5.8 Landscape and Visual Impact

5.8.1 Introduction

This section of the EIS summarises the impact of the proposed construction of the cruise berth on the visual and landscape amenity of the subject site and contiguous areas. The Dun Laoghaire Harbour Company published its Harbour Masterplan in October 2011. The Masterplan is a long term vision which it is intended to implement over a 15-20 year period and the current Cruise Berth proposal forms an important strategic part of that plan. This assessment describes the landscape character of the cruise berth subject site, its environs and its hinterland, together with the visibility of the site from significant viewpoints in the locality, around the environs of the site and from afar. An analysis of the methodology utilised to assess the impacts, the receiving environment and the potential impacts of the development are described. Mitigation measures introduced to ameliorate or offset impacts are also considered. This section of the EIS should be read in conjunction with the photomontages contained in Appendix 5.8.1 of this EIS.

5.8.2 Methodology

It should be noted that the existing context for the proposed development currently includes the existing Stena HSS berthing facilities and structures. The recent termination of the HSS ferry service will result in the removal of the related berthing facilities – this will occur before the cruise berth is operational. While the removal of the Stena HSS infrastructure does not form part of this cruise berth proposal it is however appropriate in the cumulative context to acknowledge that when operational the visual context in this part of the harbour will have changed by the removal of this infrastructure. The photomontages therefore illustrate the existing context including the existing HSS berthing facilities and the proposed development with the HSS berthing facilities removed. Given that the removal of the HSS facilities is unrelated to this proposal, this assessment is however based solely on the impacts generated by this proposed development.

5.8.2.1 Criteria and Methodology for Rating of Impacts

The system of evaluation normally used in the preparation of the landscape and visual impact assessment of an Environmental Impact Statement is utilised. The assessment methodology is therefore based on the following:

- Guidelines on the information to be contained in Environmental Impact Statements prepared by the Environmental Protection Agency (EPA) 2002 and with reference to:
- Advice Notes on Current Practice in the preparation of Environmental Impact Statements (Environmental Protection Agency (EPA), September 2003).
- Guidelines for Landscape and Visual Impact Assessment (GLVIA), prepared by the Landscape Institute and the Institute of Environmental Assessment, published by Routledge, 3rd Edition 2013.

While the following assessment addresses the potential landscape and visual impacts of the development proposal in accordance with standard EPA methodology, it is considered essential that the other associated chapters in this document are also taken into account when attempting to fully understand (particularly) the landscape impacts of this proposal.

This Landscape and Visual Impact Assessment involved:

- Visiting the area between January 2014 and May 2014 and preparing a photographic record of the main landscape features coupled with a record of data on landscape elements, features and characteristics;

- Undertaking a desk study of the subject site and its environs in relation to its local and broader landscape significance using the information gathered from site visits, studying aerial photography and Ordnance Survey mapping;
- Establishing and describing the receiving environment in terms of the existing landscape and its visual amenity;
- Assessing the nature, scale and quality of the proposed development through examination of the design team's drawings, illustrations and descriptions of the proposed scheme;
- Assessing potential viewpoints, choosing and agreeing those which could be considered most important and most representative in terms of visual impact; and
- Assessing the visual impact of the proposed development through consideration and interpretation of the photomontages (contained in Appendix 5.8.1 of this EIS).

The significance criteria used for the landscape and visual assessment are based on those given in the EPA 'Guidelines on the information to be contained in Environmental Impact Statements', 2002, (Section 5 Glossary of Impacts) as follows:

Imperceptible Impact: An impact capable of measurement but without noticeable consequences.

Slight Impact: An impact which causes noticeable changes in the character of the environment without affecting its sensitivities.

Moderate Impact: An impact that alters the character of the environment in a manner that is consistent with existing and emerging trends.

Significant Impact: An impact which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.

Profound Impact: An impact which obliterates sensitive characteristics.

The quality of potential visual and landscape impacts are assessed according to EPA guidelines as follows:

Positive: A change which improves the quality of the environment.

Neutral: A change which does not affect the quality of the environment.

Negative: A change which reduces the quality of the environment.

Potential impacts arising from a proposed development may also be considered in terms of duration as described in the EPA Guidelines:

Temporary: Impact lasting one year or less

Short-term: Impact lasting one to seven years

Medium-term: Impact lasting seven to fifteen years

Long-term: Impact lasting fifteen to sixty years

Permanent: Impact lasting over sixty years

5.8.2.2 Aspects of Impact

The primary method adopted for Landscape and Visual Impact Assessment relies largely on a comparative technique whereby accurate photomontages incorporating the proposed development are compared to the existing corresponding baseline photograph so that an assessment of impact can be made. This process or method refers largely to the visual aspects of impact which while forming the major part of one's landscape perception do not provide a complete assessment of the experience of the landscape change.

Landscape (Character) Impact

The 'landscape' aspect of impact assessment is generally much more subjective than the 'visual' aspect and could be described broadly as 'the human, social and cultural experience of one's surroundings'. Despite the extremely large part played by our visual experience in forming our views on 'landscape', one's perception and indeed memory play an important part also if the changes brought about in landscape character are to be understood.

Impact on the landscape arising from development has two distinct but closely related aspects. The first is impact in the form of change to the character of the landscape that arises from the insertion of the proposed development into the landscape. The combined impacts will elicit responses whose significance will be partially dependent on how people perceive a particular landscape and how much the changes will matter in relation to other senses as experienced and valued by those concerned.

In this case, where a harbour related structure is to be inserted within an existing harbour (alongside other 'similar' structures), it can be argued that the development is in keeping with the existing landscape and is therefore a less sensitive landscape issue than might otherwise be the case. Similarly, since the structure is proposed in order to continue or extend harbour activity, such arguments can again be made in support of the operational impacts of such development. In these circumstances the issues tend to revolve around questions of scale. However large elements in the landscape generally impact more than small elements and it should also be remembered that their impact can also be positive, sometimes to the point of being inspirational, as opposed to being negative, simply as a consequence of scale.

