

42A Parkgate Street, Dublin 8

Volume 1:
Environmental Impact Assessment Report
Non-Technical Summary



1 Introduction and Need for the Development

1.1 Introduction

This is the Non-Technical Summary (NTS) of the Environmental Impact Assessment Report (EIA) for the proposed development of a mixed use residential and commercial scheme at 42A, Parkgate Street, Dublin 8 (hereafter referred to as ‘the proposed development’).

It has been prepared in accordance with the requirements of the relevant legislation and guidance and is intended to provide a summary of the proposed development, the baseline environment of the site and surrounding area as well as a summary of the predicted effects, the primary measures proposed to mitigate these effects and the likely residual effects of the proposed development on the surrounding environment.

The proposed development comprises some 481 No. residential units with 3,698 sqm commercial office space, 214 sqm retail and 444 sqm café/ restaurant space. The proposal is deemed to be a Strategic Housing Development (SHD). Refer to Section 3 of this NTS for a detailed description of the proposed development.

The site of the proposed development is a brownfield site, and former industrial site which sits between the Criminal Courts Building and the main entrance to the Phoenix Park to the west, Heuston Station to the south and Collins Barracks to the east, as illustrated in Figure 1.1. It is also adjacent to major transport corridors and the LUAS which connects to the city centre. The site of the proposed development is located to the immediate east of the Transport Infrastructure Ireland (TII) main offices, as well as the ‘Parkgate Place’ apartments and offices. The site is currently in use by Hickey’s Wholesale Fabrics and has been since the 1970s.

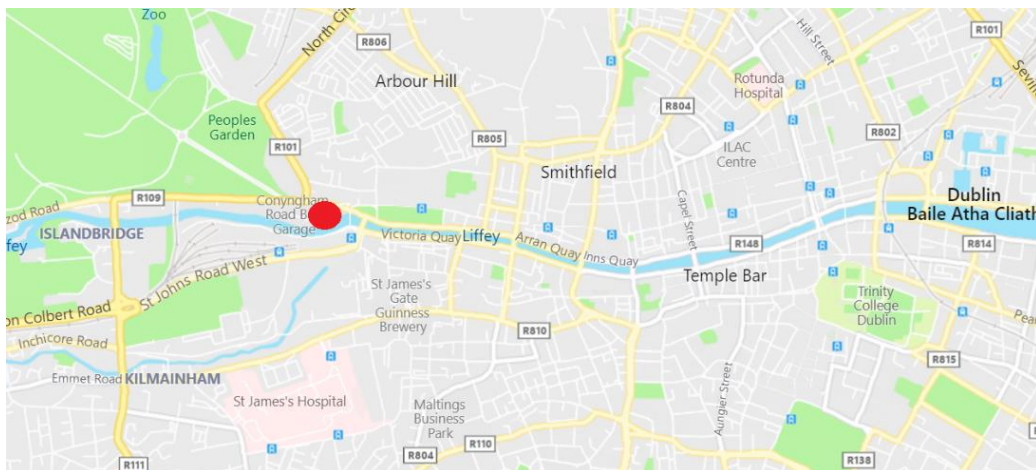


Figure 1.1 Location of the Proposed Development (Site indicated as red dot)

1.2 Need for the Proposed Development

The development will facilitate the much-needed regeneration of a currently underutilised, brownfield site, and will provide complementary modern residential accommodation in a city centre location.

According to the *Dublin City Development Plan 2016-2022*¹, the population of Dublin city is projected to increase by approximately 8,434 people per year, over the plan period (until 2022). To accommodate this population growth, an additional 4,215 estimated housing units need to be delivered per year, in Dublin.

In addition, the *Regional Spatial and Economic Strategy (RSES) for the Eastern and Midland Region* and the *Dublin City Housing Strategy (2016-2022)*² have both identified the need for accelerated delivery of housing in Dublin, to meet the accelerating demand for accommodation.

The proposed development will provide some 481 residential units in a prime city centre location. This will contribute positively to the housing targets for Dublin, as outlined in the City Development Plan, and the RSES. In addition, the SHD application is intended to speed up the planning process and to satisfy the need for the accelerated delivery of housing in Dublin.

1.3 Consultation

Extensive consultation has been undertaken with a range of stakeholders during the preparation of the EIAR and statutory consent application.

A number of consultations were carried out with Dublin City Council, under Section 247 of the *Planning and Development Act of 2016*³. In addition to the formal Pre-Planning Meetings, consultation was also held with officials from the individual Local Authority Departments throughout this process. This included the Housing Department to discuss the requirements of the Department as regards Part V units on site, as well as the Drainage and Transport Departments to discuss technical aspects of the development as they emerged.

Pre-application consultation is mandatory for prospective applicants prior to making an application for SHD to An Bord Pleanála. Ruirside Development Limited consulted first with Dublin City Council, as described above, and then with An Bord Pleanála at a pre-application meeting on 18th September 2019.

It was the opinion of An Bord Pleanála, that the documents submitted as part of the pre-application consultation required some further consideration and amendment. The proposed design has subsequently been revised to ensure that comments raised by An Bord Pleanála during the consultation process are fully addressed. Further consultation was carried out to aid this process with authorities and stakeholders.

¹ Dublin City Council (2016) *Dublin City Development Plan 2016-2022*., Dublin, Ireland.

² Eastern and Midland Regional Assembly (2019) *Regional Spatial and Economic Strategy for the Eastern and Midland Region*. Stationery Office, Dublin.

³ Government of Ireland (2019), *Planning and Development (Housing) and Residential Tenancies Act 2016*. Stationary Office, Dublin.

Pursuant to article 285(5)(a) of the Planning and Development (Strategic Housing Development) Regulations 2017⁴, a number of prescribed bodies will be notified on the submission of the planning application to An Bord Pleanála.

2 Alternatives

This chapter explores the alternatives considered for the proposed development, the site criteria set by the client and the reasons for choosing the site for the proposed development. The design objectives, client vision and alternative configurations examined during the design process are also presented. The overall layout of the proposed development developed over a period of 12 months with regular interactions and reviews with the Planning Department, Conservation Office, and Transportation Department of Dublin City Council and with An Bord Pleanála.

In composing a scheme for the site, the design strategy has taken cognisance of the reasons for the previous planning refusal as well as a comprehensive review of the site, its context, setting in the city and relationship with the River.

Do-Nothing Alternative- the ‘do-nothing’ alternative was considered. If the development were not to proceed, the existing commercial use of the site is likely to continue, in the absence of any residential or amenity facilities.

Alternative Locations- The site was chosen due to its location adjacent to the largest transportation interchange hub in the city, and the site also being capable of supporting a significant and landmark residential-led mixed use scheme.

