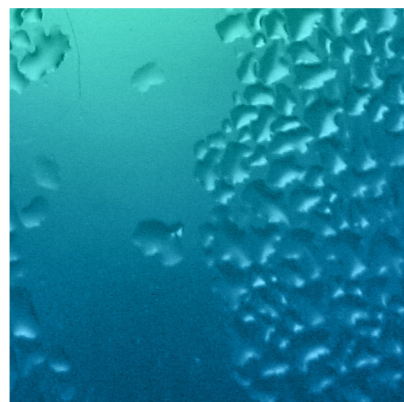
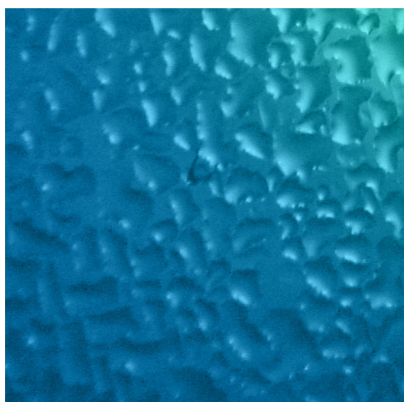
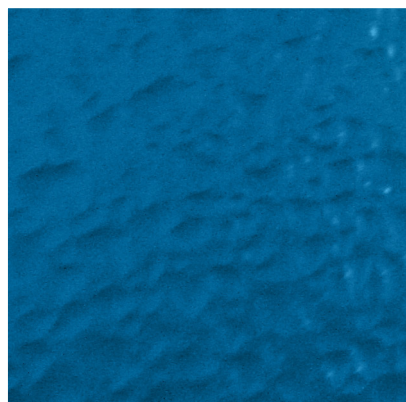
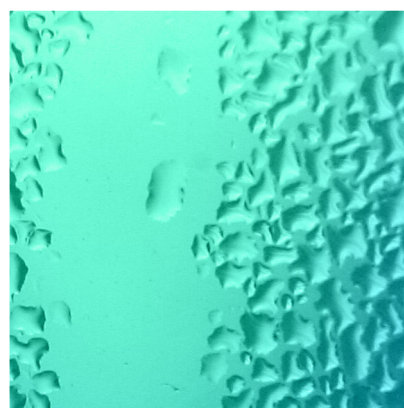
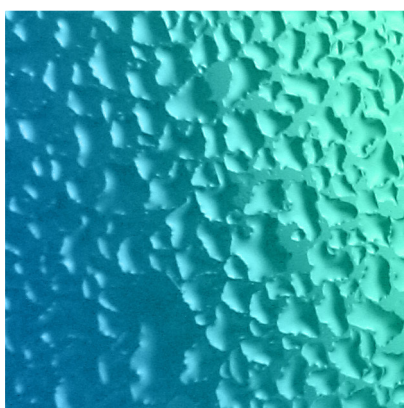
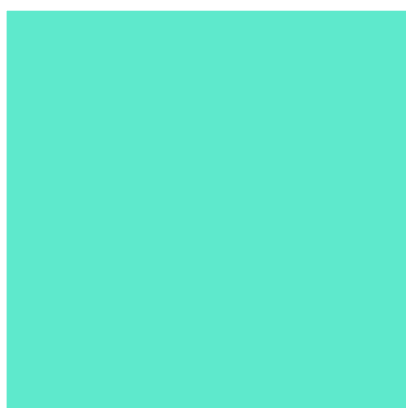
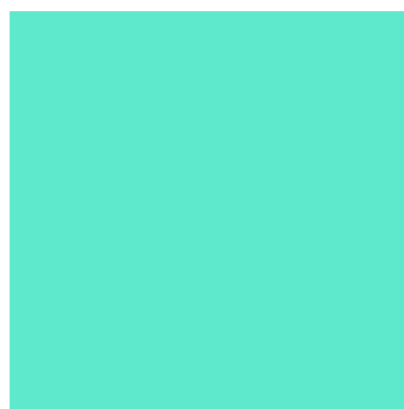
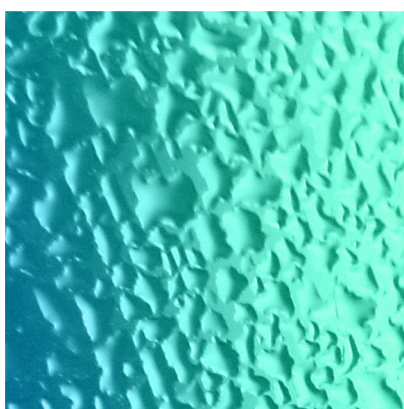
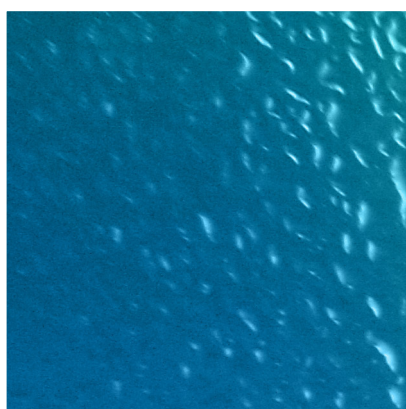


Proposed Interim Works at Dún Laoghaire Baths

Environmental Impact Report



The Proposed Interim Works at Dún Laoghaire Baths

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APPENDICES

APPENDIX A Marine Ecology Report

APPENDIX B Archaeological Impact Report

1 INTRODUCTION

Dún Laoghaire Rathdown County Council proposes to undertake works at the Royal Victoria Baths, hereafter referred to as 'proposed interim works at the Baths site'. They are situated on high ground to the southern side of Dún Laoghaire between the East Pier and Sandycove, with panoramic views over Scotsman's Bay. The land area of the site within which the interim works is proposed to be undertaken is 3.2 hectares, as shown in **Figure 1.1**.

The original Baths east of the East Pier were constructed in 1843 by John Crosthwaite and named the Royal Victoria baths. In 1896 Kingston Urban District Council purchased the baths site. The firm Alexander Fraser was engaged to build the new baths on today's site. In June 1908 it was reported that the works were nearly completed and are largely what is in existence today. The baths were improved and extended in the 1930s, but presently the site is not in use and has run derelict.

RPS have been commissioned to undertake an Environmental Impact Report on the Baths site which will assess the impacts, both positive and negative impacts associated with the proposed interim works at the Baths.

1.1 STUDY AREA

Dún Laoghaire Rathdown County is located south of Dublin City Centre and covers a land area of approximately 12,000 hectares. It contains 17 kilometres of coastline including beaches, harbours, cliffs and a series of ecologically designated sites. The vast majority of the County is classified as urban with the remainder classed as rural.

The Baths site is located between Newtownsmith and the East Pier on high ground that can feel exposed when the weather is windy and the seas are rough. Newtownsmith which lies to the south was transformed in the 1930s into a promenade and public park, and is used extensively for walking. This promenade fronts onto the original rock foreshore of Scotsman's Bay, which continues towards Sandycove and the Forty Foot bathing place.

North of the Baths site, lies the Maritime Gardens Walkway that connects with the East Pier and is situated parallel to Queen's Road. The Maritime Gardens Walkway is presently used as a coastal route of access to the East Pier, but in recent years it has become run down and the walkways and steps are in need of repair. The railway line passes in front of the Baths site through a tunnel that is covered over at the junction of Queen's Road, Windsor Terrace and Park Road, which also lies directly in front of one of the two entrances to the People's Park.

1.2 EIA SCREENING

Screening is the term used to describe the process of ascertaining whether a development requires an EIA and is determined by reference to mandatory and discretionary provisions. In interpreting which projects are likely to have significant environmental effects the provisions and criteria as set out in the Planning and Development Acts (2000-2010) and the Planning and Development Regulations (2001-2011) must be adhered to. Determination criteria are also outlined within the European Communities (Environmental Impact Assessment) Amendment Regulations (S.I. 93/1999) and (S.I. 538/2001) which implements the EIA Directive 85/337/EC, as amended by Directive 97/11/EC.

An Environmental Impact Assessment (EIA) Screening Assessment has already been undertaken to determine if there was a requirement to undertake an EIA for the interim works at the Baths site. It was determined in the EIA Screening Statement that there was no likelihood of significant environmental effects from the proposed interim works at the Baths Site. The detail of the proposed interim works was assessed in relation to the scale and extent of the works and the location of the works and it was determined that the effects were not significant in relation to the sensitive

environments. However, it was decided that for good practice an Environmental Impact Report would be conducted that would assess and mitigate any minor effects on specific environmental areas of focus.

1.3 APPROPRIATE ASSESSMENT

An Appropriate Assessment (AA) is required under the EU Habitats Directive (92/43/EEC), as amended by Directive 97/62/EC, for any plan or project likely to have a significant effect on an internationally important site for nature conservation, i.e. Special Protection Areas (SPAs) and Special Areas of Conservation (SACs), also known as Natura 2000 sites. The proposed interim works at the Baths site is not located directly within a Natura 2000 site; however there are both SAC and SPA sites in proximity to the scheme.

The relatively recent Birds and Natural Habitats Regulations (S.I 477/2011) provides an outline of the requirement for AA Screening in advance of consent for an application. Part 5, Regulation 42 (2) states that *“a public authority shall carry out a screening for Appropriate Assessment under paragraph (1) before consent for a plan or project is given, or a decision to undertake or adopt a plan or project is taken”*.

An AA Screening Assessment for the proposed interim works was undertaken and it identified the relevant Natura 2000 sites and provided information on their qualifying interests and conservation objectives. The Statement assessed the likely effects of the proposed interim works at the Baths site, individually or in combination with other plans or projects, on the identified Natura 2000 sites.

The AA Screening Statement concluded that that the interim works at the Baths site will not have a significant effect on the Natura 2000 network and a Stage 2 Appropriate Assessment is not required.

1.4 THE PROPOSED INTERIM WORKS

The interim works at the Baths site will provide for the retention and securing of the existing building for use as artist workspaces, a gallery café with outdoor seating and public toilet facilities, as shown in **Figure 1.2**. The proposed removal of dilapidated structures, as outlined in **Figure 1.3** will permit the creation of a new route that will connect Newtownsmith with the East Pier and the Peoples Park. There are a number of buildings within the Bath's site, with the main building referred to as the Baths Pavilion, being retained, while the other outbuildings to the rear will be demolished to provide space for the connecting walkway.

In order to ensure the long-term survival of the baths as a local amenity and to provide connectivity with other amenities in the area, the following works are proposed to be carried out:

- Secure the existing Dún Laoghaire Baths site;
- Demolition and removal of specific dilapidated structures;
- Renovation and re-opening of pavilion building to provide public café/gallery, toilets, terrace area and artists studios;
- Creation of a new route with associated landscaping to connect the walkway at Newtownsmith to both the East Pier and the Peoples Park;
- Enhanced facilities for swimming and improved access to the waters edge e.g. ramps, steps and renovation of the existing bandstand;
- Creation of a small jetty in line with the existing structure and the provision of a changing area;



LEGEND

**Site Boundary**



Meath
Fingal
Dublin City
South Dublin
Dun Laoghaire-Rathdown
Kildare
Wicklow

Client

Dun Laoghaire-Rathdown
County Council Comhairle Contae
Dhún Laoghaire-Ráth an Dúin

Project
**Proposed Interim Works at
Dun Laoghaire Baths**

Title
Location of Baths Site

Figure 1.1



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- Upgrading of lower walkway in maritime gardens linking the new jetty with the East Pier; and
- Extension and burying of existing stormwater outlet pipe, 50m in order for it to be located beyond the low water mark. A new wall and viewing area will be built over the outfall pipe.

It is proposed that the existing Baths Pavilion together with a smaller outbuilding will be retained, weathered and secured while the remaining dilapidated outbuildings to the rear and side of the Pavilion will be removed. The original baths entrance along Windsor Terrace will be restored to provide access to the studio space and café facilities. It is also proposed to create new public toilets, which will be accessed at street level. The footpath along Windsor Terrace will be upgraded and new street trees will be planted.

The removal of the dilapidated structures to the rear of the Baths Pavilion will create a new pedestrian and cycle route that will connect the Newtownsmith walkway with the East Pier. The form of the walkway will reflect the original rocky shoreline and sitting and viewing points will be incorporated within it. The land adjoining the walkway will be re-graded to create grassy areas that will provide continuation of the park at Newtownsmith with the Maritime Gardens leading on to the East Pier.

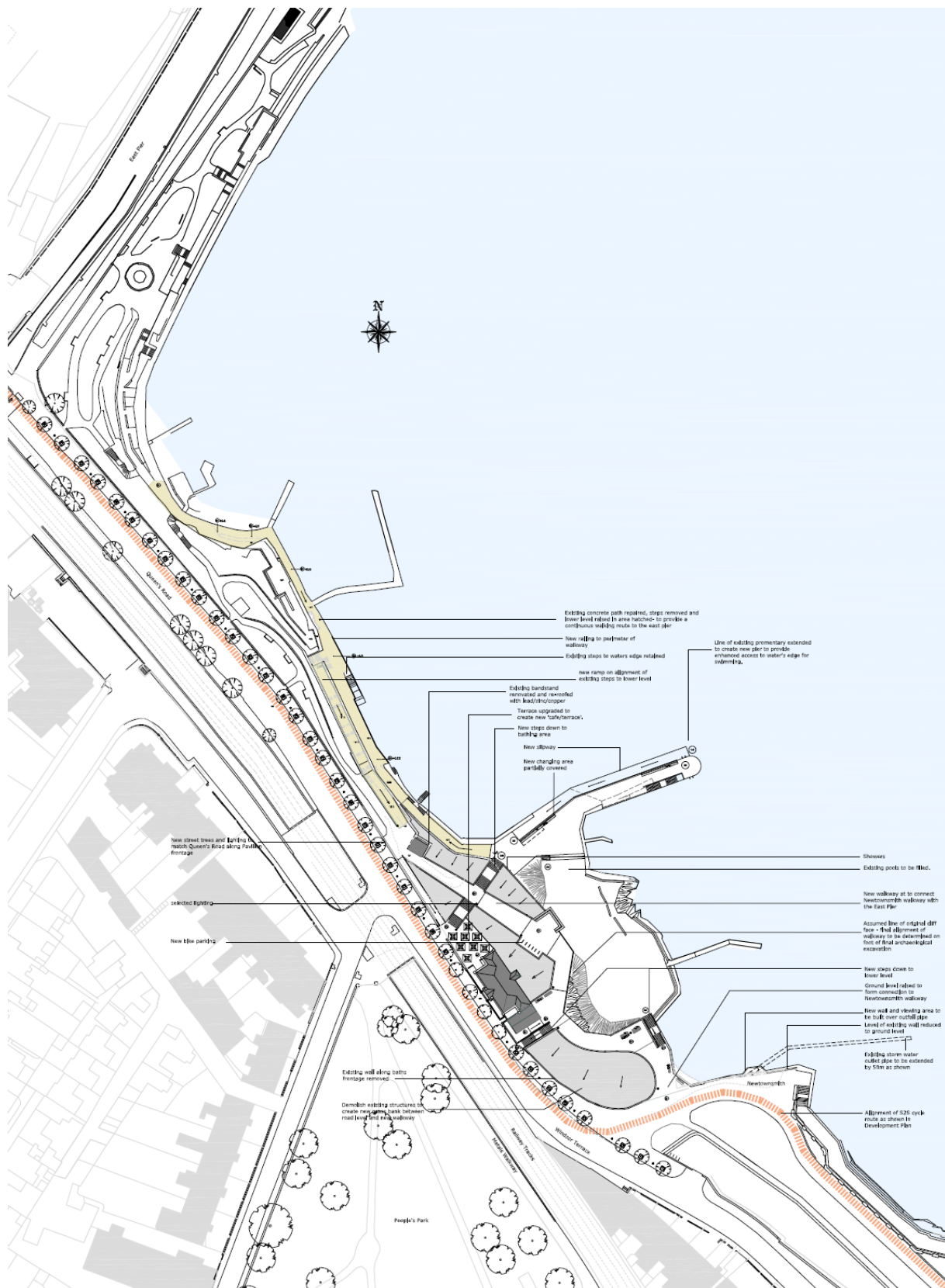
The new promenade will be linked by new steps to the café terrace that will be located in the Baths Pavilion. The access point to the new steps will be linked to the pedestrian crossing point on Windsor Terrace, which will provide a through route for pedestrians to the Peoples Park, the entrance for which lies in close proximity to the pedestrian crossing point.

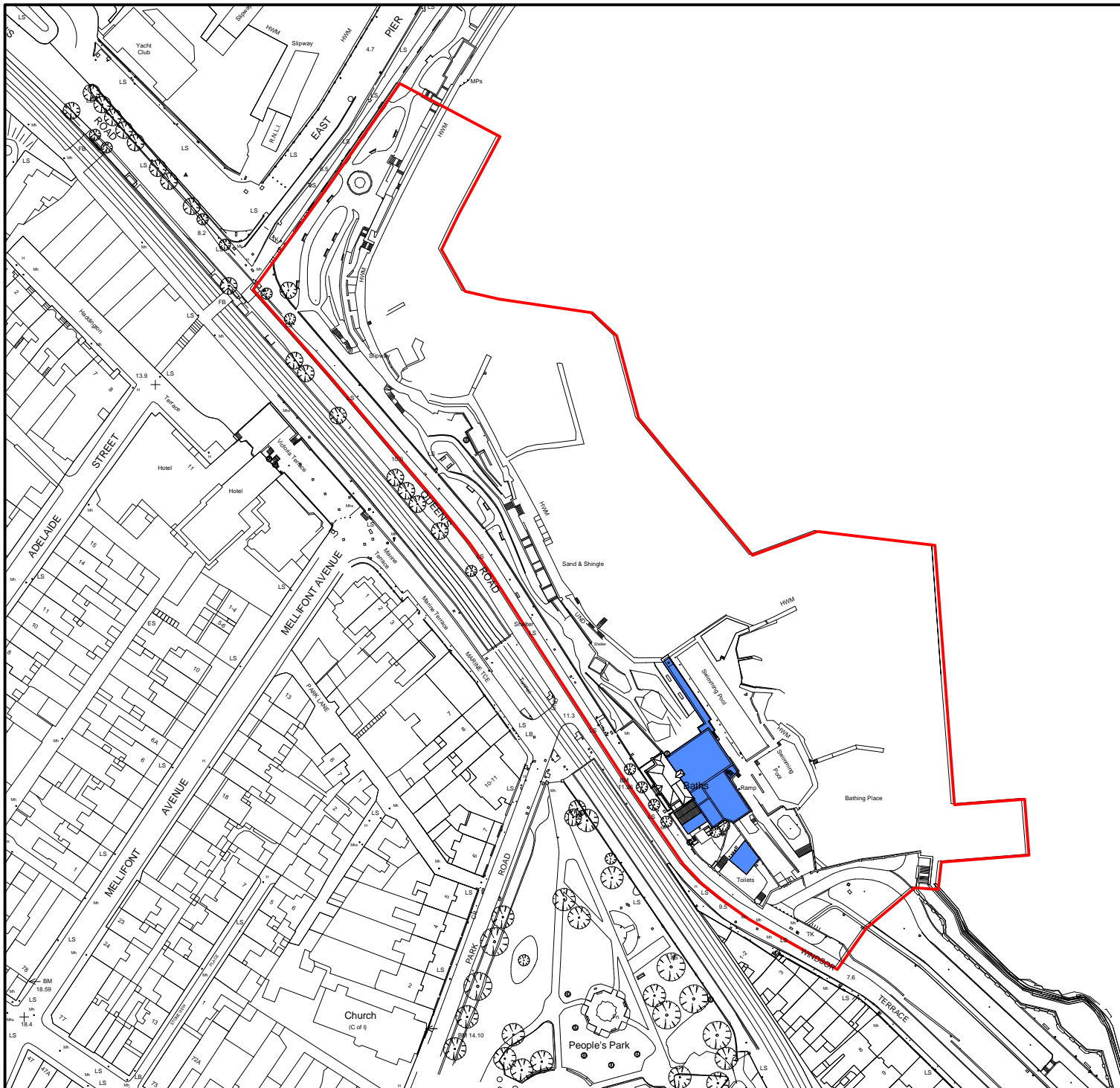
The proposed landscaping for the interim works will have materials chosen from a palette primarily of stone, concrete and steel. Lighting will be installed along the newly constructed walkway to the rear of the Baths Pavilion and the design for the lighting will be a combination of modern and reproduction styles. In addition, the new trees and planting along the walkway will compliment the materials used for its construction.

1.5 SCOPE OF THE ENVIRONMENTAL REPORT

The purpose of this report is to identify the environmental impacts, both positive and negative for the proposed interim works at the Baths site, to ensure the integration of environmental considerations, in the form of mitigation measures, into the construction and operation of the Baths site. Desktop and field surveys were carried out by environmental specialists on the land and sea within and surrounding the proposed scheme location. Following the EIA Screening Statement it was established that a number of specific environmental topics should be addressed within the Environmental Report. They include the following:

- Transport;
- Community and Landuse;
- Air Quality and Climate;
- Noise and Vibration;
- Ecology;
- Landscape & Visual; and
- Cultural Heritage.

Figure 1.2 Proposed Plan for the Baths Site



LEGEND



Site Boundary



Dilapidated
Structures
to be removed



Client



Project

Proposed Interim Works at
Dun Laoghaire Baths

Title

Outline of the
Dilapidated Structures
to be removed

Figure 1.3



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1.6 RELEVANT GUIDANCE DOCUMENTS

The documents *Guidelines on the information to be contained in Environmental Impact Statements, 2002* and *Advice Notes on Current Practice (in the Preparation of Environmental Impact Statements), 2003* as prepared by the EPA, were consulted in the preparation of this Environmental Report.

Specific guidance, legislation and standards relevant to each environmental topic area are recorded in the relevant environmental chapters of this Environmental Report.

1.7 IDENTIFICATION OF LIKELY IMPACTS

Impacts have a range of duration from temporary to permanent as defined in the EPA Guidelines. The following provides a description of the range of likely impacts.

- **Temporary** refers to an impact lasting for one year or less;
- **Short-term** refers to an impact lasting one to seven years;
- **Medium-term** refers to an impact lasting seven to fifteen years;
- **Long-term** refers to an impact lasting fifteen to sixty years; and
- **Permanent** refers to an impact lasting over sixty years.

The following factors have been considered for this Environmental Impact Report when determining the level of the impacts, both positive and negative, of the Baths site on the various aspects of the receiving environment:

- The quality and sensitivity of the existing/baseline receiving environment;
- The relative importance of the environment in terms of national, regional, or local importance;
- The degree to which the quality of the environment is enhanced or impaired;
- The scale of change in terms of land area, number of people impacted, number and population of species affected including the scale of change resulting from all types of impacts;
- The consequence of that impact/change occurring;
- The certainty/risk of the impact/change occurring;
- Whether the impact is temporary or permanent; and
- The degree of mitigation that can be achieved.

The magnitude of the impacts outlined by specialists in their methodologies in the chapters which follow take into account the guidelines given by the EPA. In all cases, the assessment of impacts has taken into account all the elements of the project as outlined in the Project Description.

1.8 ENVIRONMENTAL INTERACTIONS

Where a potential exists for interaction between two or more environmental topics, the relevant specialists have taken the potential interactions into account when making their assessment. Where relevant in the present Environmental Report reference has been made to indirect and cumulative impacts as well as impact interactions, thus ensuring that the main effects of the proposed interim works are assessed cumulatively, rather than in isolation.

Table 1.1 shows a matrix of key interactions likely to occur from the proposed interim works. The boxes marked with a tick indicate that a potential relationship exists between the two environmental factors. The level of interaction between the various topics will greatly vary but the table allows the interactions to be recognised and further developed where necessary. The table is constructed on the basis that an environmental subject has a potential inter-relationship both during the construction and operational phases of the proposed interim works.