Landscape issues are often issues of perception, experience or belief which are subjective to the point where they cannot readily be assessed and certainly not using solely the parameters suggested within the EPA guidelines. In this instance, the subject is likely to be a significant development. However in terms of landscape impact, whether one considers it to be positive or negative will depend on one's personal opinion. The assessment of landscape impact therefore in itself becomes a more subjective assessment of the balance of such opinion.

Visual Impact

The second aspect, visual impact, in contrast to landscape character impact, is usually less subjective. Visual impact occurs by means of visual intrusion and / or visual obstruction and occurs on a spectrum from imperceptible to profound impact.

Visual obstruction is defined as the full or substantial blocking of a view by the development proposal or by constituent elements of the proposal.

Visual intrusion is concerned with the relative perception of visual impact based on the degree to which the proposed development impinges on a view without blocking it.

The magnitude of visual impact relates largely (but not exclusively) to the proportion of the field of view occupied by the proposed development – therefore generally speaking the closer the viewpoint, the greater the likely impact. Assessment of the quality of visual impacts is based on whether the development improves or reduces the quality of the view or the visual

environment. In circumstances where the change is considered to neither improve nor reduce the visual quality of the view, it may be termed a neutral impact.

Significance criteria

The EPA significance criteria outlined in 5.8.2.1 (above) refer to changes in the character and quality of 'the environment'. In this instance, 'the environment' referred to is likely to be experienced at a number of scales: the harbour area; the town, and; the coastal zone. This Chapter will therefore assess the impact of the proposal on the character and quality of the landscape and visual environment at these scales. It is perhaps also important to remember that the nature of the proposed development presents two distinctly different conditions for the operational stage: (a) the berth constructed and unoccupied, and; (b) the berth constructed and occupied - both of these conditions are assessed within this study.

5.8.2.3 Photomontage Methodology

Choice of Views

The preparation of the Dun Laoghaire Harbour Masterplan (Oct 2011) involved the preparation of a Strategic Environmental Assessment (SEA) with an accompanying Environmental Report which identified a number of key viewpoints considered important in assessing the impact of the overall Harbour Masterplan proposals.

The views illustrated for this assessment were chosen to accurately represent the likely visual impact of this current proposal from identified key viewpoints. In selecting the viewpoints for photomontage production, reference was made to: the current County Development Plan (protected views and prospects), and the Harbour Plan SEA and Environmental Report. A range of other views considered by the Council and/or the applicant to be potentially of significance in this instance were also considered for inclusion. Where appropriate the selected views have been adjusted to focus on the subject site for this proposed development and to illustrate its maximum impact.

Views from the public domain are given priority, particularly those from main thoroughfares and key views and prospects.

A range of both close up views and distant views are represented. It is not practical to represent views from all locations, however the selected views were considered to be important and representative having regard to examine the greatest likely impacts.

Following the selection of viewpoints, Modelworks Media were engaged to: photograph from the viewpoints; survey their location; prepare a 3D model of the proposals; render the views, and; prepare the photomontages.

The methodology used by Modelworks Media in the preparation of photomontages has been developed by leading specialists in this field including ModelWorks, in Ireland and the UK and is accepted by local authorities as an accurate and verifiable visualisation of likely impacts.

Photography of Site

Each of the selected viewpoints was photographed using a high resolution digital camera (up to 21 million pixels) set horizontally using a surveying level to eliminate any possible elevation error during the photomontage process. The angle of view represented in the planning application set is 73 degrees and is taken with a 24mm lens.

Each of the photomontages is represented and printed with the same horizontal angle of view and therefore there is consistency of scale and comparative size.

Survey of Camera Position and Recording of Direction of View

When each photograph is taken, the ground position is marked and the direction of view is recorded by reference to fixed points in the view.

The survey team then follows to record the camera position by GPS survey to an accuracy of +- 1cm northing and easting and to an accuracy of 2cm elevation.

The fixed reference points established in each photo are also surveyed to establish exact orientation of the view and to verify the photomontage process.

3D Computer Model

A highly accurate 3D computer model of the proposed development is created in auto cad directly from the architects drawings.

The Cruise Ship was a model representing the "Independence of the Seas" and specified as being 339m long with a beam of 39m. A model of this ship was used.

All materials and finishes were modelled as realistically as possible.

Rendering of Views

Rendering is the process by which the computer generates realistic images from the 3D model. A programme called 3D studio max is used for this and is accepted as the industry standard for architectural visualisation work.

All of the information recorded at the time the site photos were taken, that is, camera co-ordinates, angle of view, and direction of view, is programmed into 3D studio Max to generate matching renders for each view. This careful method ensures that the **size**, **position** and **height** of the proposed development in each photomontage are correct to an accuracy of 0.33% i.e. +/- 1mm on an A3 print.

Careful consideration is given to the direction of sunlight, time of day, weather conditions and distance of viewer, so that photomontages will match reality in terms of lighting, sharpness, density of colour etc.

Photomontaging

At this stage the rendered image of the proposed development is superimposed onto its matching photograph.

The mathematical accuracy is then double checked and verified by ensuring that existing prominent features (such as Church Spire) which are also modelled line up exactly in the photo.

Next we establish, which existing features, such as buildings, landscape and trees, are in the foreground of the proposed development and those that are in the background, i.e. which features will mask the development and which ones will appear behind the development. When it is found that the development is not visible due to foreground features, its outline is indicated in a red line.

The resulting photomontage having gone through this extensive procedure is an accurate and verifiable representation of the proposed development as viewed from the selected camera positions.

