is submitted with any future planning applications in order to illustrate that the archaeological impact has been considered.

CONTENTS

ABSTRACT I

CONTENTS II

List of Figures iii

List of Plates iii

1 INTRODUCTION 1

1.1 General 1

1.2 The Development 1

2 METHODOLOGY 2

2.1 Paper Survey 2

2.2 Field Inspection 4

3 RESULTS OF ARCHAEOLOGICAL ASSESSMENT 5

3.1 Archaeological and Historical Background 5

3.2 Summary of Previous Archaeological Fieldwork 10

3.3 Cartographic Analysis 11

3.4 Development Plan 12

3.5 Topographical Files 12

3.6 Aerial Photographic Analysis 13

3.7 Field Inspection 13

4 CONCLUSIONS & RECOMMENDATIONS 16

5 REFERENCES 17

APPENDICES I

Appendix 1 SMR/RMP Sites within the Surrounding Area i

Appendix 2 Legislation Protecting the Archaeological Resource iv

Appendix 3 Impact Assessment and the Cultural Heritage Resource vii

Appendix 4 Mitigation Measures and the Cultural Heritage Resource ix

FIGURES

LIST OF FIGURES

Figure 1 Site location showing recorded archaeological sites
Figure 2 The Pictorial Map of Galway (1651) showing the approximate location of the proposed development area
Figure 3 Extract from the first edition OS map of 1838-9 showing the proposed development area
Figure 4 Extract from the historic OS map of 1897 showing the proposed development area
Figure 5 Satellite imagery of the proposed development area (Google Earth 2021)

LIST OF PLATES

Plate 1 Car park at Site 1, facing northwest
Plate 2 The Terryland River, facing northeast
Plate 3 Site 2 commercial buildings, facing northeast
Plate 4 Site 2 landscaped grass field and stone walls, facing south
Plate 5 Site 3 commercial structures and hardstanding, facing east

1 INTRODUCTION

1.1 GENERAL

The following report details an archaeological assessment undertaken in advance of the potential redevelopment of Sites 1, 2 and 3 at Sandy Road, Galway, County Galway (Figure 1; ITM 530667 726523). This assessment has been carried out to ascertain the potential impact of future development on the archaeological and historical resource that may exist within the area. The assessment was undertaken by Matt Brooks of IAC Archaeology (IAC), on behalf of Land Development Agency (LDA).

The archaeological assessment involved a detailed study of the archaeological and historical background of the proposed development site and the surrounding area. This included information from the Record of Monuments and Places of County Galway, the topographical files within the National Museum and all available cartographic and documentary sources for the area. A field inspection has also been carried out with the aim to identify any previously unrecorded features of archaeological or historical interest.

1.2 THE DEVELOPMENT

Development proposals for the sites are currently under compilation. This assessment has been carried out in order to inform those proposals.

2 METHODOLOGY

Research for this report was undertaken in two phases. The first phase comprised a paper survey of all available archaeological, historical and cartographic sources. The second phase involved a field inspection of the sites.

2.1 PAPER SURVEY

- Record of Monuments and Places for County Galway;
- Sites and Monuments Record for County Galway;
- National Monuments in State Care Database;
- Preservation Orders List;
- Topographical files of the National Museum of Ireland;
- Cartographic and written sources relating to the study area;
- Galway City Council Development Plan 2017-2023;
- Aerial photographs;
- Excavations Bulletin (1970–2021).

Record of Monuments and Places (RMP) is a list of archaeological sites known to the National Monuments Section, which are afforded legal protection under Section 12 of the 1994 National Monuments Act and are published as a record.

Sites and Monuments Record (SMR) holds documentary evidence and field inspections of all known archaeological sites and monuments. Some information is also held about archaeological sites and monuments whose precise location is not known e.g. only a site type and townland are recorded. These are known to the National Monuments Section as 'un-located sites' and cannot be afforded legal protection due to lack of locational information. As a result, these are omitted from the Record of Monuments and Places. SMR sites are also listed on a website maintained by the Department of Housing, Local Government and Heritage (DoHLGH) – www.archaeology.ie.

National Monuments in State Care Database is a list of all the National Monuments in State guardianship or ownership. Each is assigned a National Monument number whether in guardianship or ownership and has a brief description of the remains of each Monument.

The Minister for the DoHLGH 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.

Preservation Orders List contains information on Preservation Orders and/or Temporary Preservation Orders, which have been assigned to a site or sites. 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.

The topographical files of the National Museum of Ireland are the national archive of all known finds recorded by the National Museum. This archive relates primarily to artefacts but also includes references to monuments and unique records of previous excavations. The find spots of artefacts are important sources of information on the discovery of sites of archaeological significance.

Cartographic sources are important in tracing land use development within the development area as well as providing important topographical information on areas of archaeological potential and the development of buildings. Cartographic analysis of all relevant maps has been made to identify any topographical anomalies or structures that no longer remain within the landscape.

- The Pictorial Map of Galway, 1651
- Thomas Phillip, Map of Galway, 1685
- Ordnance Survey maps of County Galway, 1839-1897

Documentary sources were consulted to gain background information on the archaeological, architectural and cultural heritage landscape of the proposed development areas.

Development Plans contain a catalogue of all the Protected Structures and archaeological sites within the county. The Galway City Council Development Plan 2017-2023 was consulted to obtain information on cultural heritage sites in and within the immediate vicinity of the proposed development areas.

Aerial photographic coverage is an important source of information regarding the precise location of sites and their extent. It also provides initial information on the terrain and its likely potential for archaeology. A number of sources were consulted including aerial photographs held by the Ordnance Survey and Google Earth.

Excavations Bulletin is a summary publication that has been produced every year since 1970. This summarises every archaeological excavation that has taken place in Ireland during that year up until 2010 and since 1987 has been edited by Isabel Bennett. This information is vital when examining the archaeological content of any area, which may not have been recorded under the SMR and RMP files. This information is also available online (www.excavations.ie) from 1970–2021.

2.2 FIELD INSPECTION

Field inspection is necessary to determine the extent and nature of archaeological and historical remains, and can also lead to the identification of previously unrecorded or suspected sites and portable finds through topographical observation and local information.

The archaeological field inspection entailed -

- Walking the proposed development area and their immediate environs.
- Noting and recording the terrain type and land usage.
- Noting and recording the presence of features of archaeological or historical significance.
- Verifying the extent and condition of any recorded sites.
- Visually investigating any suspect landscape anomalies to determine the possibility of their being anthropogenic in origin.

3 RESULTS OF ARCHAEOLOGICAL ASSESSMENT

3.1 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

The three proposed development areas are located at Galway City within the townlands of Townparks and Ballinfoile, Barony of Galway and Parish of St Nicholas, County Galway. There are no archaeological sites located within the three development areas; however, there are six monuments within 250m of the proposed development area (Figure 1). The nearest site consists of a designed landscape - folly (GA082-084), located immediately south of Site 2.

3.1.1 Prehistoric Period (7000BC–AD 500)

The Mesolithic Period (7000–4000 BC) is the earliest time for which there is clear evidence of prehistoric activity in Ireland. During this period people hunted, foraged and gathered food and appear to have had a mobile lifestyle. The most common evidence indicative of Mesolithic activity at a site comprises of scatters of worked flint material; a by-product from the production of flint implements or rubbish middens consisting largely of shells (Stout and Stout, 1997). The latter are commonly discovered in coastal regions or at the edge of lakes and some worked flakes have been found near Oughterard (Robinson 1997, 331) roughly c. 25km to the northwest of the proposed development area.