Table 1.1 Interaction/Inter-Relationship Matrix

Community & Landuse	-						
Noise	√	-					
Ecology	√	√	-				
Air & Climatic Factors	√	X	√	-			
Transport	√	√	√	√	-		
Cultural Heritage	√	X	√	X	X	-	
Landscape	√	X	√	X	X	√	-
	Community & Landuse	Noise	Ecology	Air & Climatic Factors	Transport	Cultural Heritage	Landscape

√ = interrelationship anticipated

X = no interrelationship anticipated

The cumulative impacts from the proposed interim works at the Baths site have been considered in the Strategic Environmental Assessment (SEA) of the Dún Laoghaire Rathdown County Development Plan (2010-2016). Within the aforementioned document, an evaluation was undertaken of the Plan, Policies and Objectives using Strategic Environmental Objectives (SEOs). These SEOs are used to assess the relevant measures contained within the Plan.

It was identified that the redevelopment of the Baths site would be likely to improve the status of SEO S1 which states that:

“to maximise the sustainable re-use of brownfield lands, and maximise the use of the existing built environment rather than development Greenfield lands”¹

¹ Environmental Report of the Dún Laoghaire Rathdown County Development Plan 2010-2016 Strategic Environmental Assessment, CAAS

However it was identified in the SEA that there could be potential conflict with the following SEOs, as outlined.

- *B1 To avoid loss of relevant habitats, geological features, species or their sustaining resources in designated ecological sites.*
- *B2 To avoid significant adverse impacts, including direct, cumulative and indirect impacts, to relevant habitats, geological features, species or their sustaining resources in designated ecological sites by development within or adjacent to these sites.*
- *B3 To sustain, enhance or – where relevant – prevent the loss of ecological networks or parts thereof which provide significant connectivity between areas of local biodiversity.*
- *HH1 To protect human health from hazards or nuisances arising from exposure to incompatible landuses.*
- *W2 To maintain and improve, where possible, the quality of transitional and coastal waters and to prevent pollution and contamination of bathing waters.*
- *W4 To prevent development on lands which pose – or are likely to pose in the future – a significant flood risk*
- *CH2 To preserve and protect the special interest and character of Dún Laoghaire-Rathdown with regard to entries to the Record of Protected Structures and their context with the surrounding landscape where relevant.*
- *M1 To serve new development with appropriate waste water treatment*
- *L1 To avoid significant adverse impacts on the landscape- especially with regard to the County's landscapes attributed with a High Amenity zoning objective and protected views and prospects".*

On the implementation of the Dún Laoghaire Rathdown County Development Plan the SEA recommended a number of mitigation measures to prevent, reduce and offset any significant adverse impacts. Such measures include that subsequent plan making will be screened for an Appropriate Assessment and that planning applications made in sensitive cultural areas shall be accompanied by an assessment undertaken by a credited conservation architect. As the Baths site is not designated as a result of archaeological heritage an archaeological assessment by a conservation architect is not warranted.

2 PLANNING CONTEXT

This chapter addresses the strategic planning context of the proposed interim works at the Baths Site. Strategic planning in this sense refers to the national, regional and local planning policies and programmes. The need for development works at the Baths Site has been identified in the Dún Laoghaire County Development Plan (2010-2016). In the preparation of this Environmental Report, regard has been had to all relevant Government policies, programmes and plans. These include, for example, The *National Development Plan 2007-2013*, The *National Spatial Strategy 2002 - 2020*, and the *Regional Planning Guidelines for the Greater Dublin Area 2004 – 2016*.

2.1 NATIONAL POLICY CONTEXT

2.1.1 National Development Plan

The National Development Plan, 2007-2013 (NDP) 'Transforming Ireland – A Better Quality of Life for All', was published in January 2007. The NDP has confirmed and put in place the funding to give effect to the National Spatial Strategy, 2002 (NSS) and the future urban hierarchy and structures to accommodate a more urbanised population in large towns offering excellent 'quality of life' amenities and services.

The NDP together with the NSS and Regional Planning Guidelines (RPG) must inform the development of Dún Laoghaire Rathdown through its County Development Plan and associated core strategy, which has been included as a Variation.

The proposed interim works for the Baths site is consistent with the NDP in that it provides low scale sustainable and viable economic development consistent with the protection and enhancement of the local environment. Overall, the development will be beneficial and will provide spin-off advantages to the local economy, to the community and to the amenity and tourism infrastructure of the area.

2.1.2 National Spatial Strategy 2002 – 2022

The National Spatial Strategy (NSS), published in 2002, is a twenty year planning framework designed to achieve a better balance of social, economic and physical development as well as population growth between regions. The NSS sets out a national context for spatial planning which will inform regional planning guidelines and strategies, as well as county and city development plans and strategies. Implementation takes place nationally by informing and influencing other national plans and strategies such as the NDP; regionally by setting the strategic planning context for RPG, which in turn integrate and coordinate city and county development plans; and on down to local area plans and development management.

The proposed interim works at the Baths site fits in to the NSS, which aims to make the most of our cities, towns and rural places in order to bring a better spread of opportunities, better quality of life and better places to live in. At present the Baths site is derelict and is in need of regeneration which would provide benefits to the local community and the wider area within Dún Laoghaire Rathdown.

2.1.3 Regional Planning Guidelines 2004 – 2016

These Guidelines combine two Regional Authority Areas, the Dublin Regional Authority and the Mid-East Regional Authority. The Regional Planning Guidelines (RPGs) work to implement the strategic planning framework set out in the NSS. A principle objective of the RPG is to develop a planning framework to the Greater Dublin Area (GDA) which comprise Dublin City and the Counties of Dún Laoghaire Rathdown, South Dublin, Fingal, Kildare, Meath and Wicklow. Within the GDA there is a distinction between the existing built up area of Dublin and the surrounding environs and the

Metropolitan area, within which the proposed interim works are situated. As part of the planning framework, the RPG's allocate housing and population targets for the individual counties based on national and regional population targets set by the NSS.

As part of the planning framework, the RPG's propose strategies that follow a development path of consolidation with regard to development in order to increase densities and lead to a more compact urban form.

2.1.4 Dún Laoghaire Rathdown County Development Plan (2010-2016)

This County Development Plan sets out the policies for the sustainable development of Dún Laoghaire-Rathdown to 2016 and beyond. The area where the proposed interim works are to occur, Newtownsmith, is specifically outlined within the Dún Laoghaire Urban Framework Plan that is contained within the County Development Plan. An appropriate framework has been outlined and it is stated that any redevelopment of the baths site must have regard to seven key recommendations. They include:

- "Retention and refurbishment of existing Baths Building: The existing Baths building will be retained with a modern extension, if required, to accommodate the proposed public amenities/ facilities.
- Provision of enhanced public amenities: Provision will be made in any development for the following facilities – swimming facilities, facilities for younger children, walkways, cycle facilities, a restaurant/ coffee shop with a public viewing area and facilities for various marine therapies.
- Preference for Concept A over Concept B: (these concepts for the coastal Environmental Improvement Scheme from the East Pier to Sandycove were the subject of comprehensive public consultation).
- Minimise Infill Development: The extent of any infill development will be limited to providing adequate sea defences. Protection of any proposed development and/ or the provision of a continuous walkway/ cycleway from the East Pier to Sandycove will have due regard for the sensitive ecology of the area.
- Provision of a swimming pool: It is considered that public swimming facilities should be provided.
- Provision of car parking: The provision of additional car parking spaces will be investigated further.
- Scale of Proposed Development: In order to reduce the scale and cost of any development project the area between the East Pier and the Baths site will be prioritised for upgrading and renewal.

In addition the redevelopment of the Baths site is outlined as a Specific Local Objective (SLO) within the County Development Plan. These SLOs detail the work that the Council intends to initiate within the lifetime of the County Development Plan. For the Dún Laoghaire Baths site it is stated under SLO 21: Enhancement scheme for the area between the East Pier and Sandycove, that:

"To develop an enhancement scheme for the area between the East Pier and Sandycove. This scheme will include proposals for the upgrading and development of the Dún Laoghaire Baths site and facilitate improved pedestrian linkage to the East Pier in accordance with the

recommendations of the Dún Laoghaire Baths Sub-Committee. This objective will require any scheme to also provide adequate sea defences and take into consideration that the area between the East Pier and Sandycove is a pNHA”.

The proposed interim works at the Baths site has taken cognisance of Objective 21 within the County Development Plan and this Environmental Report will assess any sensitivities to the proposed interim works.

3 TRANSPORT

3.1 INTRODUCTION

This chapter assesses at a high level the potential transport impacts generated by the proposed interim works at the Dún Laoghaire Baths site. This includes an assessment of the potential impacts on the surrounding road network and on cyclists/pedestrians in the vicinity of the works area during both construction and operational phases.

The proposed interim works at the Dún Laoghaire Baths site will involve demolition works due to the removal of dilapidated structures and this could generate short term additional Heavy Commercial Vehicle (HCV) movements on the surrounding road network during the construction stage. The works involved with extending the overflow to sea by 50m could also generate short term construction vehicle trips.

The site is located adjacent to Dún Laoghaire East Pier and the People's Park, which are amenities used extensively by both pedestrians and cyclists, and so careful consideration will be required to ensure that construction related vehicle movements can be safely managed throughout the proposed works.

The proposed interim works will improve facilities for walkers and the public in general so when complete and in operation it is expected that the impact on the surrounding traffic volumes will be minimal and it will be a facility to improve sustainable modes of transport.

3.2 METHODOLOGY

The methodology used in this transport assessment involved a high level desktop assessment of the geometric parameters of the surrounding road network for accommodating the movement of construction vehicles. The geometric assessment included recording road widths on Queens Road and Windsor Terrace to ensure that construction related HCV can manoeuvre safely. The transport assessment has also recommended a haul route and working hours to ensure that HCV movement does not integrate with peak pedestrian periods at the Dún Laoghaire East Pier and People's Park public amenities.

3.3 EXISTING ENVIRONMENT

The Dún Laoghaire Baths site is located adjacent to the Regional Road R118 (Queen's Road) and Windsor Terrace. The R118/Queens Road joins the N31 National Primary Road at the entrance to Dún Laoghaire Harbour and adjacent to Dún Laoghaire DART station. The R118 connects Dún Laoghaire Town Centre to the M50 at Cherrywood and to the City Centre via Rock Road/Merrion Road. The N31 connects Dún Laoghaire Harbour to the M50 via Mount Merrion and the N11. Therefore the site is well connected to the M50 and all associated National Routes which would facilitate the movement of any construction related Heavy Commercial Vehicles (HCV).

3.3.1 Queens Road

Queens Road connects the site to the N31. It has a footpath along both sides of the carriageway (except for a short stretch south of the East Pier pedestrian crossing where the footpath is only on the harbour side of the road). This footpath is primarily used by pedestrians accessing the East Pier from Dún Laoghaire Town Centre and by people walking along the Coast Road. The DART railway line runs parallel on the southern side of the road. Photos of sections of Queens Road are shown in **Figures 3.1 and 3.2**.



Figure 3.1 Queens Road Looking South (before the East Pier)



Figure 3.2 Queens Road Looking South (after the East Pier)

A number of measurements identified that Queens Road is narrowest at the pedestrian crossing in front of Dún Laoghaire East Pier. At this location the road is 5.9m wide. However this width of road is still sufficient to allow two HCV vehicles travelling in different direction to pass each other simultaneously.

3.3.2 Windsor Terrace

Windsor Terrace is located adjacent to the entrance to the Dún Laoghaire Baths site and it is a continuation of the Coast Road. The road links Dún Laoghaire to Sandycove. It has footpaths along both sides of the carriageway, which are used by pedestrians accessing adjoining car parks, shops and restaurants. Photos of sections of Windsor Terrace are shown in **Figures 3.3** and **3.4**.



Figure 3.3 Windsor Terrace Looking South (at the People's Park)



Figure 3.4 Windsor Terrace Looking South (after the People's Park)

Windsor Terrace, on average, is approximately 6.3m wide between the entrance to Dún Laoghaire Baths and the junction with Queens Road/Park Road. This width of road is sufficient to allow two HCV vehicles travelling in different direction to pass each other simultaneously.

3.4 POTENTIAL IMPACTS

3.4.1 Construction Phase

The key activities during the construction phase will be the demolition work associated the removal of dilapidated structures adjacent to the Baths Pavillon and the works involved with the extension of storm water overflow pipe by 50m and the creation of a small jetty.

It is considered that the scale of HCV movement will not be significant in comparison to the volume of traffic that uses the N31 and Queens Road in Dún Laoghaire. The geometric widths of the relevant sections of the existing road network should be sufficient to allow the construction related HCV to manoeuvre safely.

3.4.2 Operational Phase

It is envisaged that the proposed development will not generate a direct traffic impact during operational phase as its primary function will be to enhance facilities for swimming and for sustainable modes of transport such as pedestrian and cycling movement as opposed to increasing vehicle volumes.

3.5 MITIGATION MEASURES

3.5.1 Construction Phase

All construction related traffic should only use the N31, Queens Road and Windsor Terrace (as far as the car park adjacent to the Dún Laoghaire Baths site) as the haul route. No construction related traffic should use Park Road or Windsor Terrace, south of the Dún Laoghaire Baths site.

It is recommended that a speed limit of 30kph be applied for all construction related HCV traffic travelling on Queens Road and Windsor Terrace due to the presence of pedestrians and cyclists.

The proposed interim works are located adjacent to popular public amenities like Dún Laoghaire Harbour East Pier and the People's Park, which attract large numbers of pedestrians, especially during weekend and evening periods. Therefore, it is recommended that construction related HCV traffic should not be travelling on the surrounding road network on weekends or after 18:00 hours on weekdays.

3.5.2 Operational Phase

The development of the walkway and adjacent facilities will have minimal traffic associated with it during its operation. Therefore, no mitigation measures will be required for the operational stage of the interim works.

3.6 RESIDUAL IMPACTS

The proposed interim works at the Dún Laoghaire Baths site have been assessed with the recommended mitigation measures outlined in this high level desktop assessment. The results show that no operational difficulties are expected and that any short term limited traffic impacts during construction can be satisfactorily mitigated. It can be stated, therefore, that the overall impact of the works at the Dún Laoghaire Baths site in terms of traffic will be imperceptible.

4 COMMUNITY AND LANDUSE

4.1 INTRODUCTION

This chapter considers and assesses the demographic and employment aspects of the community in the vicinity of the proposed interim works. It also considers any potential impacts from the changes that are proposed to lands within which the Baths site resides.

The community surrounding the Baths site can be divided into three principle elements, resident community, working community and visiting community. The proposed interim works, including the demolition and removal of dilapidated structures, the improved rear connection between Newtownsmith and the East Pier and the provision of amenities within the Baths Pavilion will be assessed in relation to both community and landuse.

In addition to the impacts on community and landuse dealt with in this chapter the impacts on human being are also considered in **Chapter 3 Transport**, **Chapter 5 Air Quality**, **Chapter 6 Noise and Vibration** and **Chapter 9 Landscape**.

4.2 METHODOLOGY

The methodology included a desktop assessment in order to gain an understanding of the existing land use pattern and location of the resident and working communities. Demographic characteristics of the area were ascertained from the census of population data and other statistics released by the Central Statistic Office (CSO). In addition, the Dún Laoghaire Rathdown County Development Plan (2010-2016) and the Strategic Environmental Assessment (SEA) of this Plan were consulted for details on existing and future planning trends with regard to the Baths site and surrounding area. A windshield survey of the area was also undertaken to gain an appreciation of the resident, working and visiting community and the survey took place on both a weekday and a weekend.

4.3 EXISTING ENVIRONMENT

4.3.1 Landuse

The proposed interim works are to be carried out on the existing structure of the Baths site which is located on a coastal site, overlooking Scotmans Bay within Dún Laoghaire Rathdown as previously shown in **Figure 1.1**. The site is derelict and the structure is presently not used for any activity, and has been boarded up for many years, that has resulted in a number of the buildings becoming dilapidated, with graffiti widespread across the exterior. The site has principally always been used as a Baths site but has been developed and extended since its establishment.

The coastal site where the proposed interim works are situated are outlined within the County Development Plan as having a Specific Local Objective, Objective 21 which has previously been outlined in **Chapter 2**. This Objective provides focus with regard to any proposed redevelopment of the Baths site.

Within the administrative area of Dún Laoghaire Rathdown there are thirteen land use zonings which provide the planning control objectives for the Council's lands. The Baths site is located within zoning objective W, which is stated "*to provide for waterfront development and harbour related uses*". The lands between the Baths site and the East Pier is an area known as Maritime Gardens, that are zoned under objective F, which states "*to preserve and provide for open space with ancillary active*".

recreational amenities". The Peoples Park situated on the landward side directly in front of the Baths site is also zoned as Objective F, while the rest of the lands surrounding the site are zoned A "to protect and/ or improve residential amenity".

It is proposed within the Dún Laoghaire County Development Plan, that during its lifetime that a Local Area Plan will eventually replace the Dún Laoghaire Urban Framework Plan. The Local Area Plan will cover the lands within which the Baths site is located and will extend inland, westwards and eastwards encompassing Dún Laoghaire Harbour, the piers and Newtownsmith coastal strip.

4.3.2 Population

The Baths site is situated in Dún Laoghaire Rathdown which has a preliminary population figure for 2011 of 206,995. This represents a 6.7% growth in population between 2006 and 2011 and a 1.2% growth in population between 2002 and 2006, which was the lowest increase of any County in the State during that period. The average household size in Dún Laoghaire in the 2006 census was 2.77 persons per private household, which is higher than Dublin City but lower than South Dublin and Fingal.

The eastern and northern parts of Dún Laoghaire have a large urban area comprising of suburbs which are comprised of embedded towns and small villages. The south and west of the County comprises a more rural landscape of agricultural lands and upland areas. Therefore, as stated in the County Development Plan about half of the County can be described as urban and the other half as rural.

4.3.3 Employment

The buoyant economic conditions in Ireland as a whole and the Greater Dublin Region have significantly decreased over the last number of years with the economic downturn. This downturn has had a severe impact on the labour market and the rate of unemployment. The Dún Laoghaire region is an affluent local authority and in comparison with other local authorities there are not large distinctions between the classes with small pockets of disadvantage within the County. In 2010 the unemployment rate in Ireland was 13.6% (CSO) and this rate has increased to 14.4% in the forth quarter of 2012. **Table 4.1** outlines CSO labour market figures for 1996, 2002 and 2006 as to date the 2010 figures are not yet available.

Table 4.1 Employment Figures

Item	Year	Dún Laoghaire Rathdown
Persons at Work	2006	87,815
	2002	81,930
	1996	76,271
Unemployed	2006	4,258
	2002	4,232
	1996	7,339

Source: CSO 1996 and 2002

4.3.4 Community

The proposed interim works will improve the Baths site, which is presently in a derelict condition, and will allow the site to be used by the resident community, the working community and the visiting community. The Maritime Gardens, which are adjacent to the Baths site are included within the proposed interim works, that will provide huge benefits to these gardens as they are presently in a state of deterioration. The section of the Maritime Gardens closest to the Baths site is unsightly and uninviting to visitors due to the litter and graffiti present.

The resident community within Dún Laoghaire and the neighbouring areas of Sandycove and Glasthule enjoy the amenities that this coastal area has to offer, as shown in **Figure 4.1**. While there are a number of differing landuses in close proximity to the Baths site, there are substantial quantity of well established residential developments. All of the roads leading to the Baths site, including Queens Road, Windsor Terrace, Park Road and Mellifont Avenue have residential properties interspersed with commercial establishments.

There are a number of amenities in close proximity to the Baths site, which are located along the coastal zone containing readily accessible public amenities, seascape and maritime facilities. The Maritime Gardens and Newtownsmith marine walkway provide an amenity to the visiting community, and the parklands within Newtownsmith provide a grassland area for amenity usage. The People Park, a parkland area of approximately 2 hectares, is located between Windsor Terrace and Summerhill Road, which continues on from Georges Street Upper. This Park was built in a formal Victorian style and has a number of structures with varying uses, such as a tea rooms in the Victorian Shelter and offices in the Park Lodge. The Park also contains a playground and on Sundays hosts the local market. The Metals Walkway and the railway line pass between the People Park and Windsor Terrace. The Metals is a walkway used by both pedestrians and cyclists and runs between Dún Laoghaire and Dalkey. It was originally used as a path along which ran carts carrying stone between Dalkey Quarry and the Harbour Works in Dún Laoghaire.

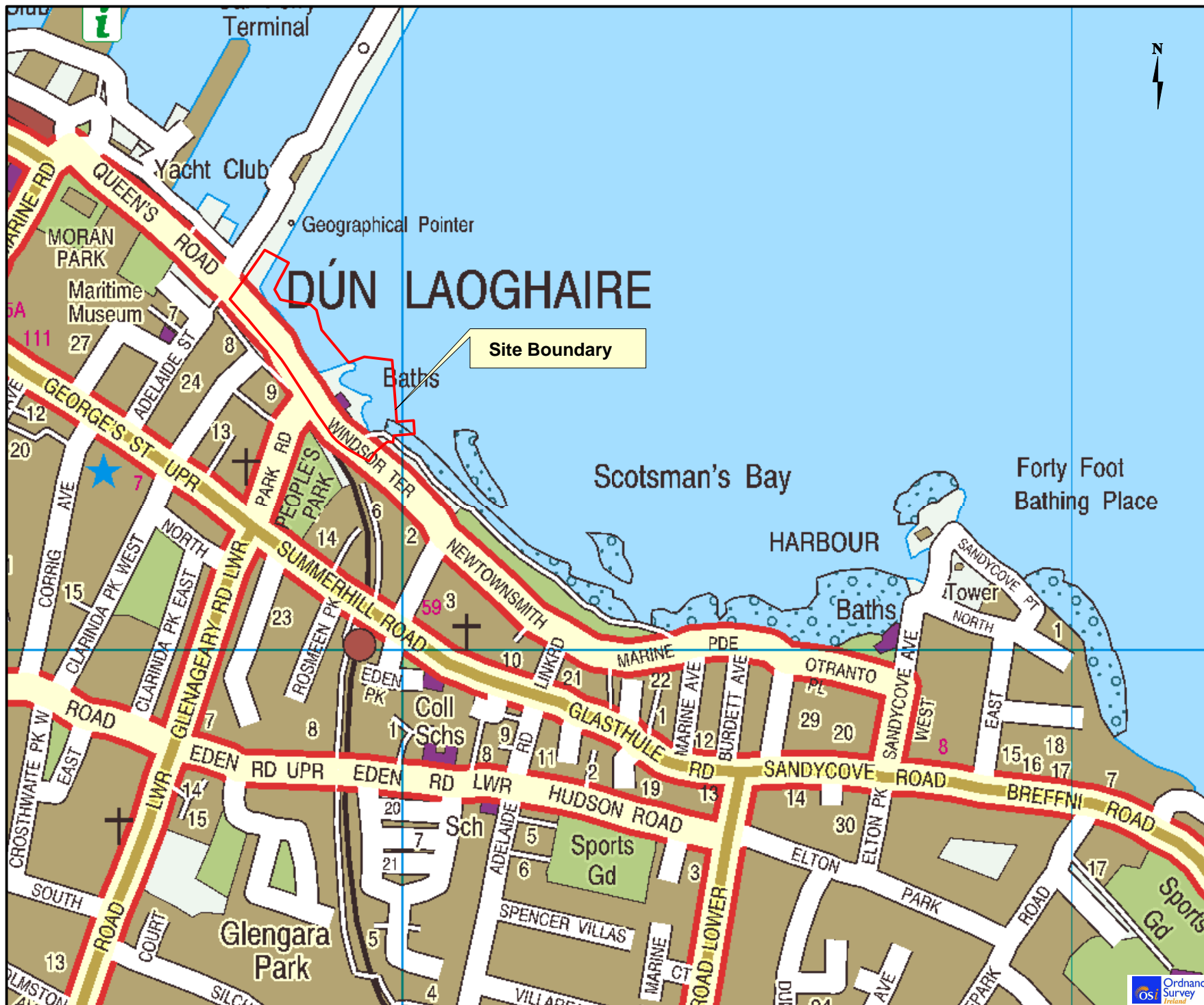
The working community of Dún Laoghaire stretches out as far as the Baths site and a number of commercial establishments are in close proximity to the site including the well known institution of Teddy ice-cream shop which is situated in front of the Baths site on Windsor Terrace. To the north of the Baths site running perpendicular to Queens Road is Georges Street Upper, which is lined with commercial premises. The Peoples Park acts as an interm buffer between Dún Laoghaire Town and Glasthule, which is a village that now forms part of the urban sprawl.