Alternative Designs/Layouts- The proposed development and its massing, use and scale was considered in this assessment. The Reddy Architecture + Urbanism: Architectural Design Statement which accompanies the planning application deals with each of these elements in greater detail:

- **The Turret and River Wall**

All design options considered the key criteria of quality of public open space, aspect, percentage of sunlight hours and the integration of the architectural heritage within the new redevelopment were assessed. The final option was chosen, as the design respects the Architectural Heritage of the wall with the integration of the new build elements, providing views, access and daylight penetration for the scheme design. Consideration was given to the potential environmental effects of all options and the relative effect of each. The critical consideration for this option was the potential architectural heritage effects.

- **Prominence of the Archway**

⁴ S.I. No. 271/2017 - Planning and Development (Strategic Housing Development) Regulations 2017

All the design proposals retained the Arch as an entrance, however the treatment of the buildings above and around the arch differed and each had its own merits. Following discussions with DCC Conservation and Planning departments, it was decided that the Archway was considered to be of such significance that a set back of the proposed new buildings would be more appropriate. The receiving environment of the archway was a primary consideration in this regard. In choosing the preferred option, consideration was also given to the potential for significant effects on the environment, of all of the proposed options. The primary consideration for this feature was in relation to preserving the architectural heritage of the stone gateway arch.

- **Ground Plane Mix and Location of Uses**

A key design consideration for the proposed development was the activation of the ground floor, including various retail, commercial and food/beverage options. Interactions with the local authority and end users as proposed by the client resulted in a comprehensive series of options, scale and location of uses. The primary environmental consideration was the preservation of the architectural heritage of the site, while maximizing the amenity and public access aspects, associated with the proposed use. The preferred option is considered to offer the most benefit in terms of increasing amenities and public uses at street level as well as activating the streetscape and new public spaces in a positive manner.

- **Massing of buildings onto the river and Parkgate Street**

The design approach has required multiple design reviews to ensure that the optimum location on the site has been chosen. The scheme has been rigorously designed to ensure it accords with the objectives of the SDRA 7 with well-designed public realm and permeability which previously was not possible. The scale of the proposed development and its prominent location in the city will mean that its existence is likely to result in very substantial changes in the visual character of the immediate area surrounding the development. However, it is considered that the use, massing and figure ground of the scheme for Parkgate Street is appropriate for this location and this site.

The planning history and previous development proposals for the site and the shortcomings which resulted in reasons for refusal have been considered in their entirety in this review. It is considered that the scheme as proposed now incorporates design responses which mitigate against the issues and concerns raised in that refusal.

3 Description of the Proposed Development

Design of the Proposed Development

The proposed development is a mixed-use residential and commercial scheme comprising 'Build to Rent' residential units with associated residential amenities and facilities, commercial office and café/ restaurant floor space. A new public square will be provided, along with a public riverside walk and private amenity courtyard. The proposed development is located at the existing Hickey's site, 42A Parkgate Street, Dublin 8.

The residential component of the proposed development will range in height from 8-29 stories, comprising five separate blocks which are arranged around 2 open courtyards. Some 481 No. residential units will be provided as part of the proposed development, accommodating over 1,100 residents.

The residential units will be served by amenity and management areas including a reception area, a post room, a quiet room, gym, business suites, lounge and TV rooms, in addition to miscellaneous support facilities.

Residents will be provided with a private communal courtyard, which will benefit from high quality landscaping. Many of the units will enjoy private balconies, while all will have access to a number of roof terraces which have been designed to afford excellent views and amenity. A second public open space will provide a public connection from Parkgate Street to the river. The public plaza will extend along the river, providing a public internal river walkway.

The commercial component of the proposed development includes 6 storeys of office, located above a 2-storey entrance foyer/mezzanine level. There is an active restaurant use at ground floor and an entrance to the offices above.

The proposed development provides two primary gateway entrances on Parkgate Street, which will facilitate pedestrian access a private communal residential courtyard and a new public realm plaza to create new links to the river and a vista through to Heuston Station and environs. A third gateway is proposed at the South Eastern corner of the site allowing pedestrian access behind the Quay wall to the main public courtyard. Vehicles will access the site from Parkgate street at the most northern point of the site.

The proposed development also provides for some modifications to the existing fabric of the protected river wall structure, to allow a more unified connection between the new public open space, the river and the views to Heuston station beyond. A summary of the proposed modifications to the river wall include:

- Interventions to the river wall; where the penetrations are in line with existing windows opens;
- The integration of elements of fabric retained from the steel structure of the existing warehouse; cast iron columns and beams; with the creation of a rampart walk which will give active use and interface between the protected structure and the public realm;
- The integration of a pedestrian walkway adjacent to the river;

- The restoration of the square tower with gated access and an active use allowing people to walk in and view the structure from within and look across the river to Heuston Station through the existing window;
- Provision of pedestrian access to the River Warehouse where the change in level is achieved with steps and a lift allowing the connection to continue along the river walk towards Island Bridge;
- The removal previous unsympathetic construction works (block infills etc) to open up the ground floor level. These new interventions are deliberately contemporary and legible. These works are intended to provide an increase in natural light levels and to give a better connection to the river walk;
- The cast iron frame elements from the existing building that are to be removed and will be reused in the structure of the walkway resulting in a sympathetic & carefully considered intervention.

The car parking provision for the development will include 11 spaces at basement level, 1 of which will be accessible, and 15 spaces at surface level, 2 of which will be accessible. In addition, 551 bicycle parking spaces will be provided.

Operation of the Proposed Development

Full-time building supervision, maintenance and management will be provided during the operational phase of the proposed development.

The development will have a designated management office, dedicated to the management of the external/estate management with an emphasis on security, surveillance of basement/bicycle parking, pedestrian access, waste marshalling area, parcel deliveries, car share bookings etc.

The proposed development will provide for employment through its mix of commercial office enterprise, in addition to the employment generated from the concierge & operational nature of the facilities associated with the Build to Rent residential element. The proposed development is estimated to give rise to approximately 550 jobs, during operation.

The proposed development will provide much needed residential opportunities in this prime city centre area, providing 481 residential units, 48 of which will be social and affordable housing.

An Energy Analysis assessment was carried out based on the current building regulations framework and the requirement to achieve a Nearly Zero Energy Building (NZEB) for all new developments. This assessment identified a centralised solution, as being the optimal whole life cycle cost solution for the proposed development.

Decommissioning of the Proposed Development

Given the nature of the proposed development, there are no current plans for the future decommissioning of the same. The proposed development will provide for residential and commercial buildings which are envisaged to become permanent features of the city centre landscape.

4 Construction Strategy

This chapter describes the indicative construction strategy for the proposed development. In addition, a Construction Environmental Management Plan (CEMP) has been prepared to provide minimum requirements that appointed Contractors will be required to implement for the proposed development (see **Appendix 4.1**).

- Land use requirements to support the construction of the proposed development;
- Indicative duration and phasing during the construction period;
- Likely activities required to prepare the site and undertake the enabling works to support the construction of the proposed development;
- Indicative methodologies to undertake demolition and construction activities (including works to structures/buildings of architectural heritage value);
- Likely activities required to undertake final finishes and landscaping;
- An overview of anticipated employment numbers, hours of working, and construction safety measures which will be enforced during the construction of the proposed development (see **Appendix 4.1**); *and* An overview of employment and typical site and environmental management measures associated with the construction of the proposed development (see **Appendix 4.1**).