It is likely that nearby coastal and riverine environments were an important element for the Mesolithic populations in this landscape, as a food and travelling resource. Some Mesolithic flints have been discovered during recent excavations in Terryland c. 769m northwest of the proposed development area (Moore Group website, 13/02/16). In addition, a large amount of lithics, some of Mesolithic date, were retrieved from the Terryland area from the 1800s onwards and are housed in the collections of the National Museum of Ireland (NMI). Lithic material has also been found at the junction of High Street and Cross Street, within Galway city c. 1.5km to the southwest (Spellissy 1999, 29).

During the Neolithic period (4000–2500 BC) communities based their economy on the rearing of stock and cereal cultivation and as a result they became less mobile. This transition was accompanied by major social change. Agriculture demanded an altering of the physical landscape; forests were rapidly cleared and field boundaries constructed. There was a greater concern for territory, which saw the construction of large communal ritual monuments called megalithic tombs, which are characteristic of the period. In Ireland four main types of megalithic tomb have been identified: court-tombs, portal-tombs, passage-tombs and wedge-tombs. The first three types are earlier in date (pre-2000 BC) and are largely confined to the northern half of the country, while wedge-tombs are slightly later in date and are most numerous in the west and south-west. No definite Neolithic sites are recorded within the local environments of the proposed development area. However, seven polished stone axeheads have been recovered from the townland of Mionlach (NMI files) and Neolithic flints are recorded from the townland of Terryland (NMI files and Moore Group Website, 13/02/16).

The Bronze Age (2500-800 BC) was characterised by the introduction of metalworking technology to Ireland and coincides with many changes in the archaeological record, both in terms of material culture as well as the nature of the sites and monuments themselves. Megalithic tombs were no longer constructed and the burial of the individual became more typical. Cremated or inhumed bodies were often placed in a cist, a small stone box set into the ground, or a stone lined grave. Burials were often made within cemeteries and marked within the landscape with the construction of an earthen barrow or cairn of stones. Only one barrow is recorded within the wider environment of the proposed development, GA082-033, which is located c. 2.6km northwest within the townland of Dangan Lower.

The most common Bronze Age site within the archaeological record is the burnt mound or *fulacht fia*. Thousands of *fulachtaí fia* have been recorded in the country making them the most common prehistoric monument in Ireland (Waddell, 2010, 183). Although burnt mounds of shattered stone occur as a result of various activities that have been practiced from the Mesolithic to the present day, those noted in close proximity to a trough are generally interpreted as Bronze Age cooking/industrial sites. *Fulachtaí fia* generally consist of a low mound of burnt stone, commonly in a horseshoe shape, centred around an earth-cut trough. They are found in low lying marshy areas or close to streams or rivers. Often these sites have been ploughed out and survive as a spread of heat shattered stones in charcoal rich soil with no surface expression in close proximity to a trough. The closest recorded example is found at Rinmore, c. 1.1km to the southeast (GA094-115). Similar to the Neolithic period a number of Bronze Age artefacts have been recovered from Galway, including the River Corrib (NMI Ref.: W.33; F399 F400; 1937:3673-4).

There is increasing evidence for Iron Age (800 BC-AD 500) settlement and activity in recent years as a result of development-led excavations. There are two phases of the Iron Age in Ireland, the Hallstatt and the La Tène, which are associated with distinct artwork and metalwork. Whilst there are no Iron Age sites recorded within the vicinity of the proposed development, the River Corrib (Newcastle area) produced a La Tène sword of Iron Age origins (NMI Ref.: E269:1), located c. 2.8km to the northwest, adjacent to a possible fording point in the Newcastle area.

3.1.2 Early Medieval Period (AD 500–1100)

During the early medieval period Ireland was not a united country but rather a patchwork of minor monarchies all scrambling for dominance, with their borders ever changing as alliances were formed and battles fought. Kingdoms were a conglomerate of clannish principalities with the basic territorial unit known as a *túath*. Byrne (1973) estimates that there were probably at least 150 kings in Ireland at any given time during this period, each ruling over his own *túath.* These kings were distributed strategically throughout the region and ruled over many tribal units.

A tradition exists of a small fishing village in the location of the present Galway city prior to the Anglo-Norman settlement (GA094-100). This was known as Ballinshruane (*Baile na Srutháin* 'the town of the streams'). This was presumably so-called because

in winter the River Corrib overflowed its banks and formed a number of small streams. According to Hardiman (1820), this hamlet was located on one of the islands formed by these streams, in the present location of the church of St Nicholas (GA094-100037), c. 1.5km southwest of the proposed development area. The annals record attacks by the Vikings on the monastic site of Roscam on the eastern outskirts of the present city and on the islands of Lough Corrib. However, the Vikings did not choose to settle in Galway.

The most common indicator of settlement during the early medieval period is the ringfort. Ringforts, (also known as *rath, lios, caiseal, cathair and dún*) are a type of defended farmstead comprising of a central site enclosed by a number of circular banks and ditches. The number of ditches can vary from one (univallate) to two or three (bivallate or tri-vallate) and is thought to reflect the status and affluence of the inhabitants. One of the most recent studies of the ringfort (Stout, 1997) suggested that there are a total of 45,119 potential ringforts or enclosure sites throughout the island of Ireland. This figure has since been revised upwards to 'over 47,000 ringforts', while O'Sullivan et al suggest that there are 'at least 60,000 early medieval settlement enclosures on the island' (O'Sullivan et al., 2014). While the names *rath* and *lios* refer to earthen ringforts, *caiseal* (cashel) and cathair refer to their stone-walled equivalents. Cashels are more frequent in the west of the country, where bed rock would have been relatively easy to source as a building material. Another feature commonly found in conjunction with ringforts is the souterrain. These are underground passageways and it has been suggested that they were food stores or used as hiding places during times of strife. The majority of souterrains comprise of earth cut passageways and chambers that are lined with either stone or wood, although stone cut examples are also known. County Galway has a particularly high recorded density of souterrains (Clinton 2001, 33), however only one is recorded within the surrounding environment (GA082-010001), located within a rath (GA082-010) at Ballybaan More, c. 1.6km to the east.

This period was also characterised by the introduction of Christianity to Ireland. The new religion was a catalyst for many changes, one of the most important being literacy. Irish was written down for the first time using the ogham script. The ogham alphabet is thought to be based on the Latin alphabet of the later Roman Empire and today the majority of the inscriptions that survive are located on pillar stones or boulders. A *leacht* is a Recorded Monument in the townland of Townparks c. 275m to the south of the development area. *Leacht's* are a rather enigmatic monument form, which have attracted a variety of interpretations. They have often been found in association with early Irish Christian places of worship.

