
7.0 ARCHAEOLOGY

7.1 Introduction

7.1.1 General

The following report details a Constraint Study undertaken to assess the impacts, if any, on the cultural heritage resource, of the proposed S2S project. Irish Archaeological Consultancy Ltd has undertaken the study on behalf of AWN Consulting Ltd.

The proposed route, will run along the water's edge where possible. It is also proposed to use the existing cycle paths along James Larkin Road, Clontarf Road and Sandycove. A pier, seawall or cantilever structure is proposed from Sandymount to Dun Laoghaire Harbour. Elsewhere, the route will run along the existing roads and along the seafront at Sandymount and Dun Laoghaire Baths-Sandycove. A pier structure is also proposed on the foreshore between the wooden bridge at Bull Island and the Bull Island causeway and between Sutton Cross and the Causeway.

A Constraint Study has been undertaken in order to identify the potential impact of the scheme on the archaeological and historical resource and to highlight areas of archaeological or cultural heritage potential within the Constraint Study Area with the intention of better informing future decisions about the route of the proposed promenade and cycleway.

7.1.2 Outline of the Cultural Heritage Study

The assessment involved a detailed study of the archaeological, historical and cultural background of the constraints area. This included information from the Record of Monuments and Places of Dublin, the Topographical Files of the National Museum of Ireland, consultation with local historians, local authorities and all available cartographic and documentary sources relating to the area.

As this represents only a preliminary route proposal, a general and provisional impact assessment has been prepared for the constraints area. An impact assessment is undertaken to outline potential adverse impacts that the proposed development may have on the cultural heritage resource.

7.2 Statutory Protection of Cultural Heritage Sites

7.2.1 Protection of Cultural Heritage

Cultural Heritage in Ireland is safeguarded through both National and International policy designed to secure the protection of the Cultural Heritage resource to the fullest possible extent (Dept. 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 Cultural Heritage can be divided loosely into the archaeological resource covering sites and monuments from the prehistoric period to the 18th century, and the built heritage resource, encompassing standing structures and sites of cultural

importance of a post-18th century date. However, many monuments are listed as both built heritage and archaeological resource, as archaeological monuments of a late post-medieval date have been added to the Record of Monuments and Places for Dublin.

7.2.2 The Archaeological Resource

The National Monuments Act 1930 to 1994, the Heritage Act 1995 and relevant provisions of the National Cultural Institutions Act 1997 are the primary means of ensuring the satisfactory protection of archaeological remains, which are held to include 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' (Nat Mons Act 1930 Section 2).

There are a number of mechanisms under the National Monuments Act, which 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

National monuments may be acquired by the Minister whether 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.

There are no national monuments within the Constraint Study Area. The Martello Tower at Merrion Strand (RMP DU019-018) is erroneously described as a National Monument in Section 3.2.9 of the Dun Laoghaire-Rathdown County Council Local Coastal Plan (2002).

Register of Historic Monuments

Section 5 of the 1987 Act states that the Minister is required 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 of sites recorded in the Register without the permission of the Minister is illegal, and two months notice in writing is required prior to any work being undertaken on or in the vicinity of a registered monument. This list was largely replaced by the RMP following the 1994 Amendment Act, but still holds records of monuments under Preservation Orders, Temporary Preservation Orders or those under ownership or guardianship of the State. All registered monuments are now included in the Record of Monuments and Places.

There are no registered historic monuments listed within the constraint study area.

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 to 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 surrounding the site must be reviewed. Work may only be undertaken on or in the vicinity of sites under Preservation Orders by the written consent, and at the discretion, of the Minister. There are no Preservation Orders attached to the sites within the constraint study area.

Record of Monuments and Places

Section 12 (1) of the 1994 Act provides that the Minister for Arts, Heritage, Gaeltacht and the Islands shall establish and maintain a record of monuments and places where the Minister believes that such monuments exist. The record comprises of a list of monuments and relevant places and a map or maps showing each monument and relevant place in respect of each county in the State. Sites recorded on the Record of Monuments and Places all receive statutory protection under the National Monuments Act 1994.

There are 19 recorded monuments within the Constraint Study Area and a further 9 in the immediate vicinity (Appendix A - 7.3). All recorded monuments are represented on the accompanying maps. Each site is known by a unique SMR File Number (Sites and Monuments Record) e.g. DU023-054: DU is used as a county prefix (designating Dublin); 023 refers to OS sheet/map number 23; 054 is the individual file number and is marked on the official RMP map. The Zone of Archaeological potential (Constraint Area) is an area outlined in black on the RMP maps, which hypothetically encloses each site. The area enclosed in each case is deemed by the National Monuments Service to have archaeological potential.

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 the case of urgent necessity and with the consent of the Minister, commence the work until two months after the giving of notice”.

7.2.3 Architectural and Built Heritage

The Built Heritage is protected by the Heritage Act 1995, the Architectural Heritage (National Inventory) and National Monuments (Misc. Provisions) Act 1999, and the Local Government (Planning and Development) Acts 1963-1999 and the Local Government (Planning and Development Act) 2000. Section 2.1 of the 1995 Heritage Act describes the architectural heritage as “all structures, buildings, traditional and designed, and groups of buildings including streetscapes and urban vistas, which are of historical, archaeological, artistic, engineering, scientific, social or technical interest, together with their setting, attendant grounds, fixtures, fittings and contents, and, without prejudice to the generality of the foregoing, includes railways and related buildings and structures and any place comprising the remains or traces of any such railway, building or structure”.

The Heritage Act promotes the interest in, knowledge and protection of the Irish heritage, including the architectural resource, with the establishment of the Heritage Council. The 1995 Heritage Act protects all heritage buildings owned by a local authority from damage and destruction.

The 1999 Architectural Heritage Act requires the Minister to establish a survey that will identify, record and assess the architectural heritage of the country. The National Inventory of Architectural Heritage (NIAH) records all built heritage structures within specific counties in Ireland. An inventory for the Dublin City and Dun Laoghaire-Rathdown areas has not yet been produced. As inclusion in the inventory does not provide statutory protection, the document is used to advise local authorities on compilation of a Record of Protected Structures as required by the Local Government (Planning and Development) Act 2000.

Protection under the Record of Protected Structures and County / City Development Plan

Structures of architectural, cultural, scientific, historical or archaeological interest can be protected under the Planning and Development Act, 2000, where the conditions relating to the protection of the architectural heritage are set out in Part IV of the act. This act superseded the Local Government (Planning and Development) Act, 1999, which came into force on 1st January 2000.