The site of the proposed development is owned by the developer, Ruirside Developments Limited. No acquisition of land will be required during the construction phase of the proposed development. The development area will also include the portion of landscaped area east of the existing ESB substation on Parkgate Street, and an area of footpath and pavement along Parkgate Street. All areas outside the site ownership boundary but within the red line boundary are owned or controlled by Dublin City Council.

The construction compound will be located on site within the planning boundary for the duration of the project. As construction progresses, it will be necessary to move the construction compound around within the site.

It is envisaged that construction of the proposed development will take approximately 34 months. The construction strategy of the proposed development will be divided into three phases.

The first phase of the construction strategy will take approximately 4 months and will involve enabling works site set up, demolition of various structures and site preparation. During this stage, services will be disconnected or diverted, asbestos will be removed from the site, scaffolding will be erected along the demolition perimeter and some of the existing buildings will be demolished, resulting in the generation of demolition wastes.

The second phase of the construction strategy will take approximately 4 months and will run concurrently with Phase 1. This stage will involve piling and groundworks.

During this phase the piling mat will be formed, piling and groundworks will be undertaken, and dewatering may be required for local excavations. During this phase, surface water run-off will need to be managed.

The third phase will take approximately 30 months and will run after phase 1 and phase 2 are complete. This phase will involve site set up and preparation, including works on the footpath on Parkgate Street, and construction of the new development. During this phase, the substructure and superstructure will be constructed, and various existing structures will be retained and adapted for re-use within the scheme. It is estimated that c. 14,400m³ of bulk excavation will result from the works, including 220m³ of excavation outside the ownership boundary for the proposed surface water improvement works. It is estimated that c. 6,100m³ of fill material will be required, assuming some re-use of excavated materials will be allowed.

Refer to Section 6 of this NTS for information on proposed construction traffic management and Section 17 for information on construction and demolition waste management.

5 Planning and Policy

The planning and policy chapter provides a summary of the hierarchy of national, regional and local planning and development policies relevant in the context of the proposed development.

The proposed development site is located within the Dublin City Council administrative area and the *Dublin City Development Plan 2016 – 2022* is the relevant local statutory planning document for the subject lands. The subject lands lie within the Heuston and Environs Strategic Development Regeneration Area (SDRA 7). This is an area which has been identified as a gateway location being capable of accommodating increased building height and delivering a significant quantum of housing and employment in the city, through regeneration of existing built areas.

6 Traffic and Transportation

This chapter describes the likely significant effects of the proposed development in relation to traffic and transportation. The environmental effects of potential increases in traffic are considered in Section 7, Air Quality, Section 8, Climate and Section 9, Noise and Vibration of this NTS.

It is anticipated that all construction vehicles accessing and egressing the site will do so from a construction access point on Parkgate Street. Construction traffic travelling to and from the site will do so via the Conyngham Road, South Circular Road, and Con Colbert Road/Chapelizod Bypass from where they will access the M50 and the national road network. This will keep trucks to an established HGV route, minimising their effects on residential areas.

The traffic generated by peak construction activities will be from excavated and demolished material being taken off site, and fill materials being brought onto site. This will result in just 14 movements through the site entrance during the peak hours, having no significant impact when compared to the volume of traffic on the surrounding road network.

During certain stages of construction, it may be necessary to close part of the footpath along Parkgate Street. If this were to occur, a minor diversion for pedestrians would be provided along the carriageway of the road immediately adjacent to the footpath, closing off one of the two existing lanes of traffic to westbound vehicles.

It is proposed that during the construction stage of the proposed development, no car parking will be provided on site, as the site is located in an area which has good access to sustainable transport modes. Cycle parking and associated facilities will be provided on site.

During the operational phase of the proposed development, vehicles will access the site at the most northern point of the site- which will lead to car parking spaces at ground level and a double car lift which provides access to car parking in the basement. The proposed development will have 26 parking spaces, 3 of which will be disabled spaces. Nine of the spaces will be utilised for office use, made up of eight standard, and one disabled space. The rest of the spaces are designated to a bespoke car club for the use of the residents to make non-commuting related trips. 55 cycle parking spaces are also to be provided. Pedestrian access will be enhanced with the proposed development.

Services and deliveries will use the loading bay provided for the development on Parkgate Street. Emergency access will be provided through the entrances into each of the courtyards.

The traffic generated by operation of the proposed development will result in approximately 13 movements through the site entrance during the peak hours having no significant impact when compared to the volume of traffic on the surrounding road network.

Overall, during both the construction and operational stages the increase in traffic attributed to the proposed development is likely to have no significant impact on the surrounding road network.

7 Air Quality

The air quality assessment focuses on the main sources of air quality effects; construction dust and operational related pollutants including nitrogen oxides.

The construction phase of the proposed development has the potential to give rise to 'significant soiling' with regards dust emissions. This may occur during activities such as: building demolition, excavation works, piling etc. It is also possible that Asbestos Containing Materials (ACMs) will be released to atmosphere during construction activities. As described in Section 6 of this NTS, traffic generation during construction will not be significant, and no subsequent likely effects on air quality are predicted.

The following measures are proposed during the construction phase to minimise air quality effects off site:

- Spraying of exposed earthwork activities and site haul roads during dry weather;
- Provision of wheel washes at exit points;
- Covering of stockpiles;
- Control of vehicle speeds, speed restrictions and vehicle access; and
- Sweeping of hard surface roads.
- A c. 1.8m hoarding will be provided around the site works to minimise the dispersion of dust from the working areas;
- Any generators will be located away from sensitive receptors in so far as practicable;
- Stockpiles will be located as far as possible from sensitive receptors and covered and/or dampened during dry weather.

During the construction phase of the proposed development it is possible that disturbance of ACMs on site could cause asbestos fibres to be released into the ambient environment. An asbestos audit will be carried out on the buildings scheduled for demolition prior to demolition works. Any asbestos discovered will be removed by a Specialist Contractor in accordance with Safety, Health, and Welfare at Work (exposure to Asbestos) Regulations 2006/2013 and disposed of by specialist contractors to an appropriately licensed facility. Traceable records of this activity, including the disposal licence, will be kept.

No likely significant effects are predicted during the operational phase of the proposed development.

The proposed gas boilers which will be used during the operational phase of the proposed development are not of a size which are considered significant. As described in Section 6 of this NTS, traffic generation during operation will not be significant, nor will subsequent emissions. No likely significant effect on air quality is therefore anticipated during operation.

8 Climate

The climate chapter assesses the likely significant effects of the proposed development on climate; including a qualitative assessment of construction and operational effects on carbon and energy, an assessment of wind effects and a daylight and sunlight analysis.

