1 NON-TECHNICAL SUMMARY

1.1 Purpose of the EIAR

The objective of this EIAR is to identify and predict the likely environmental impacts of the proposed development as well as 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.

1.2 A Note on Quotations

Environmental Impact Assessment Reports by their nature contain statements about the proposed development, some of which are positive and some less positive. Selective quotation or quotations out of context can give a misleading impression of the findings of the study.

Therefore, the study team urge that quotations should, where reasonably possible, be taken from the overall conclusions of specialists' section or from the non-technical summary, and not selectively from the body of the individual chapters.

1.3 The Requirement for an EIAR

The process to determine whether an EIA is required for a proposed development is called Screening. This is dependent on the mandatory legislative threshold requirements or the type and scale of proposed development and significance or environmental sensitivity of the receiving environment.

Annex I of the EIA Directive 85/337/EC requires as mandatory the preparation of an EIA for all development projects listed therein. Schedule 5 (Part 1) of the Planning & Development Regulations 2001-2018 brought Annex 1 of the EIA Directive directly into Irish planning legislation. The Directive prescribes mandatory thresholds in respect of Annex 1 projects. Annex II of the EIA Directive provides EU Member States discretion in determining the need for an EIA on a case-by-case basis for certain classes of project having regard to the overriding consideration that projects likely to have significant effects on the environment should be subject to EIA.

Schedule 5 (Part 2) of the Planning & Development Regulations 2001 – 2018 set mandatory thresholds for each project class. Sub-section 10(b)(iii) and (iv) addresses 'Infrastructure Projects' and requires that the following class of project be subject to EIA: (b)(i) Construction of more than 500 dwelling units. Category 10(b)(iv) refers to 'Urban development which would involve an area greater than 2 hectares in the case of business district, 10 hectares in the case of other parts of a built-up area and 20 hectares elsewhere.'

The proposed development comprises a new 30-storey residential building, accommodating 198no. 'build to rent' (BTR) apartment units, ancillary internal and external residential amenities, a café, and recaptured office space where it interfaces with another consented (but undeveloped) building Block B2. The proposed development sits within an overall site of c. 0.82 ha, which also benefits from consented strategic housing development ABP-306569-20. When the proposed development is added to the consented development, which includes 321no. BTR apartments, the cumulative residential development rises to 519no. dwelling units. This quantum of residential development exceeds the mandatory EIA threshold, whereby an EIAR must be prepared. It may be further noted that the proposed development comprises a building of significant height (30-storeys), and the site is located within an historically sensitive area at the western edge of Dublin city centre and immediately beside the River Liffey.

As such, an Environmental Impact Assessment Report is submitted to An Bord Pleanála with this SHD Planning Application.

It may be noted that an EIAR also accompanied SHD application ABP-306569-20.

1.4 Description of Proposed Development

In brief, permission is sought for Strategic Housing Development, with a life of 8 years, at 42A Parkgate Street, Dublin 8, for development comprising:

A 30-storey residential building ('Block A') (c.14,364 sq m gfa), including residential, café/restaurant, replacement office use and ancillary accommodation and works, located in the eastern apex of the site subject of otherwise consented development under ABP-306569-20.

The proposed new Block A building accommodates:

- 198no. 'Build To Rent' residential apartments (73no. studios, 97no. 1-bed, 27no. 2-bed & 1no. 3-bed) from 1st to 27th floors inclusive, including 53no. units with 'winter garden' balconies on the building's eastern elevation.
- Ancillary internal (c.384 sq m) and external (c.255 sq m) residents' private communal amenity areas and facilities, including ground floor reception/concierge area, lounge bars at mezzanine and 9th floors, roof gardens at 9th and 28th floors, and access to other residents' private communal amenity areas within the consented scheme ABP-306569-20.
- 1no. café/restaurant (c.223 sq m) at ground floor. Replacement office floor area (c.595.6 sq m total) accommodated between 1st and 8th floor levels of Block A.
- Ancillary residential bicycle storage (22no. spaces), refuse, circulation and plant, and non-residential back of house and circulation areas at ground and mezzanine floors.
- Building Maintenance Unit (BMU) at roof level.

Ancillary and associated site works and other structural and landscape works are proposed to tie the proposed new Block A building in with the consented development (ABP 306569-20). Proposed amendments to the consented scheme, include:

- At the interface of proposed Block A with the consented Block B2 office building:
    - a reduction by c.909 sq m total of office floor area over 6 floors within the consented Block B2 office building;
    - a reduction by c.35 sq m of external residential amenity and associated minor amendments to landscaping at roof level of consented Block B2; and,
    - localised changes to the northern Parkgate St façade of the consented Block B2 to include a shadow gap at its junction with proposed Block A.
- 16no. additional bicycle parking spaces accommodated within consented Block B1 undercroft area.
- Minor localised amendments to adjoining consented public realm area to tie in with proposed Block A at ground level.
- New telecommunications infrastructure at roof level of consented Block B1, including: 4no. 300mm microwave link dishes mounted on 2no. 2m high steel poles fixed to the consented lift shaft overrun, housed within GRP radio friendly shrouds, to mitigate potential for interference with existing telecommunication channels.