5.8.3 Landscape and Visual Matters

5.8.3.1 Receiving Environment

The Dun Laoghaire Harbour Company representing the wider Dun Laoghaire Cruise Stakeholder Group proposes to enhance the existing cruise berthing facilities at Dun Laoghaire Harbour in order to ensure the Harbour is in a position to attract 'next generation' cruise ships. While Dun Laoghaire is already a destination for cruise ships, the existing berthing facilities are inadequate to cater for these larger cruise ships which are expected to be up to 340 metres long.

The subject site location and geographic context:

The site of the proposed development is located within the confines of Dun Laoghaire Harbour. The harbour itself is located on the south Co. Dublin coast approximately mid-way between Dalkey island to the south-east and Dublin Port entrance channel to the north-west. Howth Head lies some 6km distant to the north-east across Dublin Bay.

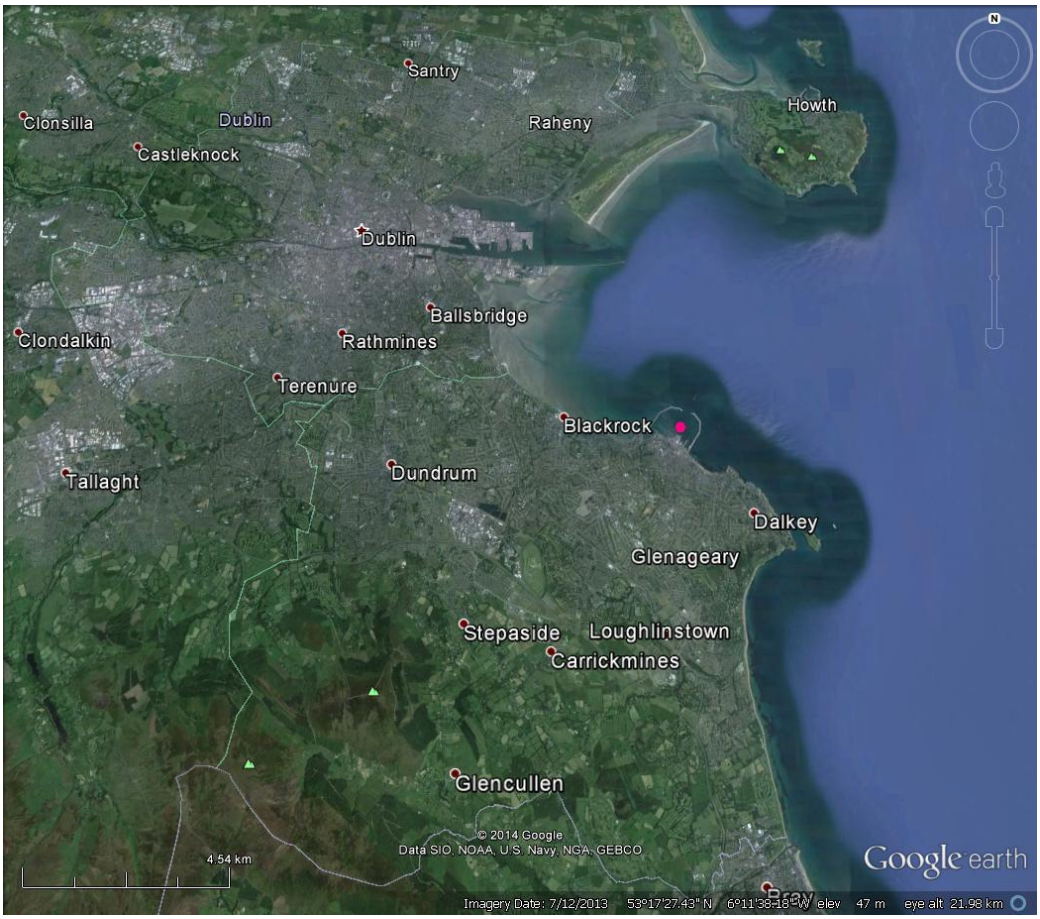

Figure 5.8.1: Geographic Context of Dun Laoghaire Harbour (indicated by red dot)

Dun Laoghaire town stretches out from the harbour area in a 180 degree arc of approximately 2km radius before giving way to the south Dublin suburbs of Blackrock, Foxrock, Cabinteely, Killiney and Dalkey. From Dalkey, the coastline runs southwards to Bray. From Blackrock in towards Dublin, the coastline is characterised largely by broad intertidal sands and mudflats backed by residential development. Moving inland to the south-west the built environment thins out above Dundrum, Stepaside and Carrickmines as the slopes steepen and the land rises up towards the Dublin Mountains. The Dublin Mountains rise to over 500 metres in places with peaks at Two Rock, Glendoo and Glencullen.

The Harbour and the Town

Dun Laoghaire occupies a shallow promontory at the southern edge of Dublin Bay where the coast changes from flat sandy beach to a more abrupt rocky shoreline. The harbour grew up over the last two hundred years, serving the greater Dublin area and taking advantage of the deeper water at this location.