A desk-based study of the baseline environment of the proposed development was undertaken in order to inform this assessment. The most recent EPA reports on greenhouse gas emissions and projections were used in order to determine the baseline environment for greenhouse gas.

An assessment of the potential increase in greenhouse gas emissions due to the construction phase of the proposed development, relative to Ireland's projected baseline for 2020, as reported by the EPA. This assessment focuses on the embodied carbon of the material used during the construction phase; concrete, reinforcement, glazing, façade and brickwork, timber, plasterboard, insulation and fill material. As a percentage of the projected 2020 emissions, the estimated emissions are 0.13% for the residential sector annual emissions, and 0.018% for the total annual 2020 non-ETS (emissions trading scheme) emissions. This increase is not considered significant.

No direct or indirect effects with regards sunlight, daylight or wind are predicted during the construction phase of the proposed development.

Boilers operating during the operational phase of the proposed development are not of a size which fall under the Greenhouse Gas Permitting scheme. No likely significant climate effects are therefore predicted as a result.

Three different options have been proposed for the operational phase of the proposed development, with regards energy. All three options comply with the requirement to achieve a Nearly Zero Energy Building (NZEB).

The analysis determined that there were no significant effects with regard to pedestrian wind comfort, at ground level for the building configuration as proposed. In terms of rooftop amenity, the minor areas of "suitable for business walking" identified on the 9th floor amenity space will be mitigated through the use of localised planting and canopy located at the base of the tower to prevent downdraft. No significant impacts are predicted.

With regard to the tower balconies, the design has ensured that where areas were identified as being 'not suitable for sitting' were removed from the overall quantum of amenity spaces.

Further, no areas off site are unsuitable for pedestrian comfort as a result of the proposed development. Therefore, no significant effects are predicted to occur.

The proposed development, during operation, will not have a negative effect on the existing amenity space in terms of exposure to sunlight and daylight. No significant effect is therefore predicted.

9 Noise and Vibration

This chapter provides information on the assessment of noise and vibration impacts on the surrounding environment during the construction and operational phases of the proposed development.

When considering the potential effects, the key sources will relate to the short-term construction phase and the long-term effects associated with the development as a whole once operational.

The existing noise climate in the vicinity of the proposed development has been surveyed. Prevailing noise levels are primarily due to the surrounding road network and passing pedestrian traffic.

During the construction phase, the assessment has determined that there is the potential for some short-term significant noise impacts when works are undertaken within close proximity to the receptor locations. However, these occurrences will only be short-term and the vast majority of the construction works will take place at distances from the receptors where no significant effects are predicted and the construction criteria will be complied with.

The use of best practice noise control measures, hours of operation, scheduling of works within appropriate time periods, strict construction noise limits and noise monitoring during this phase will ensure effects are controlled to within the adopted criteria. Similarly, vibration effects during the construction phase will be well controlled through the use of low impact equipment and adherence to strict limit values which will be subject to monitoring at the nearest sensitive buildings.

During the operational phase, the predicted change in noise levels associated with additional traffic in the surrounding area required to facilitate the development is predicted to give rise to imperceptible effects along the existing road network.

Cumulative noise levels associated with operational noise from the development will be designed to ensure the prevailing background noise environment is not increased by a significant level such that potential adverse noise effects are avoided.

Once noise emissions from operational plant and activities are designed in accordance with standard guidance the impact from this source will not be significant.

10 Biodiversity

This chapter describes the likely significant effects on biodiversity resulting from the construction and operation of the proposed development at 42A Parkgate Street, Dublin 8. Where necessary, mitigation measures are identified to reduce effects and the likely residual construction and operational effects are described.

A Report for the Purposes of AA Screening and a Natura Impact Statement (NIS) are presented as separate documents as part of the Planning application.

The study area of this assessment included the footprint of the existing buildings and hardstanding areas comprising the existing Hickey's site, and two small 'green' areas: one of recolonised bare ground within the site and one small patch outside the existing Hickey's site on Parkgate Street, beside Seán Heuston Bridge and the section of Parkgate Street at the entrance to the site. The accessible area of the River Liffey was viewed for up to 250 m either side of Heuston Bridge.

Surveys were undertaken on habitats, bats, otters and birds on 26th, 27th February and 28th March 2019 and 23rd and 24th January 2020. In addition, an internal bat survey was completed in February 2019 and January 2020.

Assessment of Effects during Construction

The buildings on site present roosting potential to bats. However, none were recorded in two separate surveys at the appropriate time of the year. There are no proposed mitigation measures for bats with regard to the demolition of buildings.

The area of the River Liffey, within the study area is urban in nature and experiences a background level of noise and disturbance. Otters are relatively tolerant of urban activity and it is not predicted that the construction activity will affect the passage of otters along the river.

There will be a minor loss of perching area for cormorants and gulls as a result of the proposed development. The disturbance is not considered significant given the availability of resting places along the river downstream and particularly around the structures of Dublin Port.

The River Liffey holds populations of Brown Trout (*Salmo trutta*) and Atlantic Salmon (*S. salar*). Salmonids are highly sensitive to pollutants of freshwater e.g. hydrocarbons, elevated suspended solids, oils and/or toxic substances. While not designated as a 'Salmonid river', Atlantic Salmon is listed under Annex II of the Habitats Directive and protected in freshwater. An assessment of hydrological and hydrogeological risks has identified a number of hazards during the construction stage which could negatively impact salmonid populations.

However, best practice construction methods and pollution control measures will be implemented throughout the construction phase of the proposed development to ensure maintenance of water quality. No likely significant effect on aquatic ecology is therefore predicted.

Assessment of Effects during Operation

The arrangement of the residential blocks around a courtyard space allows for a communal garden, consisting of an open grass plane, with a birch grove, structural planting, flowering mixes to encourage pollinator species, raingardens, seating and a play area for toddlers and young children. The inclusion of pollinator friendly species in reference to the All-Ireland Pollinator Plan is seen as a positive effect on biodiversity.

With regard to Bats and Otters, while it has been established that the immediate vicinity of the proposed development is of low value with few records of bats, there are records of bats upstream at Islandbridge and Daubenton's bats may feed further downstream near the Parkgate Street site. It has been established that there is some movement of otters along the River Liffey, albeit with no records in the immediate vicinity of the proposed development site. There will be no significant change in night time light levels over the river that would deter potentially commuting bats or otters.

It is not predicted that there would be an effect on birds in terms of the proposed development height. Consideration of collision would be for larger species such as Mute swan recorded on the river in the vicinity of the site.

The proposed development includes the construction of a new drainage network to service the site. This drainage network includes Sustainable Urban Drainage (SuDS) features which will provide treatment to and improve the quality of surface water leaving the site. The development will not have any negative effects on the surrounding area in relation to water quality, hydrology and flood risk. However, the hydrological and hydrogeological assessment has identified a number of plausible hazard sources, post construction.