The site within which the proposed works sit, benefits from extant permission for residential-led mixed use strategic housing development under ABP 306569-20 (i.e. the consented development). Permission is <u>not</u> being re-sought for the consented development.

For avoidance of doubt, while the red line site boundary is drawn around the entire planning unit of ABP Ref. 306569-20, the development works for which permission is expressly sought are identified with a green dashed line, within the wider red line planning unit.

The overall site (c.0.82 ha) is principally bounded by Parkgate Street to the north, the River Liffey to the south, an existing electricity substation and the junction of Sean Heuston Bridge and Parkgate

Street to the east, existing Parkgate Place office and residential development to the west. The application site includes areas of public footpath and roadway on Parkgate Street and a small landscaped area at the junction of Sean Heuston Bridge and Parkgate Street. There are Protected Structures on site.

1.5 Examination of Alternatives

Chapter 3 of the EIAR explores the alternatives considered for the proposed development, the site criteria set by the client and the reasons for choosing the site and the built form or design of the proposed development. The design objectives, client vision and alternative configurations examined in consultation with the planning authority during the design process are presented.

This proposal has been developed in consultation with Dublin City Council and with An Bord Pleanála, prior to the making of the application. In composing a scheme for the site, the design strategy has taken cognisance of the reasons for the previous planning refusal for a similarly tall building at this location within the site, as well as a comprehensive review of the site, its context, setting in the city and relationship with the River.

A 'Do-Nothing Alternative' was considered. If the development were not to proceed it would leave the overall masterplan for the site unfinished and underdeveloped. The overall redevelopment of the site would not achieve its optimal strategic regeneration and development potential.

Alternative Locations- The site was chosen due to its location adjacent to the largest transportation interchange hub in the city, its location within the Heuston & Environs strategic development and regeneration area (SDRA 7) where mid rise and tall buildings are promoted, and the site also being capable of supporting a significant and landmark building as a marker to the western gateway to Dublin City Centre.

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

1.6 Construction

Chapter 4 describes the indicative construction strategy for the proposed development. The strategy is in line with the strategy detailed as part of the previously submitted planning application, which was partially granted under ref. ABP-306569-20. 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, which includes both the consented scheme under ABP-306569-20 and Block A to which this application refers, will take approximately 34 months. The construction strategy of the proposed development will be divided into phases.

Heritage buildings and protected structures being conserved and integrated into the overall development, as consented under ABP-306569-20, will be protected during construction stage.

The first phase of the construction strategy will take approximately 4 months and will involve enabling works site set up, demolition of various structures not being retained 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 involve piling and groundworks. It is likely that this phase will run concurrently with enabling and demolition works. During this phase the piling mat will be formed, piling for and overall 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. This phase will involve site set up and preparation, including works on the footpath on Parkgate Street, and construction of the new development including proposed Block A pending planning approval. 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 a total of 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.

1.7 Planning and Policy

Chapter 5 provides a summary of the hierarchy of national, regional and local planning and development policies in the context of the proposed development. For further detailed discussion we refer to the 'Planning Report and Statement of Consistency' that accompanies the application.

In summary, the key planning policy and objectives are contained in the following documents:

- **National Planning Framework (NPF)**

The proposed development is consistent with the NPF, in its promotion of compact, mixed use development on underutilised sites within existing built up areas. The site's location adjacent to a major public transport hub in Dublin city centre is fully in line with the NPF.

- **Eastern and Midlands Regional Spatial & Economic Strategy, including Dublin Metropolitan Area Strategic Plan**

The proposed development delivers on the strategic vision that 50% of all new homes are to be built within the existing built up area of Dublin City & Suburbs. The site is located within the strategic development area of 'City Centre within the M50'.

- **Smarter Travel - A Sustainable Transport Future, A New Transport Policy for Ireland 2009-2020**

The proposed development contributes to the goals of this strategy as it is located immediately adjacent to a major public transportation hub, and is designed to reduce dependence of car based travel.

- **Section 28 Ministerial Guidelines for Planning Authorities**

The proposed development meets the requirements of all relevant Section 28 Ministerial Guidelines and associated Specific Planning Policy Recommendations (SPPRs) relating to, inter alia, sustainable residential and urban development, apartment design and building height in built up urban areas.

- **Dublin City Development Plan 2016-2022**

The proposed development complies with the Core Strategy and zoning objectives of the Development Plan. It complies with all relevant development plan objectives and standards (with the possible exception of residential unit mix and dwelling size – see Material Contravention Statement). It will, as part also of consented development ABP-306569-20, make a positive contribution to the realisation of the vision of the Strategic Development and Regeneration Area no. 7 (Heuston and Environs).