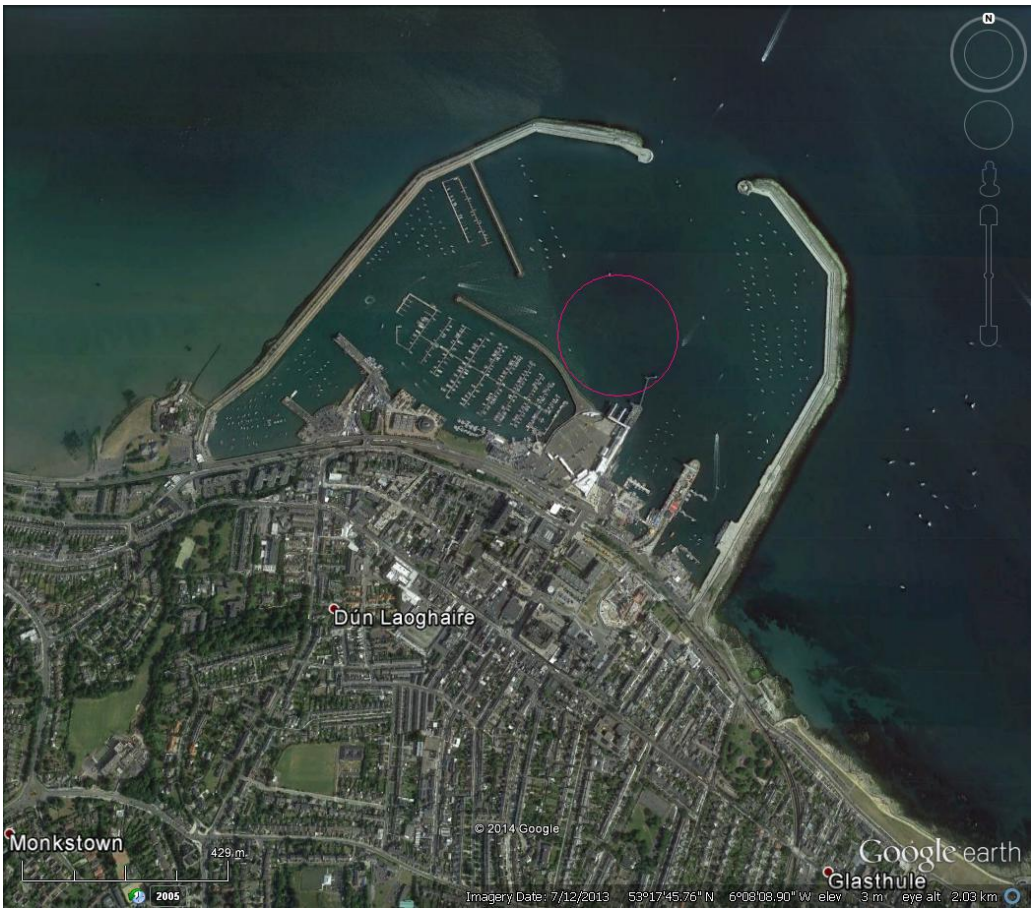

Figure 5.8.2: Aerial image of Dun Laoghaire Harbour

Dun Laoghaire Harbour is embraced and protected by the East and West piers, each of which is nearly a mile long and represent very significant recreational amenities for the town. The major part of the town's shore frontage (approx. 1.3km) is also embraced by the piers, reinforcing the close economic and physical landscape relationships between the harbour and the town. However public access into these areas is limited and somewhat fragmented. Access also tends to be by car and for specific harbour related purposes, such as visiting one of the yacht clubs.

The DART railway and the adjacent Crofton and Queens Roads along the coastline serve both town and harbour, however these also act as a barrier, separating the harbour from the town and limiting connections between them.

The harbour is connected along its southern edge by Harbour Road with development in the area being almost solely marine infrastructure such as; piers, sailing clubs, boat standings, repair yards, and transport buildings. These built elements are typically arranged as free-standing buildings/structures with associated outbuildings, car parking, open green space and planting, Several of the buildings are particularly noteworthy due to their historic status and/or architectural quality. They are typically 2-3 storeys maximum in height.

The urban form of the town, is by contrast arranged in a series of streets in an informal grid, centred around the main axes of George's Street running 'east-west' and Marine Road running 'north-south', with the latter providing the main link between town and harbour. The streets running back from the Crofton Road and Queens Road into the town, invariably do so at a gentle gradient upwards reflecting the general rise in topography up to the back of the town, while the 'east-west' streets are relatively level.

The town is designated as a major town centre and while most of its buildings marry in scale with the harbour's 2-3 storeys, a number of post-war, recent and current developments in the town centre area rise up to as much as 7 storeys. The spires of St. Michael's Church, Mariner's Church and the tower of the County Hall pierce this urban skyline.

The relationship between the harbour (contained as a flat expanse within its extensive piers), the town's skyline rising up behind it, and beyond this Killiney Hill and the Dublin Mountains, is a relationship that is most easily appreciated from the ends of the East and West piers when looking back towards the town. The subject site forms a centrepiece in the foreground of this view.

The subject site and adjacent existing structures/buildings

Despite its commercial origins, the harbour is both a large leisure recreation harbour and a working port. The proposed Cruise Berth site lies adjacent to the existing HSS ferry berth on St. Michaels Pier close to its junction with the East breakwater. The existing berth, its vehicle marshalling areas and the ferry terminal building together form a substantial and somewhat dominant ferry terminal complex at the centre of the harbour area. As outlined earlier, the existing HSS ferry berthing facilities are scheduled for removal prior to the proposed Cruise Berth facility becoming operational.

Figure 5.8.3: Marina landscape - the Royal Irish Yacht Club with the town beyond

Figure 5.8.4: The HSS ferry berth looking back towards the town

Figure 5.8.5: Looking across the harbour from the end of the West pier towards the town

Figure 5.8.6: View from the east breakwater - the harbour entrance with Howth in the distance

Figure 5.8.7: The West pier harbour entrance light looking towards the East pier

Views and Prospects

The Environmental Report accompanying the Strategic Environmental Assessment, published with the Harbour Masterplan (October 2011), outlined a broad range of key views and prospects which should be assessed in relation to the broad range of development proposed under the Masterplan. These are outlined in Figure 5.8.8 (near views) and Figure 5.8.9 (distant views) below.