3.1.3 Medieval Period (AD 1100–1600)

In 1230, the existing settlement of Galway was attacked by Richard de Burgo as part of the Anglo-Norman invasion of Connacht. The first written reference to Galway is the recording in the annals of the building of the castle of *Bun Gaillmhe*, 'the mouth of the [river] Gaillimh' in 1124. This fortification was part of the deliberate en-castellation of lands which *Toirdhealbhach Ó Conchobhair*, King of Connacht, pursued in the second quarter of the 12th century. It shows that Galway's strategic position

was already recognised. De Burgo's attack did not prove successful and he withdrew, returning two years later in 1232 when he met with greater success and erected a castle. This castle did not last long as it was destroyed in 1233. Its replacement suffered a similar fate in 1247, when the annals record the burning of both the town and the castle. The 1247 record is the first mention of the town proper, and it probably consisted of little more than a cluster of cabins nestled in the shadow of the castle (Walsh 2004, 273). However, it must have been of sufficient size to warrant it being called a town (Walsh 1996, 52). The town is recorded as being burnt again in 1266-7.

The town proper was established by Richard de Burgo's son Walter who granted legal status of a chartered borough sometime before the early 1270s. A grant of murage provided the right to levy toll on certain specified goods such as hides, fleeces, fish, wine, salt, and cloth coming into the town. The settlement began to be enclosed by walls sometime before 1272. The shape of the enclosed area was dictated largely by the configuration of the end of the ridge on which the settlement was sited. In selecting the appropriate position of for the curtain walls, the burgesses were motivated primarily by considerations of defence and were directly influenced by the topography of the site. The settlement was bounded by water on all sides except to the east; the area where it was most vulnerable to attack. The most obvious solution was to construct a wall across the ridge, similar to the construction of a promontory fort. It is reasonable to suggest that the first phase of work on the defences entailed the construction of this eastern section of town wall. Walter de Burgo founded a Franciscan friary (GA094-102) on the now-reclaimed St Stephen's Island in 1296 outside the north gate of the town, c. 1km to the southwest of the proposed development area.

It was not until the later part of the medieval period that evidence of developing prosperity begins to emerge from the historical record, as the Galway merchants capitalised on their trading links with ports on Europe's Atlantic seaboard and established the town as a substantial part of the mercantile life in the west of Ireland. The town cultivated a Spanish wine trade, with the wool trade and the growing importance of the fish trade also contributing to the growth of the town. In 1395 the town was given a charter by Richard I, which effectively removed the town from de Burgo control. This grant was followed in November 1396 by a grant of perpetual murage and pavage, and the town's new status was confirmed in 1402 by Henry IV (Bradley and Dunne 1990, 75-6).

During this period and into the 17th century, Galway was ruled by an oligarchy. This is defined as a group of families known as the 'tribes' who between then managed every important position of church and state. The wealth which these families generated through mercantile activity was reflected in the splendour of their domestic housing. One such structure is Lynch's Castle (GA094-100043) located c. 1.2km to the southwest, an urban tower house which was built in 1500 (Fitzgerald and Walsh 2004, 342). By the mid-16th century politics, commerce, and fashion had combined to ensure that Galway developed into an independent outpost. Two fires in 1412 and 1473 resulted in setbacks for the town with extensive destruction of

property. The annals record that the fire was caused by lightning and the town was almost completely destroyed.

There are additional medieval sites located within the surrounding environment of the proposed development, which is northeast of the city. A castle (GA082-080001) is c. 1km west of the proposed development on the eastern banks of the River Corrib, close to a fording point (GA082-09). The castle was in existence in 1574 when it was in the possession of 'Domynick Lynch' (Nolan 1901, 115), although there is some debate as to the exact location of the original structure, it appears to have been incorporated into the later 17th century house (GA080-080002). This location may have been a matter of strategic significance as not only would the castle have provided control over an important river crossing, but the site would be easier to relieve from the east should it be attacked. The castle was also located in close proximity to where supplies could be landed with ease and also within ready access of the ford. On the opposite side of the River Corrib a church (GA094-038) erected in 1509-10 by one of the Lynches of Galway resides, with a holy well (GA094-110) located 50m south of the church.

3.1.4 Post-Medieval Period (AD 1600–1800)

The 17th century, which witnessed the final reduction of all of Ireland to English authority, was marked by two major conflicts. In 1641 a war between the King and Parliament was sparked off by the rebellion of the Catholics in Ulster and resulted in 11 years of conflict. Galway remained mostly loyal to the English crown during the Gaelic resurgence as a matter of survival, yet by 1642 the city allied itself with the Catholic Confederation of Kilkenny. During the Cromwellian conquest of Ireland, English forces captured the city after a nine-month siege. The capitulation of Galway to the Parliamentary forces in 1653 ended centuries of wealth and almost exclusive local control. The ransacking and Cromwellian confiscations that followed marked the beginning of a long process of decline that would continue for a century and a half (Walsh 2004, 280).

The war brought a number of significant topographical changes in Galway. These included the building of three bastioned forts protecting the approaches to Galway town (GA082-083, GA094-129 and GA094-129001), just south of the proposed development area (Site 2). Bollingbrook (GA082-083) was the most northerly of three star-shaped forts erected by Cromwellian forces to blockade the town of Galway during the siege of 1651–2. A second (GA094-129), larger fort stood on the site of the present 'New Cemetery' in Bohermore, and the third was located close to the junction of College Road and Lough Atalia Road (GA094-129001). The forts were connected by linear earthworks, thus forming a continuous defensive bulwark stretching from the Terryland River to the Lough Atalia shoreline. The siege-works were abandoned following the surrender of the town in April 1652. They were repaired in 1690, but the Jacobite defenders of the town decided not use them as a defence against the advancing Williamite forces in 1691. The Williamites, however, may have used them as a base camp for their final assault on the town, which surrendered within a few days of their arrival. Following the surrender, the properties were parcelled out among the victors, and John Bollingbrook gained possession of

lands on the eastern outskirts of the town. In time these lands were called Bollingbrook Parks, with the name eventually transferring to the fort. The 1651 pictorial map of Galway depicts Bollingbrook as a quadrangular, stone-faced, earthen fort with bastions at each of the corners. Ordnance Survey maps indicate that the fort survived relatively unscathed into the late 19th century, but by the mid-20th century only the south-eastern section remained intact. The extant remains comprised a linear earthen bank with traces of bastions at its angles.

The 18th century saw a dramatic rise in the establishment of large residential houses around the country. This was largely due to the fact that after the turbulence of the preceding centuries, the success of the Protestant cause and effective removal of any political opposition, the country was at peace. The large country house was only a small part of the overall estate of a large landowner and provided a base to manage often large areas of land that could be dispersed nationally. During the latter part of the 18th century, the establishment of a parkland context (or demesnes) for large houses was the fashion. Although the creation of a parkland landscape involved working with nature, rather than against it, considerable constructional effort went into their creation. Earth was moved, field boundaries disappeared, streams were diverted to form lakes and quite often roads were completely diverted to avoid travelling anywhere near the main house or across the estate. Major topographical features like rivers and mountains were desirable features for inclusion into, and as a setting, for the large house and parkland. Well Park House and landscape is the closest example to the development area, located c. 447m to the east, with the folly (GA082-084) located to the immediate south of Site 2, possibly associated with its designed landscape (Figure 4).

3.2 SUMMARY OF PREVIOUS ARCHAEOLOGICAL FIELDWORK

A review of the Excavations Bulletin (1970–2021) has revealed that no archaeological investigations have been carried out within the three proposed development areas. Two investigations occurred within the surrounding landscape and are summarised below.

