ENVIRONMENTAL IMPACT ASSESSMENT REPORT

NON TECHNICAL SUMMARY

Spencer Dock, Block 2, Dublin 1

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1.0 INTRODUCTION

This Environmental Impact Assessment Report (EIAR) has been prepared in support of a planning application for a residential development at City Block 2, Spencer Dock, Dublin 1.

This document is a summary of the information contained in the EIAR. For detailed information and key mitigation and remedial measures please consult the full EIAR document.

2.0 PURPOSE OF THE EIAR

The objective of this EIAR is to identify and predict the likely environmental impacts of the proposed development; to describe the means and extent by which they can be reduced or ameliorated; to interpret and communicate information about the likely impacts; and to provide an input into the decision making and planning process.

The EIAR is the primary element of the Environmental Impact Assessment (EIA) process and is recognised as a key mechanism in promoting sustainable development, identifying environmental issues, and in ensuring that such issues are properly addressed within the capacity of the planning system.

3.0 REQUIREMENTS FOR AN EIAR

Projects needing environmental impact assessment are listed in Schedule 5 of the Planning and Development Regulations 2001.

Schedule 5 of the Planning & Development Regulations 2001 cites the size thresholds over which certain types of development require an EIAR to be prepared as part of the planning application process.

The proposed development falls within the project class 10(b)(iv) 'Urban Development', though the site is well below the mandatory size threshold for this type of project. However, given the nature and extent of development proposed, in pre application discussions with the Planning Authority (Dublin City Council) it was agreed that in this instance an EIAR was warranted. It was considered the opinion of the Planning Authority that whilst a sub-threshold development, it may have significant effects on the environment due to its height in particular. In this context the EIAR has been prepared.

The following components are addressed in the EIAR:

- Introduction and Methodology,
- Project Description and Alternatives Examined,
- Population and Human Health,
- Archaeology, Architecture and Cultural Heritage,
- Biodiversity (including flora and fauna),
- Land and Soils,
- Water,
- Air Quality and Climate
- Noise and Vibration,
- Material Assets Traffic and Transport & Utilities,
- Material Assets Waste;
- Interactions Between Environmental Factors,
- Mitigation and Monitoring Measures,
- Interactions;
- Risk Management;

It is necessary to examine each of these sections of the environment with respect to the impacts that the proposed development may have on them.

In addition to the information contained in the EIAR a number of other standalone reports assessing environmental impacts are submitted with the planning application documentation. These documents have been considered in the preparation of the EIAR. These include:

- Traffic Report and Mobility Management Plan;
- Waste Management Statement for Construction and Operational Phases;
- Construction Management Plan;
- Engineering Services Report;
- Demolition Method Statement;
- Flood Risk Assessment;
- Sustainability and energy efficiency report;
- AA Screening.

4.0 PROJECT DESCRIPTION AND ALTERNATIVES EXAMINED

The subject site comprises of brownfield lands and the North Lott's Pumping Station comprising of 1.26 ha. The pumping station will be retained and protected as part of the works. The proposed site and building layout has also been informed by the presence of the pumping station.

The subject site comprises of Block 2B and 2D as set out in the SDZ Planning Scheme.

Planning permission has been approved on the site under Reg. Red. DSDZ2896/18 and as amended by DSDZ4279/18 for 349 no. residential units and a 100 no. bedroom aparthotel development.

The western part of Block 2 which is outside the application boundary comprises of lands owned by CIE.

The site is bound to the north by Sheriff Street, to the south by Mayor Street, to the east by New Wapping Street and to the west by a new street.

The subject site is located in an emerging area for high density residential and commercial development with high quality public transport services. The location of the subject site is identified for re-generation as set out in the North Lotts and Grand Canal Dock SDZ Planning Scheme and has the potential to provide for significant residential development in this part of the city.

The proposed development seeks amendments to the previously permitted development permitted under Reg. Reg. DSDZ2896/18 and as amended by Reg. Ref. DSDZ4279/18. The proposed development comprises of the reconfiguration of the permitted residential scheme to provide for an additional 115 no. units increasing the total number of residential units from 349 to 464 no. The total breakdown of units will comprise of 229 no. 1 bed and 235 no. 2 bed units (18 2 bed three person and 217 2 bed 4 person) with ancillary residential amenity spaces. The proposed residential accommodation will also include the provision of 2 no. courtyard areas and roof terraces to serve the future residents. The proposed development will also provide for internal communal space.