Figure 5.8.8: Potential Near Views

Most of the views in Figure 5.8.8 (above) are not relevant to the current development proposal for the Cruise berth as they are oriented away from the subject site. However the diagram is a good indicator of the key sensitivities regarding views in the general Harbour area. A number of the preserved views illustrated, listed in the current County Development Plan (shown in blue) are included in the assessment, some of them being adjusted to focus as appropriate on the subject site. Two preserved views considered appropriate for assessment are illustrated from slightly different locations in order to show the greater impact which would be expected from adjacent locations - the preserved views from the ends of the East and West piers are illustrated from locations short of the pier ends, so that the development is illustrated rather more from the side than end-on.

Figure 5.8.9 below outlines the potential areas from which distant views may be obtained. While the construction of the proposed berth itself does not merit consideration of these viewpoints, the large scale of berthed cruise ships and their potential visibility does hold out the prospect of distant views from a number of these viewpoints being worthy of assessment. All of the viewpoints indicated in Figure 5.8.9 are from the coastline skirting Dublin Bay. Three distant viewpoints have however been included for assessment and are: from Sandycove; from Burton Road (near the car park) at Killiney Hill, and from Strand Road, Sandymount, Dublin. These are considered to be reasonably representative of the range of distant views which are likely to be impacted by the presence of a cruise ship.

Figure 5.8.9: Potential Distant Viewpoints

Views from sea on the approaches to Dun Laoghaire Harbour are also suggested in the SEA/Environmental Report as being worthy of consideration for assessment. These are not however considered practical given the accepted and exacting methodology for photomontage preparation. The two coastal viewpoints selected and the two views from the East and West piers are however considered to represent some aspects of such viewpoints if they were fully feasible.

5.8.3.2 Characteristics Of The Proposal

A description of the proposed development is set out in Chapter 3 and may be summarised in terms of its relevance to the assessment of visual impact, as follows:

There are two main aspects to the proposed development.

1. The Maritime works – which for the purposes of assessing landscape and visual impact can be sub-divided into three main parts:

   (a) the creation of the approach and inner navigation channels and the vessel turning circle – all of which will create visual impacts during the construction stage;

   (b) the new quay, approx. 435 metres long, constructed on an approximate north-south alignment from the east breakwater, pointing towards the harbour entrance. This is designed to provide for;

   (c) the periodic berthing of cruise ships (approx. 340m long and 48m beam)

The quay is comprised of three sections: the quay itself, a causeway for access, and the mooring dolphins. The anticipated form of construction of the new quay will be an open pile structure with suspended concrete quay platforms. A series of breasting and mooring monopiles will be connected using a steel walkway structure. The main quay construction will include lighting columns on the centre line. The structure will also accommodate water connections / firefighting hydrants, power connection for maintenance work, rescue buoys, ladders for

emergency access from the water, CCTV cameras, and a navigation light on the outermost monopile.

Local adjustments to the marina eastern breakwater are required at the interface of the marina eastern breakwater structure and the proposed new quay structure. However, no significant change in breakwater level is envisaged.

2. The Landside works

The land side works will comprise the access ways and infrastructure required to handle passengers transferring to and from the cruise ships once they have arrived off the vessel at berth. Passenger traffic between vessel and shore will include a combination of pedestrians, shuttle bus and/or shuttle cars. It is envisaged their onward journey will be a made up of a combination of; pedestrians, coach passengers, taxi, minibuses and (free) shuttle service to/from the town.

The proposed landside works include:

(a) A shared use pedestrian and private vehicle access zone located adjacent to the existing Marina together with a new boardwalk parallel to this shared area, complete with new feature lighting;

(b) A new pedestrian footpath with high quality concrete pavement along Harbour Road providing linkage with the existing Terminal Plaza complete with new feature lighting;

(c) A 20 coach drop off/ pick up area within a dedicated section of the existing HSS ferry marshalling area;

(d) A coach overflow holding area placed within Accommodation Walk which straddles the Old Quay Bridge at the west of the Harbour;

(e) Local modifications to an existing retaining wall adjoining the car park located adjacent to the Old Quay area also at the west of the Harbour;

(f) Demolition of certain harbour infrastructure such as a reinforced concrete boundary wall along the HSS Yard boundary, the motorist's administration building, a section of the port-cochere canopy structure, plus tree removal and replacement

(g) Construction of new buried utilities and services, and miscellaneous lighting columns and signage for vehicles and non-motorised users.

5.8.3.3 Potential Impact of the Proposal

Construction Phase

Potential visual impacts during the construction phase are related to temporary works, site activity, and vehicular movement within and around the boundaries of the subject site. These will differ in form and impact relative to whether they are maritime construction works or landside construction works. The proposed construction works and methodology (including an indicative construction programme) are included in Chapter 3 of the EIS.

Maritime construction works in general

The channel dredging work will be undertaken as the first activity and this will be followed by construction of the new quay structure (including ancillary works within the harbour).

Dredging works – The channel dredging works are a major part of the construction and will impact visually within and to a lesser extent beyond the harbour area. However, in terms of visual impact these works are unlikely to be significant. They will be undertaken using a

medium sized trailer dredger which is likely to have a loaded draft of approximately 7m and a hopper capacity of 5,000m³. Once loaded the dredger will sail to the Burford Bank Licensed Marine Disposal "Spoil Ground" area in Dublin Bay, approximately 4 nautical miles distant, where the material will be deposited using normal bottom discharge methods.

The new Quay construction

Piling - all piling on the project will be in the form of steel tubes filled with reinforced concrete. The main quay structure and access causeway will be supported on a grid of 750mm-1000mm diameter pile. Large diameter monopiles will be used to take mooring and breasting loads away from the main quay area. Piling operations will be undertaken from a heavy duty crane barge moored using spud legs and anchors if required.