Test trenching took place in Boilingbrook and Townparks in 1991, c. 47m south of Site 2 at the site of Boilingbrook Fort (GA082-083). Three quarters of the fort had been levelled since the 1940s and only a flat, slightly raised area survived at this time. Four trenches were dug within the fort and on the possible linear embankment, in order to assess the extent of the subsurface remains. The excavations revealed traces of ditches and evidence of disturbance in recent times. A number of objects were recovered including musket balls, pottery sherds, animal bones and shells. Metal detecting discovered over 40 objects, mainly consisting of iron objects, especially musket balls, a key and an undated coin (Licence E631, Bennett 1991:058).

Further excavations at Bollingbrook Fort commenced in 2000, which clearly established the full extent of the 17th-century fort, defined by an impressive external fosse. Internal features of the fort include a large subcircular pit, a shallow drainage ditch, a hearth and two concentrations of post-holes. The origin and function of the

pit were unknown, and the almost complete absence of finds from this feature was unusual in the context of the site.

The drainage ditch extended north-west/south-east across the interior of the fort and continued beyond the north-west fosse. It appeared to date from the construction phase of the fort. The post-hole concentrations occurred close to the south and west corners of the fort. They did not form any readily identifiable structures but may have been associated with temporary encampments or activities associated with occupation of the fort.

The hearth undoubtedly served a domestic function (i.e. as a cooking area), but it is possible that musket balls were produced in this area. This is suggested by the large numbers of musket balls that were found in the immediate vicinity of the hearth. Contemporary finds from the fort included a wide range of iron, copper and lead artefacts, including musket balls, coins, buckles, nails, pins, knives, horseshoes, stirrups, a cannonball and a possible spearhead. Domestic refuse was well represented by large quantities of animal bone, seashells and potsherds. Some of the pottery wares pre-dated the 17th century, suggesting activity in this area prior to the construction of the fort. The most intriguing find of all was the fragmented portion of a Bronze Age vase or urn, which was embedded in the subsoil (Licence 00E0534, Bennett 2000:0387).

3.3 CARTOGRAPHIC ANALYSIS

The Pictorial Map of Galway, 1651 (Figure 2)

This is a well-known bird's-eye view of the town printed during the reign of Charles II (1660-65). Outside the walled town the area to the east occupied by the proposed development is depicted as more open agricultural land, though with some signs of development including the three bastion forts (GA082-083, GA094-129 and GA094-129001) along a line of earthwork ramparts (GA094-129002). Each bastion is placed atop a hill with two potential barrack structures depicted northeast of the larger fort (GA094-129). The maps show the bastions as a quadrangular fort with corner turrets. The main road leads from Galway, possibly Bohermore, and passes between the forts of GA082-083 and GA094-129 and through the proposed development areas.

Thomas Phillip, Map of Galway, 1685

One of the earliest maps, immediately before the Jacobite and Williamite Wars, depicting the proposed development area shows the walled city to the southwest of the site, with its street pattern that is still recognizable in the present-day road layout. The area to the east outside the walls remains relatively undeveloped with the road leading to Galway lined by ditches and square fort, possibly remains of one of the bastion forts.

First Edition Ordnance Survey Map, 1838-9, scale 1:10,560 (Figure 3)

This is the first accurate historic mapping coverage of the area containing the proposed development which is placed within possibly eleven open fields. Site 1 is

within an undeveloped area on the northern banks of the Terryland River close to Terryland Bridge. The land is marked as 'Liable to floods'. Site 2 is placed within nine arable fields with Sandy Road (unlabeled) running through the site. One solitary structure is within the site's footprint along the roadside. 'Boilingbrook Fort' (GA082-083) is located and marked just south of the site. Site 3 is placed within one field, bound to the north and south by roads. 'Shancrogh' is labeled, possibly representing one of the roadside structures to the east.

Ordnance Survey Map, 1897, scale 1:2,500 (Figure 4)

The development sites are still placed within arable fields with little change from the First Edition OS map. Solitary changes include - Site 1 is now placed within two distinct fields. Site 2 is now within 8 fields bordered by marshland, with the roadside structure now no longer visible. There are no changes within Site 3 or within the surrounding environs. Bohermore Cemetery and the two Mortuary Chapels are found just south of Site 3.

3.4 DEVELOPMENT PLAN

The Galway City Council Development Plan 2017-2023 recognises the statutory protection afforded to all Record of Monuments and Places (RMP) sites under the National Monuments Legislation (1930–2014). The development plan lists a number of aims and objectives in relation to archaeological heritage (Appendix 2).

There are no archaeological sites located within the development areas however there are six monuments within 250m (Figure 1). Of the six sites, four are scheduled for inclusion in the next revision of the RMP (Table 1; Figure 1; Appendix 1). The nearest site consists of a folly (GA082-084), located c. immediately south of Site 2.

TABLE 1: Recorded Archaeological Sites

RMP NO.	LOCATION	CLASSIFICATION	DISTANCE TO DEVELOPMENT
GA082-084	Townparks	Designed landscape - folly	Immediately south
GA082-083	Townparks	Bastioned fort	c. 47m south
GA094-129002	Townparks	Earthwork	c. 90m south
GA094-129	Townparks	Bastioned fort	c. 159m south
GA082-008	Ballinfoile	Quarry	c. 221m northeast
GA094-129001	Townparks	Bastioned fort	c. 234m south

3.5 TOPOGRAPHICAL FILES

Information on artefact finds from the study area in County Galway has been recorded by the National Museum of Ireland since the late 18th century. Location information relating to these finds is important in establishing prehistoric and historic activity in the study area.

No stray finds are recorded from within the proposed development areas or their immediate environs.

3.6 AERIAL PHOTOGRAPHIC ANALYSIS

Inspection of the aerial photographic coverage of the proposed development area held by the Ordnance Survey (1995–2013), Google Earth (2008–2020), and Bing Maps revealed that the proposed development areas experienced a number of minor changes since 1995. All three sites have been subject to a high degree of disturbance.

Site 1 from 1995 was within two undeveloped greenfield with the development of a car park visible from coverage in 2000 which covers the majority of the site's footprint. The car park remains to the present day. Site 2 has remained fairly consistent from 1995 to the present day which contains a number of commercial structures associated with the Liosban Business Park. Including warehouses and car parks with small areas of undeveloped greenfield, such as along Sean Mulvoy Road and land east of the Terryland River which divides Site 1 and Site 2. Sandy Road has also remained extant within Site 2's footprint from 1995 running northwest to southeast. Site 3 has also remained consistent from 1995 to the present day which contains a tarmacked yard with a number of small extant structures.

No previously unrecorded sites of archaeological potential were noted within the proposed development areas.

3.7 FIELD INSPECTION

The field inspection sought to assess the site, its previous and current land use, the topography and any additional information relevant to the report. During the course of the field investigation the proposed development site and its surrounding environs were inspected (Figure 5).

Site 1 is mostly made up of a car park which occupies about half of the sites area (Plate 1). The remaining area is made up of undeveloped land of bushes and shrubs which undulates throughout. The Terryland River is bound to Site 1's southern and eastern extents and delineates the boundary between Site 2 (Plate 2).