The act provides for the inclusion of protected structures into the planning authorities' development plans and sets out statutory regulations regarding works affecting such structures. Under new legislation, no distinction is made between buildings formerly classified under development plans List 1 and List 2. Such buildings are now all regarded as 'protected structures' and enjoy equal statutory protection. Under the act the entire structure is protected, including a structure's interior, exterior, attendant grounds and also the structures within the attendant grounds.

The act defines a protected structure as (a) a structure, or (b) a specified part of a structure which is included in a Record of Protected Structures (RPS), and, where that record so indicates, includes any specified feature which is in the attendant grounds of the structure and which would not otherwise be included in this definition. Protection of the structure, or part thereof, includes conservation, preservation, and improvement compatible with maintaining its character and interest. Part IV of the act deals with architectural heritage, and Section 57 deals specifically with works affecting the character of protected structures or proposed protected structures and states that no works should materially affect the character of the structure or any element of the structure that contributes to its special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest and the issuing of declarations.

The act requires local authorities to establish a RPS to be included in the County / City Development Plan (CDP). This plan includes objectives designed to protect the Cultural Heritage during the planning process. Buildings recorded in the RPS can include recorded monuments, structures listed in the NIAH or buildings deemed to be of architectural, archaeological or artistic importance by the Minister. Sites, areas or structures of archaeological, architectural or artistic interest that are listed in the RPS receive statutory protection from injury or demolition under the 2000 Planning Act. Any damage or demolition of a site registered on the RPS is considered an offence (Section

58, 4). All current RPS sites in Dublin are listed in the CDP's for Fingal County Council, Dublin City Council and Dun Laoghaire-Rathdown County Council, although these lists are not always comprehensive.

The Local Authority has the power to order conservation and restoration works to be undertaken by the owner of the protected structure if it considers the building to be in need of repair. Similarly, an owner or developer must make a written request to the Local Authority to carry out any works on a protected structure and its environs, which will be reviewed within three months of application. Failure to do so may result in prosecution. There are 23 additional built heritage sites listed in the County and City Development Plans (Appendix A - 7.2), within the Constraint Study Area, which are not covered by the Record of Monuments and Places. In addition, both Ringsend and Irishtown are classified as Zones of Archaeological Interest in the Dublin City Development Plan.

Conservation Areas and Residential Conservation Areas have extensive groupings of buildings and associated open spaces with an attractive quality of architectural design and scale. The overall quality of the area is of sufficient importance to require special care in dealing with development proposals, which affect listed and unlisted buildings and environmental works by the private and public sector alike. The proposed route passes through 8 designated Conservation Areas.

7.3 Methodology

7.3.1 Study Methodology

The Constraint Study Area runs from north to south along the coast, from Sutton to Sandycove. Due to the nature of the proposed scheme and the surrounding urban topography, a narrow study corridor was imposed along the length of the proposed route. This corridor width measures approximately 30m along the northern section, widening to c. 60-80m through the central area, narrowing to c. 30m once more along the seafront to Booterstown, and from Dun Laoghaire to Sandycove. The study corridor was considerably widened from Booterstown to Dun Laoghaire to incorporate the coast road running to the west/south of the railway line.

With the exception of the section of the route which runs through the docklands, Ringsend and Dun Laoghaire Harbour, the study corridor is thus defined to the east by the sea-shore and to the west by the parallel coast roads: Dublin Road, James Larkin Road, Clontarf Road, Alfie Byrne Road, Beach Road, Strand Road, Rock Road, Rock Hill, Main Street (Blackrock), Newtown Avenue, Seapoint Avenue, Longford Terrace, Old Dunleary, Dunleary Road, Crofton Road, Queen's Road, Windsor Terrace, Newtownsmith, Marine Terrace and Otranto Place.

Assessment of the study area was undertaken in a number of stages. The first stage comprised research of all available documentary, cartographic, photographic and recorded information to establish the number of known monuments and built heritage sites in the area. Areas of archaeological potential were also identified during the paper study.

This was followed by a second stage of consultations with the National Monument Section, Department of Environment, Heritage and Local Government, local historians and local authorities.

The third stage involved the mapping of all recorded monuments and built heritage sites. These are presented in map form to accompany the cultural heritage constraints report.

7.3.2 Stage 1: Research

The initial research for this project comprised a paper survey of available archaeological, historical and cartographic sources relating to the study area. The following sources are the basis for archaeological and historical research for the area. Each source was examined and a list of sites and areas of archaeological and Cultural Heritage potential compiled:

- The Record of Monuments and Places and Sites and Monuments Record for Dublin
- National Inventory of Architectural Heritage
- The Topographical files of the National Museum of Ireland
- Cartographic and written sources (see References Section)
- Fingal County Development Plan
- Dublin City Development Plan
- Dun Laoghaire – Rathdown County Development Plan and Local Coastal Plan
- The Excavation Bulletin
- Urban Archaeological Survey of Dublin, City and County

The **Record of Monuments and Places (RMP)** is a list of archaeological sites known to National Monument Section, Department of Environment, Heritage and Local Government, which receive statutory protection. Ordnance Survey six-inch maps on which all recorded monuments are marked and numbered accompany these records. All recorded monuments are represented on Figures 7.1-7.6.

The **Sites and Monuments Record (SMR)** provides details of documentary sources and field inspections of recorded sites where these have taken place, and also contain information on potential sites within the county which are not contained in the RMP.

The **Topographical Files and Registers of the National Museum of Ireland** are the national archive of all known finds recorded by the National Museum. It relates primarily to artefacts but also includes references to monuments and has a unique archive of records of previous excavations. The find spots of artefacts are important sources of information on the discovery of sites of archaeological significance. There was a small collection of objects found within or in the near vicinity of the study area (Appendix A - 7.4).

Cartographic Sources A full bibliography of all cartographic sources consulted is given in Section 7 of the references section at the end of the report.

Written Sources. A full bibliography of all written sources consulted is given in Section 7 of the references section at the end of the report.

The **City and County Development Plans** include a catalogue of all the protected sites and structures within the county which feature on the Record of Protected Structures. These were consulted to obtain information on additional Cultural Heritage sites within the study area as an architectural inventory for Dublin City and Dun Laoghaire-Rathdown Counties is yet to be completed. All sites recorded in the Development Plans are included in the Cultural Heritage maps. There were thirty-one sites or structures in the Development Plans that are situated within the constraint study area.