4.4 POTENTIAL IMPACTS

4.4.1 Construction Phase

The nature and scale of the proposed interim works for this Baths site location would have the following impacts on the local resident, visiting and working community during the construction phase. There will be increased vehicular movements from the HCV construction traffic which will have associated temporary increases in relation to noise and dust effects. Key activities associated with the demolition and removal of dilapidated structures will create nuisance for the surrounding resident and working community in relation to noise and dust as a result of the demolition works.

While inconveniences may be caused to the existing communities in the area due to construction traffic, these impacts will be short-term, temporary and in this regard are not considered significant. It is a positive that this derelict, graffiti covered Baths site be redeveloped and such inconveniences will arise with any proposed works at this site. There will also be a minor increase in employment opportunities from the proposed construction works.



LEGEND



Site Boundary



Client



Project

Proposed Interim Works at
Dun Laoghaire Baths

Title

Road Network in
Vicinity of Baths site

Figure 4.1



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Approved by: E. Oliveira	Drawing No. F01
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Date: 14/03/2012	

Notes

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4.4.2 Operational Phase

The proposed interim works will potentially have a number of impacts during the operational phase of the Baths site. The majority of these impacts will be positive and any negative impacts will be minor in nature.

There will be the direct creation of jobs from the Baths site and it is anticipated that this newly improved site will act as an attraction for people visiting Dún Laoghaire and the wider area of Sandycove and Glasthule. Therefore there will be positive impacts on local services and commercial enterprises in proximity to the Baths site.

The primary function of the proposed interim measures is to enhance the area and link Newtownsmith with the East pier providing a more pleasant environment for walking and cycling. This will provide an improved visual environment and it would be anticipated that more people will be attracted to use the amenities that the area has to offer. At present the local bathing facilities at the Forty Foot in Sandycove and at the Martello Tower in Seapoint are popular sites for bathing and it is thought that the improved seaward access at the Baths site would attract swimmers to this location.

It has been identified in **Chapter 6** that the proposed interim works will not cause significant noise nuisances to the area as the proposed scheme will not generate direct traffic impacts during its operational phase. The improvement to the linkage from Newtownsmith to the East Pier may help to encourage more sustainable forms of transport including walking and cycling.

The Baths site is outlined in the Dún Laoghaire Rathdown County Development Plan and the works proposed at the site will not contravene the objectives previously outlined in **section 4.3.1** of this chapter. Therefore no negative impacts are anticipated for landuse.

4.5 MITIGATION MEASURES

4.5.1 Construction Phase

While there are nuisances associated with the construction phase, these impacts are temporary and the recommendations outlined in **Chapter 3**, will assist with reducing impacts. These measures include the following:

- No construction related traffic should use Park Road or the section of Windsor Terrace that leads onto Newtownsmith;
- A speed limit of 30kph should be applied to all construction related HCV traffic on Windsor Terrace and Queens Road;
- It is recommended that construction related HCV traffic should not be travelling on the road network after 18:00 hours on weekdays and at all during the weekends.

In relation to noise nuisance, as outlined in **Chapter 6**, to reduce any potential effects from the demolition of certain dilapidated structures, construction noise management procedures should be adhered to keep noise within acceptable levels. Dún Laoghaire Rathdown Local Authority will be responsible for imposing limits on the hours of construction operation and consider the acceptable noise limits. It is also recommended that noise monitoring be undertaken during critical periods of construction and at sensitive locations within the vicinity of the Baths site.

4.5.2 Operational Phase

The impacts associated with the operational phase of the proposed works will be positive in relation to the surrounding residential and visiting communities, and also with the business community in the surrounding area. No mitigation measures during the operational phase are proposed.

4.6 RESIDUAL IMPACTS

Once the mitigation measures are put in place including good construction management procedures, there are no residual impacts envisaged for the communities identified. There will be long term beneficial impacts to the resident community, the visiting community (including tourists) and the working community from these proposed interim works.

5 AIR QUALITY

5.1 INTRODUCTION

This chapter assesses the Air Quality Impacts associated with the proposed interim works at the Dún Laoghaire Baths site. This includes an assessment of the potential impacts on sensitive receptors in the vicinity of the works area during the construction and operational phases.

The proposed interimworks at the Dún Laoghaire Baths site will include the redevelopment of the site, which includes the demolition and removal of dilapidated structures. This study will identify, describe and assess the impact of the site in terms of its impact on air quality. Particular attention will be focused on sensitive receptors, such as residential areas adjacent to the Dún Laoghaire Baths site, and to the extent of the exposure of these receptors to construction dust and pollutants from vehicle exhausts generated in association with the Baths site during the construction phase.

5.2 METHODOLOGY

The methodology involved a desktop assessment which included the identification of the nearest sensitive receptors and a summary of the existing air quality in the vicinity of the proposed site. The identification of existing air pollutant trends in the vicinity of the proposed site and compliance with relevant ambient air legislation were also included as part of this assessment.

This assessment also recommends a schedule of control measures for both the construction and operational phases to limit the air quality impacts on the surrounding area.

5.3 EXISTING ENVIRONMENT

The Baths site is located within a suburban setting adjacent to Dún Laoghaire East Pier and the People's Park and also adjacent to Queen's Road and Windsor Terrace. The DART railway line runs parallel to Queen's Road on the southern side of the road.

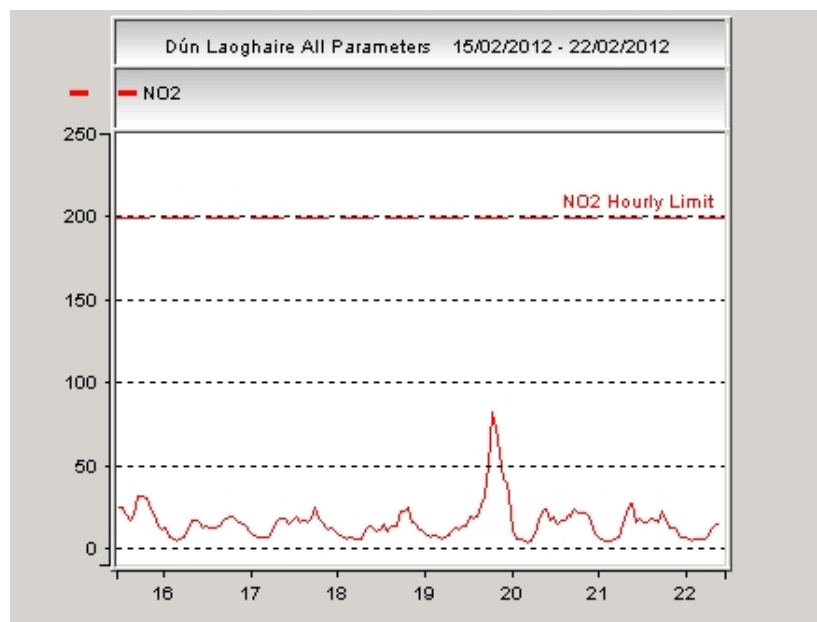
There are a number of residential properties (sensitive receptors), located at Marine Terrace, which runs parallel to Queen's Road on the southern side of the road, together with a number of residential properties along Windsor Terrace. Other than road traffic, there are no major sources of air pollutants in the vicinity of the proposed interim works.

Baseline air quality monitoring data has been referenced from the EPA's National Air Quality Monitoring Programme, Air Quality Zone A, Dublin Conurbation and the EPA Air Quality Monitoring Station at Glenageary Road, Dún Laoghaire.

Nitrogen dioxide (NO₂) and Particulate matter (PM₁₀) are measured at this location by Final County Council on behalf of Dún Laoghaire Rathdown County Council.

5.3.1 Nitrogen Dioxide (NO₂)

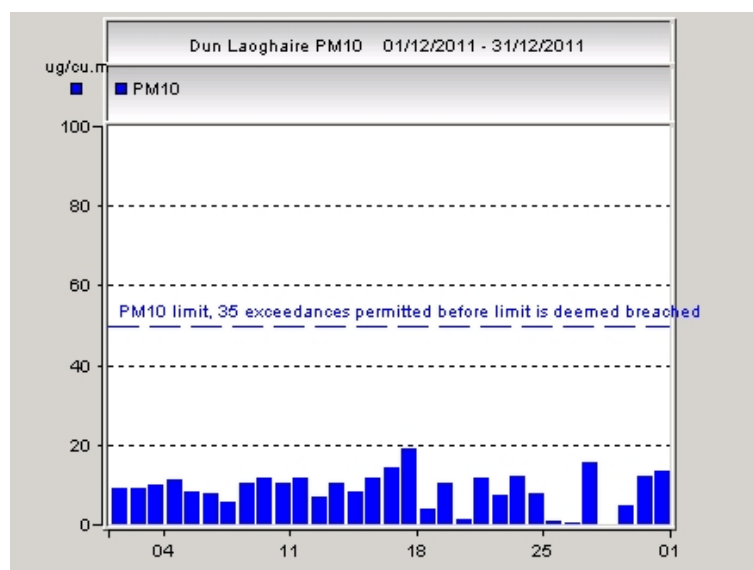
Nitrogen dioxide (NO₂) is classed as both a primary and a secondary pollutant. As a primary pollutant NO₂ is emitted from all combustion processes (such as a gas/oil fired boiler or a car engine). As a secondary pollutant NO₂ is derived from atmospheric reactions of pollutants that are themselves, derived mainly from traffic sources. NO₂ has been shown to reduce the pulmonary function of the lungs. Long term exposure to high concentrations of NO₂ can cause a range of effects, primarily in the lungs, but also in the liver and blood. The results of the latest available monitoring data for NO₂ is presented in **Figure 5.1**.

Figure 5.1 Nitrogen Dioxide Levels at Dún Laoghaire

The measurement units are microgrammes per cubic meter ($\mu\text{g}/\text{m}^3$). The NO_2 hourly limit of $200 \mu\text{g}/\text{m}^3$ is deemed breached if more than 18 exceedances have occurred within a calendar year. There have been no exceedances at this site to date in 2012.

5.3.2 Particulate Matter (PM_{10})

Particulate matter (PM_{10}) may be emitted as a primary pollutant from road vehicle exhausts, which is the main source in urban areas. In rural areas, sources will include traffic, agricultural activities and natural processes. Also point sources such as combustion, i.e. domestic fires, industrial boilers etc. are primary sources of PM_{10} . PM_{10} may also be formed as secondary pollutants from the condensation or reaction of chemical vapours in the atmosphere. Health effects associated with PM_{10} , in the long term, include chronic effects such as increased rates of bronchitis and reduced lung function. The results of the latest available monitoring data for PM_{10} is presented in **Figure 5.2**.

Figure 5.2 Particulate Matter Levels at Dún Laoghaire

The measurement units are microgrammes per cubic meter ($\mu\text{g}/\text{m}^3$). The PM_{10} limit of $50 \mu\text{g}/\text{m}^3$ is deemed breached if more than 35 exceedances have occurred. There were 11 exceedances at this site in 2011.

5.4 POTENTIAL IMPACTS

When considering the potential air quality impacts on the surrounding environment, it must be considered for each of two distinct stages: the short-term impact of the construction phase and the longer-term impact of the operational phase.

5.4.1 Construction Phase

Construction dust has the potential to cause local impacts through dust nuisance at the nearest sensitive receptors and also to sensitive ecosystems. The potential for dust generation from the construction activities associated with the proposed interim works should be assessed on the basis of a review of the construction methodologies and the proximity of these methodologies to sensitive receptors. Construction activities such as stone importation; excavation, earth moving and backfilling may generate quantities of dust, particularly in dry weather conditions. The extent of any dust generation depends on the nature of the dust (soils, peat, sands, gravels, silts etc.) and the nature of the construction activity. In addition, the potential for dust dispersion and deposition depends on local meteorological factors such as rainfall, wind speed and wind direction.

The key dust generating activities during the construction phase will be the demolition works associated with the removal of dilapidated structures adjacent to the Baths Pavillon and the works involved with the extension of the storm overflow pipe by 50m and the creation of a small jetty.

5.4.2 Operational Phase

The potential air quality impacts from the proposed Dún Laoghaire Baths interim works during its operational phase would be primarily as a result increased traffic movements along the existing routes within and surrounding the interim works site.

However it is envisaged that the proposed interim works will not generate direct traffic impacts during the operational phase as its primary function will be to enhance facilities for swimming and for sustainable modes of transport such as pedestrian and cycling movement as opposed to increasing vehicle volumes.

Therefore the air quality impacts associated with the proposed interim works are not expected to add to the deterioration of air quality in the area.

5.5 MITIGATION MEASURES

In order to sufficiently ameliorate any air quality impacts, a schedule of control measures has been formulated for both construction and operational phases.

5.5.1 Construction Phase

In order to mitigate dust emissions during the construction phase, a dust minimisation plan should be prepared as part of the Environmental Management Plan or Construction Management Plan for the interim works. The dust minimisation plan will be cognisant of the industry guidelines such as the Building Research Establishment document entitled 'Control of Dust from Construction and Demolition

Activities' and the Construction Industry Research and Information Association (CIRIA) 'Environmental Good Practice on Site'.

The dust minimisation plan shall include the following mitigation measures:

- All local public road networks, which facilitate vehicular traffic associated with the development, will be regularly inspected for cleanliness and watered, as appropriate, during dry and/or windy conditions (also applies to vehicles delivering material with dust potential) so as to minimise dust-generating potential.
- Any construction compounds associated with the site will be regularly watered and maintained so as to minimise dust-generation offsite.
- Where possible, wheel wash facilities shall be established at any construction compound or holding area for haulage trucks prior to entering onto public roads, to ensure mud and other wastes are not tracked onto public roads. Wheel washes shall ideally be self-contained systems.
- Material handling systems and site stockpiling of materials will be designed and laid out to minimise exposure to wind.
- Water misting or sprays will be used as required if particularly dusty activities are necessary during dry or windy periods.
- The transport of soils shall be undertaken in covered vehicles.

In order to ensure that any dust nuisance is minimised, a series of mitigation measures have been listed above. If the construction contractor adheres to good working practices and dust mitigation measures, the levels of dust generated from the proposed interim works are assessed to be minimal and are unlikely to cause an environmental nuisance. The construction contractor will be required to maintain monthly dust levels below the guideline of 350mg/m²/day as a 30-day average at sensitive receptors. Where dust levels are measured to be above this guideline the mitigation measures in the area must be reviewed as part of the dust minimisation plan.

Best Practice recommends that an air quality site assessment be undertaken prior to construction of the interim works at the site.

5.5.2 Operational Phase

The collection of EU Directives, known as the Auto Oil Programme, have outlined improved emission criteria, which manufacturers are required to achieve from vehicles produced in the past and in future years. This is a trend, which has been in operation for many years and is destined to continue in future years for both cars and heavy-duty vehicles. The introduction of the National Car Test (NCT) has also helped to reduce transport emissions by ensuring that all vehicles on Irish roads over 4 years old undergo an emissions test.

No project specific mitigation measures have been identified but emissions of pollutants from road traffic can be controlled by either controlling the number of road users or by controlling the flow of traffic. For the majority of vehicle-generated pollutants, emissions rise as speed drops, although the opposite is true at very high speeds (i.e. speeds greater than 120 km/hr). Emissions also tend to be higher under stop-start conditions when compared with steady speed driving. The free flow of traffic in

on the surrounding road network and parking facilities is key to ensuring air quality impacts are reduced.

5.6 RESIDUAL IMPACTS

No residual air quality impacts are expected to occur as a result of the proposed interim works at the Baths site.

6 NOISE & VIBRATION

6.1 INTRODUCTION

This chapter assesses the Noise and Vibration Impacts associated with the proposed interim works at the Dún Laoghaire Baths site. This includes an assessment of the potential impacts on sensitive receptors in the vicinity of the works area during both the construction and operational phases.

The proposed interim works at the Dún Laoghaire Baths site will include the demolition and removal of dilapidated structures. This study will identify, describe and assess the impact of the site in terms of its impact on noise and vibration. Particular attention will be focused on sensitive receptors, such as residential areas adjacent to the Dún Laoghaire Baths site, and to the extent of the exposure of these receptors to noise and vibration generated in association with the Baths site during the construction phase.

6.2 METHODOLOGY

The methodology involved a desktop assessment, which included the identification of the nearest noise sensitive receptors and a summary of the existing noise climate, and the identification of existing noise sources in the vicinity of the proposed site.

The assessment also recommends a schedule of control measures for both construction and operational phases to limit the noise impacts on the surrounding noise sensitive receptors.

6.3 EXISTING ENVIRONMENT

The Baths site is located within a suburban setting adjacent to Dún Laoghaire East Pier, the People's Park and adjacent to Queen's Road and Windsor Terrace. The DART railway line runs parallel to Queen's Road on the southern side of the road.

There are a number of residential properties located at Marine Terrace, which runs parallel to Queen's Road on the southern side and residential properties along Windsor Terrace. The predominant influence on the existing noise climate in the area include road traffic noise from Queen's Road and Windsor Terrace and railway noise associated with the operation of the DART.

6.4 POTENTIAL IMPACTS

When considering the potential noise impacts on the surrounding environment, it must be considered for each of two distinct stages: the short-term impact of the construction phase and the longer-term impact of the operational phase.

6.4.1 Construction Phase

Short-term increases in noise impacts are likely to occur during the construction phase of the development due to the requirement to use heavy plant and machinery.

The key activities during construction phase will be the demolition work associated with the removal of dilapidated structures adjacent to the Baths Pavillon and the works involved with the extension of the storm overflow pipe by 50m and the creation of the small jetty.

6.4.2 Operational Phase

The potential noise impacts from the Dún Laoghaire Baths interim works during its operational phase would be primarily as a result increased traffic movements along the existing routes within and surrounding the interim works site.

However it is envisaged that the proposed interim works will not generate direct traffic impacts during the operational phase as its primary function will be to enhance facilities for swimming and for sustainable modes of transport such as pedestrian and cycling movement as opposed to increasing vehicle volumes.

Therefore the noise impacts associated with the Baths proposed interim works is not expected to add to significant noise nuisance in the area.

6.5 MITIGATION MEASURES

In order to sufficiently ameliorate the likely noise and vibration impacts, a schedule of control measures has been formulated for both the construction and operational phases.

6.5.1 Construction Phase

It is recommended that best practice construction noise management procedures be adhered to during the construction phase of the project to ensure that noise levels are kept within acceptable levels.

There is no published statutory Irish guidance relating to the maximum permissible noise level that may be generated during the construction phase of a project. Local authorities normally control construction activities by imposing limits on the hours of operation and consider noise limits at their discretion.

In the absence of specific noise limits, appropriate criteria relating to permissible construction noise levels for a development of this scale may be found in the NRA "Guidelines for the treatment of Noise & Vibration in National Road Schemes" 2004, see **Table 6.1** for details.

Table 6.1 Maximum Permissible Noise Levels at the Façade of Dwellings During Construction

Days & Times	L _{Aeq} (1 hr) dB	L _{pA(max)slow} dB
Monday to Friday 07:00 to 19:00 hrs	70	80 ¹
Monday to Friday 19:00 to 22:00 hrs	60 ¹	65 ¹
Saturday 08:00 to 16:30 hrs	65	75
Sundays and Bank Holidays 08:00 to 16:30 hrs	60 ¹	65 ¹

Note 1: Construction activity at these times, other than that required in respect of emergency works, will normally require the explicit permission of the relevant local authority.

In addition, the following practicable noise and vibration measures shall be employed:

- All construction related traffic should only use the N31, Queens Road and Windsor Terrace (as far as the car park adjacent to the Dún Laoghaire Baths site) as the haul route;

- It is recommended that a speed limit of 30kph be applied for all construction related HCV traffic travelling on Queens Road and Windsor Terrace;
- It is recommended that construction related HCV traffic should not be travelling on the surrounding road network on weekends or after 18:00 hours on weekdays.
- Monitoring typical levels of noise and vibration during critical periods and at sensitive locations;
- Selection of plant with low inherent potential for generation of noise and/ or vibration; and
- Establishing channels of communication between the contractor/developer, Local Authority and residents.

6.5.2 Operational Phase

The development of the walkway and adjacent facilities will have minimal noise impacts associated with it during its operation. This means no mitigation measures will be required for the operational stage of the development.

6.6 RESIDUAL IMPACTS

During the construction phase of the project there will be a potential impact on nearby residential properties due to noise and vibration emissions from site traffic and other activities. However, limiting the hours of operations, along with implementation of appropriate noise and vibration control measures, will ensure that impacts are kept to a minimum and within appropriate limits.

The overall noise impacts associated with the proposed interim works at the Dún Laoghaire Baths site will be imperceptible.

7 ECOLOGY

7.1 INTRODUCTION

EcoServe was appointed by RPS Consulting Engineers to prepare an Environmental Impact Report in relation to the proposed interim works at Dún Laoghaire Baths. The principal aim of this survey was to identify and map the habitats present along the proposed works and surrounding environment, to note the occurrence of protected species and to identify associated ecological constraints and any potential impacts of the proposed interim works. The full Ecoserve report can be found in **Appendix A**.

The study area is located within a proposed Natural Heritage Area (pNHA) namely Dalkey Coastal Zone and Killiney (site code 001206). The footprint of the marine areas which will be directly impacted upon by the proposed interim works were the focus of the survey and within the southern end of the site i.e. 1) the new wall and viewing area to be built over the outfall pipe and the extension outlet pipe to the south of the study area, 2) the extension of the existing promontory to create a new small jetty. The immediate areas/habitats surrounding these were also included in the survey area and more broadly the marine area of Dún Laoghaire itself.

7.2 METHODOLOGY

7.2.1 Field Survey

A marine survey was carried out on the 20th February 2012, encompassing intertidal and shallow subtidal zones between the site of the proposed jetty to the north and the site of the proposed outfall pipe to the south. The survey was carried out at spring low tide in order to access as much of the study area as possible by foot.

A broad scale mapping survey of the marine biotopes (flora, fauna and habitats) was completed, in accordance with the procedures described by Emblow *et al.* (1998) and Davies *et al.* (2001). Surveyors walked along the shore in order to identify the extent and distribution of biotopes. Biotope identification was carried out in the field and species lists for each biotope were compiled. Biotopes and species lists were then compared to existing data and interpreted using the biotope classification (Connor *et al.*, 2004). The survey was initiated on 3 hours prior to low tide, which on the day measured 0.7 m above Chart Datum.

In order to identify subtidal biotopes and to ensure no protected species in the vicinity of the proposed development were overlooked, a snorkel survey was also carried out. The snorkel survey involved carrying out transects across the site of both the proposed jetty and the outfall pipe. This allowed the nature of the substratum to be established and the subtidal biotopes to be identified. Data collected during the subtidal survey was used to assign a distinct biotope to each of the examined sites in accordance with the principles detailed by Emblow *et al.* (1998) and Davies *et al.* (2001).