The proposed development also includes the change of use of the permitted aparthotel to shared accommodation. The proposed shared accommodation will provide for 120 no. bedrooms (200 bedspaces) comprising of 2 no. studios (single occupancy), 46 no. studio units (double occupancy), and 36 no. 2 bedroom units. The proposed shared accommodation development also include the provision of ancillary communal space to serve the residents and a café unit at ground floor level. It is proposed to manage the shared accommodation development separate to the residential accommodation on the site. The proposed shared accommodation scheme will contain its own communal space and roof terrace to serve the residential units.

Alternatives Examined

The presentation and consideration of various alternatives investigated by the project design team is an important requirement of the EIAR process. The Examination of Alternatives had particular regard to:

- alternative designs; and
- alternative processes.

Alternative Designs

Alternative design and layouts for the subject lands were considered over approximately a 12 month period up to the finalisation of the scheme. A number of different design options were considered for the site. In addition, the proposals for the subject site were the subject of detailed discussions with the Planning Authority prior to the principles of the finalised scheme being agreed.

The scheme as presented to ABP addressed the following concerns raised in the last pre application meeting with Dublin City Council.

- Increase in the percentage area of the commercial floor area
- Reconfiguration of internal communal space for residents
- Relocation of bin store area to the north of the site
- Increased level of detail on the quantum and provisions of the communal and public open space area
- Increased detail on the boundary treatments on the site
- Breakdown of residential service facilities and amenity areas
- Increase in dual aspect ratios
- Revised design to the north facing units
- Details of the proposed materials refined in response to the overall context of the development

The relevant environmental issues and potential effects which informed this consideration primarily related to biodiversity, water, human health and landscape and visual impact.

A key consideration is the requirement to demonstrate to the Planning Authority that the proposed development is consistent with objectives for the site set out in the LAP and that the design of the development is of exemplar quality.

Alternative Processes

The EIA Guidelines state that within each design solution there can be a number of different options as to how the processes or activities of the development can be carried out. These can include management of emissions, residues, traffic and the use of natural resources. A key consideration in the various options which were considered, as discussed above, was the overall land use mix and layout of the development resulting in potential impact on human health and the presence of underground services resulting in impacts on the water supply in the area. Where relevant, alternative processes are considered in each Chapter of the EIAR.

5.0 POPULATION AND HUMAN HEALTH

Human Beings comprise an important aspect of the environment to be considered. Any significant impact on the status of humans, which may be potentially caused by a development proposal, must therefore be comprehensively addressed as part of the Environmental Impact Assessment.

The construction phase of the proposed development is likely to result in a positive net improvement in economic activity and residential development in the area of the proposed development site particularly in the construction sector and in associated and secondary building services industries.

The proposed development will result in a construction period of approximately 8-12 months on top of the currently construction phase which is currently underway. Thus, the construction phase is likely to significantly enhance economic activity in the construction sector. It is anticipated that a substantial

number of jobs will be created directly on site. The construction of this development would also support job creation in building supply companies as well as have a positive impact for local businesses associated with the increase in spending on goods and services in the area.

The construction phase will also have secondary and indirect 'spin-off' impacts on ancillary support services in the area of the site, such as retail services, together with wider benefits in the aggregate extraction (quarry) sector, building supply services, professional and technical professions etc. These beneficial impacts on economic activity will be largely temporary but will contribute to the overall future viability of the construction sector and related services and professions over the phased construction period.

The construction phase of the project may have some short-term negative impacts on local businesses/residents during the construction phase. Such impacts are likely to be associated with construction traffic, possible nuisances associated with construction activity and noise impact. Mitigation of these potential impacts through construction management (such as methods employed, hours of operation) is an established approach. Such impacts will be short term and in the longer term, the completed scheme will have long-term beneficial impacts for local businesses, residents and the wider community. The construction methods employed and the hours of construction proposed will be designed to minimise potential impacts. These issues and appropriate mitigation measures are addressed in Chapter 13 of the EIAR, in the Construction Management Report, Demolition Method Statement and the Waste Management Statement which accompany the application.

In the longer term, the completed scheme will have long-term beneficial impacts for local businesses, residents and the wider community. Overall, the proposed development will result in the construction of new, high quality residential scheme. The proposed residential development will have a significant positive impact on economic activity in the area. It is estimated that the development will support on average, of at least 20-30 workers associated with the Shared Accommodation Scheme.

The provision of additional office based employment floorspace as part of the proposed development, is consistent with the provisions of the Dublin City Development Plan 2016-2022 and the North Lotts and Grand Canal Dock Planning Scheme and will have a positive impact in terms of the existing economic activity in the wider study area.

The proposed development will provide for much needed residential accommodation in an area close to the city centre and well served by public transport. The proposed development will significant increase the residential provision in the area providing for 464 no. residential units and 200 no. shared accommodation bedspaces. In addition, the increase in population as a result of the development will enhance the overall activity and vitality of the area as a residential location and will contribute to the existing and adjoining commercial uses in the area.