The **Urban Archaeological Survey**, carried out in the 1980s and 1990s, is a study of urban centres in the country which originated from early medieval ecclesiastical centres or medieval towns and which still contain original elements or medieval street plans. The Urban Archaeological Surveys for Dublin City and County were consulted.

7.3.3 **Stage 2: Consultations**

Following the initial research a number of statutory and voluntary bodies were consulted to gain further insight into the cultural background of the study area. These were as follows:

- The National Monuments and Historic Properties Section, National Monument Section, Department of the Environment, Heritage and Local Government.
- The Irish Antiquities Division of The National Museum of Ireland

7.3.4 **Stage 3: Amalgamation of Information**

Once all RMP (Archaeological Heritage) and Built Heritage sites (architectural or post-medieval structures not listed in the RMP but listed in the county development plan) sites had been identified during the initial research and consultation stages, the information was mapped onto OS maps of the area (Figures 7.1-7.6). Conservation Areas designated on the Development Plan Maps were also included.

Areas of archaeological potential, identified through cartographic analysis, were also marked on the accompanying figures.

Areas of archaeological potential identified through cartographic and topographical evidence are prefixed by 'AAP'. An AAP is identified as a result of the examination of an area's topography and landscape in the light of local history and archaeology and the analysis of cartographic records. Particular attention is given to the proximity of recorded monuments to the area and what this might reveal about the general archaeological landscape. Particular areas such as riverbanks and crossings, marshland or high vantage points often contain archaeological site-types particular to this kind of topography, such as ancient fording points, fulachta fiadh or ringforts. This work is based on paper survey only. No field inspections were carried out for this study.

7.4 Baseline Environment

7.4.1 Archaeological and Historical Background

There are 27 Recorded Monuments (which are listed on the RMP) located within the Constraint Study Area (Fig.7.1) and these range in date from the prehistoric to the post-medieval period.

Sutton to Kilbarrack

There is evidence that this area was intensely settled during the prehistoric period. Coastal habitation was common from the Mesolithic period onwards. Sutton is one of seven townlands forming a part of the peninsula and isthmus of Howth parish, which contains many ancient remains, including a cromlech (portal tomb), a fortified headland, an early sanctuary, and a medieval castle and church.

Two prehistoric burial mounds and an early Iron Age cemetery are located along this stretch of coastline. The 'Knock of Howth', a prehistoric mound and burial site to the south of Sutton Cross quite close to the sea wall, was destroyed in the 1930's (DU015-019). A curving stone wall north of Boroughfield Road outlines the northern portion of the site. Formerly a round-topped mound (H. 1.7m, diameter, c. 18m), the upper strata contained a human skull and large white boulder. A second burial mound, located close to Sutton Cross, was destroyed in the 1920's and the site now stands in the front garden of a large domestic residence (DU015-023). A cemetery of stone-lined graves (of early Iron Age type cists) was discovered on the present grounds of Suttonians Rugby Club in 1937 (DU015-022).

There is one enclosure site, marked 'fort' on 1837 OS map, recorded within the study area (Kilbarrack Lower, DU015-083). Enclosure sites belong to a classification of monument whose precise nature is unclear. Often they may in fact represent ringforts, which have either been damaged to a point where they cannot be positively recognised, or which are smaller or more irregular in plan than the accepted range for a ringfort. An early-Christian date is generally likely, though not a certainty.

The medieval Church of St. Berach / Barroc is described by Walsh as the ruins of a chapel, consisting of a nave, chancel and side aisle, accessed via the coast road at Sutton Strand (DU015-021).

Clontarf

Clontarf is familiar to Irishmen everywhere from its association with the defeat of the Vikings by Brian Boru in 1014. The name - the Plain of the Bull - derives from the rumbling noise, which was made by the sea as it rolled over the sandbanks in the Inbhear Dubh-linne, the bay of Dublin.

The First church in Clontarf was founded by the great abbot of Bangor, St. Comgall, around 550, and it would have been a part of the evangelical efforts from the monastery and school of St. Mobhi at Glasnevin to the area from Fingal to Swords and Sutton. St. Comgall was the patron of Clontarf until, with

the advent of the Knights of St. John of Jerusalem; St. John the Baptist supplanted him. The presence of a holy well in St Anne's Park (DU019-012) provides further indication of early medieval ecclesiastical activity.

A castle and a Commandery of the Knights Templar were founded at Clontarf during the 12th and 13th centuries and a village subsequently developed along the road from the castle to the seashore. The harbour for the village lay near the present junction of Vernon Avenue with Clontarf Road and was to become the most important place for landing fish on the north shore of Dublin bay, with the area known as Herringtowne or Fish House. Buildings for the processing and storage of fish were erected here and appear on maps of the area from the 17th century onwards. These buildings were known as The Sheds of Clontarf or variations thereof; a name that also at times extended to the area and is marked on both Rocque and Scalé's 18th century maps. Clontarf became a popular seaside resort during the 18th and early 19th centuries, but with the decline of the fishing industry in the mid-19th century the village also suffered a decline (De Courcy 1996, 80-1).

A leadmine (DU019-033) was located on the shore at Clontarf near the swimming baths, with one shaft on the shore and another a short way inland. It is mentioned in a list of Irish mines in 1497 and is known to have continued in production for about 300 years, being abandoned when the tide flooded the mine (De Courcy 1996, 80). The shaft on the shore survived as a tall stone tower, which was cut down during the construction of the promenade and incorporated into the swimming baths. The Clontarf Baths and Assembly Rooms were first built in 1864 and subsequently reconstructed in 1886. Hot seawater baths were installed and the main bathing area divided into two pools, for men and women (as at Merrion). When Clontarf Baths Ltd purchased the premises in 1945, the hot baths were closed and the two pools converted into one (De Courcy 1996, 82).

Clontarf Strand was a major source of Shingle and small boulders used in the construction of the South Wall (DU018-066) and other harbour works in the 18th century, with boulders often dressed to form walling stone and smaller stones for filling kishes. The area is sometimes referred to as the 'Quarries of Clontarffe Strand', although it is unlikely that these were actual quarries. Further mining of the natural resources at Clontarf is indicated on Greenville Collins' map of 1686. A series of roughly rectangular beds are depicted just above 'high water marke', c. 2 km east of Clontarf Head, and described as 'salt works'. Salt works are also shown at two other points along the bay on Greenville Collins' 1686 map, at Booterstown and Dollymount.

In 1805 a chapel was opened in Clontarf and replaced in 1835 by present Church of St. John The Baptist. In 1837 Sir Benjamin Lee Guinness purchased the estate of Thornhill, which he renamed St. Anne's and to it later added the lands of Bettyvill, Charleville, Maryville, Sybil Hill and Bedford Lodge. His son Arthur (Lord Ardaulin) rebuilt the house between 1873 and 1875; it was destroyed by fire in 1943.