Where biotopes could not be identified *in situ*, samples were collected, preserved in 70% Industrial Methylated Spirits (IMS) and returned to the laboratory for identification. Specimens were identified to the lowest possible taxonomic level possible and the appropriate biotope was then identified.

7.3 EXISTING ENVIRONMENT

7.3.1 Conservation

The proposed interim works at the Dún Laoghaire Baths site itself is not under any designation as per the European Communities (Natural Habitats) Regulations, 1997 (S.I. No. 94 of 1997) as amended or the Wildlife Acts 1976 to 2010.

A number of conservation designations exist in Ireland providing protection to habitats and species. The study area is located within a proposed Natural Heritage Area (pNHA) namely Dalkey Coastal Zone and Kiliney (site code 001206), however pNHAs are not afforded any statutory protection, although they can be protected under a county development plan. There are a number of designated sites within 10 kilometres of the site.

South of the study site are Dalkey Island Special Protection Area (SPA)(site code 004172), Loughlinstown Wood pNHA (site code 001211), Dingle Glen pNHA (site code 001207) and Ballybetagh Bog pNHA (site code 001202)

North of the study area are Sandymount Strand/Tolka Estuary SPA (site code 004024), South Dublin Bay Special Area of Conservation (SAC) and pNHA (site code 000210) and North Dublin Bay pNHA (site code 000206), Howth Head SAC and pNHA (site code 000202), Howth Head Coast SPA (site code 004113).

7.3.2 Study Area

The intertidal study area consisted of three moderately exposed, east facing, bedrock shores divided by what were originally promenades, now in a seriously dilapidated state. The walls of the promenade and the backing walls of the each shore and the large boulders were characterised by dense barnacles (*Chthamalus montagui* and *Semibalanus balanoides*) and the limpet (*Patella vulgata*) on their upper reaches (LR.HLR.MusB.Cht.Cht). On the lower reaches of this community were zones of the pepper dulse seaweed (*Osmundea pinnatifida*). This zone was not obvious on the walls surrounding the cove, where the existing storm water outlet is located. Here the first zone was that of the green algae *Enteromorpha*, below which was a mixed zone of *Enteromorpha* and *Fucus spiralis*. *Enteromorpha* was also present along the tops of the promenade. Other species found in this zone included the flat limpet *Patella depressa*. Lower and in crevices on the walls and boulders were the beadlet anemone (*Actinia equina*) and the smooth dogwhelk (*Nucella lapillus*). A single plant of *Ascophyllum nodosum*, with broken fronds as a result of exposure, hosting the obligate epiphyte *Polysiphonia nodosum* was recorded at the base of the backing wall. The upper shore through to the lower shore consisted of the biotope *Fucus serratus* and red seaweeds on moderately exposed eulittoral rock (LR.MLR.BF.Fser.R) in varying degrees of seaweed density. Species recorded within this zone included *Halichondria panacea*, Spirorbidae, *Chthamalus montagui*, *Patella vulgata*, *Littorina littorea*, *Nucella lapillus*, *Palmaria palmata*, Corallinaceae, *Corallina officinalis*, *Chondrus crispus*, *Mastocarpus stellatus*, *Lomentaria articulata*, *Membranoptera alata*, *Osmundea pinnatifida*, *Fucus serratus*, *Enteromorpha intestinalis*, *Ulva* sp. and *Cladophora rupestris*. The bedrock shore also contained coralline crusts and *Corallina officinalis* in shallow eulittoral rockpools (LR.FLR.Rkp.Cor.Cor) and patches of sandy deposits. The sand-binding red seaweed *Rhodothamniella floridula* was recorded in patches throughout this biotope.

On the northern side of the promenade below a number of outflow pipes from the baths and walkways were large patches of the green algae *Cladophora rupestris*.

The extreme lower shore and shallow subtidal consisted of bedrock covered by sand to a depth of 10 cm in the lower shore with sparse *Fucus serratus* plants. Polychaetes dominated this lower shore sand biotope (LS.LSa.MuSa) and included such species as *Cirriiformia tentaculata*, *Anoides oxycephala*, *Glycera alba*, *Heteromastus filiformis* and *Malocerus fuliginosus*. This lower shore biotope extended into a subtidal mixed sediment biotope where polychaetes also dominated the clean sands (SS.SMx.IMx). There is a small kelp bed mainly composed of *Laminaria digitata* located centrally in the shallow subtidal between the two promenades.

7.4 POTENTIAL IMPACTS

7.4.1 Construction Phase

7.4.1.1 Loss or alteration of habitats and loss of species

The extension of the current promenade to create a new small jetty will result in a loss of habitat and species under the immediate footprint of the jetty and storm water outlet. However, the bedrock shores surrounding the promenade will be replaced by an artificial hard substrate providing a similar surface for attachment, but with a stronger vertical slope. Those habitats in the form of sandy areas currently supporting infaunal species will be permanently lost and replaced by an artificial hard substrate. The impact is likely to be short term and not significant with colonisation beginning within a very short time frame.

In the case of the storm outlet, if it is above the sediment it will provide a hard substrate for colonisation of marine organisms and alter the species which will inhabit the area beneath. If it is buried, it will temporarily disturb the habitat and species present. Once the trench for the storm water outlet has been backfilled, there are no long term impacts predicted to arise from the operation of the storm water outlet.

7.4.1.2 Increased sedimentation and suspended solids

There may be an increase in the turbidity of the water during the construction of the new small jetty and laying of the outfall pipe. This could result in increased siltation, smothering of organisms and a reduction of light for phytoplankton and seaweed. This is likely to be localised and restricted to the immediate area during the construction period and for a short time afterwards. The marine environment in Dún Laoghaire is moderately exposed to wave action and therefore, it is envisaged that any temporary increase in suspended solids is likely to be dispersed quickly by the sea and have minimal impact on the macro flora and fauna present.

Fish species can be susceptible to an increase in suspended solids. The function of the gills can be inhibited by excessive amounts of suspended solids in the water column. Vision can be impaired by turbidity (decreased transparency), thus reducing the fish's ability to capture prey items. The release of suspended solids can also result in a change of habitat on the seabed when particles settle out. This may alter the composition of invertebrate communities perhaps reducing those that are prey for fish.

The volume of suspended material is likely to be low and rapidly dispersed by the tide in Dún Laoghaire. Fish are mobile species that will actively avoid detrimental conditions. The suspended solids will not form a 'barrier' to dispersal thus fish will be able to avoid affected areas and little or no damage is likely to their gill function. The likely volume of suspended material additional to prevailing conditions will be low and quickly dispersed; therefore it is unlikely to restrict the feeding activities of fish.

Suspended matter will eventually settle onto the seabed and fill the spaces between gravel and rocks where fish eggs are laid which could result in a loss of spawning habitat. The area was not identified during the survey as a potential spawning ground. If any area is affected it will be very small compared to the available unaffected feeding areas outside the area of construction. Sediment re-suspension will be temporary and unlikely to have an impact on the habitat for invertebrate species. The area of habitat unavailable to fish species during construction is likely to be negligible compared to the total area of similar habitat available. Any bird species which may feed on fish or invertebrates are unlikely to be affected by the proposed interim works.

7.4.1.3 Pollution

Pollution can occur from the drilling plant, service vehicles and storage containers in a number of ways. Site machinery and vehicles create a risk of contamination through neglected spillages, the improper storage, handling and transfer of oil and chemicals and refuelling of vehicles and plant. Incorrectly maintained sanitation facilities and/or using 'outdoor toilet' introduce toxins and excess nutrients into the environment. Rubbish items, such as chewing gums, cigarette butts, beverage containers and food wrappings may create hazard to fauna that may accidentally ingest it or get entangled into it. Accidental leakage or discharge of chemicals and pollutants could cause changes in the pH of the water and could have a direct toxic impact on the fauna and flora on site.

7.4.1.4 Compacting of littoral sediments

Activities associated with the excavation of a trench, should the storm water outlet be buried, will lead to a localised clearance of the habitat and species. In addition trampling by people or machinery will result in ground deterioration in the vicinity of the excavation areas. These disturbances are likely to be temporary impacts, lasting for the duration of the construction.

7.4.1.5 Disturbance

Noise, disturbance and vibration from the machinery might cause certain species, including marine mammals and birds to avoid the area during working hours. These disturbances are likely to be temporary impacts, lasting for the duration of the construction.

7.4.2 Operational Phase

7.4.2.1 Removal and alteration of habitats and species

While the loss of the habitat associated with the construction will be permanent and the species associated with it will be lost, the existing seashore supports a range of hard substrata communities that are abundant and these will colonise the new hard substrate once it becomes available. No reduction in the diversity of species is expected.

7.4.2.2 Change in hydrographical conditions

The construction of the new small jetty will result in a change in water patterns within the immediate area. The addition of artificial hard substrata in the shallow subtidal may cause an increase in scouring and ultimately a change in habitat and species composition on the seaward side where more soft sediment is present. The change hydrographical conditions are not thought to be significant as the majority of surrounding area consists of boulders, rocky outcrops and artificial piers/promenades.

7.5 MITIGATION MEASURES

7.5.1 Construction Phase

7.5.1.1 Loss or alteration of habitats and loss of species

To minimise habitat and species loss and disturbance, efforts should be made to keep the area of ground disturbed by the storm outlet and small jetty to a minimum.

7.5.1.2 Disturbance

Noise, disturbance and vibration from the machinery should be kept to minimum in terms of intensity, duration and spatial extent. Where possible, working hours shall be restricted to the daytime in order to minimise the disturbance to both locals and marine mammals.

7.5.1.3 Pollution

All materials should be properly stored in designated areas and away from the shore. All fuels or chemicals kept on the site should be stored in bunded containers. All machinery should be well-maintained and refuelling carried out within bunded enclosures or away from the beach. Where machinery is working within the immediate vicinity of the beach, oil interceptors should be installed. Spoil and fluids need to be contained and handled according to their contaminants. All other waste material, including rubbish should be contained in appropriate receptacles and disposed of properly. Emergency response procedures should be in place to deal with accidental spillages should such occur. This should include appropriate training of the crew members and a contact list of relevant statutory organisations (to include EPA and NPWS). All accidental spillages should be contained and cleaned up immediately. Remediation measures should be consulted with the relevant organisations (EPA and NPWS) and carried out without delay in the event of pollution of the adjacent waterbody. Documentary evidence of appropriate disposal of waste materials and appropriate crew training should be requested to ensure that fuel, oil and chemical spills do not pose a threat to the marine ecology.

7.5.2 Operational Phase

The loss of footprint of the development will continue in to the operation phase as an impact however no other impacts are predicted during the operational phase.

7.6 RESIDUAL IMPACTS

With the implementation of the recommended mitigation measures, the residual impacts would be expected to be insignificant.

8 LANDSCAPE

8.1 INTRODUCTION

The purpose of this chapter is to make an assessment of the landscape and visual impacts associated with the proposed interim works at Dún Laoghaire Baths site. The assessment begins with a description of the existing landscape setting and visual resources to establish baseline conditions. The proposal is then applied to the baseline and the impacts of the proposed interim works upon the existing landscape setting and visual resources are then predicted.

This chapter outlines the methodologies used to assess the potential landscape and visual impacts and describes the potential impact including the residual impact and provides details on mitigation measures.

8.2 METHODOLOGY

8.2.1 General Approach

The landscape and visual assessment methods are derived from the *Guidelines for Landscape and Visual Impact Assessment* (The Landscape Institute and Institute of Environmental Management & Assessment, 2002) and the then DOE and Local Government *Landscape and Landscape Assessment Guidelines* (June 2000). The landscape has been appraised to allow it to be described and classified into landscape character areas that in turn enable the categorisation of landscape quality. The capacity of a landscape to accept change of the type proposed is then assessed. The key landscape components are landform, vegetation and historical and cultural components. Landform relates to topography, drainage characteristics and geology. Historical and cultural components include historic landscapes, protected structures, conservation areas and historic designed landscapes. Vegetation plays an important role in how the landscape and visual resources of an area are viewed and is an integral component of a landscape character.

Assessment was undertaken through analysis of up to date digital copies of OSI Discovery Series raster and OSI vector maps and aerial photography, in conjunction with drawings of the proposed interim works. Site visits were undertaken to assess the existing environment and the landscape and visual impacts associated with the proposed interim works.

Existing visual resources were established along with sensitive receptors, i.e. residential properties, scenic viewpoints and visitor amenity areas. The proposed interim works were then applied to this landscape and visual baseline and potential impacts predicted.

A review of the Dún Laoghaire-Rathdown County Development Plan 2010 – 2016 relevant statutory documents was undertaken to establish if there are any relevant landscape related designations that may influence the assessment within the study area.

8.2.2 Landscape Assessment Methodology

8.2.2.1 Landscape Assessment Definitions

This section describes the key criteria and terminology used in the landscape assessment.

Landscape Resource: The combination of elements that contribute to landscape context, character and value.

Landscape Value: The relative value or importance attached to a landscape that expresses national, regional or local consensus because of intrinsic characteristics.

Landscape Character: The distinct and homogenous pattern that occurs in the landscape reflecting geology, landform, soils, vegetation and mans impact.

Landscape Quality: The assessment of the landscape quality assesses the value of the landscape in relation to its rarity, location and landscape character attributes. In general, the higher the quality of landscape the more sensitive it will be to change.

Based on information gathered as part of the classification of the landscape, it is possible to assess the landscape quality of the study area using a 5-point scale as follows:

- a) Highest quality - the landscapes of highest quality are, by definition, landscapes of an 'awe inspiring' or 'sublime' nature and are important on an international and national level.
- b) Very attractive - this definition relates to landscapes which are still of high value nationally and can be defined as highly scenic.
- c) Good landscape - this category contains areas that, although still attractive, have less significant and more common landscape features.
- d) Ordinary landscape - this category contains areas that have only common landscape features and some intrusive elements such as conspicuous infrastructure with scope for improvement in management.
- e) Poor landscape – this category includes areas that contain frequent detracting aspects and/or lack of management results in a degraded landscape with very few valued features.

Landscape sensitivity is used to establish the capacity of the landscape to accommodate the type of development proposed and is defined using the following categories and criteria:

High: Highest/Very Attractive landscape quality with highly valued or unique characteristics susceptible to relatively small changes;

Medium: Good landscape quality with moderately valued characteristics reasonably tolerant of changes; and

Low: Ordinary/Poor landscape quality with common characteristics capable of absorbing substantial change.

Magnitude of Landscape Resource Change: Direct resource changes on the landscape character of the study area are brought about by the introduction of the proposal and its effects on the key landscape characteristics. The following categories and criteria have been used:

High:- Total loss or alteration to key elements of the landscape character, which result in fundamental change;

Medium:- Partial or noticeable loss of elements of the landscape character; and

Low:- Minor alteration to elements of the landscape character.

Significance of Landscape Impact: The level of significance of impact on landscape character is a product of landscape sensitivity and the magnitude of change in landscape resource as indicated in the Table 8.1.

Table 8.1 Significance of Landscape Impact

Magnitude of landscape resource change	Landscape Sensitivity		
	Low	Medium	High
No change	No change	No change	No change
Low	Slight	Slight / moderate	Moderate
Medium	Slight / moderate	Moderate	Moderate / Substantial
High	Moderate	Moderate / Substantial	Substantial

8.2.3 Visual Assessment Methodology

8.2.3.1 Visual Assessment Criteria and Terminology

The following text describes the key criteria and terminology used in the visual assessment.

Visual Amenity: is the value of a particular area or view in terms of what is seen by the viewer. This value may be influenced by the physical condition of the landscape viewed and the contribution the characteristics of the view make to the local environment.

Visual Resources: are the overall key elements/features/characteristics that combine to make a view.

Viewer Sensitivity: is a combination of the sensitivity of the human receptor (i.e. resident; commuter; tourist; walker; recreationalist; or worker) and the quality of view experienced by the viewer and is defined using the following categories and criteria:

High sensitivity: - users of an outdoor recreation feature which focuses on the landscape; valued views enjoyed by the community; tourist visitors to scenic viewpoint; occupiers of residential properties with a high level of visual amenity;

Medium sensitivity: - users of outdoor sport or recreation which does not offer or focus attention on landscape; occupiers of residential properties with a medium level of visual amenity; and

Low sensitivity: - regular commuters, people at place of work; occupiers of residential properties with a low level of visual amenity.

Magnitude of Visual Resource Change: the magnitude of change in visual resource or amenity results from the scale of change in the view with respect to the loss or addition of features in the view and changes in the view composition, including proportion of the view occupied by the proposed development. Distance and duration of view must be considered. Other infrastructure features in the landscape and the backdrop to the development will all influence resource change. The following categories and criteria have been used;

High: - Total loss or alteration to key elements/ features/ characteristics of the existing landscape or view and/or introduction of elements considered totally uncharacteristic when set within the attributes of the receiving landscape or view;

Medium: - Partial loss or alteration to key elements/ features/ characteristics of the existing landscape or view and/or introduction of elements that may be prominent but not necessarily substantially uncharacteristic when set within the attributes of the receiving landscape/view;

Low: - Minor loss or alteration to key elements/ features/ characteristics of the existing landscape or view and/or introduction of elements that may not be uncharacteristic when set within the attributes of the receiving landscape/view; and

No change: - Very minor loss or alteration to key elements/ features/ characteristics of the existing landscape or view and/or introduction of elements that are not uncharacteristic when set within the attributes of the receiving landscape/view.

Significance of Visual Impact: Significance of visual impact can only be defined on a project by project basis responding to the type of development proposed and its location. The principal criteria for determining significance are magnitude of visual resource change and viewer sensitivity. **Table 8.2** illustrates significance of visual impact as a correlation between viewer sensitivity and magnitude of visual resource change.

Table 8.2 Significance of Visual Impact

Magnitude of visual resource change	Viewer Sensitivity		
	Low	Medium	High
No change	No change	No change	No change
Low	Slight	Slight / moderate	Moderate
Medium	Slight / moderate	Moderate	Moderate / Substantial
High	Moderate	Moderate / Substantial	Substantial

Zone of Visual Influence

The visual assessment is assisted by the production of a Zone of Visual Influence (ZVI). The ZVI is the area within which views of the proposed interim works during construction and operation can be obtained. The extent of the ZVI is determined primarily by the topography of the area. The ZVI is a tool used to determine the study area for the landscape and visual impact assessment and does not represent a prediction of impacts.

The ZVI is refined by field studies to indicate where relevant buildings, woodlands, hedges or other local features obscure visibility from the main roads, local viewpoints/landmarks and settlement etc and it is through such field studies that prediction of visual impact takes place.

A series of representative viewpoints have been selected within the ZVI to illustrate typical views towards the components of the proposed interim works during the construction and operation stages. The location of all viewpoints is indicated on **Figure 8.1**.



LEGEND



Site Boundary



Client



Project

Proposed Interim Works at Dun Laoghaire Baths

Title

Viewpoint Locations

Figure 8.1



Issue Details

Drawn by: E. Oliveira	Project No. MDE1091
Checked by: B. Deegan	File Ref. MDE1091M0001F01
Approved by: S. Khan	
Scale: 1:40,000 @ A4	Drawing No. Rev.
Date: 14/03/2012	M0001 F01

Notes

1. This drawing is the property of RPS Group Ltd. It is a confidential document and must not be copied, used, or its contents divulged without prior written consent.
2. All levels are referred to Ordnance Datum, Malin Head.
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8.3 EXISTING ENVIRONMENT

8.3.1 General Overview

The study area is located on the north eastern coast of Dún Laoghaire. The study area for the purpose of the landscape and visual appraisal covers the area of landscape and visual setting that has potential views of the proposed interim works (i.e. the ZVI). The juxtaposition of the urban coastal town with the coast results in a dramatic landscape/seascape.

The study area is located on the shore front of Dún Laoghaire 11km south of Dublin. Dún Laoghaire is a large town with a lot of attractions for tourists and recreational users along with a car ferry crossing to the UK. The study area surrounds the derelict baths site that is immediately to the east of the East Pier. Historically the baths were a great attraction to the public who on warm days came and bathes in the baths and sunbathed on the promenades. The study area is linked with the adjacent People's Park and the Coastal Promenade, but the baths have fallen into disrepair with the area needing to be secured off from the public for health and safety reasons.

The north easterly facing coastline extends towards Dublin Bay and south easterly towards Bray. Views inland from Dún Laoghaire Bay predominantly consists of urban views of three storey terraces dominating the landscape. There are very restricted views inland due to the built up nature of the town. The town has open recreation grounds, urban trees, street furniture and footways making green corridors extending from the coast. The views from the study area are predominantly sea views overlooking Dún Laoghaire Harbour and pier as far as Howth.

8.3.2 Landscape Character

The distinctiveness of the landscape character in the study area has resulted in the identification of one overall landscape character area as part of this assessment namely:

- Dún Laoghaire Coastal Landscape

Dún Laoghaire is a coastal town that predominantly consists of three storey houses fronting on to the long coastal promenade that offers views across the Harbour and Bay. The coast has a strong historic character with landmark features such as Martello Towers which frequent on rocky outcrops. Wide promenades with open grassed areas and street furniture give a high value to recreational use in Dún Laoghaire. Views inland from the East Pier or promenade are significantly restricted by the Victorian terraces painted in muted pastel colours. The topography of Dún Laoghaire generally falls gently towards the Harbor from the Dublin Mountains which form a backdrop to the town, but can not be seen from the coast. The Harbour is busy with frequent ferries and ships coming and going each day.

This landscape character area has a medium sensitivity to change.

8.3.3 Dún Laoghaire-Rathdown County Development Plan 2010 – 2016

A review has taken place of the Dún Laoghaire-Rathdown County Development Plan 2010 – 2016 and other relevant statutory documents to establish if there are any relevant landscape related designations that may influence the assessment within the study area.

LHB18: Parks, Coastlines and Harbours – It is the policy of the Council to continue to improve recreational and tourism related amenities in public parks along the coastline and at harbours for access to the general public.

LHB20: The Metals – It is the Council policy to manage and enhance The Metals from the People's Park to Dalkey giving due regard to its historic importance while encouraging its use as a walking route between Dún Laoghaire and Dalkey.

8.3.3.1 Scenic Routes and Prospects

No scenic routes have been identified in the Development Plan in proximity to the proposed site. Prospects identified:

- Dalkey Hill from Ulverton Road, Station Road and the East Pier
- Killiney Hill from Vico Road, Station Road and the East Pier

8.3.4 Visually Significant Vegetation

Due to the nature of the Dún Laoghaire Coastal Landscape there are few areas of tall visually significant or protected trees or other vegetation.

8.4 POTENTIAL IMPACTS

8.4.1 Construction Phase

Potential demolition and construction stage impacts as

- (i) Obstruction of views;
- (ii) Change in landscape character;
- (iii) Machinery for site preparation/enabling works and operations; and
- (iv) Site access and vehicular and plant movements.

8.4.1.1 Landscape Character Impacts

An assessment of the significance of the impact of the proposed interim works during construction on the landscape character area described previously has been completed and summarised in the following sections.

8.4.1.2 Dún Laoghaire Coastal Landscape Character

The proposed demolition and construction stage of the interim works is located within the Dún Laoghaire Coastal Landscape Character. The proposed activities will be of medium prominence during the demolition stage due to the ground level nature of these activities. The topography, harbour front location of the proposed site and the retention of some of the existing buildings will lessen the visual impacts. The town side of the proposed works, behind the Pavilion, is bounded by Windsor Terrace and then a train line before the People's Park. Recreation users of People's Park may have a slight negative visual impact. However the topography and layout of the baths will offer a lot of screening from the demolition and construction works. The nearest residential properties are on Windsor Terrace. There may be views from upper floors to the bath site that can not be seen from road level.