The construction phase of the proposed development is unlikely to have any significant impact on social patterns within the surrounding area. Some temporary additional local populations may arise out of construction activity. However, these impacts are imperceptible, temporary in nature and therefore not considered significant.

6.0 ARCHAEOLOGY ARCHITECTURE AND CULTURAL HERITAGE

Chapter 4 assesses the impact of the proposed development on features of archaeological, architectural and cultural heritage merit, and proposes measures to safeguard these features.

There are no recorded archaeological monuments within the proposed development site. However, previous archaeological investigations in the vicinity have revealed significant discoveries of Late Mesolithic and Middle Neolithic fish traps on the NCC / Spencer Dock development site, c. 160m southwest of the proposed development.

Archaeological monitoring was undertaken in the northern portion of the proposed development in 2011/2012, revealing archaeological features in the form of two clusters of horizontal brushwoods and demonstrating the archaeological potential of this area. Excavation work within the southern portion of this proposed development site has the potential to reveal and directly impact similar waterlogged and

organic archaeological deposits and features as evidenced by the previous findings that were preserved by record within the northern boundary of the site.

Architecture

There are no designated architectural assets within the proposed development site. Several architectural assets related to the industrial heritage of the North Wall and Royal Canal area are recorded in the Record of Protected Structures of the Dublin City Council and in the National Inventory of Architectural Heritage survey. These structures are predominantly located along the water front of the canal and river wall, and will not be impacted by the development.

While a Victorian House is recorded by the NIAH survey 20m from the proposed development (NIAH no.: 50010196), it is not listed in the RPS of the Dublin City Council. There will be a moderate visual impact from the development to the setting of this structure. However, this change in the character of the streetscape will be mitigated by the overall positive impact of the redevelopment of the Docklands area.

Cultural Heritage

There are no cultural heritage assets within the proposed development site. Several structures related to the industrial heritage of the North Wall and Royal Canal area are recorded in the Record of Protected Structures of the Dublin City Council, the National Inventory of Architectural Heritage survey and the Dublin City Industrial Heritage Record. These structures will not be impacted by the development.

Avoidance, Remedial & Reductive Measures

The groundworks phase of works (bulk excavations) is currently being carried out as part of the permitted development (Reg. Ref. DSDZ4279/18). The works commenced in December 2018 and are expected to be finished by the end of July 2019. All of the groundworks have been monitored by an archaeologist (Rubicon Heritage Ltd) under licence number 18E0761, issued by the National Monuments Service of the Department of Culture, Heritage and the Gaeltacht (a copy of the method statement was also forwarded to the Dublin City Archaeologist). To date, no features of archaeological significance have been encountered (Jean O'Dowd & James Hession, Rubicon Heritage Ltd, *pers. comm*.). Archaeological monitoring is ongoing and will continue until the completion of the groundworks.

7.0 BIODIVERSITY (INCLUDING FLORA AND FAUNA)

A review of the biodiversity of the site was carried out by OPENFIELD Ecological Services and this included a study of existing information from the area and a site survey. The site survey was carried out in September 2018. September is within the optimal season for general habitat survey and so no constraints to carrying out a full assessment were encountered.

It was found that the site is not within or adjacent to any area that is designated for nature conservation at a national or international level. There are no plants recorded from the site that are listed as rare or of conservation value. There are no habitats that are examples of those listed on Annex I of the Habitats Directive. There are no alien invasive plant species as listed on Schedule 3 of SI No. 477 of 2011. The site can be described as artificial in nature and is nearly entirely covered with hard surfaces. There are no water courses on, or directly adjacent to, the site. Overall the habitats on the site have been evaluated as 'negligible value'. The site contains no suitable roost locations for Bats and surrounding urban habitats provide few resources for feeding.

Sustainable drainage systems (SUDS) will be used to attenuate surface water running off the site. Additional landscaping will compensate for the loss of habitat that will occur. With the suggested mitigation in place, the ecological impacts by this proposed development will be neutral. There are no impacts that could affect any area designated for nature conservation.

8.0 VISUAL IMPACT

The proposed development site comprises a vacant plot occupying the eastern half of City Block 2. It is part of a wider area within the Dublin Docklands North character area that has witnessed significant change in the last twenty years. It is a modern and changing urban landscape, where contemporary buildings have emerged from derelict and vacant city blocks that surround pockets of traditional terraced houses.