In 1931, the Dublin Port and Docks Board began a reclamation scheme which, when completed, provided an improved roadway and an attractive promenade. The Guinness' estate of St. Anne's was compulsorily acquired by the Dublin Corporation in 1939, and besides provision of housing, it was utilised to form a park.

The Docklands

The docklands comprise about 1300 acres of land on the north and south banks of the river Liffey. In the past there was little contact between the communities on both sides of the river. Until Butt Bridge opened in 1879, Sackville Bridge - now O'Connell Bridge - was the nearest crossing-point, so people relied on the Liffey ferries to cross down-stream. When the Custom House opened in 1791, Ringsend was the only part of this area that was developed. The remainder consisted of low-lying wastelands, which had been divided into lots / lotts by the Ballast Office. The road from Ringsend to the city was regularly under water at high tide, but land was gradually drained or reclaimed, as was a large area of the foreshore in order to construct the North Wall and Alexandra Basin.

The population increased steadily throughout the 19th century, and the vacant land was gradually covered with houses and commercial properties. The Royal Canal and the Grand Canal, which linked Dublin with the river Shannon, opened harbours in the area during the early 1800s. By the 1850s Docklands included two of Dublin's main railway terminals (Amiens St and Westland Row). Hotels, warehouses, coal yards and cattle yards moved near the port and the railway lines, as did stables for the countless horses that transported goods from the port throughout the city.

Dublin bay presented major dangers for shipping and in 1716 work began on a bank to protect the south side of the channel at the mouth of the harbour, running from Ringsend to Poolbeg. The South bank provided only limited protection for shipping and in 1753, after a particularly stormy winter, the bank was replaced with a wall - the South Bull Wall. The Poolbeg Lighthouse replacing a floating light at the end of the Bull Wall was lit for the first time on 29 September 1767.

In 1800 a major survey of Dublin harbour by Captain William Bligh, who is remembered for his role in the mutiny on the HMS Bounty, recommended that the North Bull Wall should be constructed, parallel to the South Bull Wall to prevent sand building up in the mouth of the harbour. He forecast correctly, that this would create a natural scouring action that would deepen the river channel. When the North Bull Wall was completed in 1842, sand gradually accumulated along its side until the modern Bull Island emerged.

Until 1800 most trade took place on the south side of the River Liffey, but with the opening of the new Custom House in 1791, port development shifted to the north bank of the river. The original Custom House Dock opened in 1796. In 1821 it was supplemented by George's Dock, which included large warehouses and storage vaults. In 1851, the Ballast Board commissioned William Dargan to construct a dry dock at the North Wall, which was leased to a shipbuilding firm that went bankrupt in 1870. Imports of wheat rose rapidly from 1840 onwards and several large flourmills opened in the Docklands. A large building firm T. and C. Martin opened a joinery plant, using imported timber, and before 1900 there was a sugar refinery in the south Docklands, which processed imported cane sugar.

Ringsend (DU018-053)

The name Ringsend is probably derived from its location on the tip of the dry spit formed by, and protecting, the easternmost channel of the Dodder delta at its confluence with the Liffey (thus an Anglo-Irish hybrid of '*an rinn*' – the point,

with 'end'). The area appears to have been inhabited from at least the early medieval period by a community of fishermen. It seems probable that there were at least two fords across the lower Dodder, at Ballsbridge and Ringsend, prior to the mid-18th century when the first bridge appears to have been constructed at Ringsend.

The increasing shipping traffic to Dublin in the 16th century led the Corporation in 1582 to take steps to erect a fort at Ringsend, in order to secure the revenues due to it from all ships sailing into Dublin. In the early 17th century, violations of the revenue laws had become very frequent, owing to the distance of the Custom House from Ringsend. It was decided in 1620, on the advice of a customs officer called Thomas Cave, to station a revenue surveyor permanently at Ringsend and a Revenue House was built there. From the 17th to the 19th century Ringsend was the chief place of embarkation and disembarkation for passenger traffic.

The Down Survey maps show two gabled houses drawn at north end of Ringsend approximately where Thorncastle St is today. De Gomme in 1673 shows a large settlement and fort here. Greenville Collins' 1686 and 1693 maps both show a small fort in the village of Ringsend at this time. The fort does not appear on any of the 18th century maps and there is in its place a significant void on the maps of Brooking (1728) and Rocque (1760). By this time the fort may have been demolished and the space left empty. A 'revenue watch house' was maintained at Ringsend until 1793, when the Ballast Board provided a replacement at the 'New Bason'. The old building was demolished in 1812 to open the route for a wooden bridge proposed at the mouth of the Dodder.

Irishtown (DU018-054)

A community adjacent to Ringsend was set up which became known as Irishtown, which today comprises largely artisan dwellings of 19th / 20th century date. The Down Survey maps show a large gabled house drawn approximately where Strand St is today. De Gomme in 1673 shows a large number of dwelling houses here. Irishtown, was founded in the mid 1400s when Dublin Corporation ordered all people of Irish blood to leave the city within a month (Archeire.com 1996-2004). The area outside the city walls that they moved to became known as Irishtown. According to the 'Ancient Calendar of Records of Dublin in 1654', it was Cromwell who issued a decree ordering all persons of Irish blood to move two miles outside the city limits.

Although there were sufficient inhabitants at Irishtown for the construction of a church there in the early 18th century (St Matthew's), its official name at the time was the 'Royal Chapel of St Matthew at Ringsend'. The name Irishtown does appear on a number of 18th century maps and is referenced in records of the 19th century as Irishtown. The present Bath St runs through the old village along the spine of the original foreshore. Much of the shoreline along the present Bath St and Beach Road was in-filled in the beginning of the 20th century and was completed by 1935-6.

Boosterstown / Merrion

Although there is evidence of human activity in the south Dublin area from the Later Mesolithic period (5000-3300BC) onwards, the earliest recorded settlement evidence in Boosterstown and its environs dates to the Anglo-Norman invasion. In 1173 Strongbow granted all the lands of Donnybrook, which included *Tracht Muirbtean* (Merrion) and Cnorco (part of Mount

Merrion), to Walter de Rideleford who erected an earthen rampart and castle. The rampart was made up of a stout thorn fence, which led to it being given the name Thorncastle. He then built a roadway between this castle and his headquarters at Donnybrook. This roadway was evident in places between Donnybrook and Merrion, and formed the Parliamentary boundary between the same two points. The existing road from Merrion to Blackrock is its continuation.