11 Archaeology and Cultural Heritage

The subject site lies within the designated zone of archaeological potential for the RMP historic city of Dublin (DU018-020). There are no specific recorded archaeological sites (RMP / SMR sites) within the boundary of the site or in its immediate vicinity.

The historical background of the surrounding area suggests that while there is a rich history of occupation since at least the Early Christian period, the site itself survived as open pasture until the nineteenth century, sloping southwards towards the River Liffey.

The existence of ecclesiastical foundations in the Kilmainham area and the presence of fording points in the vicinity of Parkgate Street, suggest the possibility of activity north of the River Liffey during the early medieval period, though there is as yet no archaeological evidence of such.

The retrieval of numerous finds from the Viking Period at King's Ford Islandbridge and in Phoenix Park points to an interaction between both banks of the Liffey during the Viking settlement.

An examination of documentary sources and historical maps for the area indicates that there were several phases of development at the site from the late eighteenth century onwards (e.g. the Phoenix Iron Works in the early 1800s, followed by Kingsbridge Woollen Factory and the Parkgate Printing Works). This development first involved the reclamation of the meadow with the introduction of at least 2-5m of fill across the floodplain and the building of a boundary wall to the river.

Archaeological monitoring of ground investigation works indicated that remains associated with the iron-working activities on the site survive below ground; there would be a moderate negative direct effect on these features.

The archaeological monitoring also confirmed the presence of some riverine and pre-reclamation river meadow deposits at 3.8m-5m deep. This would suggest that beneath the existing ground level and the reclamation deposits, the original ground surface may be relatively intact, with little disturbance occurring. There is the potential that previously unknown archaeological sites, features or deposits may survive at this pre-reclamation level, giving rise to a potentially moderate / significant negative effect.

Based on the findings from the ground investigation works, the Dublin City Archaeologist has requested archaeological test excavation in order to understand the nature, extent and significance of the below-ground deposits within the site. The testing will commence in January 2020 after the site has been vacated and will be carried out under licence (Licence No. 19E0781) to the National Monuments Service (Department of Culture, Heritage and the Gaeltacht).

The history of the site is significant in terms of cultural heritage. The historic industrial fabric on the site is a tangible and integral part of this history. However, the site has not been publicly accessible, and its history and importance are little known, both to the local community and to Dubliners in general.

As the proposed development will include public open spaces, this offers an opportunity for this to be remedied, and to make a cultural contribution (resulting in an overall slight positive effect on cultural heritage). The provision of information panels, placed in the communal lobby or public square of the development, could assist in the recognition and preservation of the history of the site. These could incorporate both the story of the industrial heritage of the site – providing context for the historic elements that will be retained – as well as the results of any new archaeological findings that may emerge from the archaeological testing and resolution on the site.

The surviving above-ground structures associated with the industrial heritage on the site are assessed in **Chapter 12**, Architectural Heritage. The setting of the historic buildings / monuments in the surrounding urban landscape are assessed in **Chapter 12**, Architectural Heritage and in **Chapter 13**, Landscape and Visual Impact. These are summarised in Sections 12 and 13 below.

12 Architectural Heritage

ARC Architectural Consultants Ltd has been commissioned by the Applicant, Ruirside Developments Ltd, carry out this assessment of the impacts of the proposed development on former industrial lands at 42A Parkgate Street, Dublin 8.

There are a number of structures on the site of the proposed development that have heritage value. Some structures on the site are listed in Record of Protected Structures, but other structures are not. The wording of the Record in the Record of Protected Structures specifically excludes some of the larger structures on the site. The wording is as follows:

(43) Parkgate Street, Dublin 8

Former Parkgate Printing Works, now known as Parkgate House. Only the following structures are included in the Record of Protected Structures: (a) riverside stone wall; (b) turret at eastern end of site; (c) square tower on the riverfront; and (d) entrance stone arch on the Parkgate Street frontage.

Items a) and d) are also listed in the National Inventory of Architectural Heritage (NIAH). Items b) and c): the round turret and the square tower are not. Structures that are not listed in the Record of Protected Structures include:

- The large warehouse building at the eastern end of the site that covers almost half the overall site.
- A ruinous late Georgian house towards the north west corner of the site.
- Gabled industrial buildings on the River front at the west end of the river wall.
- A small two storey building attached to the inside of the eastern side of the arched entrance gateway.
- The long-curved wall of the warehouse facing onto Parkgate Street.

Of these six structures, only the ruinous Georgian house is listed in the NIAH.

As part of the proposed development, it is proposed to retain all the structures listed in the Record of Protected Structures. This will involve restoration works to all the structures. It is proposed to alter the river wall, including partial demolition to allow for enlarging some of the existing and former openings in the wall and by creating some new openings.

It is proposed to retain the larger of the two gabled industrial buildings on the River front and part of the smaller gabled building. While it is proposed to demolish the rest of the remaining structures, it is proposed to retain some of the large cast iron structural elements from the warehouse for use in the new development.

All the proposals for these structures have the potential to give rise to direct effects on the architectural heritage of the structures themselves and indirect effects on the architectural heritage of the surrounding area.

The retention and repair of heritage structures is likely to give rise to “slight” to “moderate” permanent, positive effects on architectural heritage. The loss of heritage features is a permanent loss and has the potential to result in “slight” to “moderate” negative effects on the architectural heritage.

13 Landscape and Visual

This chapter describes the likely significant visual effects of the proposed development on the surrounding environment.

A survey of the potential visibility of the proposed development was carried out by ARC on several dates in the summer and autumn of 2018, having regard to the contents of the *Dublin City Development Plan 2016-2022*. Following meetings with Dublin City Council, 19 view locations were selected, and photomontages were prepared from these view locations.

The assessment examined the River Liffey Corridor from Dublin Port to west of Island Bridge, the Phoenix Park and the lands of the Royal Hospital Kilmanham, and areas of Dublin City north, east and south of the subject site up to a distance of 1 kilometre from the site. The assessment concentrated on the more important public streets and spaces.

Likely Significant Effects

Almost all of the lands west of what is now Rory O’More bridge as far as Chapelizod, both north and south of the River made up a vast official and military complex. The setting was more rural than urban, however all this changed dramatically in the 1840s with the coming of the railway, dividing the state lands, and with the now Heuston station becoming the focal point at the west end of the Quays. The area changed again dramatically in recent years with permission granted in 2005 on OPW lands at Military Road for a 32-storey residential tower, and later with the construction of Heuston South Quarter and the Criminal Courts of Justice. The subject development at Parkgate Street will bring change, but it will be part of a process of change that is already well established.

The proposed development will include a cluster of substantial buildings including a landmark building of the order of 92.5 metres in height, over street level.

The scale of the proposed development will be such that it is likely to be openly visible from a wide area of the surrounding City, including from some medium and long-distance vantage points.

The proposed development has the potential to result in a major change of the character of Parkgate Street, as must be the case for any development on the subject site; since what is seen from Parkgate Street at the moment is a blank grey wall, a stone arched gate and the rear of a dilapidated three bay Georgian house.