The existing site is well-contained visually - views of the existing site are most readily obtained from adjoining and nearby streets. Sheriff Street Upper defines the site's northern site boundary with partial views extending in both directions. Similarly, New Wapping Street defines the site's eastern boundary with partial views extending to North Wall Quay and beyond. Mayor Street Upper defines the site's southern boundary and affords partial views on both directions, which is also the route of the LUAS. In addition, there are glimpses of the site from immediately north along East Road – due to its angle of approach to Sheriff Street Upper, it is directly aligned with the site. Occasional glimpses towards the site occur within other parts of East Wall.

Most views towards the proposed development site are public views from nearby streets and open spaces. Key private views will be from the residential properties on New Wapping Street adjoining the site's eastern boundary, and from the modern Spencer Dock apartments at City Block 1, overlooking the site from the west.

The surrounding derelict/vacant City Blocks allow a significant degree of visual permeability through the Spencer Dock hub towards the proposed development site, notably from the south and southeast, though views will become heavily restricted in the future as each of these blocks is developed. At present, some such views also occur from south of the River Liffey, aided by the open panoramas across the river and vistas along the river.

This assessment of landscape and visual impacts has considered the proposed development in the landscape context of the following key planning documents/considerations.

The proposed development will incorporate heights of 7 no. storeys (27.5 m) to 13 no. storeys (46.8m) in Block 1 and incorporate heights of 7 no. storeys (27.5m) to 11 no. storeys (40.5m) in Block 2. Building finishes will be primarily brick and glass with coloured metal cladding/detailing. The proposed development will also a link bridge between the blocks at 6th floor level

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The proposed development has succeeded in reworking the permitted development in light of new planning policy and guidance on building heights to deliver a significant improvement to its architectural expression and contribution to the urban landscape of Spencer Dock while also optimising use of the land resource at a prime location within the central city.

In reworking the design of the permitted development, the proposed development has delivered significant enhancements that include the following:

- Recognising the city's diverse urban landscape
- Responding successfully to the scale and character of adjacent buildings, spaces and the local area
- Protecting and enhancing the city skyline
- Clustering taller buildings at the heart of a major city hub
- Contributing positively to the city's architectural heritage
- Providing a new local landmark and high quality public & communal spaces
- Delivering imaginative contemporary architecture in an appropriate context
- Reinforcing place-making and local identity
- Achieving high quality, inclusive, sustainable urban design
- Demonstrating excellence in the ordinary
- Animating streets with activity
- Providing character, legibility, variety and visual interest at street level
- Protecting and enhancing key views and prospects within the wider city
- Respecting the setting and visual qualities of the former railway buildings at North Wall Quay
- Protecting views south from the Spencer Dock area to landmark buildings at Grand Canal Dock – Boland's Mill and the Alto Vetro tower.

- Protecting views east along Mayor Street Upper to Point Square
- Avoiding/minimising harm to quality of existing views generally
- Avoiding poor visual amenity in the new public realm

As a result of these, the impacts of the proposed development upon landscape character are likely to be highly positive. Visual impacts will vary from neutral to highly positive, often in the short-term until neighbouring development substantially obscures the proposed development from view.

The proposed development will have no significant adverse effects upon designated views within the city or upon public visual amenity.

Visual Impacts: Sheriff Street Upper & New Wapping Street

The proposed development has a highly positive impact upon these views. The architecture is distinct from, but complements, its neighbours, exhibiting a boldly articulated roofscape and contrasting 'layered' elevations. It demonstrates a much greater degree of individuality, character and presence compared to the permitted development, significantly aiding local identity and legibility. The designated vista along New Wapping Street is framed by new buildings that focus on landmark buildings south of the river while avoiding obstructing this view.

Visual Impacts – Mayor Street Upper & Station Square

Visual impacts upon Mayor Street Upper and Station Square are moderately to highly positive. The architectural approach to the proposed development contributes much stronger character and visual richness to the urban landscape than the permitted development. The articulation of the roofscape resulting from varied heights and set-backs together with material contrasts create a pleasing outlook from Station Square. This layered effect provides a visually rich architectural composition. Buildings step back from the neighbouring houses as height increases, providing a visual transition between the two.

Visual Impacts – River Liffey Corridor & Ringsend

Occasional glimpses of the proposed development will result in imperceptible or slight positive ivisual impacts upon the River Liffey corridor. Views of the proposed development are completely obscured from many locations such as Ringsend Road / River Dodder, East Link Road and Britain Quay to the east; also City Quay and beyond to the west. It remains substantially screened from elsewhere including Sir John Rogerson's Quay and North Wall Quay. Intervening buildings offer no more than partially glimpses that add subtle richness to the urban backdrop of an emerging contemporary urban waterfront. Ongoing and future development in city blocks along the waterfront will further obscure views of the proposed development in due course.