Site 2 is the largest of the three sites and it mostly made up of commercial buildings, warehouses and hardstanding (Plate 3). Solitary areas are in undeveloped greenfield such as to the east of the Terryland River that contains trees and bushes. A small area at the sites south-eastern extent is undeveloped, consisting of a landscaped grass field bordered by stones walls (Plate 4).

Site 3, to the south like Site 2, is mostly made up of commercial structures and hardstanding (Plate 5). No previously unrecorded sites or areas of archaeological potential were noted during the course of the inspection.

It is clear that the three development areas have been subject to a large degree of disturbance. The Terryland River channel retains some archaeological potential.

Plate 1: Car park at Site 1, facing northwest

Plate 2: The Terryland River, facing northeast

Plate 3: Site 2, commercial buildings, facing northeast

Plate 4: Site 2, landscaped grass field and stone walls, facing south

Plate 5: Site 3, commercial structures and hardstanding, facing east

4 CONCLUSIONS & RECOMMENDATIONS

This archaeological assessment was commissioned by Land Development Agency (LDA), to assess the potential for the survival of archaeological features in advance of potential future development at Sites 1, 2 and 3, Sandy Road, Galway, County Galway. There are no archaeological sites located within the three development areas, although six monuments are recorded within the surrounding study area. The nearest site consists of a designed landscape - folly (GA082-084), located immediately to the south of Site 2.

A review of the Excavations Bulletin (1970–2021) has revealed that no archaeological investigations have been carried out within the three proposed development areas. Two investigations have occurred within the 250m study area. Test trenching followed by full archaeological excavation, was carried out at the site of the 17th century Bollingbrook Fort (GA082-083), c. 47m south of Site 2.

Analysis of cartographic sources has revealed that the proposed development areas were formerly located within undeveloped fields, just northeast of three bastion forts, along a line of earthwork ramparts. The main road from Galway, possibly Bohermore, passes between the forts of GA082-083 and GA094-129.

Analysis of aerial photographic record available for the area failed to identify any previously unknown archaeological features in the area. The coverage clearly shows modern development within the three sites since 1995. The level of ground disturbance and landscaping was confirmed during the field inspection for the assessment. The field inspection failed to identify any previously unrecorded areas of archaeological potential within the development areas, due to the level of disturbance that has occurred. The channel of the Terryland River retains some archaeological potential, but the three sites are considered to be low with regards to archaeological potential.

It is highly likely that previous ground disturbances would have led to the removal of any archaeological features or deposits that may have been present within the three sites. As such, there is no predicted impact upon the archaeological resource as a result of future development going ahead.

It is recommended that a revised archaeological assessment (based on this report) is submitted with any future planning applications in order to illustrate that the archaeological impact has been considered.

5 REFERENCES

Bennett, I. (ed.) 1987–2010. *Excavations: Summary Accounts of Archaeological Excavations in Ireland*. Bray. Wordwell.

Bradley, J. and Dunne, N. 1990 *The Urban Archaeology Survey of County Galway.* Dublin, Office of Public Works (unpublished).

Chartered Institute for Archaeologists 2020a. Standards & Guidance for Field Evaluation.

Chartered Institute for Archaeologists 2020b. Standards & Guidance for Archaeological Excavation.

Chartered Institute for Archaeologists 2020c. Standards & Guidance for an Archaeological Watching Brief (Monitoring).

Culleton, E. 1999 *Celtic and early Christian Wexford*, Dublin: Four courts Press

Delany, D. *'Bollingbrook Fort, Seán Mulvoy Road, Galway.'* In I. Bennett (ed.), Excavations 2000: summary accounts of archaeological excavations in Ireland, 132-4, no. 387. Bray

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

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

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

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

Galway City Council Development Plan, 2017-2023.

Galway City Walls Conservation, Management & Interpretation Plan

Gosling, P. (compiler) 1993 Archaeological inventory of County Galway, vol. 1: West Galway. Dublin. Stationery Office

Gwynn, A. and Hadcock R. N. 1970 Medieval Religious Houses, Ireland Harlow: Longmans.

Hardiman, J. 1820 The History of the Town and County of Galway, from the earliest period to the present time, embellished with several engravings. Dublin.

McErlean, T., 1983 'The Irish townland system of landscape organisation', in Reeves-Smyth, T. Hamond, F. Landscape Archaeology in Ireland. BAR British Series 116. pp. 315–39.

MacNiocaill, G. 1984 Medieval Galway: Its Origins and Charter. In D. O'Cearbhail, Galway: Town and Gown, 1–9. Dublin, Gill and Macmillan.

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

National Monuments Service, Department of Housing, Local Government and Heritage. *Sites and Monuments Record*, County Galway.

National Museum of Ireland. *Topographical Files*, County Galway.

O' Sullivan, A. 2001 Foragers, farmers and fishers in a coastal landscape: an intertidal archaeological survey of the Shannon estuary (Discovery Programme Monograph 5). Dublin. Royal Irish Academy.

Spellissy, S. 1999 *The History of Galway*. Limerick, The Celtic Bookshop.

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

Walsh, P. 1996. 'The topography of the town of Galway in the medieval and early modern periods', in Moran, G. Galway History and Society: Interdisciplinary Essays on the History of an Irish County, pp.27-96. Dublin: Geography Publications.

CARTOGRAPHIC SOURCES

The Pictorial Map of Galway, 1651

Thomas Phillip, Map of Galway, 1685

Ordnance Survey maps of County Galway, 1839-1897

ELECTRONIC SOURCES

www.excavations.ie – Summary of archaeological excavation from 1970–2021.

www.archaeology.ie – DoHLGH website listing all SMR/RMP sites.

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

www.googleearth.com – Satellite imagery of the proposed development area.

www.bing.com– Satellite imagery of the proposed development area

APPENDICES

APPENDIX 1 SMR/RMP SITES WITHIN THE SURROUNDING AREA

SMR NO.	GA082-084
RMP STATUS	Not scheduled for inclusion
TOWNLAND	Townparks
PARISH	St Nicholas
BARONY	Galway
I.T.M.	530812 726297
CLASSIFICATION	Designed landscape - folly
DIST. FROM DEVELOPMENT	c. 4m south
DESCRIPTION	Currently the information for this record has not been uploaded
REFERENCE	www.archaeology.ie/ SMR file

SMR NO.	GA082-083
RMP STATUS	Scheduled for inclusion
TOWNLAND	Townparks
PARISH	St Nicholas
BARONY	Galway
I.T.M.	530482 726311
CLASSIFICATION	Bastioned fort
DIST. FROM DEVELOPMENT	c. 47m south
DESCRIPTION	On a prominent NE-SW ridge along which ran the medieval approaches to Galway town (GA094-100----). Three forts and linear entrenchments were erected across this ridge in 1651 by the Parliamentary forces then besieging Galway. All traces of the central fort, which stood on the site of the New Cemetery, Bohermore, and the E one, in the College Rd area, are now gone. On N shoulder of the ridge are the poorly preserved remains of roughly square earthen artillery fort (L/Wth 28m). Only the SE bank (H c. 2m), which is concave on plan, and its angles with E and S sides survive. No visible surface trace survives of the linear bank shown on OS 1:500 map (1872) to NW of it; probably part of the entrenchments connected with the forts.
REFERENCE	www.archaeology.ie/ SMR file