The deck structure is in two parts:

(a) the main quay which will be used for berthing operations and for the Embarkation / disembarkation of passengers

(b) an access causeway which provides access for passengers and light vehicles from the land to the quay.

Both parts of the structure are designed to maximise the use of precast concrete elements to provide a permanent shutter and a working platform for the subsequent in-situ works.

After completion of the reinforced concrete slab the bollards, fenders and other furniture will be lifted into position and bolted to the deck.

A range of floating plant items and vessels will be employed during the construction, including:

1. Dredger vessel up to 7m draught

2. Barge mounted excavator

3. Barge mounted piling crane pile hammers, drill heads, plus equipment/ small plant

4. Pile delivery barges – working and backup storage

5. Service pontoons for health and safety provisions

6. Work boat/ tug

7. Service launch vessels for routine access from the existing quaysides to work areas over water

8. Support launch vessels for surveys and monitoring staff

Landside construction works

Vehicular movement will increase in the immediate area, and temporary vertical elements such as hoarding etc, will be put in place. All construction impacts will be temporary, and will include the following:

- Demolition of existing structures/buildings
- Site preparation works and operations
- Site infrastructure and vehicular access
- Construction traffic

- Dust and other emissions
- Temporary hoardings (2.4 metres in height)
- Temporary site lighting
- Temporary site buildings (including office accommodation)
- Cranage

Operational Phase

The proposed development will consist of the insertion of a new berthing facility (and associated works) onto the subject site as outlined in 5.8.3.2 above. Landscape and Visual impacts would be expected to arise as outlined below:

Maritime elements

Navigation markers for the approach and inner navigation channels and the vessel turning circle – the visual impact of these would be expected to be slight and are entirely in keeping with the existing harbour function and fabric.

The new quay (approx. 435 metres long) – this is an extensive but relatively low level structure which would be expected to be visible from within, but not from outside, the harbour area. However while it is longer than any similar structure currently within the harbour, its nature and function would not be considered alien and it would not be expected to obstruct existing views.

The periodic berthing of large cruise ships (approx. 340m long and 48m beam) brings a new scale of vessel into the harbour area - this would be expected to make a significant impact, though this would be of a temporary and transient nature. The source of that impact, arising from the presence of a sea-going vessel would again not be considered alien to the harbour. However its scale could potentially be over-bearing to some but exhilarating to others. The harbour area (inside the East and West piers) is relatively expansive and the scale of the harbour may be considered large enough to comfortably accommodate such a vessel.

Landside elements

The access ways and infrastructure required to handle passengers transferring to and from the cruise ships once they have arrived off the vessel at berth will create a degree of change, refurbishment and new finishes and facilities. Passenger traffic between vessel and shore will include a combination of pedestrians, shuttle bus and/or shuttle cars and the new works are required to accommodate this traffic from the new berth. The impacts created would not be considered to be greatly different in nature to those created by the former HSS service. However the proposed facilities require to be tailored to the shift in character, numbers, periodicity and onward transport modes of the passengers. For example, while the more frequent HSS service would have generated predominantly car traffic, it is envisaged that the cruise ship passengers' onward journey will be primarily pedestrian or by coach, taxi or minibus.

The 'Do Nothing' Approach

If the proposed development were not to proceed, the current walkways, access routes and car parking/marshalling areas would remain in their present form. The economic implications for the harbour as set out elsewhere in this document and its continued disuse would also presumably lead to gradual degradation of the harbour facilities and fabric in this area. While a range of existing harbour activities would substantially continue, the reduced harbour traffic and patronage, particularly following the termination of the Stena HSS ferry operation, could impact negatively on Dun Laoghaire Harbour's substantial contribution to the vitality of the town.

Cumulative Effects

Current guidelines for Landscape and Visual Impact Assessment, suggest that a determination should be made as to whether cumulative effects are likely to occur – these are outlined in the current GLVIA guidelines (3rd edition) as 'additional effects caused by the proposed development when considered in conjunction with other proposed developments of the same or different types'. While these were originally conceived as an important consideration in the context of developments such as wind farms and their relevance for other types of development is more difficult to determine, it has become accepted that a determination generally needs to be made as to whether any likely pending or permitted development of a similar nature will have any bearing on the assessment of the proposed development. This is subject to the assessor's judgement in the matter.

For this proposed development, other potential developments considered likely to create 'additional effects' could include:

- Future intended development by Dun Laoghaire Harbour as outlined in the Dun Laoghaire Harbour Masterplan 2011-2030
- The Urban Beach and Floating Pool Facility at Berth 1 (East Pier) for which Planning Approval was granted on 28th November 2014.

The current Cruise Berth proposal is an objective of the Dun Laoghaire Masterplan 2011-2030 and is designed to accommodate the other aspects of the Masterplan - the proposal could not therefore be considered to cause any additional effects when viewed in the context of the Masterplan being realised.

The proposed development may cause additional effects when viewed in the context of the approved Urban Beach and Floating Pool project. In the event of the Beach and Pool facility having been constructed and open for business before the delivery of the current Cruise Berth proposal, the subsequent presence of the berthing facility is unlikely to create any additional impacts upon the Beach and Pool, patrons or staff. However its construction would be expected to cause additional negative impacts, albeit on a temporary basis. The arrival and presence of a large cruise ship would however be expected to enhance the experience of the Beach and Pool patrons.