Visual Impacts – East Wall Approach (North)

Visual impacts upon this approach from the north will be moderately to highly positive. The proposed development provides strong definition to junction of New Wapping Street and Sheriff Street Upper, which is currently missing. It joins Canon Hall to establish a cluster of taller buildings that contain the vista along East Road, establishing a focus and destination for those travelling along the road. The stepped roofscape and elevations combined with a contrast of colour and materials to establish a strong urban character that contrasts with the approach along East Road and improves upon that delivered by the permitted development. From East Wall Road, the proposed development remains screened from view by intervening buildings.

Visual Impacts – Point Village Approach (East)

The southern end of Block 2 will be partially visible but remains a very small part of this vista, integrating with the intervening contemporary urban streetscape. A slight and neutral visual impact arising as a result.

Visual Impacts – North City Approach (West)

Visual impacts are slight and neutral in glimpses of the proposed development from Guild Street along Mayor Street Upper. The proposed development easily complements nearby buildings and avoids intrusion upon the streetscape; in due course, further development of Block 2 will further screen it.

The proposed development appears a natural extension of the residential streetscape on the south side of Sheriff Street Upper, where visual impacts are slight and positive. The lifting bridge interrupts the view and makes it difficult to appreciate the form of the proposed development or compare its merits to the permitted development.

9.0 LAND AND SOILS

An appropriate assessment for the proposed redevelopment of the subject lands and associated works pertaining to existing soils, geology & hydrogeological environment was carried out using data collected from a detailed desk study and intrusive specific site investigation and monitoring works. The investigations included on site intrusive testing consisting of boreholes and in-situ sampling. These works provided information on the existing ground conditions within the subject lands.

The predicted impacts of the proposed development with regard to the land and soil environment have been assessed for the construction and operational phases.

Construction Phase

It is anticipated that the development site works and excavation proposals will not be deep enough to impact the underlying bedrock geology during the construction phase. It is therefore considered that the greatest impact from construction will arise from the extensive stripping and wide scale excavation of soils and sub-soils to prepare and construct the basement.

With the implementation of the mitigation measures as set out within this report, there will be minimal short term impact to the soil and geology in and surrounding the site. No long-term impact is expected as a result of the construction phase.

Operational Please

The day-to-day activities of the completed development would be unlikely to have any direct impact on the groundwater environment. Minor impacts may include increased infiltration and therefore slightly increased recharge volumes entering the groundwater. This is directly related to the creation of permeable development areas which, pending their arrangement will reduce run-off volumes and increase infiltration potential. The risk of spills or leaks of fuels and oils from residential vehicles may impact if the surface water system is not designed to address this.

The impacts on soils and geology arising from the operational phase will be temporary and very minor.

No significant long-term impact on the soil resulting from the proposed operational phase of the development is predicted. Once the development is completed, risks to the land and soils will be from pollutants deriving from the use of the dwellings and/or from contaminated surface

10.0 WATER

RSK Ireland have carried out an assessment of the potential impact of the proposed development on the water environment. Namely; surface water, foul water and water supply. The assessment has

resulted in a series of mitigation measures which are to be employed during the construction and operational phases of the development to minimize the impact on the water environment.

Surface Water

Construction Phase

Provided the proposed mitigation measures are implemented, the impact of the proposed development during the construction phase will be minimal and temporary.

Operational Phase

There is currently no drainage system in place on site. There will be a decrease in surface water run-off from the new development due to the SUDS measures proposed. Surface water run-off will also improve in quality due to these measures

Foul Water Drainage

Construction Phase

Provided that the proposed mitigation or measures are implemented, the impact of the proposed development during the construction stage will be of a temporary nature and will be minimised

Operational Phase

The development will result in an increase in the waste water discharged from the site to the public sewer system.

Irish water have confirmed that the current surrounding foul water system has the capacity for the proposed development. The potential impact from the operational phase of the development is therefore likely to be minimal.

Water Supply

Construction Phase

Provided that the proposed mitigation measures are implemented, there will be no appreciable impact of the proposed development during the construction stage on the water supply in the area.

Operational Phase

The new development will have an increase in the water supply demand. In order to mitigate actual demand, mitigating methods such as dual-flush toilet units and aerated taps will be applied. Provided that mitigating measures are applied the potential impact of the proposed development on the public water supply network is likely to be long term and minimal.