The garrison of the castle was to be made up of de Rideleford's planted tenants. As a result, he decided not to plant them apart, as had been the norm previously, but to house them close together in a village. This arrangement led the locals to refer to the settlement as *Baile an Bothair*, or 'the town on the road'. This became modified to Ballybothair and became anglicised as Booterstown.

De Rideleford's property passed through several hands during the 13th and 14th centuries, and eventually came into the possession of Sir John Cruise towards the end of the 14th century. Cruise was responsible for building Merrion castle, and most likely founded the Chapel of Ease, which occupied the site of the disused graveyard on Merrion road at Dornden.

It was during Cruise's occupation that the area experienced attacks from the native Irish. The O'Byrnes and the O'Tooles, who had been expelled from the lands of Ofelan and Omurthy in Kildare by de Rideleford, 'gave no rest or peace to the occupants' (Donnelly 1911, 86), especially after the Bruce Invasion. Cruise suffered so much from their incursions that he was allowed to hold his property rent free for life.

When Philip Fitzwilliam succeeded to the property, the village of Ballybothair was completely destroyed and all the tenants killed. He petitioned the King for a remission of rent in 1435 that he might rebuild the village and also erect a fortified castle, to replace Thorncastle, which was destroyed by the Irish. His petition was granted, and work on the new castle started in 1449. Its site is shown on the OS map, lying directly opposite the Parish Church in Booterstown Avenue, and vaults belonging to it are incorporated in the house which stands on the site. After 1562 Merrion Castle was a clandestine refuge where Catholics would occasionally assemble for Mass.

DU023-001 is recorded as the site of Merrion Castle, situated west of Merrion station along Sandymount Strand. It was demolished c. 1780. Merrion Castle was the ancestral home of the Fitzwilliam family since the 15th century. Duncan's map of 1821 records it as surviving but it is recorded as "the site of" on later OS maps.

DU023-05301 is recorded as a church site and DU023-05302 as a graveyard. They are recorded on the OS map of 1837 but not on the 1937-38 OS map. The walled graveyard originally enclosed the church of Merrion described in the Downe Survey map of 1650 as "Chapel of Merryon". The present gravestones date from c. 1760-1820.

Blackrock

The Fitzwilliam and subsequently the Pembroke family owned much of the land in south County Dublin and this included the Mount Merrion and Fitzwilliam estates, however, there were a number of smaller country residences erected by smaller landowners. The area occupied by the present

Blackrock was little changed between the medieval period and the 18th century, when much of the new building began to take place and included a number of large country houses such as Frascati House, Lios an Uisce, Blackrock House and Maretimo House. The latter was constructed as a summer residence for Lord Cloncurry in 1774, around the same time as John Lees, Secretary to the Post Office, erected Blackrock House. When the railway was constructed in the early 19th century, Lord Cloncurry had a private footbridge built to access the small headland on the shore.

The area around Blackrock had functioned as a fashionable resort for the gentry of Dublin since the early 18th century. Maps of Dublin Bay from the 17th and 18th centuries all indicate the extent of the shallow waters and sandy shoreline between Ringsend and Seapoint, which acted as ideal bathing locations. The small village of Newtown between Blackrock and Seapoint was known until this time as Newtown on the Strand. The place name 'Blackrock' derives from a large outcrop of limestone (calp), which turns black when wet. Rocque's map of 1760 shows the location of this outcrop slightly offshore, close to the disused public baths. The town itself is depicted on Rocque's map as a collection of small houses, shops and taverns. Later maps indicate that there was little change until the development in early 19th century.

Seapoint / Templehill

The lands on which Seapoint and Templehill now stand formed at the time of the Norman Conquest portion of those of Stillorgan, and were known as Argortin, or the Tillage Lands. At the beginning of the 13th century they were given, as a solemn religious offering, by Raymond Carew, the Anglo-Norman owner of Stillorgan, to St. Mary's Abbey, and, when added to its lands of Carrickbrennan, completed the contents of the civil parish of Monkstown.

On the dissolution of the Abbey, in 1539, the lands of Newtown, as they were then called, contained a small castle-house, besides other dwellings, and were held by a tenant called John Moran. They were granted by the Crown to Sir John Travers at the same time as those of Monkstown, and, like the latter, were subsequently held by Viscount Baltinglas, Sir Gerald Aylmer, the Cheevers family, and Edmund Ludlow. The tithes, which had also belonged to the Abbey, were retained by the Crown, and in the 16th century were leased to, amongst others, James Stanyhurst Speaker of the House of Commons, and Recorder of Dublin, the father of the well-known historian, and to Thomas, Earl of Ossory, the lands being then described as Newtown on the Strand, or Newtown-juxta-Mare.

In the early part of the 18th century, Newtown Castle Byrne, as it was then called, after the owner of the soil, was a pleasure resort for the citizens of Dublin. As the picture shows, a small town, which stood near the site of the railway station, had been built, and in a lease of that period the square of Newtown is mentioned. A large assembly-room, known as the Great Room of Castle Byrne (DU023-008), which was supported by subscribers, who dined together during the summer was erected, and there, in the year 1749, the Lord Chancellor, Robert Jocelyn, then Lord Newport, and afterwards Viscount Jocelyn, ancestor of the Earls of Roden, while residing at Mount Merrion, dined with the gentlemen of his court, to celebrate, after the manner of that time, the Battle of the Boyne. Some fatalities which occurred at Newtown, indicate that sea bathing was then in vogue, and the drowning in August 1755, of an attorney with the historic name of Boswell, perhaps deserves record.

Dun Laoghaire

The original small fishing village of Dunleary was situated near the beginning of the present West Pier. All that remains of the original village is a row of 15 houses, including 'Purty Kitchen' and the Coal Harbour Pier. A second pier (referred to as the 'Old Pier' on 18th century maps), which was in the form of a curve, is now buried beneath the railway line. The present inner harbour, known as the coal harbour, dates from the 18th century.

Construction began on a new harbour in 1815 to facilitate the trade in Dublin Port and in the 1820's a new town was created to the east, on the site of the present town. The harbour consists of two huge granite piers, the East and West Pier, enclosing a space of 250 acres. King George IV visited Dunleary in 1821 causing the name 'Kingstown' to be formally adopted (a stone obelisk near the 1859 Carlisle Pier was built to commemorate the event). The visit of the King was recorded on the obelisk, which is now positioned in front of the Royal St. George Yacht Club. The present name, Dun Laoghaire ('fort of Laoghaire'), was adopted again in 1920. In 1930, two small stones containing early decorations were dug up near the Coal Harbour, suggesting that the original fort was built there (DU023-052). Both the site of the original fort, and the Martello Tower that was built on top of it, were destroyed during construction of the railway in the early 19th century.