SMR NO.	GA094-129002
RMP STATUS	Scheduled for inclusion
TOWNLAND	Townparks
PARISH	St Nicholas
BARONY	Galway

I.T.M.	530562 726254
CLASSIFICATION	Earthwork
DIST. FROM DEVELOPMENT	c. 90m south
DESCRIPTION	Currently the information for this record has not been uploaded
REFERENCE	www.archaeology.ie/ SMR file

SMR NO.	GA094-129
RMP STATUS	Scheduled for inclusion
TOWNLAND	Townparks
PARISH	St Nicholas
BARONY	Galway
I.T.M.	530689 726157
CLASSIFICATION	Bastioned fort
DIST. FROM DEVELOPMENT	c. 159m south
DESCRIPTION	Currently the information for this record has not been uploaded
REFERENCE	www.archaeology.ie/ SMR file

SMR NO.	GA082-008
RMP STATUS	Not scheduled for inclusion
TOWNLAND	Ballinfoile
PARISH	St Nicholas
BARONY	Galway
I.T.M.	530707 726883
CLASSIFICATION	Quarry
DIST. FROM DEVELOPMENT	c. 221m northeast
DESCRIPTION	A hachured feature marked on the 1945-6 revision of the OS 6-inch map proved on inspection in 1983 to be a disused quarry. As it is of post-AD 1700 date it does not come within the remit of the Archaeological Survey of Ireland.
REFERENCE	www.archaeology.ie/ SMR file

SMR NO.	GA094-129001
RMP STATUS	Scheduled for inclusion
TOWNLAND	Townparks
PARISH	St Nicholas
BARONY	Galway
I.T.M.	530707 726883
CLASSIFICATION	Bastioned fort
DIST. FROM DEVELOPMENT	c. 234m south

DESCRIPTION	Currently the information for this record has not been uploaded
REFERENCE	www.archaeology.ie/ SMR file

APPENDIX 2 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 the Department of Housing, Local Government and Heritage) 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.

The Galway City Council Development Plan 2017-2023

Where appropriate, the Council will require impact assessment, monitoring, surveying or excavation of the archaeological heritage of a site during the development process.

Policy 8.5 Archaeology:

Protect the archaeological heritage of the city. Ensure that proposed development within the designated city centre Zone of Archaeological Potential is not detrimental to the character of an archaeological site or its setting.

Have regard to the archaeological recommendations of the DAHG on any planning applications.

Endorse the sustainable use of archaeological heritage as an educational and cultural resource and promote public awareness of the archaeological heritage of the city.

Require the surveying, recording or excavation of archaeological heritage during the development process where appropriate.

Seek the preservation in-situ or, at a minimum, preservation by record of archaeological sites/monuments included in the Record of Monuments and Places.

Ensure that any development proposals with potential to impact on archaeological heritage includes for an archaeological assessment. This includes within terrestrial, riverine, inter-tidal and sub-tidal environments.

Promote the protection of the varied industrial heritage of the city and encourage greater appreciation and public awareness of this heritage

APPENDIX 3 IMPACT ASSESSMENT AND 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 2017). 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 4 MITIGATION MEASURES AND 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.

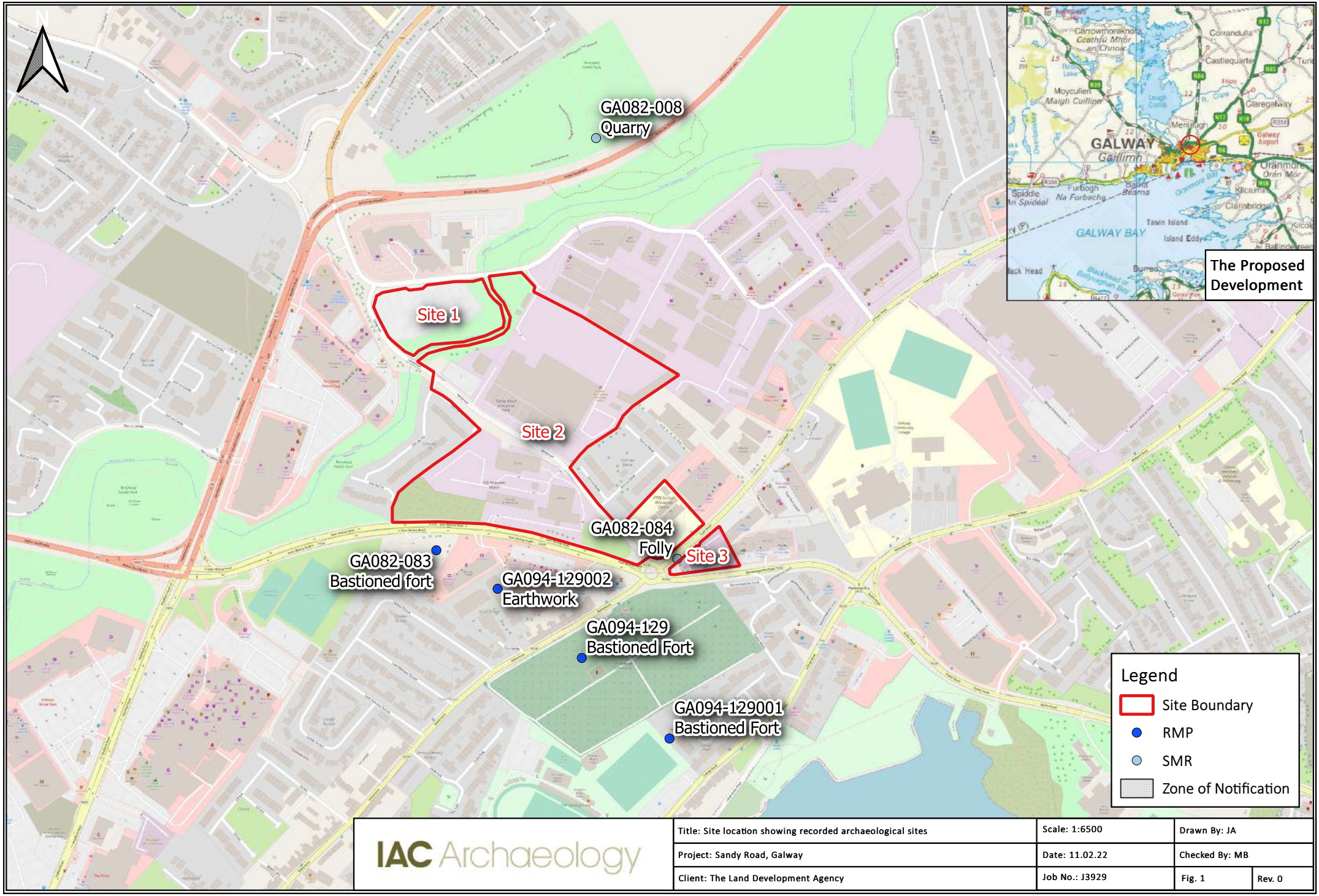
Archaeological Test Trenching can be defined as 'a limited programme of intrusive fieldwork which determines the presence or absence of archaeological features, structures, deposits, artefacts or ecofacts within a specified area or site on land, inter-tidal zone or underwater. If such archaeological remains are present field evaluation defines their character, extent, quality and preservation, and enables an assessment of their worth in a local, regional, national or international context as appropriate' (CIfA 2020a).