The proposed development will impart a more urban, city centre, character to the immediate area, when compared to the rather empty soulless character of the present scene, imparted by the present blank grey wall. It is clear that some care has been taken in the design of the proposed development to provide a lively elevational treatment along Parkgate Street, varied in volume, form and materials, and that in particular the proposed scheme seeks to animate the street at ground level.

Assessment of Effects during Construction

The construction of the proposed development will give rise to the usual visual impacts to be expected from a large construction project, including the normal visual impacts associated with hoarding, tower cranes, construction traffic and emerging and unfinished structure. It is considered that the potential impact of the proposed development during the construction phase will be “moderate” in extent under a worst-case scenario. The character of visual impacts during the construction phase is likely to be wholly negative at first, becoming neutral to positive as work proceeds and the new structure becomes apparent.

Assessment of Effects during Operation

The scale of the proposed development and its prominent location in the city will mean that its existence is likely to result in very substantial changes in the visual character of the immediate area surrounding the development and less substantial changes in the visual character of areas of the city even at some remove from the site of the proposed development.

In line with the terminology of the EPA Guidelines, this report assesses potential visual effects as ‘moderate’ where the development is consistent with existing and emerging trends as expressed through planning policy, even where changes resulting from the existence of the development will be large and substantive.

14 Water and Hydrology

This assessment considers the likely effects of the proposed development in relation to flood risk, surface water, water quality and the existing hydrological regime, including water supply and wastewater.

The proposed development is located within hydrometric Area 09 (HA09), which falls within the Eastern River Basin District Area. The primary surface waterbody in the vicinity of the site of the proposed development is the River Liffey which flows immediately south of the site.

A Flood Risk Assessment (FRA) was completed as part of the planning application and has considered the effects of flood risk on the proposed development. There is no historic record of the site having flooded. The risk of fluvial and tidal flooding from the River Liffey to the site is limited to the southern site boundary. The risk of pluvial flooding to the site is low.

The risk of groundwater flooding is also considered to be low. The proposed development will have no impact on floodplain storage and conveyance. The proposed development will also not increase flood risk off site.

The majority of stormwater runoff from the existing site discharges directly into the River Liffey with the remainder discharging to the combined sewer on Parkgate Street. Some of the surface water also naturally infiltrates to ground. The existing building in the study area is currently in operation as a warehouse and the wastewater discharge volume is estimated to be very low. The site is currently serviced by a connection to the public watermains on Parkgate Street.

The proposed development includes drainage works to manage the discharge of surface water runoff from the site and will consist of the construction of a new stormwater drainage network and include Sustainable Urban Drainage (SuDS) features such as green roofs, rain gardens, filter strips, filter drains and water butts.

The proposed development includes the construction of a new wastewater drainage network and water supply network in order to service the site. A computer model has been prepared for the catchment within the development area and has been used to assess the impact of both the proposed surface water and wastewater drainage network.

The construction activities associated with the proposed development have the potential to alter the water quality and hydrological regime temporarily in the study area. This would be considered a short-term effect and the significance of this effect is moderate/slight.

The proposed stormwater drainage design will not result in an increase in the surface water when compared to the current scenario. As such the operational phase of the proposed development is predicted to have an overall neutral long-term impact on the hydrology within the study area.

The proposed development will result in an additional effluent volume discharging to the public sewer.

To address this, it is proposed to upgrade a section of the existing sewer network on Parkgate Street to divert stormwater from an area of the road catchment to the development. This will create capacity for the wastewater discharge from the development in the combined sewer. Foul effluent from the proposed development will discharge to Ringsend Wastewater Treatment Plant (WWTP) for treatment. While the Ringsend WWTP is currently operating a constrained capacity, a number of projects are in place which will help alleviate this, including: the Ringsend WWTP, the Greater Dublin Drainage Project, the 9C Sewer Duplication Project and the Liffey Siphones Refurbishment Project. As such the proposed development is predicted to have an overall neutral impact within the study area in relation to wastewater.

A CEMP has been prepared (Appendix 4.1). This CEMP will be developed further by the appointed contractor and submitted to the planning authority for approval prior to construction.

Earthworks operations shall be carried out such that surfaces shall be designed with adequate falls, profiling and drainage to promote safe run-off and prevent ponding and flooding. Good housekeeping (site clean-ups, use of disposal bins, etc.) will be enforced by the contractor on the site to mitigate against the risk of spillages. No mitigation measures are required during the operational phase of the development.

Visual monitoring will be undertaken as part of the regular site audits during construction of the proposed development to ensure that the existing drainage regime of the site is not impacted. No monitoring measures are required during the operational phase of the park.

With the implementation of mitigation measures described, there will be no significant residual effect on hydrology, drainage characteristics, water quality or flood risk during either construction or operation of the development.

15 Land and Soils

Chapter 15 of the Parkgate Street Environmental Impact Assessment Report describes the likely impacts of the proposed development on soils and land (i.e. soils and geology). The impact assessment was undertaken with due regard to the overarching EIA guidance (described in Section 1.9 of Chapter 1) and Institute of Geologists Ireland (IGI) guidance.

In accordance with IGI's Guidelines for the preparation of soils, geology and hydrogeology chapters of environmental impact statements, 2013, baseline information within a distance of 2 km from the proposed development has been reviewed. This 2 km buffer area is also shown on Figure 15.1.

A conceptual site model was created based on this information. The geological environment at and in the vicinity of the study area can be described as a historically stable geological environment and underlain by a poor aquifer. Consequently, the geological environment is considered to be Passive (type A) as per the IGI guidelines.

The geological features of importance include contaminated land within the proposed site; the potential soft ground associated with the estuarine deposits; and the bedrock / aggregate resources which would be impacted by the development. Contaminated land was designated a 'High' importance ranking, with the other features being designated a 'Low' importance ranking.

The impact assessment identified required works during the construction phase which may have an impact on the baseline environment. These included earthworks; storage or transmission of leachable and/ or hazardous materials; excavation of materials above the water table and excavation of materials below the water table.

During construction, these works may have an effect on the baseline environment due to pollution from construction activities, compression of substrata, loss of overburden, earthworks haulage; excavation of soft soils; removal of contaminated soils; and ground movements. The magnitude of these potential impacts was determined to be small adverse with the significance of the impacts ranging from imperceptible to moderate / slight.

The impact assessment determined that the operational phase of the proposed development would have an overall neutral long-term impact on the land and soils. The only item which was noted to have a moderate to slight effect was the excavation and management of the contaminated soils on site.

With the implementation of the proposed mitigation measures outlined in Section 15.5.1 and monitoring during construction, the effect of the proposed development on land and soils is considered to be of negligible magnitude and imperceptible significance during construction and operation. No residual effects of significance on land and soils have been identified.