11.0 AIR QUALITY AND CLIMATE

AWN Consulting Ltd. has been commissioned to carry out an assessment of the potential air quality and climate impacts as a result of the proposed mixed-use development (residential and aparthotel facilities) at the Spencer North, Dublin 1. A stand-alone odour assessment has also been prepared for the Irish Water emission point located on the site which is to be adjusted as part of the development, this assessment.

In terms of the existing air quality environment, baseline data and data available from similar environments indicates that levels of nitrogen dioxide, carbon monoxide, particulate matter less than 10 microns and less than 2.5 microns and benzene are generally well below the National and European Union (EU) ambient air quality standards.

The greatest potential impact on air quality during the construction phase is predicted to be from construction dust emissions and the potential for nuisance dust. In order to minimise dust emissions during construction, a series of mitigation measures were prepared in the form of a Dust Minimisation Plan. When the dust minimisation measures set out in the plan are implemented, fugitive emissions of dust from the site will be insignificant and pose no nuisance at nearby receptors.

The operational impact of the development was assessed based on emissions of the pollutants nitrogen dioxide, particulate matter less than 10 microns, particulate matter less than 2.5 microns, carbon monoxide and benzene using the UK Design Manual for Roads and Bridges screening model which is a recommended screening model for assessing the impact of traffic on air quality. The inputs to the air dispersion model consist of information on road layouts, receptor locations, annual average daily traffic movement's, annual average traffic speeds and background concentrations.

The impact of the traffic from the proposed development compared to the respective EU limit values for the pollutants was assessed. Based on the modelling results, the impact of the development in terms of ambient levels of, nitrogen dioxide, particulate matter less than 10 microns, particulate matter less than 2.5 microns, carbon monoxide and benzene are predicted to be imperceptible with respect to the operational phase air quality and was screened out. The operational stage impact on climate is also considered to be imperceptible. The cumulative impact of the development including the full buildout of the site is also predicted to have an imperceptible impact on air quality and climate.

As the National and EU standards for air quality are based on the protection of human health, and concentrations of pollutants for both the construction and operational stages of the proposed development are predicted to be significantly below these standards, the impact to human health is predicted to be imperceptible and not significant in the short and long term.

12.0 NOISE AND VIBRATION

AWN Consulting Ltd. has been commissioned to carry out an assessment of the potential noise and vibration impacts as a result of the proposed mixed-use development (residential and aparthotel facilities) at Spencer North, Dublin 1.

The existing noise climate in the vicinity of the proposed development has been surveyed. Prevailing noise levels are primarily due to local road traffic.

The noise impact assessment has focused on the potential outward impacts associated with the construction and operational phases of the proposed development on its surrounding environment.

During the main construction phase involving site clearance, demolition and building construction works, the assessment has determined that the construction noise criteria can be complied with at the nearest sensitive properties. There is potential for elevated levels of noise at some adjacent properties during demolition works of buildings within the grounds. A schedule of noise mitigation measures including, noise limits and screening will all be employed to ensure any noise and vibration impacts during this phase will not exceed the recommended limit values.

During the operational phase, the outward noise impact to the surrounding environment will be limited to any additional traffic on surrounding roads and plant noise from the commercial buildings as part of the development. The impact assessment has concluded that additional traffic from the proposed development will have an insignificant impact on the surrounding noise environment. The resulting impact is of neutral, long-term and not-significant.

The inward noise impact from existing road and Luas traffic movements will be, with the implementation of the minimum façade specifications, achieve good internal ambient noise levels. The overall effect is described as neutral and long term.

13.0 MATERIAL ASSETS UTILITIES

Material Assets considers physical resources in the environment which may be of human or natural origin. The objective of the assessment is to ensure that these assets are used in a sustainable manner, so that they will be available for future generations, after the development of the proposed development.

Economic assets of a natural origin include the assimilative capacity of air, water, landscape; together with non-renewable resources such as minerals and soils and renewable resources such as biodiversity.

The Material Assets chapter describes existing services to the application site and describes the predicted impacts which the development may have on these services.

At present there is a 1000mm combined sewer located to the north of the subject lands in Sheriff St and to the east of the site in New Wapping St. There is no dedicated storm water sewer in these streets. All foul & storm water effluent is conveyed to the new pumping station located on the subject lands before the effluent is pumped to the Regional Waste Water Treatment Plant at Ringsend. There is also a 300mm ductile iron main in New Wapping & a 400mm DI main in Sheriff St.

As required by Irish Water a *pre-connection enquiry* submission was lodged for a review of the potential impacts of the proposed development on the areas foul water and potable water services. Irish Water responded to the submission and subsequently reviewed and issued a *Letter of Design Acceptance* for the proposed scheme. Irish Water have indicated that the proposal can be accommodated within their existing infrastructure with same on-site additional works required, notably connecting the 400mm ductile iron water main on Sheriff Street to the existing watermain on Mayor Street to the south of the subject site via a new 400mm main to the immediate west of the proposed buildings.