The demolition phase of the proposed works will be temporary in nature and duration.

When landscape impacts are assessed during the demolition and construction phase there will be slight negative impacts due to the limited influence of the demolition and construction stage activities and the low landscape resource change that will result.

8.4.1.3 Visual Impacts

The assessment of the existing visual environment and the impact of the proposed interim works and its various component parts during the demolition and construction stage has established that the likely sources of impact will be at ground level with occasional vehicles accessing the site for preparation works and therefore visible from the townscape of Dún Laoghaire. Such surface changes will be readily absorbed into the wider panoramic view. The site is relatively exposed from the sea and all stages of demolition will be noticed. The site will be mainly screened from the town, however the Pavilion renovation will be most noticeable due to its location backing on to Windsor Terrace.

The demolition and construction phase of the proposed works will be temporary in nature and duration.

When viewed from within the wider landscape the overall visual impacts during the demolition and construction phase will be moderate due to the viewer exposure on the open coastal site.

8.4.2 Operational Phase

8.4.2.1 Dún Laoghaire Coastal Landscape Character

The proposed operational stage of the proposed interim works are located within the Dún Laoghaire Coastal Landscape Character. The completed works will result in the removal of some unsightly structures. There will be an overall beneficial impact that will enhance this landscape. The proposals are in keeping with the existing character of the Dún Laoghaire Coastal Landscape Character. This landscape character area has a medium sensitivity to change. The proposed interim works will result in a medium beneficial change in landscape resource. The predicted significance of landscape impact is Moderate Beneficial.

8.4.2.2 Visual Impacts

Zone of Visual Influence (ZVI): Proximity of the built environment of Dún Laoghaire with the coast determines the Zone of Visual Influence. The views along the coast are broadly restricted to the ferry terminal and associated pier to the north and Sandy Cove to the south. A series of viewpoints have been selected within the ZVI to illustrate a range of potential views. The location of all viewpoints are indicated on **Figure 8.1**

Viewpoint 1: View east from Harbour Pier

Viewer sensitivity: This view is from East Pier available to tourists and recreational users. The viewer sensitivity is high.

Existing visual resource: The existing view is available from the East Pier in Dún Laoghaire looking South along the promenade. The view is urban, open and coastal. In the centre of the view the water meets the existing baths which are in a dilapidated state. This structure rises over two storeys with the pavilion complex on an elevated position above and behind the baths. Moving to the right from the pavilion there is a single story building. At street level a three storey Victorian style terrace meets the skyline.

Predicted view: The renovation of the existing pavilion will enhance the views to it from this viewpoint. The pavilion is to be a Victorian style, which will draw the eye and complement the terraces on Windsor Terrace. It is proposed to be surrounded by landscape areas, grass, trees, walkways and other parkland facilities. This will visually enhance pedestrian connection between recreational facilities in Dún Laoghaire. From this viewpoint the renovations will improve the overall view.

Magnitude of change: The magnitude of change in visual resource is low.

Significance of Visual Impact: The predicted significance of visual impact will be moderate beneficial.

Viewpoint 2: View South East from Promenade

Viewer sensitivity: this view is available from the promenade at Queens Road and is available to the local community, tourists and recreational users. The viewer sensitivity is high.

Existing visual resource: The existing view is from the promenade parallel to Queens Road. The promenade offers views to Dún Laoghaire Bay and the baths. The immediate foreground is the asphalt footway curving to the right bounded by a 4 tier metal fence. To the front of the pavilion building there are the remains of the baths stepping down levels to meet the water. The unattractive baths and pavilion dominate the view. Beyond this the harbour can be seen curving away to the left with residential houses dwellings, trees, grass and overhead lights.

Predicted view: The proposed renovation will offer views of open grass recreation areas, footways, trees and a renovated pavilion building.

Magnitude of change: The magnitude of change in visual resource is low.

Significance of Visual Impact: The predicted significance of visual impact will be moderate beneficial.

Viewpoint 3: North West from Windsor Terrace Car Park Viewing Point

Viewer sensitivity: This view is from the terraced promenade at Windsor Terrace looking north west and is available to the local community, tourists and recreational users. The viewer sensitivity is high.

Existing visual resource: The existing view is dominated by the promenade. This structure is geometric in shape and design. The existing baths can be seen rising from behind a wall occupying the centre of the view. Beyond the baths the harbour curves around to the right where fencing marks the walkways and grassed areas. Vertical boat masts can be viewed in the distance. A line of trees come from behind the pavilion to the right side of the view along the promenade.

Predicted view: The renovation of the existing pavilion will enhance the views from this viewpoint. The pavilion is to be a Victorian style, which will draw the eye. The proposed view will be a continuous area of walkways and grass to connect beyond the baths which will soften the view from this viewpoint and visually link in with the existing promenade.

Magnitude of change: The magnitude of change in visual resource is low.

Significance of Visual Impact: The predicted significance of visual impact will be moderate beneficial.

Viewpoint 4: View west from Sandy Cove Pier

Viewer sensitivity: This view is available from a local pier and is available to the local community, tourists and recreational users. The viewer sensitivity is high.

Existing visual resource: This view from Sandy Cove Pier. In the immediate foreground there are jetties coming towards the middle of the view from both sides of the view. The distant view is of a built up seaside town. In the centre of the view the existing baths can be just discerned with the pavilion rising up behind it. The urban setting of Dún Laoghaire can be seen sprawling from the right of the view towards the left. It has the usual character of a seaside town with painted terraces and church spires.

Predicted view: The proposed interim works will enhance the harbour front, but will not significantly alter the built up character of this view due to the distance of the view.

Magnitude of change: The magnitude of change in visual resource will be no change.

Significance of Visual Impact: The predicted significance of visual impact will be no change.

Viewpoint 5: View north east from Marine Terrace and Park Road junction

Viewer sensitivity: This view is available from a junction of two local roads (Park Road and Marine Terrace) available to tourists, recreational users and local town visitors. The viewer sensitivity is high.

Existing visual resource: This view is from the junction of two local roads. It is an open urban character. The immediate foreground is dominated with asphalt road, cobbled footways, street signs and street lighting with the area being bounded by a metal fence before the Dún Laoghaire harbour. The existing pavilion building is located in the centre of the view but the shoreline is not visible.

Predicted view: although the pavilion will be renovated there will be little change to this view apart from cosmetic improvements to the pavilion and the loss of the baths wall.

Magnitude of change: The magnitude of change in visual resource will be no change.

Significance of Visual Impact: The predicted significance of visual impact will be no change.

Visual Impact on Prospects

Two prospects have been identified for protection in the Dún Laoghaire Rathdown County Development Plan (Plan Reference: Figure 3.36). Both Prospects run along the face of the existing baths and are equally distant to the site. As discussed above all five viewpoints show both prospects (Dalkey Hill from Ulverton Road, Station Road and the East Pier and Killiney Hill from Vico Road, Station Road and the East Pier) which will be positively improved.

8.5 MITIGATION MEASURES

8.5.1 Landscape Aims

The physical and visual integration of the proposed interim works and associated features into surrounding landscape.

Reinstatement of existing vegetation cover, earth banks and existing landscape features.

8.5.2 General Objectives

Construction areas will be kept tidy at all times.

8.6 RESIDUAL IMPACTS

The very nature of the Dún Laoghaire Baths is a prominent feature on the coastline and any change in visual resource will have high impact. The construction phase of the interim works will likely have a negative impact on the visual resource. Once construction is complete there will be an improvement in the quality of views. On completion of the proposed works there are no significant residual landscape or visual impacts predicted as a result.

This landscape and visual assessment has a direct interaction with the Ecology Section of the Environmental Report. The loss of habitats is described fully in the Ecology Section and not elaborated in this landscape and visual assessment. In completing the landscape and visual assessment liaison has taken place between the landscape architect and the ecologist with regards to appropriate mitigation measures.

The proposed interim works at the Dún Laoghaire Baths site are located within a landscape character area identified as Dún Laoghaire Coastal Landscape. This landscape character area has been identified as having a medium sensitivity to change. The magnitude of landscape resource change will be medium beneficial and the significance of landscape impact will be moderate beneficial due to improvements to the coastal landscape.

The Zone of Visual Influence (ZVI) has been established for the proposed interim works to allow any potential areas of significant visual impact to be identified. Actual visual impacts from within the ZVI have been predicted by site survey and assessment.

A total of 5 viewpoints have been assessed and no viewpoints have been predicted to have significant visual impacts. Overall there will be a beneficial visual impact due to the interim works proposed.

The broader landscape character area and visual context around Dún Laoghaire harbour has the capacity to absorb a development of this scale and the proposed works are acceptable in landscape and visual terms as it will improve the visual amenity of the area.

9 CULTURAL HERITAGE

9.1 INTRODUCTION

This chapter evaluates the archaeological and cultural heritage significance of the landscape and assesses the potential impact of the proposed interim works on the baths and on the receiving archaeological environment (terrestrial and marine). It was carried out by Courtney Deery Heritage Consultancy for RPS on behalf of Dún Laoghaire Rathdown County Council. The full Cultural Heritage Report can be found in **Appendix B**.

The Dún Laoghaire Baths, which are now in a derelict state, are located on the coast on the northern end of Scotsman's Bay in the townland of Glashule, the Parish of Monkstown and the Barony of Rathdown. There have been baths at this location since Edwardian times. Prior to that there was an early nineteenth century military battery (c. 1805-6) associated with the Glashule Martello tower, the site of which now lies in People's Park. While the Martello is recorded in the Record of Monuments and Places (DU023-017----) the site of the battery (No. 11) is not, its association with the recorded monument however affords the site of the battery some significance. This significance is recognised by Dún Laoghaire Rathdown County Council.

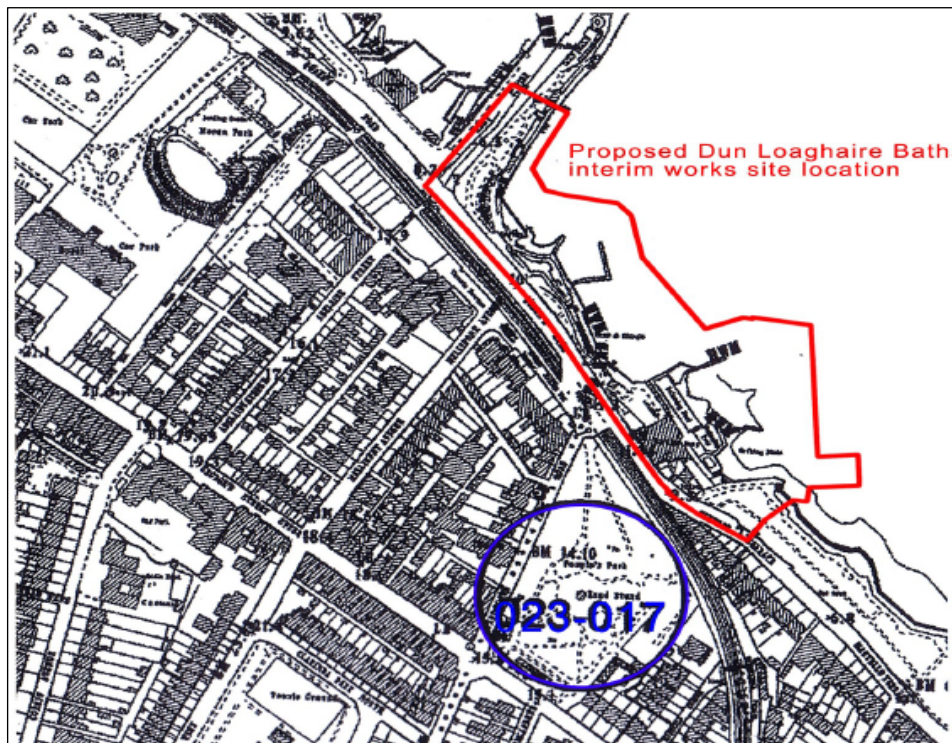


Figure 9.1 RMP Site Location Map Showing Proposed Interim Works Site Location and Location of the Glashule Martello Site (DU023-017----)

The existing baths involved the reclamation of some 30m of the original rocky coastline. The intertidal zone in the Dublin Bay area has historically been a treacherous one and in this area alone between the East Pier of Dún Laoghaire Harbour and Sandycove there is a record of at least 16 shipwrecked vessels.

Cartographic and historic analysis and investigative works were carried out at the Baths complex to assess the potential survival of Glashule Battery No. 11 (Bolton 2011). The sources indicated that the baths were constructed on an entirely different alignment than the battery structure. The survey did not reveal any significant or recognisable remains of the battery surviving within the Dún Laoghaire Baths

complex, although masonry fragments associated with the battery however are reused in the Baths structure. Some evidence of rock cut defences, which had been quarried back to form the lowermost defences of the battery, were also identified. The survey concluded that there remained only a slight possibility that some of the original features associated with the battery might survive behind current retaining walls

The proposed development will:

- Secure the existing Baths Pavillion and site and provide a gallery café, workspaces and public toilet facilities.
- Remove dilapidated structures and the infilling of the concrete baths to permit the creation of a new pedestrian route and landscaping to connect the Newtownsmith walkway to both the East Pier and the Peoples Park.
- Expose the original rocky shore line in the area of the site of the battery.
- Enhance facilities for swimming and access to the water's edge including the extension of the existing small jetty and slipway.
- Extending the existing storm water outlet pipe by 50m into the sea.

9.2 METHODOLOGY

The report follows an investigation of the baths carried out by Dr. Jason Bolton in 2011. These investigations involved the breaking of concrete, removal of external render and internal plaster in order to establish whether any upstanding remains associated with the early nineteenth century battery is incorporated into the existing baths complex. The report was supported by the examination of cartographic and historical sources. A summary of the findings from this report are provided below with permission from Dún Laoghaire Rathdown Co. Council.

The archaeological appraisal is based on a desk-study and site inspection of the proposed development project. The desk study is based on an examination of the Record of Monuments and Places (RMP) of the Department of the Arts, Heritage and the Gaeltacht (DAHG). The Shipwreck Inventory of Ireland compiled by the The Underwater Archaeology Unit (UAU) of the DAHG was examined for shipwrecks that might be located in Scotsman's Bay or in the vicinity of the East Pier of Dún Laoghaire Harbour. The topographical files of the National Museum of Ireland (NMI) were examined for stray finds that may have been found in the study area. Additional documentary and literary references, including excavation bulletins and historic maps, were also consulted to predict likely archaeological remains surviving on site and to explore the development of the study area.

An inspection of the baths was undertaken to assess the impact of the proposed development on the current footprint of the site, and to inspect any upstanding structures.

9.3 EXISTING ENVIRONMENT

9.3.1 Brief Archaeological Background

Glasthule, derives its name from a combination of the Irish *Glas* meaning a little stream (one which flowed into Scotsman's Bay), and *Tuathail* or Toole, a surname i.e. Toole's stream. There is no record of any activity in the study area until 1805 when the Glasthule Martello tower and battery were erected.

However, South County Dublin has a long settlement history, dating back to the end of the Mesolithic period (5000-3300 BC). A small number of Bann Flakes (flint tools) dating from this period were identified from Dún Laoghaire but it is only at Dalkey Island where finds have been made in significant numbers during excavation of midden sites (Corlett 1999, Liversage, 1968). There is little evidence for later activity dating to the Neolithic period Bronze Age and Iron Age in this area with sites only to be found further west in Loughlanstown, Glenamuck and Carrickmines. Similarly no sites are recorded in the area during the early medieval period the closest being the neighbouring settlements of the Kill of the Grange (RMP DU023-015) and Monkstown (RMP DU023-013) with Early Christian origins. These were then adopted by the Vikings and later by the Anglo-Norman settlers who favoured the established sites and their existing infrastructure. The Anglo-Normans also established themselves in Bullock (DU023-020).

In response to a threat of invasion by Napoleonic forces in Ireland Lieutenant-Colonel Benjamin Fisher was authorised on the 2nd June 1804 to begin construction of Dublin's Martello Towers. A defensive 'chain' of twenty-eight sites consisting of Martello Towers and gun batteries was set in place, extending from Bray, Co. Wicklow to Balbriggan, Co. Dublin (numbered 1-16 'South of Dublin', and 1-12 'North of Dublin'). The most heavily fortified section of coastline was the rocky shoreline between Bullock Harbour and Sandymount, which was defended by five 18-pounder Martello Towers, one 'double-tower' at Williamstown and three gun batteries, including the battery at Glashule.

The two plots of land at Glashule were purchased for £90 and 10 shillings from "Lords Longford, De Vesci, and Mr Daniel Sexton" in 1806; though the lands had already been legally transferred in trust to Benjamin Fisher the year before. The "three gun battery at Glasstool" was built by John Murray, who was also responsible for the batteries and towers at Dún Leary, Sandycove, and Seapoint. Glashule battery was armed with three 24-pounder guns positioned behind an angled bastion on the rocky foreshore of Scotsman's Bay (**Figure 9.2**).

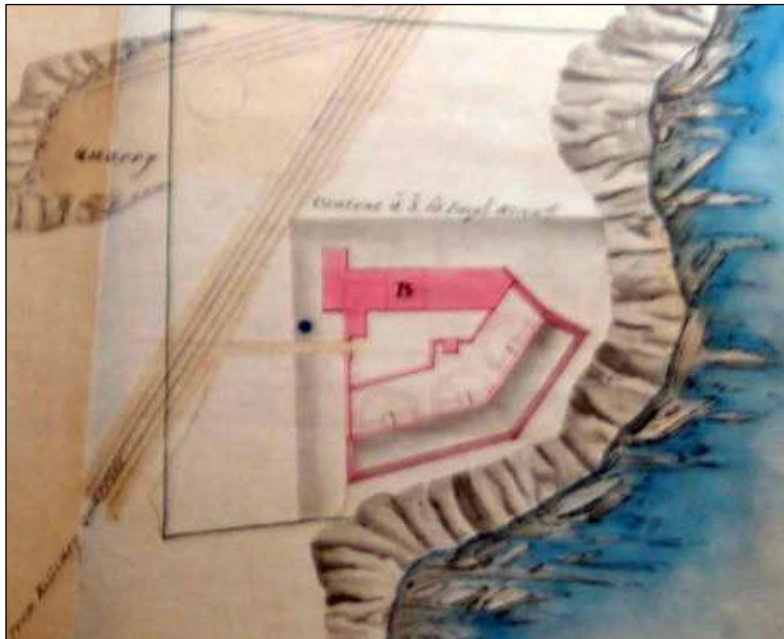


Figure 9.2 The 1831 Board of Ordnance Plan of "No. 12 Glossdool"

The battery continued to be manned after the end of the Napoleonic Wars in 1815, with occasional references surviving to soldiers quartered at Glashule. The battery began to be eroded by the sea from about 1818, a process then attributed to "the rebound of the Surge" from the newly-built east pier of Dún Laoghaire Harbour.



Figure 9.3 Detail from an Engraving of Duncan's 1821 Map Showing Glasshule Battery

The Battery was occupied by the Preventative Service Water Guard (later renamed the Coast Guard) in the 1820s.

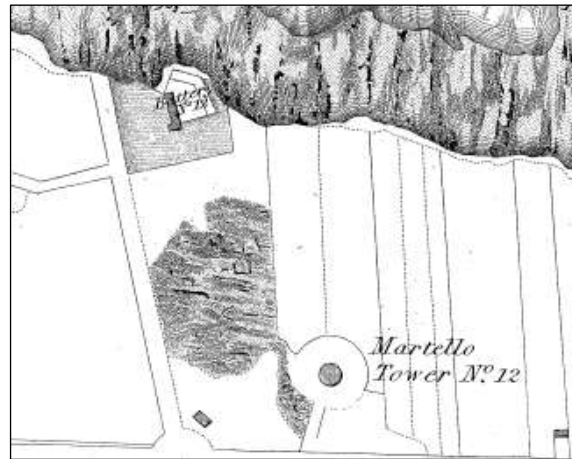


Figure 9.4 Detail of Rennie's 1820 Map Showing the Battery, Martello Tower and Park Road.

The 1828 'return' records only one 24-pounder cannon (originally three were mounted) in position at '12 – Glasshule' battery, with both gun and carriage "unserviceable ... incapable of standing 40 or 50 rounds", and though remaining in active military use, the battery was no longer functioning as an active coastal artillery station.

18th September 1854, the Board of Ordnance sold the battery to the then commissioners of Kingstown Harbour. The battery and the Guard Room survived almost unchanged till the early years of the twentieth century. Unlike the other suppressed military forts and towers, the battery was marked on the 1869 Ordnance Survey six-inch revision map as 'Old Battery', though it is not known for what purpose the Harbour Commissioners used the site.



Figure 9.5 Historic Photograph Showing the Whitewashed and Slate-Roofed Guard House and Part of the Battery Walls (arrowed) Positioned below the then Street-Level (after Bolton 2011).

On the 14th March 1907, the Commissioners of Kingstown Harbour sold the battery to Kingstown Urban District Council “at the price of five hundred pounds ..”. The detailed plan of the site accompanying the 1907 title deed (**Figure 9.6**) shows the battery almost unchanged from an 1831 Board of Ordnance plan (Fig. 2).

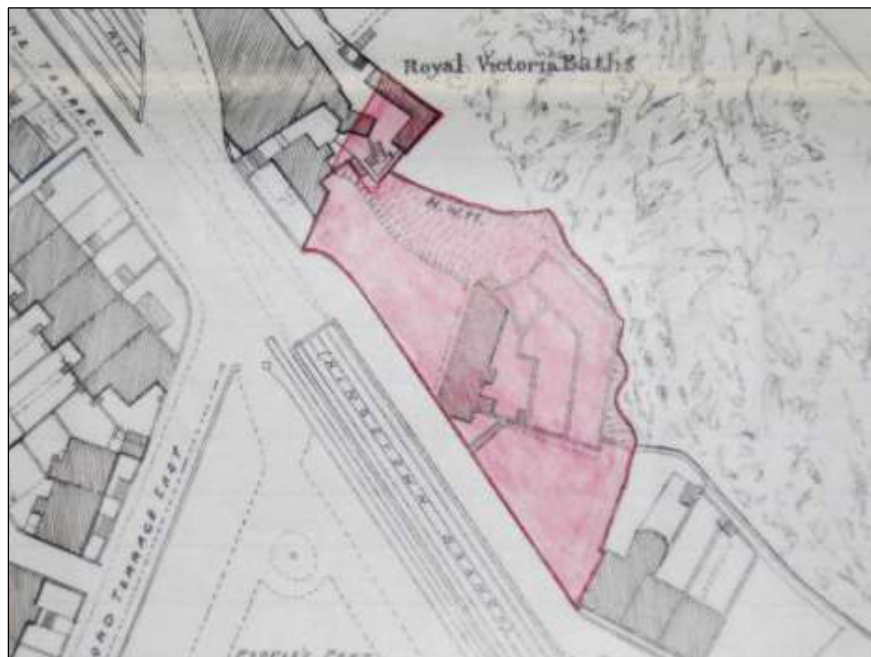


Figure 9.6 Copy of the 1907 Deed Plan Map Showing the Battery and the Extent of Property Purchased by Kingstown Urban District Council.

The battery was quickly removed to develop the site as a public baths, and cannot be traced on the 1908 Ordnance Survey 25-inch map of the site (**Figure 9.7**). The baths were further developed and extended throughout the 20th century.