Full Archaeological Excavation can be defined as 'a programme of controlled, intrusive fieldwork with defined research objectives which examines, records and interprets archaeological deposits, features and structures and, as appropriate, retrieves artefacts, ecofacts and other remains within a specified area or site on land, inter-tidal zone or underwater. The records made and objects gathered during fieldwork are studied and the results of that study published in detail appropriate to the project design' (CIfA 2020b).

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

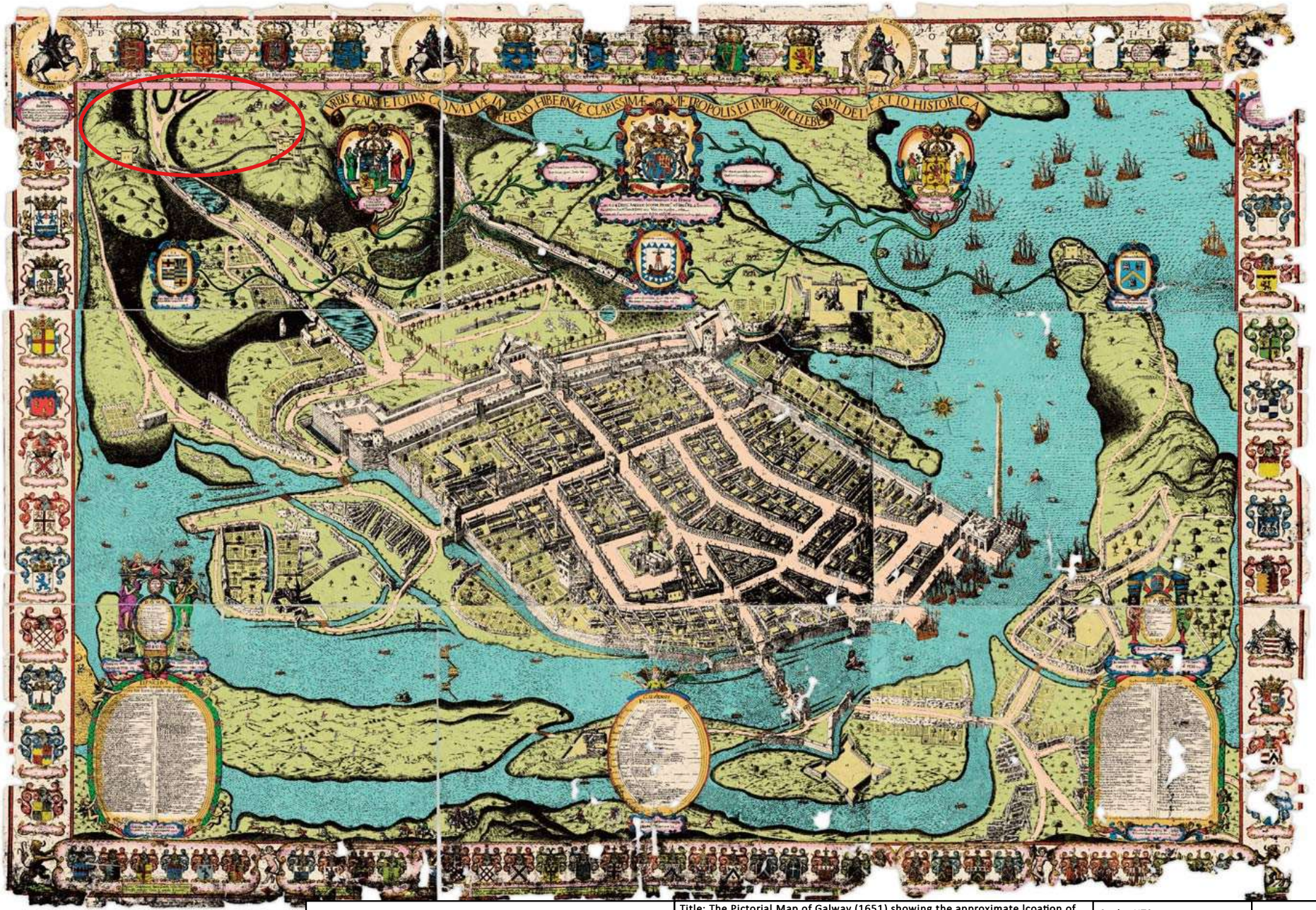
disturbed or destroyed. The programme will result in the preparation of a report and ordered archive (CIfA 2020c).

Underwater Archaeological Assessment consists of a programme of works carried out by a specialist underwater archaeologist, which can involve wade surveys, metal detection surveys and the excavation of test pits within the sea or riverbed. These assessments are able to access and assess the potential of an underwater environment to a much higher degree than terrestrial based assessments.



IAC Archaeology

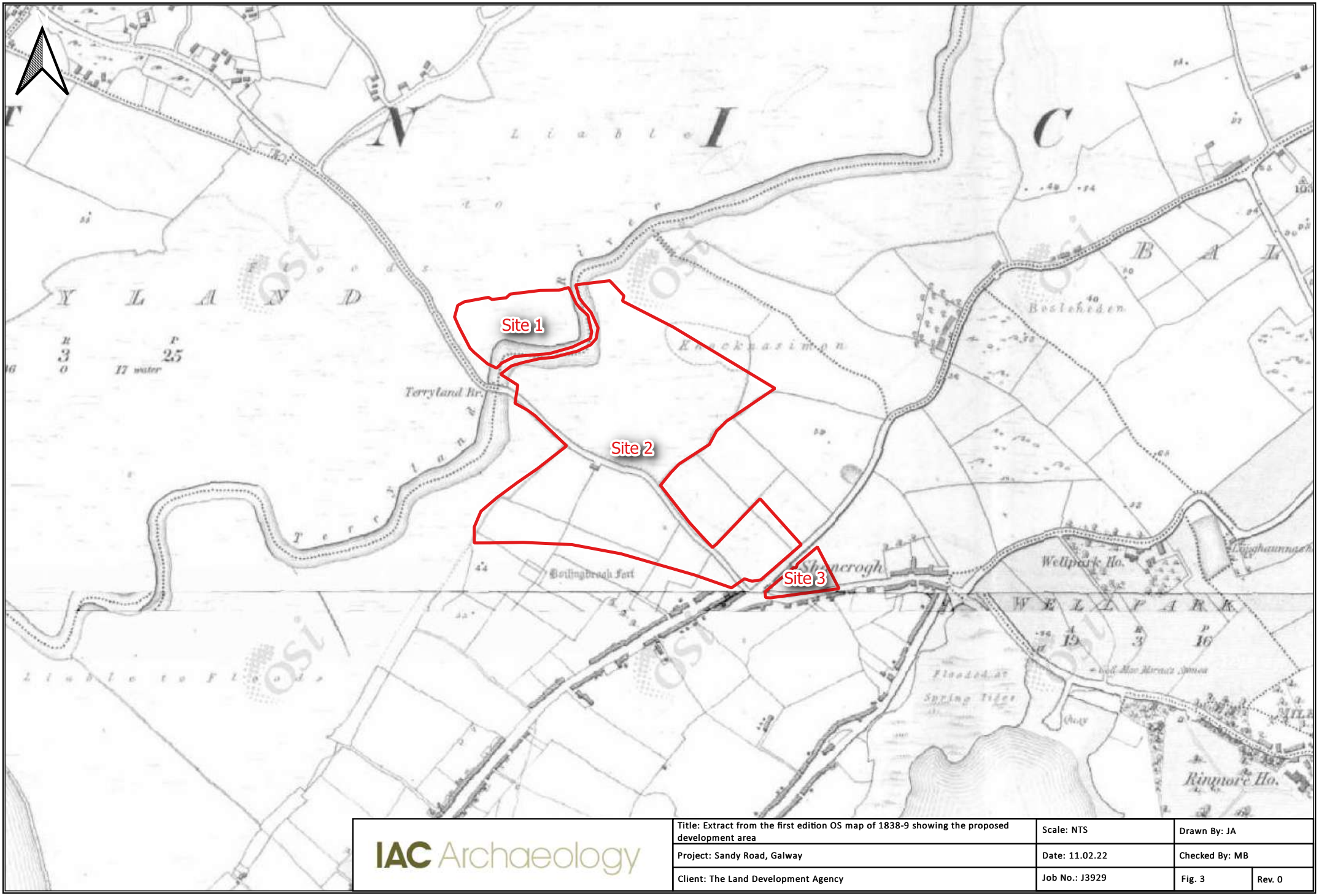
Title: Site location showing recorded archaeological sites	Scale: 1:6500	Drawn By: JA	
Project: Sandy Road, Galway	Date: 11.02.22	Checked By: MB	
Client: The Land Development Agency	Job No.: J3929	Fig. 1	Rev. 0