The disposal of storm water from the subject site will require an on-site attenuation tank to be constructed. Combined with a flow restriction device this will reduce the storm water flow from the development to pre-development greenfield rates.

The proposed development does not require any mitigation measures as the proposed storm water system will increase the spare capacity in the existing public combined sewer due to the proposal to include an on-site attenuation system, which will restrict the storm water runoff from the site during extreme rainfall events.

As noted above the proposed foul effluent generation and potable water requirements have been assessed and can be accommodated within existing Irish Water infrastructure.

The impact on the existing combined sewer will be that while the foul effluent volumes will increase due to the proposed development, the restricted storm water flows will allow for increase spare capacity during extreme storm events.

The proposed development will draw down increased volumes of potable water, but the magnitude of same has been assessed and deemed suitable by Irish Water without compromising the local network.

All internal drainage & wastewater and potable water services will be monitored and maintained by the buildings maintenance personnel. External connections to the public utilities will be maintained by Irish Water. As the restricted storm water flow outfalls into the existing combined sewer, Irish Water will maintain this utility also.

14.0 MATERIAL ASSETS TRAFFIC AND TRANSPORT

Vehicular access to the development's internal car parking areas shall be via two new junctions on New Wapping Street, between Sheriff Street Upper and Mayor Street Upper. At surface level, the development incorporates a north-south access road between Sheriff Street Upper and Mayor Street Upper. The scope of the impact assessment encompassed the existing junction of New Wapping Street with Sheriff Street Upper and East Road, the existing junction of New Wapping Street with Mayor Street Upper, and the two new development access junctions on New Wapping Street.

Baseline modelling has shown that the two existing junctions currently operate within their effective capacities during peak periods, and that queues and delays on the majority of junction approaches are low. During the morning peak, however, the northern and western approaches to the New Wapping Street / Sheriff Street Upper / East Road junction are heavily saturated, with significant vehicle queues and delays.

Traffic survey data recorded on the 4th of October 2017 were used to determine the local peaks in background traffic flow. The surveyed traffic flows were scaled up to obtain background traffic flows for the baseline year of 2019.

Trip generation factors from the industry-standard TRICS database have been used to predict the trip generation to and from the proposed development, for both the morning and evening peak hour periods. In addition to the subject development, vehicular trips predicted to be generated by committed and planned developments in the vicinity of the subject site were included in the background traffic flows for future assessment years. At each of the junctions assessed, vehicular arrivals and departures were distributed in accordance with the directional splits observed at the junction during the traffic survey.

The operational performance of the two existing junctions and the two proposed junctions on New Wapping Street was assessed using industry-standard TRANSYT software. An integrated model was constructed that incorporated these four linked junctions; the performance of these was then assessed under current traffic conditions, as well as for the planned year of opening, 5 years after opening, 10 years after opening, and 15 years after opening (the design year).

Modelling results for the design year 2036 show that background traffic growth and the addition of vehicular traffic related to committed and planned developments (excluding the subject development), are likely to have a long-term significant adverse impact on the operational efficiency of the two existing junctions assessed. The junction of New Wapping Street with Sheriff Street Upper and East Road shall exceed its effective capacity on the northern and western approaches, with significant increases in vehicle queues and delays on these approaches during peak times; all junction approaches shall however continue to operate within ultimate capacity.

Development traffic during the construction phase is likely to reach at most 80 vehicle movements per day at its peak (a maximum of approx. 16PCU/hr in each peak hour period). Consequently, the impact of construction traffic on the operation of the surrounding road network shall be less significant than the impact of operational traffic related to the subject development. This impact shall be confined to the duration of construction activity on the subject site

Modelling results for the design year 2036 show that operational traffic related to the subject development is likely to have a long-term slight adverse impact on the operational efficiency of the two existing junctions assessed, in comparison to the Do-Nothing Scenario. Development traffic shall not be the cause of any junction becoming oversaturated, and shall result in only minor increases in vehicle queues and delays.

At the junction of New Wapping Street with Mayor Street, which is particularly sensitive due to the presence of the Luas light rail line, development-related traffic shall result in no discernible increase in vehicle queues. No vehicle queuing shall extend back through either existing junction from the new development access junctions on New Wapping Street.

The lead contractor appointed for the construction of the development shall be required to prepare a Construction Management Plan, including a plan for the scheduling and management of construction traffic, which shall outline measures to be taken to mitigate the impact of construction traffic on the surrounding road network.