5.8.3.4 Avoidance, Remedial Or Reductive Measures

Construction Phase

Given the openness of the site, particularly within the harbour area, the temporary works, accommodation, plant and machinery required for the construction will be visible during the construction phase. In my experience, such construction-related elements are generally viewed as a temporary and an unavoidable feature of construction in any setting and not unusual in the context of a working harbour. However the description of the proposed development set out in Chapter 3, outlines aspects of the proposed Construction Methodology included to assist in reducing impacts across the site area and beyond. Temporary hoarding will be used to minimize visual impact at ground level during the construction phase. Mitigation measures for the construction period largely revolve around the implementation of appropriate site and construction management procedures – such as the control of lighting, storage of materials, placement of compounds, control of vehicular access, and effective measures to control dust, dirt and other emissions.

Operational Phase

The proposed scheme is designed to integrate well within its existing harbour context. This will be accomplished through:

- positioning, modelling, detailing of the quay structure and ancillary elements, in order to assist in the visual integration and reduction of its apparent mass.
- use of appropriate colour and materials.
- appropriate detailing to assist in the integration of the proposed external structures with adjacent existing buildings, structures and surfaces.
- rationalisation of all site furnishings and other visual clutter.
- provision of refurbished pedestrian spaces at ground level, linking the proposed berthing facility with the town's public realm infrastructure.
- retention and provision of public uses within the scheme, in order to encourage public access and permeability.
- replacement of tree planting affected by the works.

The scheme is designed specifically to provide berthing facilities for a new generation of large cruise ships. There is little (if any) mitigation within the scheme possible to reduce the expected significant (but transient) impacts created by the berthing of such vessels.

5.8.3.5 Predicted Impact of the Proposal

The development itself will impact on the landscape to varying degrees. Due to the nature of the development such impacts would be expected to be long term. In landscape terms, there are three inter-related aspects to be addressed in considering the success (or otherwise) of the design proposals, namely:

- The perceived character of the area – how it is impacted by the proposal
- The proposed visual, social and cultural amenity
- The proposed views of the berth structure (and berthed cruise liner), relative to existing views.

Construction Phase

The proposed construction works will impact significantly and somewhat negatively on the visual environment within the harbour area over the period of construction. The works will be apparent through the presence of the required temporary structures, site accommodation, site storage, plant and machinery operating in and around the site area. The works will not significantly affect existing views from the piers back towards the town or the general views of the harbour area from the town, its hinterland or the adjacent coastline.

There will be slight and negative amenity impacts within the harbour area during the works. However, while existing pedestrian access for enjoyment of the public areas in the harbour area will be affected, this is limited to the works areas around the western end of the existing ferry terminal building up towards the proposed quay structure adjacent to the East breakwater – these are limited to the construction period and therefore of temporary to short term duration.

Operational Phase

Landscape Character Impacts

The photomontages produced to inform the visual impact assessment give a clear indication of the scale and nature of the proposed development. Ultimately the development consists of a relatively long, low and slender berthing structure extending out into the large and open expanse of the harbour waters. This is in keeping with the general nature of harbour structures so would not be considered to be inherently negative. The new addition will therefore be initially noticeable when viewed from within the harbour area. Despite being slightly visible from higher ground behind the town (refer to View 1 from Killiney Hill) it will not however be generally discernible from outside the harbour area.

The removal of the existing HSS berthing structures will be discernible from the town (Marine Road), Sandycove and Killiney Hill as well as the East and West piers and will impact positively from these areas. However, while the removal of these structures will yield a positive impact on the overall landscape character of the harbour area and beyond, it should be remembered they do not form a part of this proposed development.

The arrival into the harbour of a large cruise ship will have a significant impact on all existing views towards the harbour. A proportion of other harbour users may consider the sheer scale of the docked ship to be negative given that the vast majority of other vessels using the harbour are small by comparison. Size and shadow casting are of course effects which will be experienced by other harbour users. However, they will be temporary and rarefied effects, with ships more often not docked than docked. However a docked ship is of course a 'natural' and appropriate aspect of the harbour and its backdrop - the expanse of sea around it. It is an expected feature and affirms the purpose of the harbour. The scale and finish of the cruise ships provided for is impressive and could not generally be considered negative. Contrary to the frequent experience of other harbour users, the occasional experiences of the general public from the public accessible areas is likely to be very much more positive.

Assessment of Visual Impacts

A number of photomontages have been prepared which clearly illustrate the visual impact on the surrounding landscape. The viewpoints have been selected in consultation with Dun Laoghaire Rathdown County Council Planning Department. They are included in Appendix 5.8.1 of this document. The existing view from each viewpoint is illustrated together with the proposed development as seen from the same viewpoint. The location of each viewpoint is illustrated on the accompanying location map.

For each view, the magnitude and quality are assessed and summarised below. The design life of the structure (in excess of 60 years) means that all visual impacts are assessed as 'permanent', however they may realistically be considered as 'long term' impacts - refer to the significance criteria relating to duration (5.8.2.1).

The operation of the berth involving the arrival, berthing and departure of ships (up to the illustrated scale) will be of a variable nature and duration throughout the design life of the berth. For each view, the additional periodic impact of visiting berthed ships is represented by the cruise ship, 'Independence of the Seas' which is the design vessel for the berth, so it is the most appropriate ship to use. Its overall length is 339m and its beam is 38.6m.

Photomontages:

View 1a - Existing View

This view from Killiney Hill Park is a distant view looking north-west towards the town and the harbour which occupies the centre of the image. The East and West piers are clearly defined with the existing ferry terminal building and HSS berthing structures visible left of centre.

View 1b - Proposed View

The alignment of the proposed quay and associated monopoles are now visible but are in keeping with the harbour context. The development occupies only a small portion of the field of view therefore the proposed development is assessed as **slight and neutral** from this viewpoint.

View 1c – Proposed View (including representative berthed Cruise ship)

The docked ship is clearly visible and though it actually occupies a small portion of the field of view, it will register as an appreciable additional and not unwelcome presence.

The visual impact from this location will be **moderate and positive**. This impact will be **temporary** in duration.