The town developed between 1820 and 1840, with numerous terraces laid out and churches, yacht clubs and other public buildings constructed. The main street, George's St, follows the route of the Military Road linking the two Martello towers, at the old pier and in the present People's Park.

With the coming of the Dublin to Kingstown railway in the 1830's, the town became a popular seaside resort, with the train's passenger service as important as the transport of goods. The neo-Classical railway station was built in the 1840's using granite masonry (now Restaurant na Mara). The Coal Harbour was an exceedingly busy place importing coal and by 1855 the Outer Coal Harbour was constructed at a cost of £30,000. In 1827 the Harbour Commissioners had built a jetty to be used exclusively by the Admiralty's Mail Packets. This Mail Service continued until 1850 when a new contract was made with the City of Dublin Steam Packet Company. 1861 saw the construction of a Lifeboat House on the Royal Slip at the foot of the Carlisle Pier. A Harbour Master's House was built in 1845. A boom year for the area came in 1863 with the additions to the Harbour of a battery/fort, a coastguard station, a seaman's home and a lighthouse and keepers cottages.

Martello Towers

The Martello tower takes its name from Cape Martella on the northwest coast of Corsica, where in 1794 a circular stone defensive tower resisted a land and sea attack despite being only lightly armed. This model was used for the large numbers of towers built in the early 19th century along the British and Irish coastlines, to defend against threats of Napoleonic invasion (De Courcy 1996, 247).

Nine Martello towers were built around Dublin Bay in 1804: one at Sutton on the North shore, with the remaining eight placed along the south shore at Sandymount (DU019-018), Williamstown (DU023-002 i.e. at Blackrock College), Seapoint (DU023-010), Dunleary (DU023-052), Glasthule (DU023-017), Sandycove (DU023-019), Bullock and Dalkey. Two of the towers, at Dun Laoghaire and Glasthule, have been removed or destroyed in the early to mid-

19th century. None of the towers were identical either in size or in garrison and three had associated shore batteries (Dun Laoghaire, Sandycove and Dalkey Island). Both the Martello tower and the battery at Dun Laoghaire were located near the Old Pier. The tower stood near the land end (beneath the present roadway to the south of the modern railway line). The battery initially stood on the shore east of the pier and was subsequently relocated at the east pier head of the new Kingstown Harbour.

7.4.2 Previous fieldwork in the Study Area

Ringsend:

Thorncastle Street (Bennett 2000:0337; 00E0669): Archaeological monitoring was undertaken on a site bounded by derelict warehouses to the N, Thorncastle St to the E, apartments to the S and the River Dodder to the W. The development was being constructed on the site of a recognised archaeologically sensitive area (RMP DU18:53). Two further archaeologically sensitive areas are near the site, RMP DU18:54 and DU18:66. Surface clearance occurred in two areas, the first within the NW portion of the site, where a minion cannonball was found within the topsoil. Three service trenches were also dug. The trench at the NE end of the site contained a very high quantity of red brick and iron slag. The intense concentrations of iron slag show that some form of iron working took place on or near the site. However, there are no historical records to substantiate this. Nothing of an artefactual or structural nature was found to indicate the above period. It is highly improbable that the find location of the cannonball was the point of its original deposition. The ball probably belonged to Cromwell's arsenal and may have been misplaced when his army landed here in August 1649. It is possible that the ball may have been picked up and then discarded from lack of recognition.

Thorncastle Street (Bennett 2000:0338; 00E0744): Archaeological testing took place on a disused factory premises that closed down around 1983. The site is bounded on the N by the River Liffey and by York Road, on the W by the confluence of the River Dodder with the Liffey and the lock system joining the Grand Canal to the Liffey, and on the E by Thorncastle St. The development involved the demolition of the factory premises and the erection of a multi-storey building with basement carparking facilities. Five test-trenches, previously opened by engineers on the site, were reopened to examine the stratigraphy and nature of the subsoil. All of the trenches yielded predominantly early modern stratigraphic deposits. The stratigraphy indicates activity on the site but mainly relating to reclamation and subsequent industrial activity. All of the evidence, archaeological and historical, places the activity securely in the 18th to early 20th centuries.

Irishtown Road / Dermot O'Hurley Avenue (Bennett 1999:266; 99E0145): Five test-trenches were excavated on the site before development, revealing largely 19th century material sitting on layers of yellow sand and clay. This material appears to have built up on the site following the growth of this area as a suburb of Dublin during the 19th century. The site was of no archaeological significance.

Seapoint Terrace, Irishtown Road, Ringsend (Bennett 1997:185; 96E0269): Five long trenches were dug on the development site at the rear of Seapoint Terrace. This area of Ringsend was composed of tidal mudflats and sandbanks both in the medieval period and later. While several dwellings are listed in the Sandymount/Ringsend area in the Down Survey, the area was not

extensively settled and reclaimed until the 18th century. Between 0.5m and 0.8m of garden soil containing 19th century and later material overlay the sand and gravel subsoil on the site. Towards the centre of the site a localised grey soil and small oyster shell midden, c. 0.2m thick, yielded fragments of late 17th century pottery. No structural features were associated with the 17th century soil. Razor shell and limpet throughout the upper levels of the sand subsoil indicate that the area was open sandbanks until the widespread deposition of the recent garden soil.

Sandymount:

Sandymount Strand (Bennett 1999:270; 99E0490): Underwater monitoring was carried out of cable laying for the Esat link along Sandymount Strand. The Shipwreck Inventory for County Dublin, held in the office of the Underwater Unit of the National Monument Section, records a large number of shipwrecks for Dublin Bay including Sandymount Strand. No archaeology was encountered during the monitoring of the works.

Merrion:

185–203 Merrion Road (Bennett 2000:0279; 00E0886): The area required assessment because of its association with and proximity to four recorded monuments, a complex centred on the site of Merrion Castle (DU23:00101, 'Tower-House Site'; 23:00102, 'Dwelling Site'; 23:00103, 'Armorial Stone'; and 23:00104, 'Stone Head'). From an extant archaeological viewpoint only the last two components are still evident on the site, displayed in the wall of Fitzwilliam Hall. Three trial-trenches did not yield any features or artefacts of archaeological significance. This would suggest that this area, while adjacent to the castle, was not in contemporary use. However, some fragments of post-medieval pottery were noted in the spoilheaps, which might relate to the latest occupation of the castle.