16 Hydrogeology

Chapter 16 of the Parkgate Street Environmental Impact Assessment Report describes the likely impacts of the proposed development on groundwater beneath the site (i.e. Hydrogeology). The impact assessment was undertaken with due regard to the overarching EIA guidance (described in Section 1.9 of Chapter 1) and Institute of Geologists Ireland (IGI) guidance.

In accordance with IGI's Guidelines for the preparation of soils, geology and hydrogeology chapters of environmental impact statements, 2013, baseline information within a distance of 2 km from the proposed development has been reviewed. This 2 km buffer area is also shown on Figure 15.1.

A conceptual site model was created based on this information. The geological environment at and in the vicinity of the study area can be described as a historically stable geological environment and underlain by a poor aquifer. Consequently, the geological environment is considered to be Passive (type A) as per the IGI guidelines.

The hydrogeological features of importance include the locally important bedrock aquifer beneath the site; the sand and gravel deposits beneath the site; and the River Liffey. The bedrock aquifer and River Liffey were both designated a 'Medium' importance ranking, with the sand and gravel layer beneath the site designated a 'Low' importance ranking.

The impact assessment identified required works during the construction phase which may have an impact on the baseline environment. These included earthworks; excavation of materials above the water table and excavation of materials below the water table.

During construction, these works may have an effect on the baseline environment due to removal of made ground; accidental spillages and release of fines; effects on groundwater flow and recharge due to local dewatering; potential effects on the bedrock aquifer and effects on the water level in the River Liffey. The magnitude of these potential impacts was determined to be minor beneficial (removal of made ground) to moderate adverse (release of fines) with the significance of the impacts ranging from imperceptible to moderate.

The impact assessment determined that the operational phase of the proposed development would have an overall neutral long-term impact on the hydrogeology of the site. The removal of some of the made ground from the site and the construction of sealed SUDs drainage results in reduced infiltration and therefore reduced leaching from any made ground left in situ. This could then be considered a small positive effect during the operational phase.

With the implementation of the proposed mitigation measures outlined in Section 16.5.1 and monitoring during construction, the effect of the proposed development on hydrogeology is considered to be of negligible magnitude and imperceptible significance during construction and operation. No residual effects of significance on hydrogeology have been identified.

17 Resource and Waste Management

An assessment of the potential impacts associated with waste management during the construction and operational phases of the proposed development was carried out. The receiving environment is largely defined by Dublin County Council as the local authority responsible for setting and administering waste management activities in the area through regional and development zone specific policies and regulations.

During the demolition and construction phases, typical C&D waste materials will be generated which will be source segregated on-site into appropriate skips/containers, where practical and removed from site by suitably permitted waste contractors to authorised waste facilities. Where possible, materials will be reused on-site to minimise raw material consumption. Source segregation of waste materials will improve the re-use opportunities of recyclable materials off-site. Completion of the basement and construction of new foundations, the installation of underground services and attenuation tank will require the excavation of c.14,620m³. The importation of c. 6,100m³ of fill materials will be required for ground preparation works. It is anticipated, where appropriate, that some of this fill requirement will be obtained from the quantum of excavated materials. The remaining balance of excavated materials, which is either unsuitable for use as fill, or not required for use as fill, will be exported off site.

Excavated material which is to be taken offsite will be taken for offsite reuse, recovery, recycling and/or disposal.

A carefully planned approach to waste management and adherence to the site-specific Construction and Demolition Waste Management Plan (Appendix 17.1) during the construction phase will ensure that the effect on the environment will be short-term, neutral and imperceptible.

During the operation phase, waste will be generated from the residents as well as the commercial tenants. Dedicated communal waste storage areas have been allocated throughout the development for residents. The residential waste storage areas have been appropriately sized to accommodate the estimated waste arisings in both apartments and shared residential areas. The commercial tenants will have a dedicated waste storage area allocated within the development and this can be viewed on the drawings submitted with the application. The waste storage areas have been allocated to ensure a convenient and efficient management strategy with source segregation a priority. Waste will be collected from the designated waste collection areas by permitted waste contractors and removed off-site for reuse, recycling, recovery and/or disposal.

An Operational Waste Management Plan has been prepared which provides a strategy for segregation (at source), storage and collection of wastes generated within the development during the operational phase including dry mixed recyclables, organic waste, mixed non-recyclable waste and glass as well as providing a strategy for management of waste batteries, WEEE, printer/toner cartridges, chemicals, textiles, waste cooking oil and furniture (Appendix 17.2).

The Plan complies with all legal requirements, waste policies and best practice guidelines and demonstrates that the required storage areas have been incorporated into the design of the development.

Provided the mitigation measures outlined in Chapter 17 are implemented and a high rate of reuse, recycling and recovery is achieved, the predicted effect of the operational phase on the environment will be long-term, neutral and imperceptible.

18 Population & Human Health

The purpose of this assessment is to identify and assess the potential health and wellbeing effects of the proposed development on the surrounding population and local community during construction and operation.

The construction phase of the proposed development will likely result in a positive effect on the population in that it will give rise to approximately 600-700 construction jobs. This will subsequently lead to an increase in employment and expenditure in local businesses.

However, a potential temporary negative effect on the population is also identified during construction in that there may be some temporary community disturbance by means of site hoarding/fencing, additional signage, reduced local access (pathways etc.), increased number of people accessing local services etc.

Best practise construction management measures will be employed to limit the level of disturbance incurred.

Dust or Asbestos Containing Materials released to atmosphere during the construction phase could pose a risk to human health by increasing the risk of asthma and other respiratory illnesses. However, appropriate mitigation measures will be employed during construction to ensure that emission levels are contained within all legal limits and that ACMs are handled appropriately. No human health effects are therefore identified.

During the construction phase there is the potential for some significant noise effects which have the potential to cause annoyance, sleep disruption, heart and circulation problems, quality of life, cognitive process disruption and hearing problems. However, appropriate mitigation measures will be employed during construction to ensure that emission levels are contained within all legal limits.

Should any construction materials contaminate the water surrounding the site of the proposed development (such as the River Liffey), the contaminated water could result in the spreading of infectious diseases. However, best practise construction methods will be employed to ensure that no water contamination will occur.

Similarly, leaks from the waste may contaminate soils and water streams, and produce air pollution through contamination, creating health hazards. Waste generated during the construction phase will be segregated at source and disposed of appropriately in accordance with the Construction and Demolition Waste Management Plan (CDWMP). No human health effects are likely to occur.

A ‘very unlikely’ risk of a major accident or disaster occurring is identified during the construction phase of the proposed development.

During the construction phase of the proposed development, there is potential for the temporary disruption of services which could give rise to human health effects. Disruptions in electricity or gas, for example, could result in a lack of heating to the household of an elderly person, and could represent a health risk.

The operational phase of the proposed development will likely result in a positive effect on the population due to the provision of housing, including social and affordable housing in the local area. A positive effect on the population is also predicted through the provision of commercial opportunities including the provision of office space, cafes and restaurants and facility management.

It has been determined that there is sufficient capacity in surrounding childcare facilities and schools to accommodate the proposed development.