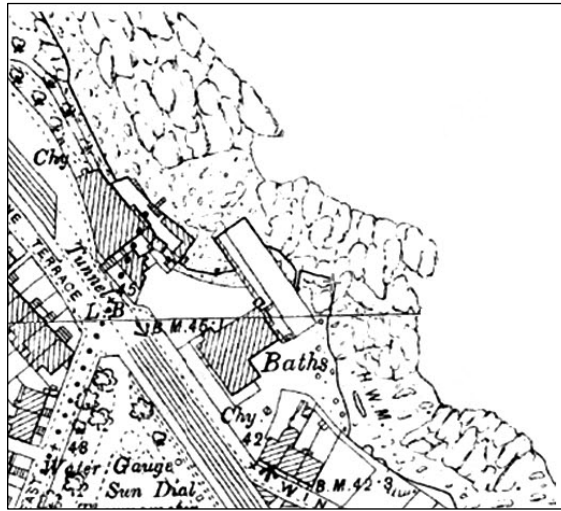


Figure 9.7 Revised 1908 Ordnance Survey Map Showing the Baths Complex

9.3.2 Shipwreck Inventory

According to the Shipwreck Inventory of Ireland approximately 225 wrecks are recorded in the area between West Pier of Dún Laoghaire Harbour and Bray, the heaviest concentration being in or around Dún Laoghaire Harbour. This was due to ships trying to unsuccessfully seek shelter in the harbour during particularly stormy weather. There is a record of a great storm in March 1844 when 16 ships were lost, similarly in February 1861 when up to 40 vessels were stranded or wrecked in or around the harbour and again in March 1901 eleven ships met the same fate (Brady 2008). The shipwreck listings of most interest to the current study include those that specifically mention Dún Laoghaire East Pier, where 16 ships in total and one ship, of unknown name (W01951) went ashore at Scotsman's Bay on the 12th February 1861 (a record of these ships and their incident of loss is provided in **Appendix B**).

It is unlikely that such wrecks would be left in situ, some would have been salvaged and some dredged to make the bay safe for shipping traffic. There is however a potential that features or finds associated with the wrecked vessels may lie undiscovered beneath the foreshore beyond the rocky outcrop.

9.3.3 Site Visit

A site visit was carried out on a bright day on the 2nd February 2012; this was undertaken within the context of an assessment of the archaeological potential of the study area, taking cognisance of the potential implications of modifying the existing area on any former feature that might survive at this location.

The baths are currently in a derelict condition and as there are many unused structures on site and sheltered areas it is subject to anti social behaviour. The site comprises a nineteenth century complex that was substantially expanded in the the early twentieth century and again in the 1970's when it was known as 'Rainbow Rapids'. It lies on four levels: at street level is the Baths Pavilion over basement (c. 1907), the next two levels comprise changing rooms, the former laundry and indoor pools and the final level outdoor changing rooms, concrete pools, concrete paths and a small jetty. There is associated retaining sea walls comprising granite ashlar on the northern side of the baths and granite and concrete steps leading to the water's edge.



Plates 1–6: Views of the site: -The 1907 Baths Pavilion, view of the baths looking NE, a rubble wall marking an earlier 19th century property boundary, the ashlar and concrete retaining sea wall at the northern end of the baths complex, re-used roughly dressed granite masonry with a groove cut into it and a roughly dressed granite mooring post.

No features of an archaeological nature or potential were identified during the field inspection. The only visible upstanding pre-1907 feature that can be seen on the site is a granite rubble stone wall (**Plate 3**) which was a former property boundary wall running in a northeast direction, it is indicated on **Figure 9.8** in yellow. Throughout the site lies some re-used roughly dressed granite stone, including a possible mooring post (**Plate 6**), while the original use of some of these stones cannot be alluded to they do serve to enhance the area.

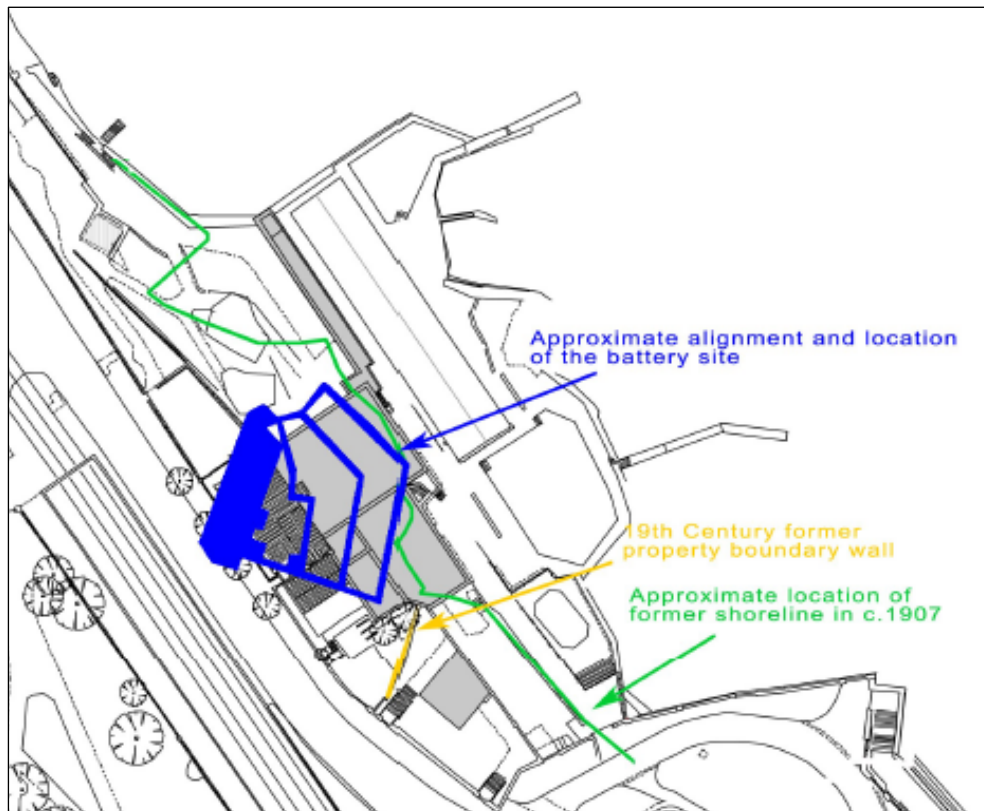


Figure 9.8 An Outline of the Battery as Found on the 1907 Deed Plan Map Overlaid onto a Modern Survey of the Baths

Figure 9.8 shows the alignment of the former battery on top of the existing baths complex, none of the internal or external walls of the baths align with the battery site. The site inspection and cartographic analysis has indicated that the baths were constructed after the battery was dismantled. The granite masonry was re-used to build new walls in the baths complex.

Since 1907 the Edwardian baths complex has been extended seaward. A large area of the rocky shoreline has been reclaimed for the existing bath complex comprising large mass concrete pools and piers. The approximate line of the former shoreline is indicated on **Figure 9.8**.

9.3.4 Summary of Investigation Works

All rooms, compartments and areas within the Edwardian bath complex were fully explored, where necessary. There are areas within the complex which could not be accessed due to then 'over-burden' of twentieth century concrete construction. However, these areas were close to sea-level, where there does not appear to be any scope for any significant remains of Glasthule battery to have survived.

Within the existing complex, there is one small stretch of (probable) re-used granite masonry from the rear of the battery, a few hewn blocks and one grooved stone suggesting re-use of some masonry, and fragments of brown-stained granite used as coarse aggregate within the concrete walls of the battery.

At basement level, the granite bedrock has been cut (i.e. quarried) to form a battered near-vertical rock face (**Plate 7**). This vertical rock face is found below a poured concrete flooring structure within the bathing complex. A passage has been cut through the vertical rock face in this area to form a passageway leading to the boiler room and the rear of the complex. This rock surface has been quarried back and is likely to have formed the lowermost part of the defences of Glasthule Battery.



Plate 7: General view of the eastern end of the bath complex at basement level showing the 19th century granite masonry wall meeting the cut granite bedrock. This rock surface has been quarried back and is likely to have formed the lowermost part of the defences of Glasthule Battery. (After Bolton 2011)

The early twentieth century development also involved the phased reclamation of the foreshore. The ordnance survey 25-inch map sheet (published in 1908 but based on an earlier survey) shows a pier in front of the battery (**Figure 9.7**) and consequently removed the ashlar masonry of the seaward side of Glasthule Battery.

It is possible that some remains of the battery survive as areas of collapsed masonry buried within the twentieth century construction. However, the insertion of concrete retaining walls and concrete structures (in many areas visible rising from the granite bedrock) coupled with the absence of any significant alignments with the known layout of Glasthule battery lead to the conclusion that there is only a very slight possibility of significant or recognisable remains of No. 11 Glasthule Battery surviving within the Dún Laoghaire Baths complex (see **Figure 9.8**).

9.4 POTENTIAL IMPACTS

9.4.1 Construction Phase

The 'site of' a Napoleonic battery (No. 11) is located within the Dún Laoghaire Baths complex. The battery is associated with Glasthule Martello tower, the site of which lies in the Peoples Park (RMP Ref: DU023-017----). Both structures were demolished in the early 20th century. While there are no recorded archaeological monuments or protected structures within the Dún Laoghaire Baths complex its association with the recorded Martello tower accords the site some significance, one that is recognised by the County Council.

The proposed development involves the removal of dilapidated mid 20th century and later structures. Historical and cartographic analysis has indicated that the baths were placed on an entirely different orientation than the battery site; and site investigation works have established that the battery site was almost certainly demolished prior to the construction of the baths in 1907. There is therefore only a very slight possibility that 'in situ' remains of the battery survives at the site. There is a distinct potential that the demolition of the existing structures on site may reveal re-used masonry fragments (e.g. dressed granite stone) that were associated with the former battery structure.

The rock cut stone defences which were identified during the site investigation works will be exposed as part of the proposal, this will be a positive impact of the proposed development as it will reveal the earlier coastline and will provide an insight into the construction of battery site in the area and will enhance the visitors experience at the site.

Historical sources have shown that there have been numerous ships lost off the short stretch of coastline from East Pier to Sandycove. There is a significant potential that any work associated with the extension of the storm water outlet pipe and the extension of the promontory will impact on potential underwater archaeological finds or remains that may lie on or beneath the sea bed.

9.4.2 Operational Phase

There are no specific impacts relevant to archaeological heritage during the operation phase of the proposed development.

9.5 MITIGATION MEASURES

9.5.1 Construction Phase

Given the local cultural heritage interest in the bath complex, it is suggested that a photographic survey is carried out of all areas in the baths to provide a 'record of the past'. This survey should be deposited in the local library and the Irish Architectural Archive.

It is recommended that the dismantling of the baths structure is monitored by a suitably qualified archaeologist. If any features associated with the Glasthule battery are uncovered during monitoring at the site they should be recorded (described and photographed). It is recommended that any dressed/ roughly dressed pieces of granite that might be identified during monitoring be salvaged and re-used and integrated into the scheme. Reuse of original material could further enhance the scheme.

An underwater archaeological assessment should be carried out in the areas of the foreshore that will be impacted upon by the proposed 50m extension of the outfall pipe into the bay and by the extension of the promenade. This assessment should however be carried out well in advance of construction of works and prior to the detailed design of these features. A report on the findings of this archaeological investigation shall be submitted to the Underwater Unit of the Department of the Arts, Heritage and the Gaeltacht. Further archaeological mitigation may be required i.e. should archaeology be identified, at this stage, preservation in situ is the preferred option through avoidance. However, if avoidance is not possible, full archaeological excavation would be carried out.

9.5.2 Operational Phase

In order to enhance the visitor experience, understanding and appreciation of the site it is suggested that signage is put in place to inform people of the historic relevance of the site– the exposed rock associated with the battery will be of particular interest and the history of bathing in the area. Such signage could be integrated with natural heritage aspects of the area and could complement existing local heritage signage or branding in the area.

9.6 RESIDUAL IMPACTS

No residual impacts are envisioned as a result of the proposed interim works.

APPENDIX A
MARINE ECOLOGY REPORT

EIR on the proposed Interim works at Dún Laoghaire baths

Report prepared for:
RPS Consulting Engineers

February 2012

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1.0 Introduction

EcoServe was appointed by RPS Consulting Engineers to prepare an Environmental Impact Report in relation to the proposed Interim works at Dún Laoghaire Baths. The principal aim of this survey was to identify and map the habitats present along the proposed works and surrounding environment, to note the occurrence of protected species and to identify associated ecological constraints and any potential impacts of the proposed construction works.

1.1 Study area

The study area is located within a proposed Natural Heritage Area (pNHA), Dalkey Coastal Zone and Killiney Hill (site code 001206). The footprint of the marine areas which will be directly impacted upon by the proposed interim works were the focus of the survey and within the southern end of the proposed interim works site, i.e. 1) the new wall and viewing area to be built over the outfall pipe and the extension of the outlet pipe to the south of the study area, 2) the creation of a small promenade in line with the existing structure. The immediate areas/habitats surrounding these were also included in the survey area and more broadly the marine area of Dún Laoghaire itself.

1.2 Proposed works

It is proposed to create enhanced facilities for swimming and access to the water. This will involve the creation of a small promenade in line with the existing structure and the covering of the existing storm water outlet with a new wall and viewing area and the seaward extension of the outlet pipe by 50 m.

2.0 Methodology

2.1 Field survey

A marine survey was carried out on the 20th February 2012, encompassing intertidal and shallow subtidal zones between the site of the proposed small promenade to the north and the site of the proposed outfall pipe to the south. The survey was carried out at spring low tide in order to access as much of the study area as possible by foot.

A broad-scale mapping survey of the marine biotopes (flora, fauna and habitats) was completed, in accordance with the procedures described by Emblow *et al.* (1998) and Davies *et al.* (2001). Surveyors walked along the shore in order to identify the extent and distribution of biotopes. Biotope identification was carried out in the field and species lists for each biotope were compiled. Biotopes and species lists were then compared to existing data and interpreted using the biotope classification (Connor *et al.*, 2004). The survey was initiated 3 hours prior to low tide, which, on the day, measured 0.7 m above Chart Datum.

In order to identify subtidal biotopes and to ensure no protected species in the vicinity of the proposed development were overlooked, a snorkel survey was also carried out. The snorkel survey involved carrying out transects across the site of both the proposed small promenade and the outfall pipe. This allowed the nature of the substratum to be established and the subtidal biotopes to be identified. Data collected during the subtidal survey was used to assign a distinct biotope to each of the examined sites in accordance with the principles detailed by Emblow *et al.* (1998) and Davies *et al.* (2001).

Where biotopes could not be identified *in situ*, samples were collected, preserved in 70% Industrial Methylated Spirits (IMS) and returned to the laboratory for identification. Specimens were identified to the lowest taxonomic level possible and the appropriate biotope was then identified.

3.0 Existing environment

3.1 Conservation

The proposed interim works at the Dún Laoghaire Baths site itself is not under any designation as per the European Communities (Natural Habitats) Regulations, 1997 (S.I. No. 94 of 1997) as amended or the Wildlife Acts 1976 to 2010. However, the study area is located within a proposed Natural Heritage Area (pNHA), Dalkey Coastal Zone and Killiney Hill (site code 001206). pNHAs are not afforded any statutory protection, although they can be protected under a county development plan.

A number of conservation designations exist in Ireland providing protection to habitats and species and there are a number of designated sites within 10 kilometres of the site. South of the study area are Dalkey Island Special Protection Area (SPA)(site code 004172), Loughlinstown Wood pNHA (site code 001211), Dingle Glen pNHA (site code 001207) and Ballybetagh Bog pNHA (site code 001202)

North of the study area are Sandymount Strand/Tolka Estuary SPA (site code 004024), South Dublin Bay Special Area of Conservation (SAC) and pNHA (site code 000210) and North Dublin Bay pNHA (site code 000206), Howth Head SAC and pNHA (site code 000202), Howth Head Coast SPA (site code 004113).

3.2 Study Area

The intertidal study area consisted of three moderately exposed, east facing, bedrock shores divided by what were originally promenades, now in a seriously dilapidated state. The walls of the promenade and the backing walls of each shore, which included large boulders, were characterised by dense barnacles (*Chthamalus montagui* and *Semibalanus balanoides*) and limpets (*Patella vulgata*) on their upper reaches (LR.HLR.MusB.Cht.Cht). On the lower reaches of this community were zones of the pepper dulse seaweed (*Osmundea pinnatifida*). This zone was not obvious on the walls surrounding the cove, where the existing storm water outlet is located. Here the first zone was that of the green algae *Enteromorpha*, below which was a mixed zone of *Enteromorpha* and *Fucus spiralis*. *Enteromorpha* was also present along the tops of the promenade. Other species found in this zone included the flat limpet *Patella depressa*. Lower and in crevices on the walls and boulders were the beadlet anemone (*Actinia equina*) and the smooth dogwhelk (*Nucella lapillus*). A single plant of *Ascophyllum nodosum*, with broken fronds as a result of exposure, hosting the obligate epiphyte *Polysiphonia nodosum* was recorded at the base of the backing wall. The upper shore through to the lower shore consisted of the biotope *Fucus serratus* and red seaweeds on moderately exposed eulittoral rock (LR.MLR.BF.Fser.R), in varying degrees of seaweed density. Species recorded within this zone included *Halichondria panacea*, Spirorbidae, *Chthamalus montagui*, *Patella vulgata*, *Littorina littorea*, *Nucella lapillus*, *Palmaria palmata*, Corallinaceae, *Corallina officinalis*, *Chondrus crispus*, *Mastocarpus stellatus*, *Lomentaria articulata*, *Membranoptera alata*, *Osmundea pinnatifida*, *Fucus serratus*, *Enteromorpha intestinalis*, *Ulva* sp. and *Cladophora rupestris*. The bedrock shore also contained coralline crusts and *Corallina officinalis* in shallow eulittoral rockpools (LR.FLR.Rkp.Cor.Cor), and patches of sandy deposits. The sand-binding red seaweed *Rhodothamniella floridula* was recorded in patches throughout this biotope.

On the northern side of the promenade below a number of outflow pipes from the baths and walkways were large patches of the green algae *Cladophora rupestris*.

The extreme lower shore and shallow subtidal area consisted of bedrock covered by sand to a depth of 10 cm in the lower shore with sparse *Fucus serratus* plants. Polychaetes dominated this lower shore sand biotope (LS.LSa.MuSa) and included such species as *Cirriiformia tentaculata*, *Anoides oxycephala*, *Glycera alba*, *Heteromastus filiformis* and *Malocerus fuligosus*. This lower shore biotope extended into a subtidal mixed sediment biotope where polychaetes, also dominated the clean sands (SS.SMx.IMx). There is a small kelp bed mainly composed of *Laminaria digitata* located centrally in the shallow subtidal area between the two promenades (IR.MIR.KR.Ldig.Ldig).

4.0 Potential impacts

4.1 Construction phase

As no method statements have been prepared in relation to the proposed works the potential impacts described are non-specific and in some cases may not be applicable, so here a scenario is envisaged where a cofferdam is required to complete the proposed work.

Loss or alteration of habitats and loss of species

The creation of a small promenade in line with the existing structure and the new wall and viewing area will result in a loss of habitat and species under the immediate footprint of the promenade and new wall area. However, the bedrock shores surrounding the promenade will be replaced by an artificial hard substrate providing a similar surface for attachment, but with a stronger vertical slope. Those habitats in the form of sandy areas currently supporting infaunal species will be permanently lost and replaced by an artificial hard substrate.

In the case of the storm water outlet, if it is above the sediment it will provide a hard substrate for colonisation of marine organisms and alter the species which will inhabit the area beneath. If it is buried, it will temporarily disturb the habitat and species present.

Increased sedimentation and suspended solids

There may be an increase in the turbidity of the water during the construction of the new small promenade and laying of the outfall pipe. This could result in increased siltation, smothering of organisms and a reduction of light for phytoplankton and seaweed. This is likely to be localised and restricted to the immediate area during the construction period and for a short time afterwards. The marine environment in Dún Laoghaire is moderately exposed to wave action and therefore, it is envisaged that any temporary increase in suspended solids is likely to be dispersed quickly by the sea and have minimal impact on the macro flora and fauna present.

Fish species can be susceptible to an increase in suspended solids. The function of the gills can be inhibited by excessive amounts of suspended solids in the water column. Vision can be impaired by turbidity (decreased transparency), thus reducing the fish's ability to capture prey items. The release of suspended solids can also result in a change of habitat on the seabed when particles settle out. This may alter the composition of invertebrate communities perhaps reducing those that are prey for fish.

Suspended matter will eventually settle onto the seabed and fill the spaces between gravel and rocks where fish eggs are laid which could result in a loss of spawning habitat. The area was not identified during the survey as a potential spawning ground.

Pollution

Pollution can occur from the drilling plants, service vehicles and storage containers in a number of ways. Site machinery and vehicles create a risk of contamination through neglected spillages, the improper storage, handling and transfer of oil and chemicals, and refuelling of vehicles and plant. Incorrectly maintained sanitation facilities and/or using 'outdoor toilet' introduce toxins and excess nutrients into the environment. Rubbish items, such as chewing gums, cigarette butts, beverage containers and food wrappings may create hazard to fauna that may accidentally ingest it or get entangled in it. Accidental leakage or discharge of chemicals and pollutants could cause changes in the pH of the water and could have a direct toxic impact on the fauna and flora on site.

Compacting of littoral sediments

Activities associated with the excavation of a trench, should the storm water outlet be buried, will lead to a localised clearance of the habitat and species. In addition, trampling by people or machinery will result in ground deterioration in the vicinity of the excavation areas. These disturbances are likely to be temporary impacts, lasting for the duration of the construction.

Disturbance

Noise, disturbance and vibration from the machinery might cause certain species, including marine mammals to avoid the area during working hours. These disturbances are likely to be temporary impacts, lasting for the duration of the construction.

4.2 Operational phase

Removal and alteration of habitats and species

While the loss of the habitat associated with the construction will be permanent and the species associated with it will be lost, the existing seashore supports a range of hard substrata communities that are abundant and these will colonise the new hard substrate once it becomes available. No reduction in the diversity of species is expected.

Change in hydrographical conditions

The construction of the new promenade will result in a change in water patterns within the immediate area. The addition of artificial hard substrata in the shallow subtidal area may cause an increase in scouring and ultimately a change in habitat and species composition on the seaward side, where more soft sediment is present. The change in hydrographical conditions are not expected to be significant as the majority of surrounding area consists of boulders, rocky outcrops and artificial piers/promenades.

5.0 Predicted impacts

Loss or alteration of habitats and loss of species

Initial habitat loss, resulting from the construction of the promenade will be replaced by the vertical sides of the promenade; therefore, the impact is likely to be short term and not significant with colonisation beginning within a very short time frame.

Once the trench for the storm water outlet has been backfilled, there are no long term impacts predicted to arise from the operation of the storm water outlet.

Increased sedimentation and suspended solids

The volume of suspended material is likely to be low and rapidly dispersed by the tide in Dún Laoghaire. Fish are mobile species that will actively avoid detrimental conditions. The suspended solids will not form a 'barrier' to dispersal thus fish will be able to avoid affected areas and little or no damage is likely to their gill function. The likely volume of suspended material additional to prevailing conditions will be low and quickly dispersed; therefore it is unlikely to restrict the feeding activities of fish.

If any area is affected it will be very small compared to the available unaffected feeding areas outside the area of construction. Sediment re-suspension will be temporary and unlikely to have an impact on the habitat for invertebrate species. The area of habitat unavailable to fish species during construction is likely to be negligible compared to the total area of similar habitat available.

Compacting of littoral sediments

Activities associated with the excavation of a trench, should the storm water outlet be buried, will lead to a localised clearance of the habitat and species. In addition, trampling by people or compaction by machinery will result in ground deterioration in the vicinity of the excavation areas. These disturbances are likely to be temporary impacts, lasting for the duration of the construction.

Disturbance

Noise, disturbance and vibration from the machinery might cause certain species, including marine mammals to avoid the area during working hours. These disturbances are likely to be temporary impacts, lasting for the duration of the construction.