7.4.3 Recorded Monuments

All the Recorded Monuments have statutory protection and should be regarded as constraints, which should be avoided if at all possible. RMP sites are listed in Appendix A - 7.1 in order of their location on the accompanying maps, from Sutton (N) to Sandycove (S). There are nineteen Recorded Monuments located within the Constraint Study Area and a further nine located in the immediate vicinity. The proposed route passes through the Constraint Area of the following Recorded Monuments (the constraint area is set by the fact that for certain types of archaeological elements, such as ring forts, castles and other such structures, a substantial element of the features of archaeological interest may be below ground, such as buried walls, tombs, middens etc), however significant underground features are not likely to be associated with the elements listed below and therefore there should not be significant issues associated with the route passing through the constraint areas:

- DU015-023, Burial Mound (Figure 7.1)
- DU015-021, Church, graveyard and graveslab (Figure 7.1)
- DU019-001, Dwelling, Armorial stone, watermill and mill race (Figure 7.2)
- DU019-033, Lead Mine (Figure 7.3)
- DU018-020564, Sir John Rogerson's Quay (Figure 7.3)
- DU018-020201, North Wall Quay (Figure 7.3)
- DU018-066, Great South Wall (Figures 7.3)
- DU018-053, Settlement – Ringsend (Figure 7.3)
- DU018-054, Settlement – Irishtown (Figure 7.3)

- DU019-018, Martello Tower (Figure 7.4)
- DU023-002, Martello Tower (Figure 7.5)
- DU023-010, Martello Tower (Figure 7.5)
- DU023-052, Promontory fort site, inscribed stones, martello tower site (Figure 7.6)
- DU023-019, Martello Tower (Figure 7.6)

7.4.4 Built Heritage Sites

A total of 31 built heritage sites have been identified within the Constraint Study Area (see Appendix A - 7.2). Appendix A - 7.2 contains architectural or post-medieval structures not listed in the RMP, which have been given individual constraint numbers prefixed by 'BH' (Built Heritage). All of these sites are protected structures, which are listed in the Dublin City and Dun Laoghaire-Rathdown Development Plans. There are no protected structures within the constraint study area in Fingal County.

The built heritage sites are predominantly houses, both individual and terraced (BH1-3, BH11, BH17-21, BH26) but also include the larger Blackrock House (BH18); four churches (BH4-6 and BH12); four Martello Towers (BH15, 16, 27, 31); a battery (BH30); a river bridge (BH10); two railway bridges (BH22 and 27); a folly (BH24); a bathing house (BH23); warehouses and other commercial premises in the Docklands (BH7). The quays along the north (BH8) and south (BH9) of the Liffey were also identified as built heritage sites, as was the sea wall along Strand Road at Sandymount and Merrion (BH14); the Great South Wall along Pigeon Road (BH13); the West Pier (BH28) and associated harbour structures (BH29) in Dun Laoghaire harbour.

Two of these built heritage sites, BH23 and BH 24, lie directly on the proposed route of the promenade / cyclepath (Figure 7.5).

As the extents of most of the built heritage sites are not recorded or represented on the OS Maps, it is difficult to assess the impact of the development on the associated grounds of the buildings. The impact assessment for the built heritage must be regarded as provisional until a full field inspection is undertaken.

In addition to these built heritage sites, there are 8 Conservation Areas designated by Dublin City Council and Dun Laoghaire-Rathdown:

- CA1 Spencer Dock (Figures 7.3)
- CA2 North Wall Quay (Figure 7.3)
- CA3 Sir John Rogerson's Quay and River Dodder (Figure 7.3)
- CA4 Idrone Terrace (Figure 7.5)
- CA5 Brighton Vale (Figure 7.5)
- CA6 Dun Laoghaire Harbour (Figures 7.6)
- CA7 Dun Laoghaire Town (Figure 7.6)
- CA8 Sandycove Harbour and Point (Figure 7.6)

7.5.5 Areas of Archaeological Potential

A coastal environment such as that along the proposed route can be regarded as an area of high archaeological potential. Coastal occupation sites have been favoured from prehistoric times for their proximity to rich food sources and are often represented by habitation sites and middens. Shell middens of various dates are known around much of the Irish coast, two of prehistoric date excavated at Howth and Dalkey (Waddell 1998, 19). Rivers were also

important areas of activity, serving as route ways, boundaries, defences and ritual sites and a number of Dublin's main rivers enter the sea at Dublin Bay (including the Santry River, the Liffey and the Dodder). Riverbanks and riverbeds are considered areas of high archaeological potential, containing features such as *fulachta fiadh*, fords, ancient bridging sites, mills, *longphorts* and other habitation sites. They produce archaeological artefacts such as log boats, organic material, and votive offerings of swords, axe heads and other finds.

It is possible that archaeological material may remain *in situ* in the riverine area around the mill and mill race at Santry River (RMP site DU019-001) and Ringsend Bridge over the Dodder River (AAP2 / BH10). The concentration of archaeological monuments in the Constraint Study Area and the occurrence of stray finds further increase the likelihood of associated remains.

7.4.6 Conclusion

The recording of 18 RMP sites from within the Constraint Study Area indicates the importance of the coastline along Dublin Bay from the prehistoric period onwards. The assessment has indicated that the area delineated by the Constraint Study has been occupied from at least the Neolithic / Bronze Age period. This phase of prehistory is primarily represented along the sea shore by a number of sites, including an earthwork, a wedge tomb and a burial mound and an Iron Age promontory fort site. While the coastline remains little changed since the medieval period, there has doubtless been some erosion since the prehistoric period. The number of burial sites and stray finds recorded close to the shoreline evidences this.

The distribution of sites of early medieval and medieval date (represented by church and graveyard sites, two holy wells, a settlement site, an enclosure site and a castle site) along the coast from Sutton to Sandycove, indicates that this area continued and increased in importance for settlement and commercial activity.

Much of the present Docklands and part of the shoreline immediately to the north and south (Fairview Park and Ringsend Park) represent areas of land reclaimed during the 18th and early 19th centuries. These areas underwent extensive development at this time and many of the post-medieval buildings of the period still survive and are protected under the Development Plans.