The creation of this high-quality quarter will provide a catalyst for the further regeneration of the area increasing footfall and a sense of local community with the introduction of cafes, food and beverage, commercial office and high quality residential uses along Parkgate Street.

Proximity to public transport networks will likely result in a positive effect on those living and working in the proposed development, once operational.

No human health effects are identified, resulting from air quality during the operational phase of the proposed development

Three different options have been proposed for the operational phase of the proposed development, all of which comply with the requirement to achieve a Nearly Zero Energy Building (NZEB). No likely significant climate effects are predicted, and as a result, no consequent human health effects are identified.

Noise levels associated with traffic and machinery/plant during the operational phase of the proposed development are not predicted to be significant and will not result in any human health effects.

Surface water run-off during the operational phase of the proposed development will utilise a proposed new Sustainable Urban Drainage System (SuDS). The existing combined sewer network on Parkgate Street will also be upgraded as part of the development. No water related human health effects are therefore identified.

Waste arising during the operational phase of the proposed development will be disposed of appropriately and in accordance with the sites Operational Waste Management Plan (OWMP). No human health effects are therefore identified.

The operational phase of the proposed development is unlikely to give rise to any significant effects in terms of health and safety. The design of the proposed development has been formulated to provide for a safe environment for future resident's employees. The proposed development has been designed in accordance with all relevant safety and building standards and regulations. A 'very unlikely' risk of a major accident/disaster occurring was identified.

19 Material Assets

This assessment describes the likely significant effects of the proposed development on material assets such as services and utilities. A desk study has been carried out to identify the existing material assets within and adjacent to the site and to determine the likely significant effects of the construction and operation of the proposed development on those material assets.

Electricity and water will be required for the construction activities. This demand is expected to cause a slight negative and short-term effect.

During the construction phase of the proposed development, existing utilities, including electricity and gas will be disconnected, and the services terminated from entering the site. Where utility diversions are required, the action will be agreed with the relevant service provider, and a potential slight-negative, temporary effect is predicted.

During the construction phase of the proposed development, Sustainable Urban Drainage Systems (SuDs) will be incorporated into the site, with surface water run-off from the development site discharging through a minimum of a two-stage treatment train process prior to discharge to the River Liffey. The predicted quantity of construction generated foul water is not expected to be significant. As such, no likely significant effects on the existing sewerage infrastructure are identified.

The proposed development site includes a portion of land which is owned or controlled by Dublin City Council, however a letter of consent from Dublin City Council has been obtained permitting the application for the proposed works. The construction and operation of the proposed development will require the removal and relocation of the existing Dublin Bikes stand, 1 no. street light and waste bins on Parkgate Street, which has the potential to cause a likely, slight- negative, permanent effect.

The proposed development will increase demand on the electricity network in Dublin city centre due to increased residential provision, however, energy efficient initiatives will somewhat offset this demand, causing a permanent, but not significant effect.

It is expected that the existing gas, water and telecommunications will have the capacity to accommodate the increased demand, causing a permanent, but not significant effect. However, 2 no. telecommunication channels will be affected by the height and scale of the proposed development, causing a minor adverse effect on transmission links.

The proposed development includes a new surface water drainage network, causing a long-term, positive effect on the existing sewerage infrastructure and capacity.

The proposed development will result in an additional wastewater effluent volume discharging to the public sewer. The proposed development includes a new wastewater drainage network for the site, therefore it is expected that there will be sufficient capacity in the sewerage network to accommodate the foul wastewater discharge from the proposed development. Foul effluent from the proposed development will discharge to Ringsend Wastewater Treatment Plant (WWTP) for treatment. While the Ringsend WWTP is currently operating a constrained capacity, a number of projects are in place which will help alleviate this, including: the Ringsend WWTP, the Greater Dublin Drainage Project, the 9C Sewer Duplication Project and the Liffey Siphones Refurbishment Project.

Surface water run-off from the development will discharge directly to the River Liffey and not the public sewerage system. As such the proposed development is predicted to have an overall neutral impact within the study area in relation to surface and foul water drainage.

20 Major Accidents and Disasters

This assessment describes the proposed development in respect of its potential vulnerability to major accidents/disasters, and its potential to give rise to the same.

The scope and methodology of the assessment is centred on the understanding that the proposed development will be designed, built and operated in line with best international current practice. As such, major accidents resulting from the proposed development would be very unlikely.

A risk analysis-based methodology that covers the identification, likelihood and consequence of major accidents and/or disasters has been used for this assessment.

The scenario with the highest risk score in terms of a major accident and/or disaster during the construction phase of the proposed development was identified as being ‘quay wall/upper quay wall collapse.’ This risk was identified as being ‘very unlikely’ to occur, with ‘limited’ consequences should it do so, indicating a ‘low risk scenario.’ Standard best practice construction measures will be implemented by the contractor during construction, and lateral steel restraints will be provided to the existing stonework along the river, throughout construction, to avoid risk of collapse.

The scenario with the highest risk score in terms of a major accident and/or disaster during the operational phase of the proposed development was identified as being an ‘incident at nearby Heuston Station.’ This risk was identified as being ‘very unlikely’ to occur, but with ‘very serious’ consequences should it do so, indicating a ‘medium risk scenario.’ In 2018, Ireland was ranked as the 65th country most impacted by terrorism of the 163 countries by the ‘Global Terrorism Index’. The National Risk Assessment 2019 has identified the risk to Ireland from both domestic and international terrorism, however there are no similar ‘recorded incidents or anecdotal evidence’ of an attack of this magnitude in Ireland.

By their nature, major accidents and/or disasters have the potential to give rise to indirect effects such as effects on the economy, tourism, transport, human health etc.

21 Cumulative and Interactive Effects

This chapter summarises the residual effects that have been identified in **Chapters 6 – 20** of the EIAR and determines whether they give rise to cumulative and/or interactive effects based on best scientific knowledge.

Proposed and existing developments, most likely to result in cumulative effects arising from the construction and operation of the proposed development, have been listed in Appendix 21.1 of the EIAR. No likely significant cumulative effects have been identified with regards the proposed development.

A number of potential interactive effects between environmental factors have also been identified in respect of the proposed development (e.g. traffic and transportation and noise and vibration). Actual effects and the description of significance are dealt with in the most relevant chapter (Refer to **Chapters 6-20** of the EIA for further detail).

22 References

Dublin City Council (2016) *Dublin City Development Plan 2016-2022.*, Dublin, Ireland.

Eastern and Midland Regional Assembly (2019) *Regional Spatial and Economic Strategy for the Eastern and Midland Region.* Stationery Office, Dublin.

Government of Ireland (2019), *Planning and Development (Housing) and Residential Tenancies Act 2016.* Stationary Office, Dublin.

S.I. No. 271/2017 - Planning and Development (Strategic Housing Development) Regulations 2017

Department of Housing, Planning and Local Government (2018) *Urban Development and Building Height Guidelines for Planning Authorities*