6.0 Mitigation measures

6.1 Construction phase

Loss or alteration of habitats and loss of species

To minimise habitat and species loss and disturbance, efforts should be made to keep the area of ground disturbed by the storm outlet and pier to a minimum.

Disturbance

Noise, disturbance and vibration from the machinery should be kept to minimum in terms of intensity, duration and spatial extent. Where possible, working hours shall be restricted to the daytime in order to minimise the disturbance to both locals and marine mammals.

Pollution

All materials should be properly stored in designated areas and away from the shore. All fuels or chemicals kept on the site should be stored in bunded containers. All machinery should be well-maintained and refuelling carried out within bunded enclosures or away from the beach. Where machinery is working within the immediate vicinity of the beach, oil interceptors are considered best practice. Spoil and fluids need to be contained and handled according to their contaminants. All other waste material, including rubbish should be contained in appropriate receptacles and disposed of properly. Emergency response procedures should be in place to deal with accidental spillages should such occur. This should include appropriate training of the crew members and a contact list of relevant

statutory organisations (to include EPA and NPWS). All accidental spillages should be contained and cleaned up immediately. Remediation measures should be consulted with the relevant organisations (EPA and NPWS) and carried out without delay in the event of pollution of the adjacent waterbody. Documentary evidence of appropriate disposal of waste materials and appropriate crew training should be requested to ensure that fuel, oil and chemical spills do not pose a threat to the marine ecology.

Compacting of littoral sediments

Construction of the new small promenade should be approached from the landward side. However, should it be necessary for construction of the extension to the promenade to occur on the seaward side of the site, vehicles movements on the shore should be kept to the minimum required and follow the same tracks as much as is practicable to minimise the area of shore being impacted upon.

6.2 Operational phase

The loss of footprint of the development will continue in to the operation phase as an impact however no other impacts are predicted during the operational phase.

7.0 Residual impacts

With the implementation of the recommended mitigation measures, the residual impacts will be insignificant.

8.0 Do nothing scenario

Should this development not proceed and in the absence of any other change either anthropogenic or natural then there will be no change to the existing environment.

9.0 Reinstatement

Marine areas temporarily disturbed during construction, should be re-filled to restore the communities which existed before the commencement of the project restoring it to its original environment,

10.0 Monitoring

No monitoring is required following the completion of construction.

11.0 References

- Connor, D. W., Allen, J. H., Golding, N., Howell, K. I., Lieberknecht, L. M., Northen, K. O. and Reker, J. B. (2004) The Marine Habitat Classification for Britain and Ireland. Version 04.05 Joint Nature Conservation Committee, Peterborough.
- Davies, J., Bradley, M., Connor, D., Khan, J., Murray, E., Sanderson, W., Turnbull C. and Vincent, M. (2001). Marine Monitoring Handbook. Joint Nature Conservation Committee.

Emblow, C. S., Costello, M. J. and Wyn, G. (1998). Methods for mapping seashore and seabed biotopes in Wales and Ireland - INTERREG SensMap project. Irish Sea Forum - Emergency response planning: saving the environment, Liverpool University Press.

Appendix I

Table 1. Pictures from onsite survey

		
<p>Existing storm water outlet pipe</p>	<p>Exposed bedrock shore covered in barnacles with shallow rockpools visible</p>	<p>Current view of promenade</p>
		
<p>Bedrock shore north of promenade with distinct zone of <i>Laurencia pinnetifida</i> along the wall.</p>	<p>Lower shore brown and red seaweeds attached to bedrock and boulders</p>	<p>Lower shore sediment biotope</p>

Appendix II

Description of biotopes as per JNCC Classification Scheme

LR.HLR.MusB.Cht.Cht

***Chthamalus* spp. on exposed upper eulittoral rock**

Very exposed to moderately exposed upper and mid eulittoral bedrock and boulders characterised by a dense community of barnacles, including *Chthamalus montagui*, *Chthamalus stellatus* and *Semibalanus balanoides*, and the limpet *Patella vulgata*. Damp cracks and crevices in the rock provide a refuge for small individuals of the mussel *Mytilus edulis*, and the winkles *Melarhaphe neritoides* and *Littorina saxatilis*. These crevices can also be occupied by encrusting coralline algae and the anemone *Actinia equina*. Patches of the black lichen *Verrucaria maura* and the green seaweed *Enteromorpha intestinalis* may be present, though in low abundance (Occasional). Shaded vertical littoral fringe and upper eulittoral bedrock may be characterised by the shade-tolerant red seaweeds *Catenella caespitosa*, *Bostrychia scorpioides* and/or *Lomentaria articulata*. Where the turf of *C. caespitosa* is well established, barnacles are rare. Geographical variation: There is much regional variation in the distribution and zonation of *Chthamalus* spp. On the west coast *Chthamalus* spp. dominate the upper eulittoral, often forming a distinct white band above a darker band of *S. balanoides* in the mid eulittoral zone (Sem). *C. montagui* is better adapted to resist desiccation and, therefore, extends further up the shore. In the south-west *Chthamalus* spp. can be the dominant barnacles throughout the eulittoral zone.

LR.MLR.BF.Fser.R

***Fucus serratus* and red seaweeds on moderately exposed lower eulittoral rock**

Moderately exposed lower eulittoral bedrock characterised by mosaics of the wrack *Fucus serratus* and turf-forming red seaweeds including *Osmundea pinnatifida*, *Mastocarpus stellatus* or *Corallina officinalis*. The hydroid *Dynamena pumila* can occur in dense populations on the *F. serratus* fronds whilst the sponge *Halichondria panicea* can cover the bedrock beneath. Underneath the canopy a number of other red seaweeds may be present including *Palmaria palmata*, *Lomentaria articulata*, *Membranoptera alata* and *Chondrus crispus*. Green seaweeds such as *Cladophora rupestris*, *Enteromorpha intestinalis* and *Ulva lactuca* are present though usually in small numbers. In addition, such shores provide a greater number of permanently damp refuges between the stones and underneath the seaweed canopy. Within these micro-habitats species such as the limpet *Patella vulgata*, the barnacle *Semibalanus balanoides* or the whelk *Nucella lapillus* can be found in lower abundance than higher up the shore. If a few boulders are present then the winkle *Littorina littorea* and the crab *Carcinus maenas* can be found on or underneath the boulders. described. These are: *F. serratus* with red seaweeds (Fser.R) and *F. serratus* with under-boulder communities (Fser.Bo) with sponges. Lastly, a *F. serratus* and piddocks community on soft rock has been identified (Fser.Pid). Dense *F. serratus* with fewer red seaweeds occurs on more sheltered shores (Fserr).

LR.FLR.Rkp.Cor.Cor

***Fucus serratus* and red seaweeds on moderately exposed lower eulittoral rock**

Shallow and smaller rockpools throughout the eulittoral zone in a wide range of wave exposures characterised by a covering of encrusting coralline algae on which *Corallina officinalis* often forms a dense turf. The bottom of these pools can be covered in coarse gravel and cobbles. These 'coralline' pools have a

striking appearance as they are dominated by red seaweeds. Foliose red seaweeds found in these pools include *Mastocarpus stellatus*, *Chondrus crispus* and the filamentous *Ceramium nodulosum*. The ephemeral green seaweeds *Cladophora rupestris*, *Ulva lactuca* and *Enteromorpha* spp. can also occur in high abundance. The pools may hold large numbers of grazing molluscs, particularly the winkle *Littorina littorea* (which often occurs in exceptionally high densities in upper shore pools), the limpet *Patella vulgata* and top shell *Gibbula cineraria*. Gastropods may graze these pools to such an extent that they are devoid of any foliose red seaweeds, and the flora are reduced to encrusting coralline algae and large numbers of gastropods. Large brown seaweeds are generally absent. Within the pools, pits and crevices are often occupied by the anemone *Actinia equina* and small individuals of the mussel *Mytilus edulis*, while the barnacle *Semibalanus balanoides* can be found on the rock surface. The whelk *Nucella lapillus* can be found on the rock surface preying on the barnacles and mussels.

LS.LSa.MuSa

Polychaete/bivalve-dominated muddy sand shores

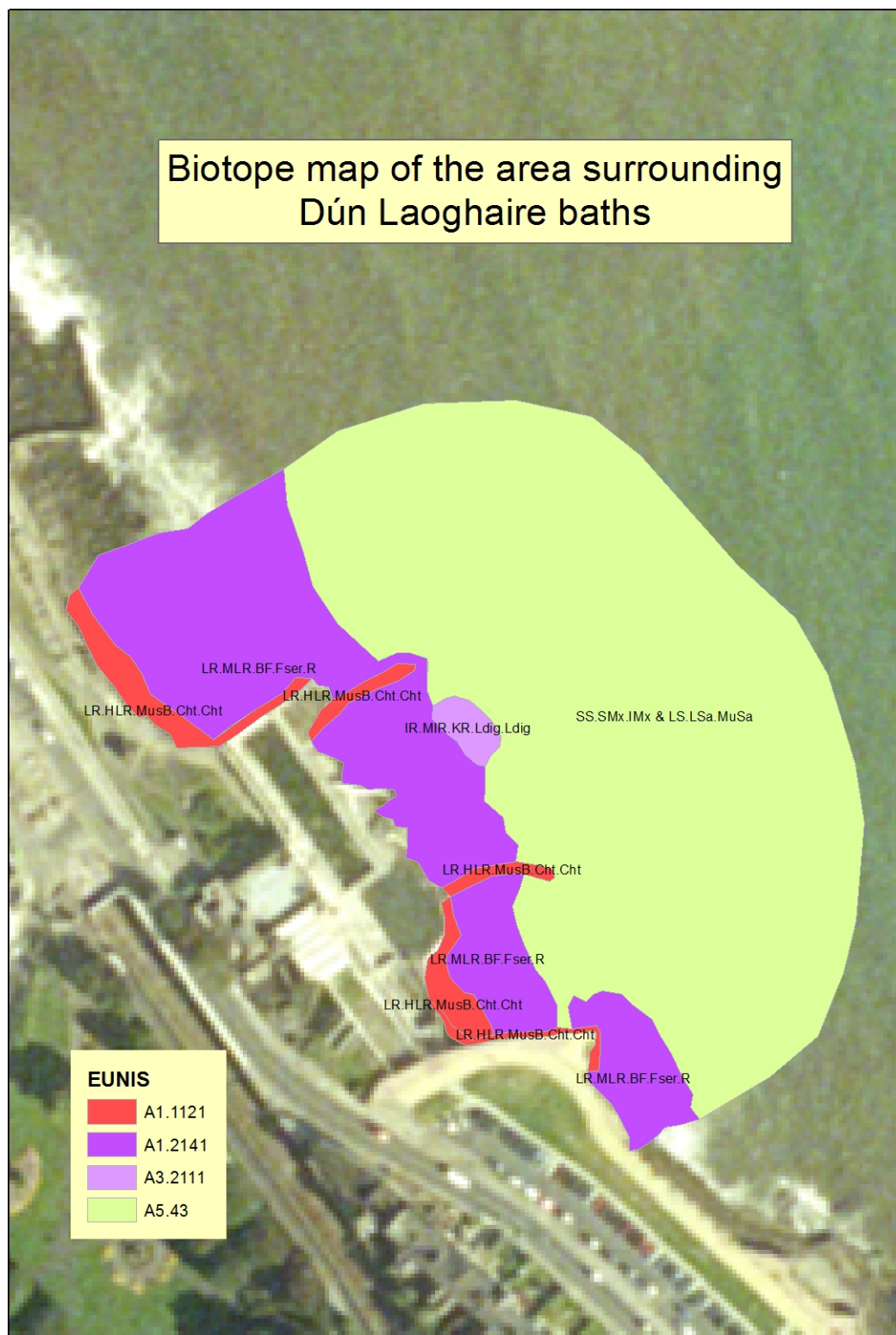
Muddy sand or fine sand, often occurring as extensive intertidal flats on open coasts and in marine inlets. The sediment generally remains water-saturated during low water. The habitat may be subject to variable salinity conditions in marine inlets. An anoxic layer may be present below 5 cm of the sediment surface, sometimes seen in the worm casts on the surface. The infauna consists of a diverse range of amphipods, polychaetes, bivalves and gastropods.

SS.SMx.IMx

Infralittoral mixed sediment

Shallow mixed (heterogeneous) sediments in fully marine or near fully marine conditions, supporting various animal-dominated communities, with relatively low proportions of seaweeds. This habitat may include well mixed muddy gravelly sands or very poorly sorted mosaics of shell, cobbles and pebbles embedded in mud, sand or gravel. Due to the quite variable nature of the sediment type, a widely variable array of communities may be found, including those characterised by bivalves (SMX.VsenAsquAps, SMX.CreAsAn, and SMX.Ost), polychaetes (SMX.SpavSpAn) and file shells (SMX.Lim). This has resulted in many species being described as characteristic of this biotope complex all contributing only a small percentage to the overall similarity (see below). This biotope complex may also include a newly proposed *Chaetopterus* biotope (Rees pers com.) recently found in the eastern English Channel. This biotope is characterised by an undescribed *Chaetopterus* sp. and small *Lanice conchilega*. Further sampling is needed in order to assess and fully characterise this potential biotope. As a result, the *Chaetopterus* biotope has not been included in this revision. Infaunal data for this biotope complex are limited to that described in the biotope SMX.VsenAsquAps and so are not representative of the infaunal component of the whole biotope complex.

Appendix III – Biotope Map



APPENDIX B

ARCHAEOLOGICAL INVESTIGATION WORKS

Proposed Interim Works at
Dun Laoghaire Baths

Archaeological Impact Report

DRAFT FOR REVIEW

By
Siobhán Deery MA MIAI
of
Courtney Deery Heritage Consultancy

For
RPS

On behalf of
Architects Department
Dun Laoghaire Rathdown County Council

20th February 2012

1 Introduction

- 1.1 This report forms part of an Environmental Impact Report for the proposed interim works at Dun Laoghaire Baths in Glasthule, Dun Laoghaire. It evaluates the archaeological and cultural heritage significance of the landscape and assesses the potential impact of the proposed interim works on the baths and on the receiving archaeological environment (terrestrial and marine). It was carried out by Courtney Deery Heritage Consultancy for RPS on behalf of Dun Laoghaire Rathdown County Council.
- 1.2 The Dun Laoghaire Baths, which are now in a derelict state, is located on the coast on the northern end of Scotsman's Bay in the townland of Glasthule, the Parish of Monkstown and the Barony of Rathdown. There have been baths at this location since Edwardian times. Prior to that there was an early nineteenth century military battery (c. 1805-6) associated with the Glasthule Martello tower, the site of which now lies in People's Park. While the Martello is recorded in the Record of Monuments and Places (DU023-017----) the site of the battery (No. 11) is not, its association with the recorded monument however affords the site of the battery some significance. This significance is recognised by Dun Laoghaire Rathdown County Council.

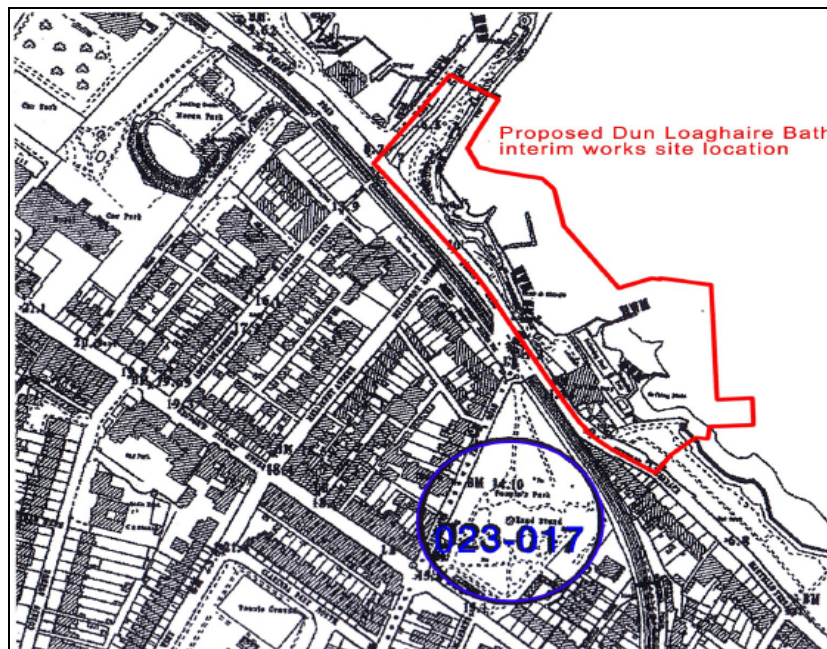


Figure 1: RMP site location map showing proposed interim works site location and location of the Glasthule Martello Site (DU023-017----)

- 1.3 The existing baths involved the reclamation of some 30m of the original rocky coastline. The intertidal zone in the Dublin Bay area has historically been a treacherous one and in

this area alone between the East Pier of Dun Laoghaire Harbour and Sandycove there is a record of at least 16 shipwrecked vessels.

1.4 Cartographic and historic analysis and investigative works were carried out at the Baths complex to assess the potential survival of Glasthule Battery No. 11 (Bolton 2011). The sources indicated that the baths were constructed on an entirely different alignment than the battery structure. The survey did not reveal any significant or recognisable remains of the battery surviving within the Dun Laoghaire Baths complex, although masonry fragments associated with the battery however are reused in the Baths structure. Some evidence of rock cut defences, which had been quarried back to form the lowermost defences of the battery, were also identified. The survey concluded that there remained only a slight possibility that some of the original features associated with the battery might survive behind current retaining walls.

1.5 The proposed development will:

- Secure the existing Baths Pavillion and site and provide a gallery café, workspaces and public toilet facilities.
- Remove dilapidated structures and the infilling of the concrete baths to permit the creation of a new pedestrian route and landscaping to connect the Newtownsmith walkway to both the East Pier and the Peoples Park.
- Expose the original rocky shore line in the area of the site of the battery.
- Enhance facilities for swimming and access to the water's edge including the extension of the existing pier and slipway.
- Extending the existing storm water outlet pipe by 50m into the sea.

2 Methodology

2.1 The report follows an investigation of the baths carried out by Dr. Jason Bolton in 2011. These investigations involved the breaking of concrete, removal of external render and internal plaster in order to establish whether any upstanding remains associated with the early nineteenth century battery is incorporated into the existing bath_s complex. The report was supported by the examination of cartographic and historical sources. A summary of the findings from this report are provided below with permission from Dun Laoghaire Rathdown Co. Council.

- 2.2 The archaeological appraisal is based on a desk-study and site inspection of the proposed development project. The desk study is based on an examination of the Record of Monuments and Places (RMP) of the Department of the Arts, Heritage and the Gaeltacht (DAHG). The Shipwreck Inventory of Ireland compiled by the The Underwater Archaeology Unit (UAU) of the DAHG was examined for shipwrecks that might be located in Scotsman's Bay or in the vicinity of the East Pier of Dun Laoghaire Harbour. The topographical files of the National Museum of Ireland (NMI) were examined for stray finds that may have been found in the study area. Additional documentary and literary references, including excavation bulletins and historic maps, were also consulted to predict likely archaeological remains surviving on site and to explore the development of the study area.
- 2.3 An inspection of the baths was undertaken to assess the impact of the proposed development on the current footprint of the site, and to inspect any upstanding structures.

3 Existing Environment

3.1 Brief Archaeological background

Glasthule, derives its name from a combination of the Irish *Glas* meaning a little stream (one which flowed into Scotsman's Bay), and *Tuathail* or Toole, a surname i.e. Toole's stream. There is no record of any activity in the study area until 1805 when the Glasthule Martello tower and battery were erected.

However, South County Dublin has a long settlement history, dating back to the end of the Mesolithic period (5000-3300 BC). A small number of Bann Flakes (flint tools) dating from this period were identified from Dun Laoghaire but it is only at Dalkey Island where finds have been made in significant numbers during excavation of midden sites (Corlett 1999, Liversage, 1968). There is little evidence for later activity dating to the Neolithic period Bronze Age and Iron Age in this area with sites only to be found further west in Loughlanstown, Glenamuck and Carrickmines. Similarly no sites are recorded in the area during the early medieval period the closest being the neighbouring settlements of the Kill of the Grange (RMP DU023-015) and Monkstown (RMP DU023-013) with Early Christian origins. These were then adopted by the Vikings and later by the Anglo-Norman settlers who favoured the established sites and their existing infrastructure. The Anglo-Normans also established themselves in Bullock (DU023-020).

Summary of the history of the defences at Glasthule (after Bolton 2011) with some additions

In response to a threat of invasion by Napoleonic forces in Ireland Lieutenant-Colonel Benjamin Fisher was authorised on the 2nd June 1804 to begin construction of Dublin's Martello Towers. A defensive 'chain' of twenty-eight sites consisting of Martello Towers and gun batteries was set in place, extending from Bray, Co. Wicklow to Balbriggan, Co. Dublin (numbered 1-16 'South of Dublin', and 1-12 'North of Dublin'). The most heavily fortified section of coastline was the rocky shoreline between Bullock Harbour and Sandymount, which was defended by five 18-pounder Martello Towers, one 'double-tower' at Williamstown and three gun batteries, including the battery at Glasthule.

The two plots of land at Glasthule were purchased for £90 and 10 shillings from "Lords Longford, De Vesci, and Mr Daniel Sexton" in 1806; though the lands had already been legally transferred in trust to Benjamin Fisher the year before. The "three gun battery at Glasstool" was built by John Murray, who was also responsible for the batteries and towers at Dun Leary, Sandycove, and Seapoint. Glasthule battery was armed with three 24-pounder guns positioned behind an angled bastion on the rocky foreshore of Scotsman's Bay (Figure 2).

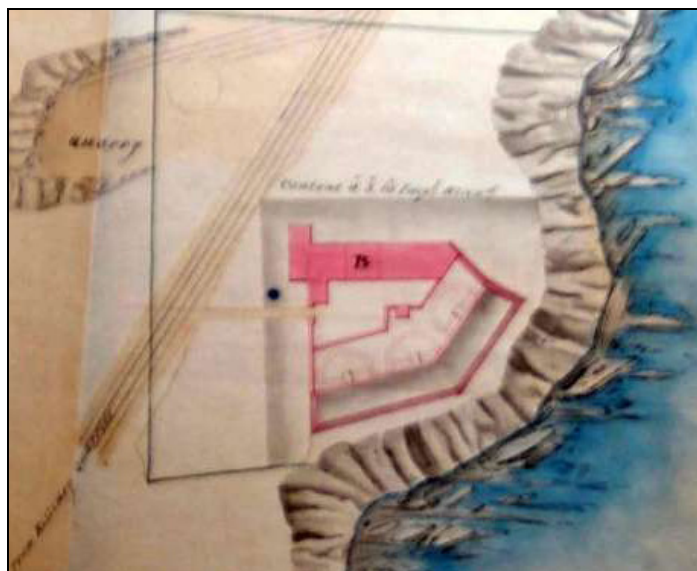


Figure 2: The 1831 Board of Ordnance Plan of "No. 12 Glasstool"

The battery continued to be manned after the end of the Napoleonic Wars in 1815, with occasional references surviving to soldiers quartered at Glasthule. The battery began to be

eroded by the sea from about 1818, a process then attributed to “the rebound of the Surge” from the newly-built east pier of Dun Laoghaire Harbour.



Figure 3: Detail from an engraving of Duncan's 1821 map showing Glashule Battery

The Battery was occupied by the Preventative Service Water Guard (later renamed the Coast Guard) in the 1820s.