Sites of varying types from the post-medieval period are recorded from within the Constraint Study Area, the majority of which are individual or terraced houses, commercial buildings and churches and are protected under the Development Plans. Some of the more unusual structures are associated with the 18th century houses of Blackrock and Maretimo (the latter no longer extant). The bathhouse and folly occupy a small headland and are now separated from the original estate grounds by the railway line. A monumental footbridge, also associated with Maretimo House, crosses the railway line to access the headland.

7.5 Constraints

All Recorded Monuments (RMP sites) have statutory protection and should be regarded as constraints, which should be avoided if at all possible, those within the constraints study area are listed in Section 7.4.3 of this report. However significant

underground features are not likely to be associated with any of these listed structures and therefore there are not predicted to be significant impacts associated with the S2S route passing through the constraint areas, with respect to recorded monuments.

In addition to RMP sites, 14 additional built heritage sites, listed in the Dublin City Development Plan and 10 listed in the Dun Laoghaire-Rathdown County Development Plan are located within the Constraint Study Area and these are afforded protection under these Development Plans.

The S2S route runs along the Built Heritage Site which is the sea wall along Strand Road and Merrion (BH14) and crosses the North and South Quays Built Heritage sites (BH8 and BH9). The S2S also runs close to the following sites, the 4 Martello Towers, (BH 15, 16, 27 and 31), the folly (BH23) and bathing house (BH24) and harbour structures in Dun Laoghaire Harbour (BH29).

The constraint area includes 8 Conservation Areas designated by Dublin City Council and Dun Laoghaire-Rathdown Council, and the proposed S2S route will pass through the following areas directly: North Wall Quay, Sir John Rogersons Quay and River Dodder, Brighton Vale, Idrone Terrace, Dun Laoghaire Harbour, Dun Laoghaire Town, and Sandycove Harbour and Point.

From an archaeological and built heritage point of view, only the Maretime section (BH 23 and BH 24) poses a significant potential constraint to the route, due to the fact that the structures of archaeological interest are directly on the foreshore and therefore the route has been designed to ensure it does not directly traverse these protected structures nor impact on these structures negatively.

7.6 Mitigation Measures

An Environmental Management Plan (EMP) will be implemented as part of the design, planning, construction and operational stages of S2S. The EMP will ensure that any archaeological issues are dealt with at an early stage of the development, and the avoidance or mitigation of any potential impacts on cultural or archaeological structures or areas can be integrated into the overall design of S2S (See Appendix B).

Potential Mitigation Strategies for Archaeological 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

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 when avoidance and preservation in situ are not possible.

Full Archaeological Excavation

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.

Archaeological Test Trenching

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.' (IFA 1994a, 1)

Monitoring

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.' (IFA 1994b, 1).

7.7 Possible Impacts

Potential Impacts on Archaeological Remains

Impacts can be identified from detailed information about a project, the nature of the area affected and the range of archaeological resources potentially affected.

It was noted in Section 7.5 that all Recorded Monuments (RMP sites) have statutory protection and should be regarded as constraints, which should be avoided if at all possible, those within the constraints study area are listed in Section 7.4.3 of this report. However significant underground features are not likely to be associated with any of these listed structures and therefore there are not predicted to be significant impacts associated with the S2S route passing through the constraint areas, with respect to recorded monuments.

The S2S route runs along the sea wall along Strand Road and Merrion (BH14) and crosses the North and South Quays (BH8 and BH9). The S2S also runs close to the following sites, the 4 Martello Towers, (BH 15, 16, 27 and 31), the folly (BH23) and bathing house (BH24) and harbour structures in Dun Laoghaire Harbour (BH29). The S2S therefore has the potential to impact directly on these Built Heritage sites.

The proposed S2S route will pass through the following Conservation Areas directly: North Wall Quay, Sir John Rogersons Quay and River Dodder, Brighton Vale, Idrone Terrace, Dun Laoghaire Harbour, Dun Laoghaire Town, and Sandycove Harbour and Point and therefore has the potential to impact directly on those sites.

Development can affect the archaeological 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. Based on the desk top studies undertaken to date, the risk of impacting directly on RMP sites is considered extremely low. Potential impacts will occur on the Built Heritage Sites and Conservation Areas noted above, these impacts will be mitigated by use of materials sympathetic to the Conservation Area and Built Heritage Site in question

- 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. The desk top studies indicate that the route is not likely to directly affect known archaeological sites under these headings.
- 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. Dewatering is not envisaged as part of the S2S construction works and hence dewatering impacts are not likely to be an issue.
- 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. The S2S will be sensitively designed to ensure that materials used and the overall design principles are in agreement with the designated Conservation Areas and Built Heritage sites through which it passes.
- 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

There is no standard scale against which the severity of impacts on the archaeological and historic landscape may be judged. 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.

Impacts are defined as 'the degree of change in an environment resulting from a development' (EPA, 1995, 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.

As noted under Potential Impacts above, no RMP sites are predicted by be impacted by the proposed S2S route.

The S2S route directly traverses a number of Built Heritage Sites, and the design of the route in the vicinity of these sites will be sympathetic to the materials and

structures which comprise the existing environment, to ensure any impacts are minimal. The design of the route at Maretimo has been specified so as to minimize any impacts on the Built Heritage sites on the Maretimo headland.

The S2S route also passes through a number of Conservation Areas, and the design of the S2S structure will take be sympathetic to the materials and structures in these areas, to ensure any impacts are minimal.

7.8 Recommendations and Additional Studies

Due to the extent of the archaeological and built heritage resource within the Constraint Study Area, further assessment and investigation should be undertaken during the appropriate stages of the project.

It is expected that the next stage in the S2S project would be detailed design, followed by an EIS. It is recommended that a suitably qualified archaeologist or heritage architect, with experience in the impact of built structures on Built Heritage sites and Conservation Areas, be appointed as part of the design team for the S2S. For the Sections which cross or run close to Built Heritage sites, or which run through Conservation Areas, the archaeologist/heritage architect will conduct a detailed study of the materials and structures in each area, through site walkover and desk top research, and will use this information to inform the design of the S2S in these areas, to ensure any potential impacts are minimised and that the design is sympathetic to these areas. The archaeologist should also consult with the Local Authority Conservation Officer and agree design details and mitigation measures as appropriate.

When the project proceeds to EIS, a suitably qualified archaeologist with experience in assessing the impact of projects of this nature in an urban environment should be appointed to determine the likely impact of the route and to recommend any additional mitigation measures.

This archaeologist should conduct a walkover of the entire route, and using the desk top study from this report as a data source, should define the baseline archaeological and cultural heritage of the route. Any impacts should be identified and quantified and mitigated as deemed appropriate.