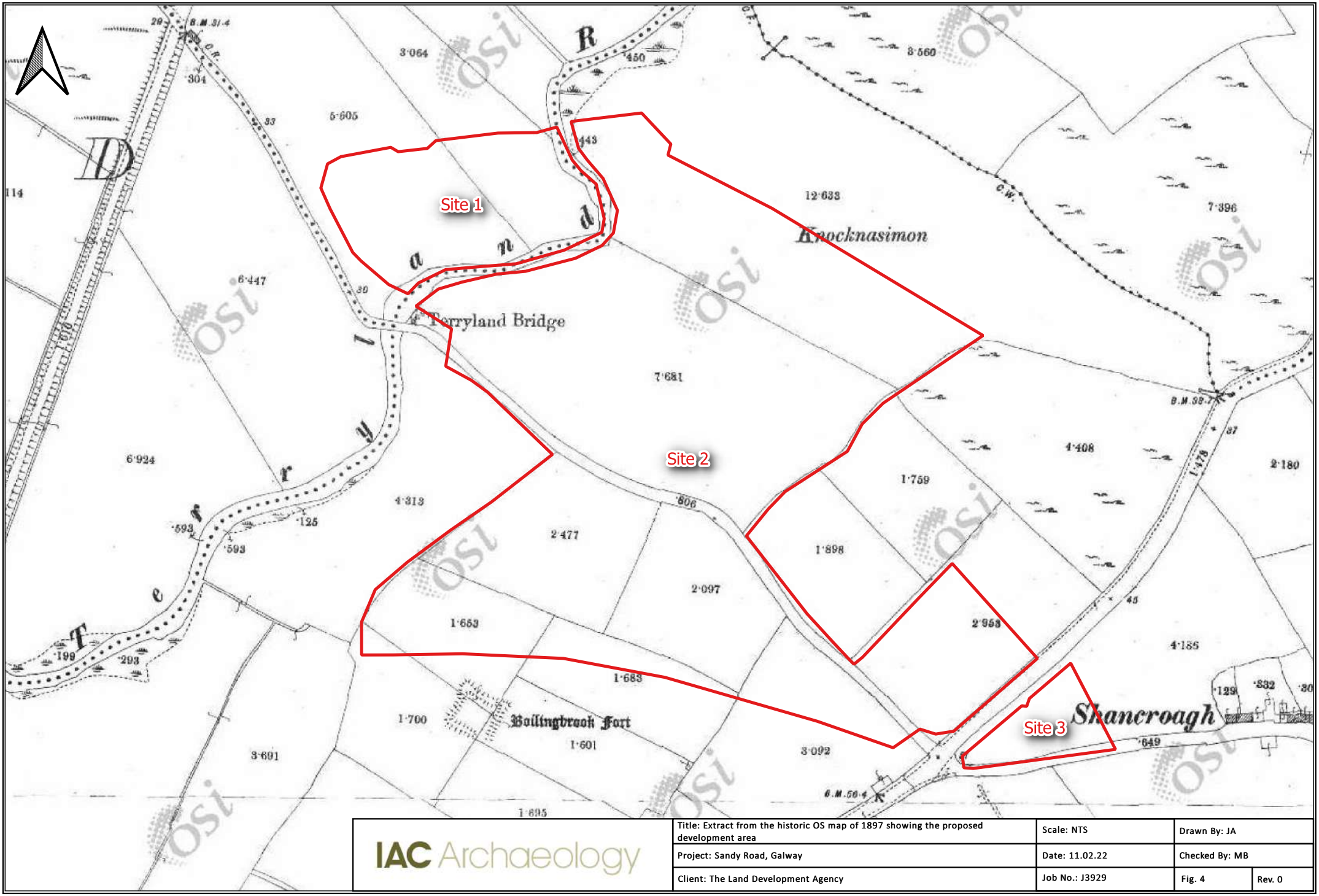


THIS IS THE EARLIEST MAP OF GALWAY CITY [CIRCA. 1651] OF WHICH THERE ARE BUT TWO COPIES NOW KNOWN. ONE IN DUBLIN, AND THE SECOND IN THE ARCHIVES OF THE HARDIMAN LIBRARY AT NUI, GALWAY. THIS COPY WAS FOUND IN THE TRINITY COLLEGE LIBRARY COPY. JAMES JOYCE, IRISH NOVELIST AND POET, FOUND THE MAP FASCINATING AND WROTE OF IT "THE MOST INTERESTING DOCUMENT IN THE CITY ARCHIVES IS THE MAP OF THE CITY....".

IAC Archaeology

Title: The Pictorial Map of Galway (1651) showing the approximate lcoation of the proposed development area	Scale: NTS	Drawn By: JA	
Project: Sandy Road, Galway	Date:11.02.22	Checked By: MB	
Client: The Land Development Agency	Job No.: J3929	Fig. 2	Rev. 0


Site 1
Site 2
Site 3
Terryland Br.
Terryland R.
Bollingbrook Fort
Shancrogh
Wellpark Ho.
Rinmore Ho.
Boolaheeden
Knockaunnagon
WELLPARK
Liable to Floods
Liable to Floods
Liable to Floods



IAC Archaeology

Title: Extract from the historic OS map of 1897 showing the proposed development area	Scale: NTS	Drawn By: JA	
Project: Sandy Road, Galway	Date: 11.02.22	Checked By: MB	
Client: The Land Development Agency	Job No.: J3929	Fig. 4	Rev. 0

IAC Archaeology

Title: Satellite imagery of the proposed development area (Google Earth 2021)	Scale: NTS	Drawn By: JA	
Project: Sandy Road, Galway	Date: 11.02.22	Checked By: MB	
Client: The Land Development Agency	Job No.: J3929	Fig. 5	Rev. 0