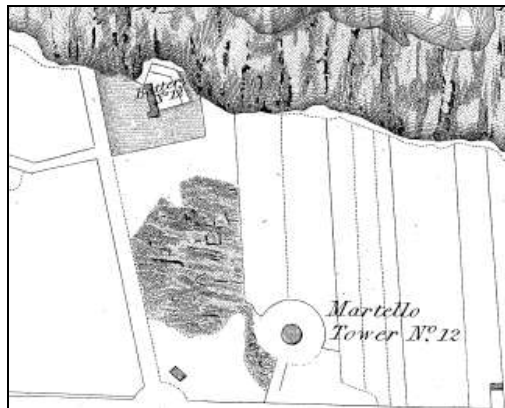


Figure 4: Detail of Rennie's 1820 map showing the battery, Martello Tower and Park Road.

The 1828 ‘return’ records only one 24-pounder cannon (originally three were mounted) in position at ‘12 – GlassTool” battery, with both gun and carriage “unserviceable ... incapable of standing 40 or 50 rounds”, and though remaining in active military use, the battery was no longer functioning as an active coastal artillery station.

18th September 1854, the Board of Ordnance sold the battery to the then commissioners of Kingstown Harbour. The battery and the Guard Room survived almost unchanged till the early years of the twentieth century. Unlike the other suppressed military forts and towers, the battery was marked on the 1869 Ordnance Survey six-inch revision map as ‘Old Battery’, though it is not known for what purpose the Harbour Commissioners used the site.



Figure 5: Historic photograph showing the whitewashed and slate-roofed guard-house and part of the battery walls (arrowed) positioned below the then street-level (after Bolton 2011).

On the 14th March 1907, the Commissioners of Kingstown Harbour sold the battery to Kingstown Urban District Council “at the price of five hundred pounds ..”. The detailed plan of the site accompanying the 1907 title deed (Fig. 6) shows the battery almost unchanged from an 1831 Board of Ordnance plan (Fig. 2).

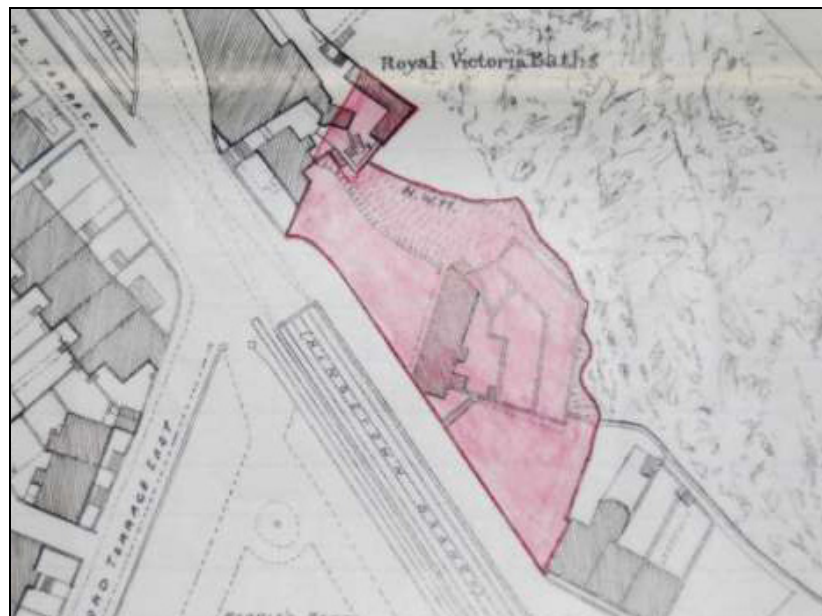


Figure 6: Copy of the 1907 deed plan map showing the battery and the extent of property purchased by Kingstown Urban District Council.

The battery was quickly removed to develop the site as a public baths, and cannot be traced on the 1908 Ordnance Survey 25-inch map of the site (Fig. 7). The baths were further developed and extended throughout the 20th century.

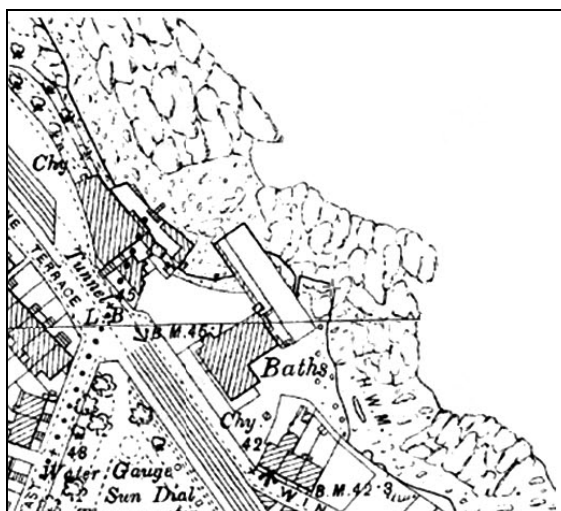


Figure 7: Revised 1908 Ordnance Survey map showing the baths complex

3.2 Shipwreck Inventory

According to the Shipwreck Inventory of Ireland approximately 225 wrecks are recorded in the area between West Pier of Dun Laoghaire Harbour and Bray, the heaviest concentration being in or around Dun Laoghaire Harbour. This was due to ships trying to unsuccessfully seek shelter in the harbour during particularly stormy weather. There is a record of a great storm in March 1844 when 16 ships were lost, similarly in February 1861 when up to 40 vessels were stranded or wrecked in or around the harbour and again in March 1901 eleven ships met the same fate (Brady 2008). The shipwreck listings of most interest to the current study include those that specifically mention Dun Laoghaire East Pier, where 16 ships in total and one ship, of unknown name (W01951) went ashore at Scotsman's Bay on the 12th February 1861 (a record of these ships and their incident of loss is provided in Appendix 2).

It is unlikely that such wrecks would be left in situ, some would have been salvaged and some dredged to make the bay safe for shipping traffic. There is however a potential that features or finds associated with the wrecked vessels may lie undiscovered beneath the foreshore beyond the rocky outcrop.

3.3 Site Visit

A site visit was carried out on a bright day on the 2nd February 2012; this was undertaken within the context of an assessment of the archaeological potential of the study area, taking cognisance of the potential implications of modifying the existing area on any former feature that might survive at this location.

The baths are currently in a derelict condition and as there are many unused structures on site and sheltered areas it is subject to anti social behaviour. The site comprises a nineteenth century complex that was substantially expanded in the the early twentieth century and again in the 1970's when it was known as 'Rainbow Rapids'. It lies on four levels: at street level is the Baths Pavilion over basement (c. 1907), the next two levels comprise changing rooms, the former laundry and indoor pools and the final level outdoor changing rooms, concrete pools, concrete paths and piers. There is associated retaining sea walls comprising granite ashlar on the northern side of the baths and granite and concrete steps leading to the water's edge.



Plates 1–6: Views of the site: -The 1907 Baths Pavilion, view of the baths looking NE, a rubble wall marking an earlier 19th century property boundary, the ashlar and concrete retaining sea wall at the northern end of the baths complex, re-used roughly dressed granite masonry with a groove cut into it and a roughly dressed granite mooring post.

No features of an archaeological nature or potential were identified during the field inspection. The only visible upstanding pre-1907 feature that can be seen on the site is a granite rubble stone wall (Plate 3) which was a former property boundary wall running in a northeast direction, it is indicated on Figure 8 (below) in yellow. Throughout the site lies some re-used roughly dressed granite stone, including a possible mooring post (Plate 6), while the original use of some of these stones cannot be alluded to they do serve to enhance the area.

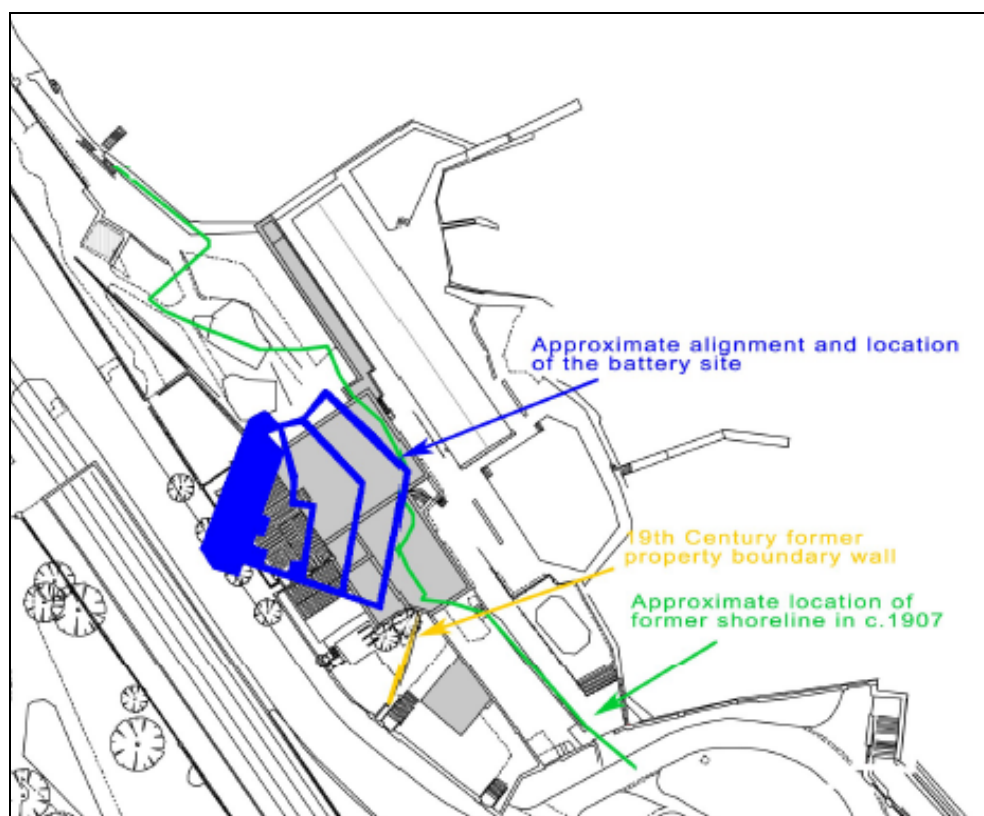


Figure 8: An outline of the battery as found on the 1907 deed plan map (shown above) overlaid onto a modern survey of the Baths.

The above map overlay (Fig. 8) shows the alignment of the former battery on top of the existing baths complex, none of the internal or external walls of the baths align with the battery site. The site inspection and cartographic analysis has indicated that the baths were constructed after the battery was dismantled. The granite masonry was re-used to build new walls in the baths complex.

Since 1907 the Edwardian baths complex has been extended seaward. A large area of the rocky shoreline has been reclaimed for the existing bath complex comprising large mass

concrete pools and piers. The approximate line of the former shoreline is indicated on Figure 8 above.

3.4 Summary of Investigation Works (after Bolton 2011)

All rooms, compartments and areas within the Edwardian bath complex were fully explored, where necessary. There are areas within the complex which could not be accessed due to then 'over-burden' of twentieth century concrete construction. However, these areas were close to sea-level, where there does not appear to be any scope for any significant remains of Glashule battery to have survived.

Within the existing complex, there is one small stretch of (probable) re-used granite masonry from the rear of the battery, a few hewn blocks and one grooved stone suggesting re-use of some masonry, and fragments of brown-stained granite used as coarse aggregate within the concrete walls of the battery.

At basement level, the granite bedrock has been cut (i.e. quarried) to form a battered near-vertical rock face (Plate 7). This vertical rock face is found below a poured concrete flooring structure within the bathing complex. A passage has been cut through the vertical rock face in this area to form a passageway leading to the boiler room and the rear of the complex. This rock surface has been quarried back and is likely to have formed the lowermost part of the defences of Glashule Battery.

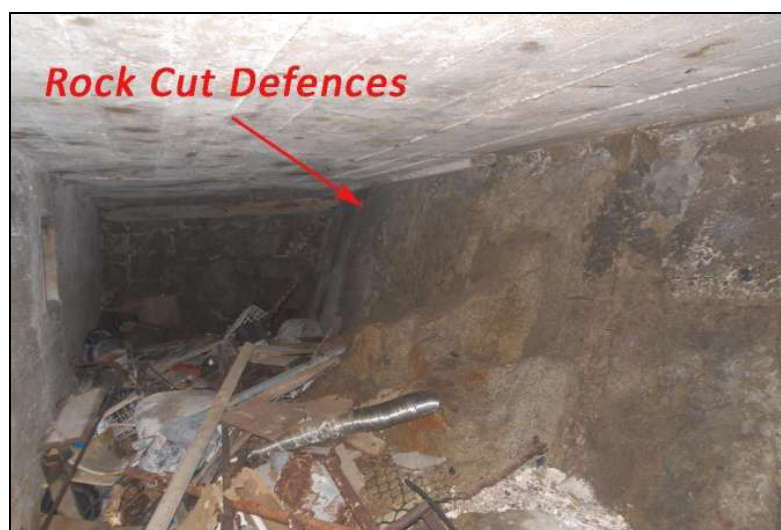


Plate 7: General view of the eastern end of the bath complex at basement level showing the 19th century granite masonry wall meeting the cut granite bedrock. This rock surface has been quarried back and is likely to have formed the lowermost part of the defences of Glashule Battery. (After Bolton 2011)

The early twentieth century development also involved the phased reclamation of the foreshore. The ordnance survey 25-inch map sheet (published in 1908 but based on an earlier survey) shows a pier in front of the battery (Fig. 7) and consequently removed the ashlar masonry of the seaward side of Glasthule Battery.

It is possible that some remains of the battery survive as areas of collapsed masonry buried within the twentieth century construction. However, the insertion of concrete retaining walls and concrete structures (in many areas visible rising from the granite bedrock) coupled with the absence of any significant alignments with the known layout of Glasthule battery lead to the conclusion that there is only a very slight possibility of significant or recognisable remains of No. 11 Glasthule Battery surviving within the Dun Laoghaire Baths complex (see above map overlay Fig. 8).

4 Potential Impacts

Construction

The 'site of' a Napoleonic battery (No. 11) is located within the Dun Laoghaire Baths complex. The battery is associated with Glasthule Martello tower, the site of which lies in the Peoples Park (RMP Ref: DU023-017----). Both structures were demolished in the early 20th century. While there are no recorded archaeological monuments or protected structures within the Dun Laoghaire Baths complex its association with the recorded Martello tower accords the site some significance, one that is recognised by the County Council.

The proposed development involves the removal of dilapidated mid 20th century and later structures. Historical and cartographic analysis has indicated that the baths were placed on an entirely different orientation than the battery site; and site investigation works have established that the battery site was almost certainly demolished prior to the construction of the baths in 1907. There is therefore only a very slight possibility that 'in situ' remains of the battery survives at the site. There is a distinct potential that the demolition of the existing structures on site may reveal re-used masonry fragments (e.g. dressed granite stone) that were associated with the former battery structure.

The rock cut stone defences which were identified during the site investigation works will be exposed as part of the proposal, this will be a positive impact of the proposed

development as it will reveal the earlier coastline and will provide an insight into the construction of battery site in the area and will enhance the visitors experience at the site.

Historical sources have shown that there have been numerous ships lost off the short stretch of coastline from East Pier to Sandycove. There is a significant potential that any work associated with the extension of the storm water outlet pipe and the extension of the promontory will impact on potential underwater archaeological finds or remains that may lie on or beneath the sea bed.

Operation

There are no specific impacts relevant to archaeological heritage during the operation phase of the proposed development.

5 Mitigation Measures

Construction

Given the local cultural heritage interest in the bath complex, it is suggested that a photographic survey is carried out of all areas in the baths to provide a 'record of the past'. This survey should be deposited in the local library and the Irish Architectural Archive.

It is recommended that the dismantling of the baths structure is monitored by a suitably qualified archaeologist. If any features associated with the Glasthule battery are uncovered during monitoring at the site they should be recorded (described and photographed). It is recommended that any dressed/ roughly dressed pieces of granite that might be identified during monitoring be salvaged and re-used and integrated into the scheme. Reuse of original material could further enhance the scheme.

An underwater archaeological assessment should be carried out in the areas of the foreshore that will be impacted upon by the proposed 50m extension of the outfall pipe into the bay and by the extension of the promenade. This assessment should however be carried out well in advance of construction of works and prior to the detailed design of these features. A report on the findings of this archaeological investigation shall be submitted to the Underwater Unit of the Department of the Arts, Heritage and the Gaeltacht. Further archaeological mitigation may be required i.e. should archaeology be

identified, at this stage, preservation in situ is the preferred option through avoidance. However, if avoidance is not possible, full archaeological excavation would be carried out.

Operation

In order to enhance the visitor experience, understanding and appreciation of the site it is suggested that signage is put in place to inform people of the historic relevance of the site—the exposed rock associated with the battery will be of particular interest and the history of bathing in the area. Such signage could be integrated with natural heritage aspects of the area and could complement existing local heritage signage or branding in the area.

6 Residual Impacts

No residual impacts are envisioned as a result of this proposed development.

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www.excavations.ie

Appendix 1 Inventory of shipwreck sites that were lost between the East Pier and Sandycove.

Ref: W01744	Site/Ship Name: Argyle
Date of Loss: 26/12/1852	
Place of Loss: Dun Laoghaire Harbour, East Pier	
Description: 79-ton, 20 year old schooner of Crock en route from Glasgow to Waterford, five crew, general cargo. Captain was Murphy/McCarthy. Broke from moorings during a SSW force 11 wind, struck the East Pier, sank.	
References:	

Ref: W01749	Site/Ship Name: Betsey/Betsy
Date of Loss: 13/08/1829	
Place of Loss: Dun Laoghaire, outside eastern pier entrance	
Description: Schooner of Dundalk, en route from Liverpool to Dundalk, six crew, four passengers, cargo of rock salt and resin for Mr. Martin of Dundalk. Captain was James Lawless. Encountered a severe storm, driven towards Bullock Harbour. Too dangerous to enter the harbour, attempted to reach Dun Laoghaire Harbour. Mast, rudder broke away vessel struck against eastern pier and was dashed to pieces. Crew, passengers washed overboard. Master, a boy, three crew saved themselves. Five drowned in total including three passengers.	
References: Freemans Journal, 17 th August 1829, LL6,456, 18 th August 1829	

Ref: W0175	Site/Ship Name: Celericus/Celeritas
Date of Loss: 03/12/1823	
Place of Loss: Dun Laoghaire, N side of East Pier	
Description: 110-ton Dutch schooner/galliot parted from anchor, forced onto East Pier. Became a total wreck. Loss of vessel attributed to poor state of its cables	
References: INA HC DL. 1823-1825	

Ref: W01764	Site/Ship Name: Collon
Date of Loss: 29/01/187	
Place of Loss: Dun Laoghaire, East Pier	
Description: En route from Troon to Dublin. Struck the east pier, fell over, went to pieces. Three crew drowned	
References: LL7,235, 3 rd February 1837	

Ref: W01772	Site/Ship Name: Dwarf
Date of Loss: 03/03/1824	
Place of Loss: Dun Laoghaire, East Pier	
Description: 203-ton, 14- year old cutter, parted from moorings in a northerly gale driven against the new wall, sank. Lt N Gould and 59 of the 60 crew were saved. Payment claimed for raising wreck though some accounts suggest vessel broke up completely	
References: Gosset 1986, 100-110. INA HC DL 1823-1825; LL 5,888, 9 th March 1824; PP 1824;PP 1833, XXIV, 1	

Ref: W01777	Site/Ship Name: Ellen
Date of Loss: 28/12/1821	
Place of Loss: Sandycove, Near the Fourty Foot	
Description: Brig of Liverpool, en route from Liverpool to Dublin carrying a 'valuable cargo' Captain was Bird. Driven ashore during a SE gale, wrecked. Sandycove lifeboat rescued crew, but four lifeboat crew lost their lives. Some cargo saved	
References: De Coursey Ireland 1983, 39, Gilligan 1980, 46-8; LL 5,658, 1 st January 1822	

Ref: W01786	Site/Ship Name: Fame
Date of Loss: 24/12/1836	
Place of Loss: Sandycove	
Description: Collier went ashore	
References: LL7,225, 30 th December 1836	

Ref: W01818	Site/Ship Name: John and Henry
Date of Loss: 18/04/1881	
Place of Loss: Bullock/Sandycove	
Description: 79-ton, 40year old wooden schooner of Swansea. Owned by H banister of Burrow-in –Furness, master A. Mc. Mullin. En route from Swansea to Red Bat, Antrim, four crew, cargo of culm/coal. Stranded, totally wrecked in ENE fource 2 wind. No loss of life. Vessel sold by the master for 5 pounds.	
References:	

Ref: W1824	Site/Ship Name: Liffey
Date of Loss: 15/03/1897	
Place of Loss: Dun Laoghaire Harbour, East Pier	
Description: 50- ton, 21yr old wooden smack of Dublin. Owned by C.Burnham of Ringsend, master was J. Clarke. Fishing in ballast in Kingstown, four crew. Lost E force 2 wind. Crew saved by HMS Melampus and HMS Jason.	
References: LL 18,574, 16 th March 1897, 7; LL 18,575, 18 th March 1897, 3; PP 1896, LXXXIII, 141	

Ref: W01855	Site/Ship Name: Minerva
Date of Loss: 05/02/1824	
Place of Loss: Dun Laoghaire, East Pier	
Description: Schooner of Liverpool, sank attempting to lift sloop Providence, sloop Union also sank.	
References: INA HC DL 1823-1825	

Ref: W01862	Site/Ship Name: Neptune
Date of Loss: 09/02/1861	
Place of Loss: Dun Laoghaire Harbou, outside the East Pier	
Description: 188-ton brig, en route from Workington, six crew, cargo of coal. Master was Fannin. Struck rocks in a NE force 10 wind. Became stranded, total loss. Five crew drowned, one survived. Six crew off the Ajax including Captain Boyd, drowned attempting to rescue the crew of the Industry and the Neptune.	

References: De Courcy Ireland 1983, 67-8, 71; Independent (Wexford), 13th February 1861, 2; LL 14,619. 11th February 1861, PP 1862, LIV 14,23

Ref: W01865	Site/Ship Name: Onyx
Date of Loss: 09/02/1861	
Place of Loss: Dun Laoghaire Harbour, East Pier	
Description: Of Falmouth cargo of aslt. Ran onto the East Pier when existing the harbour. Two thugs and boats of the HMS Ajax, failed to refloat the vessel. Expected to become a wreck.	
References: LL 14,618, 9 th February 1861	

Ref: W01871	Site/Ship Name: Providence
Date of Loss: 04/12/1823	
Place of Loss: Dun Laoghaire Harbour, East Pier	
Description: Sloop to Fishguard, in ballast, driven upon the pier, sank. Union (sloop) and Minerva (schooner) both sank attempting to raise the Providence.	
References: INA HC DL 1823-1825	

Ref: W01878	Site/Ship Name: Robert and Mary
Date of Loss: 28/09/1856	
Place of Loss: Dun Laoghaire, outside the East Pier	
Description: 39-ton, 32 yr old single decked single masted smack/sloop of Dundalk. Owned by Patrick Little, Master Quirk. En route from Whitehaven to Drogheda, cargo of coal. Went ashore during a storm became a total wreck .	
References: INA DKRS 1841-54, LL 13,261, 30 th 11 1856	

Ref: W01893	Site/Ship Name: Union
Date of Loss: 05/02/1824	
Place of Loss: Dun Laoghaire, East Pier	
Description: Sloop of Aberystwith, sank while attempting to raise the sloop Providences, Schooner Minerva also sank	
References: INA HC, DL 1823-25	

Ref: W01921, W01922, W01937, W01938, W01955, W01964, W01965, W01966	Site/Ship Name: Unknown
Date of Loss: 27/12/1836, 09/02/1861, 1908, 1934, 1934, 1966	
Place of Loss: Near Sandycove (2), Outside East Pier(5)	
Description: These ships went ashore on rocks/ went down in storms	
References: Freemans Journal, 27 th December 1836, Dundalk Democrat, 16 Feb 1861	