View 2a - Existing View

This view from Sandycove is a moderately distant view looking west towards the town and the harbour which occupies the centre of the image. The East pier is clearly defined running horizontally from left to right with the existing ferry terminal building and HSS berthing structures visible left of centre. The twin chimneys of the ESB power station at Poolbeg are visible in the distance beyond the harbour.

View 2b - Proposed View

The proposed new berthing structures are not visible. The proposed development is assessed as having **no impact** from this viewpoint.

View 2c – Proposed View (including representative berthed Cruise ship)

The docked ship is clearly visible and it occupies a relatively significant portion of the field of view. As such it will register as an appreciable additional presence and while it can be considered a positive addition, albeit a temporary one, it has the effect of blocking the view of the ESB twin towers at Poolbeg. This may in itself be considered by many to be a positive effect, however the chimneys are a long term landmark in this view.

The visual impact from this location will be **significant and neutral**. This impact will be **temporary** in duration.

View 3a - Existing View

This view is from the lower end of Marine Road in Dun Laoghaire town. The former Kingstown railway terminal is in the centre of view with the existing ferry terminal and HSS berthing structures to the right of view.

View 3b - Proposed View

The only discernible change to the view is the minor effect of the removal of the existing HSS berthing structure to the extreme right of view however this is not part of the proposed development. The proposed development is therefore assessed as having **no impact** from this viewpoint.

View 3c – Proposed View (including representative berthed Cruise ship)

The upper decks of the docked ship are visible over the ferry terminal building. However they are not particularly dominant and only occupy a relatively small portion of the view. The form of the ship is not incongruous and is entirely in keeping with the nautical character of this part of the town. The immediacy of the vessel is quite striking and will act as a very positive draw down to the harbour area.

The visual impact from this location will be **moderate and positive**. This impact will be **temporary** in duration.

View 4-1a - Existing View

This view is from the East pier of the harbour looking back towards the town to the left of view. The expansive scale of the harbour area is obvious. The existing HSS berthing structures are fairly prominent in the left part of the view.

View 4-1b - Proposed View

The proposed new cruise berthing structure is visible near the horizon line and while it is extensive it is not in any way incongruous. The proposed development affects only a small part of the field of view. Overall the visual impact from this location is **slight and neutral**.

View 4-1c – Proposed View (including representative berthed Cruise ship)

The docked ship is clearly visible and occupies a relatively significant portion of the field of view. As such, it is likely to register as an additional and positive presence, particularly from this viewpoint which is predominantly experienced by recreational walkers.

The visual impact from this location will be **significant and positive**. This impact will be **temporary** in duration.

View 4-2a - Existing View

This view is the same as View 4-1a but taken at low tide to check for any additional appreciable impacts arising.

View 4-2b - Proposed View

At lower tide level, there is a very small increase in visibility of the proposed new quay structure and monopoles. However, the difference is effectively imperceptible relative to the assessment at higher tide level (View 4-1b).

View 4-2c – Proposed View (including representative berthed Cruise ship)

At the lower tide level, there is no appreciable difference in the view relative to the assessment at higher tide (View 4-1c).

View 5-1a - Existing View

This view is from the West pier of the harbour looking back towards the town to the right of view. The expansive scale of the harbour area is apparent. The existing skyline of the town is more prominent in this image.

View 5-1b - Proposed View

The proposed new cruise berthing structure is visible near the horizon line and while it is extensive it is not in any way incongruous. The changes brought about by the proposal affect only a small part of the field of view. Overall, the visual impact from this location is (as for View 4-1b) **slight and neutral**.

View 5-1c – Proposed View (including representative berthed Cruise ship)

The docked ship is clearly visible and occupies a relatively significant portion of the field of view. As such, it is likely to register as an additional and positive presence, particularly from this viewpoint which is predominantly experienced by recreational walkers.

The visual impact from this location will be **significant and positive**. This impact will be **temporary** in duration.

View 5-2a - Existing View

This view is the same as View 5-1a but taken at a lower tide level to check for any additional appreciable impacts arising.

View 5-2b - Proposed View

At lower tide level, there is a very small increase in visibility of the proposed new quay structure and monopoles however the difference is effectively imperceptible relative to the assessment at higher tide level (View 5-1b).

View 5-2c – Proposed View (including representative berthed Cruise ship)

At the lower tide level, there is no appreciable difference in the view relative to the assessment at higher tide (View 5-1c).

View 6a - Existing View

This is a distant view from Strand Road in Sandymount, Dublin. The West pier from Dun Laoghaire reaching out to sea to the left of view is extensive and clearly identifies the harbour area in the distance.

View 6b - Proposed View

The proposed development is not visible. There is therefore **no impact** from this viewpoint.

View 6c – Proposed View (including representative berthed Cruise ship)

The scale of the docked ship at this distance is impressive and entirely in keeping with the coastal/nautical context. The ship in reality however, occupies only a small portion of the field of view and impact is therefore assessed as **slight and positive**. This impact will be **temporary** in duration.

Summary of Landscape and Visual Impacts

The predicted impacts for the development itself (i.e., the physical, constructed and long term/permanent elements) are assessed for half of the views as **slight and neutral** and for the other half as **no impact**.

The periodic/temporary introduction into the harbour of a cruise ship, creates impacts which range from **slight to significant** and which are assessed as **positive** in five of the six views. The sixth view (View 2c), is assessed as **significant and neutral** – this is largely due to the effect of the ship blocking the existing view of the twin towers at Poolbeg in the distance – albeit on a temporary basis.

Broadly therefore, the longer term impacts are at worst, slight and neutral – the nature of the proposed development being in keeping with the existing harbour context. The arrival of large cruise ships on a temporary 'visiting' basis is on balance assessed as a positive impact.