The development shall incorporate several design elements intended to mitigate the impact of the development on the operation of the surrounding road network. These include a reduced car parking provision, which shall discourage higher vehicle ownership rates and excessive vehicular trips to the development, and a high provision of secure bicycle parking, which shall serve to encourage bicycle journeys by both residents and visitors.

In addition, a Mobility Manager shall be appointed for the proposed development, with the remit to implement and oversee an ongoing Mobility Management Plan (MMP). This shall assist residents and their visitors in making the most of sustainable transport opportunities and in avoiding single-occupant car journeys.

In terms of traffic and transport considerations, the residual impact of the subject development is equivalent to the operational impact.

A Mobility Manager shall be appointed for the proposed development, with the remit to implement and oversee an ongoing Mobility Management Plan (MMP). In conjunction with this, the Mobility Manager shall be responsible for monitoring the travel habits of residents of and visitors to the development, for instance by conducting periodic travel surveys.

15.0 MATERIAL ASSETS WASTE

At present the subject site is undergoing excavation works permitted from an earlier planning application. The proposed application does not address material currently being excavated to form the basement area of the development. The water chapter address the waste generated during the construction/operational phase of the development.

In accordance with local and regional guidance, along with a review of industry best practice the potential impact of the proposed development during its construction & operational phase has been assessed. The assessment reviewed the likely causes of onsite waste production during the construction stages with regard to construction materials and waste material generated by the construction operatives. In addition the assessment looked at the operational phase for the development.

Should no development take place on the subject lands then there will be no increase in construction or operational waste above what is currently being excavated as part of the permitted permission.

The operation impact of the proposed development will require waste management protocols to be adopted. These allow for a more sustainable/recycling culture to be developed and used post construction. These protocols operate around waste reduction and recycling. As it is not practical to completely remove the generation of waste by-products. Waste which can not be eliminate will be, where practical, recycled using various waste segregation systems to separate out as much material as possible for recycling.

The proposed development mitigation measures regarding the generation of waste both at the construction phase and operational phase will take then form of implementing strategies to ensure

that waste streams are kept to a minimum. The proposed implementation of the waste hierarchy approach will ensure that best practices are followed to reduce & recycle waste materials.

The impact from the proposed development will be that material which can be recycled will be sent to suitable facilities, while material which has no further use will be sent to a suitable facility for ultimate disposal, this may still have a benefit if the waste material is sent to the Dublin regional municipal incinerator. From which waste material is used as fuel to be converted into a power source which feeds the local district heating system. As noted waste minimisation, reuse and recycling are at the core of the proposed developments waste management strategy it will not be possible to completely recycle all elements of waste generated, and as such a percentage of waste generated will be unsuitable for any disposal option but landfill.

All waste generated either during the construction phase or the operational phase will be required to be ultimately disposed of. The required segregation and disposal of waste ensures that a high level of onsite operational management is in place to reduce this as far as is practical, due to the financial expenditure required in the disposal of same. To ensure this occurs the management company tasked with the operational running of the proposed development will use a detailed waste minimisation plan to ensure that waste generated is disposed of in accordance with the developments waste procedures while adhering to the local & regional regulations.

16.0 RISK MANAGEMENT

This Chapter of the EIAR identifies, describes and assesses the direct and indirect significant effects on the population and human health, biodiversity, land, soil, water, air quality and climate, material assets, cultural heritage and landscape deriving from the vulnerability of the project to risks of major accidents and/ or disasters that are relevant to the project concerned.

It was concluded that in compliance with the appropriate mitigation measures there are no identified incidents or examples of major accidents and / or natural disasters that present a sufficient combination of risk and consequence that would lead to significant residual impacts or environmental effects.

17.0 INTERACTIONS BETWEEN ENVIRONMENTAL FACTORS

This chapter of the EIAR deals with the likely interactions between effects predicted as a result of the proposed development. This is required by Part X of the *Planning and Development Act 2000* and Part 10, and schedules 5, 6 and 7 of the *Planning and Development Regulations 2001*.

All potential inter-relationship impacts between the various areas covered in the EIAR are listed and the key interactions and interrelationships are summarised.

18.0 SUMMARY OF MITIGATION AND MONITORING MEASURES

This chapter provides a summary of all the design, construction and operation mitigation measures proposed throughout the EIAR document for ease of reference for the consent authority and all other interested parties.

19.0 CONCLUSIONS

The proposed development represents an appropriate use of a brownfield site. It is considered that the proposed development accords with national, regional and local planning policy.

The EIAR has shown that, subject to the implementation of the mitigation measures and appropriate monitoring, there will be no long term adverse impacts on the environment as a result of the development proposal.