- **Other Relevant Strategic Development Policy**

The proposed development is also supported by other development policy, including:

  - Rebuilding Ireland: Action Plan for Housing and Homelessness (2016)
  - National Development Plan
  - Transport Strategy for Greater Dublin Area 2016-2035
  - Managing Intensification & Change (DEGW 2000)
  - Heuston Gateway: Regeneration Strategy and Development Framework Plan 2003.

1.8 Transport

Chapter 5 describes the likely significant effects of the proposed development in relation to traffic and transportation. These effects are described on the basis of the previously submitted planning application, which was partially granted under ref. ABP-306569-20. The present proposal, although pertaining only to the tower element associated with the redevelopment of the entire site, considers the consented development (ref. ABP-306569-20) with regard to access, cycle parking, car parking and impacts on the transport networks; as it is directly linked to and it is to be facilitated by transport facilities proposed under the consented scheme.

Regarding the construction phase, the total number of trips during peak construction activity is not expected to have a significant impact on the local traffic network.

Regarding the operational phase, the proposed development is to be facilitated by permitted car parking provision. The consented development will provide 26 car parking spaces to serve the entire site. No additional car parking spaces are provided as part of the proposed development, and therefore, no additional car trips are expected to be generated by the development. It is therefore expected that the development will have a negligible impact on the local road network. For this reason, a traffic impact assessment was not required to be undertaken for this development.

Also, the additional pedestrian, cycle and public transport trips generated by the provision of additional residential units is expected to be insignificant in the context of the volumes and capacity of the existing networks and the trips generated by the previously assessed scheme.

The permitted cycle parking quantum is 551 cycle parking spaces. In accordance with Dublin City Development Plan standards of 1 cycle parking space per residential unit, the addition of 38 residential units gives rise to the provision of 38 new cycle parking spaces. The additional cycle parking will be split between proposed block A (22 spaces) and the undercroft area of consented building B1 (16 spaces). Despite the proposed net reduction in office space (c.313.4 sq m), the permitted number of cycle parking spaces is maintained. Thus, resulting in an overall provision of cycle parking spaces above the minimum required by the Dublin City Development Plan cycle parking standards.

In conclusion, there are no significant direct effects expected during the construction and operational phases of the development, and therefore, there are no significant indirect effects identified.

Also, having reviewed the existing granted planning applications in the vicinity of the site, no relevant proposed developments have been identified that could be considered to result in significant cumulative effects in the context of the proposed development during both the construction and operational stages.

Since there are no significant and residual effects anticipated, no monitoring has been proposed with respect to effects from construction or operational traffic associated with the proposed development.

The Construction Environmental Management Plan (CEMP) includes measures to mitigate potential impacts in relation to traffic and transportation in the area during the construction phase. A Mobility Management Plan (MMP) will be developed with measures to further encourage sustainable transport trips during the operational phase. A Mobility Management Plan was prepared that took account of the overall development as part of planning application ref. ABP-306569-20. This is considered valid for the present planning application, as it contains measures that pertain to all the buildings and facilities across both planning applications.

1.9 Air Quality

In Chapter 7, 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 will occur during activities such as: 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 assessment of likely significant effects during construction includes for the implementation of 'standard mitigation', as stated in the TII guidance. The measures which are appropriate and practicable to the proposed development include :

- 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.

In addition, the following measures will be implemented for the proposed development:

- 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.

Employee awareness is also an important way that dust may be controlled on any site. Staff training and the management of operations will ensure that all dust suppression methods are implemented and continuously inspected.

During the construction phase of the proposed development it is possible that disturbance of Aesbestos Containing Materials (ACM) on site could cause asbestos fibres to be released into the ambient environment. 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 gas boilers, as permitted under ABP decision 306569-20, which will be used to service Block A during the operational phase of the proposed development are not of a size which are considered significant with regards air quality. As described in Section 1.7 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.

1.10 Climate

Chapter 8 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 climate.

A climate impact assessment was carried out in order to determine the likely significant effects of greenhouse gas emissions predicted 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 significant materials used during the construction phase. As a percentage of the projected 2025 emissions, the estimated emissions are 0.17% for the residential sector annual emissions, and 0.02% for the total annual non-ETS emissions. This effect is not considered significant.

There is potential for carbon emissions to be generated from construction vehicles accessing the site. However, due to the level of construction traffic predicted (Refer to Section 1.6 of this NTS), no significant indirect climate effects are predicted during construction.

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

The operational wind assessment identified that the proposed development is not predicted to introduce any adverse wind effects to the rooftop amenity space, with the space generally deemed suitable for short/long term sitting activity, provided a balustrade/wind screening is provided, with a minimum height of 2 metres required. The analysis also identified no deterioration of wind conditions at ground level nor local roof level amenities of the permitted scheme as a result of the tower redesign.

The daylight assessment identified that the tower redesign has no impact on the overall daylight compliance rate of the development when compared against the previous submitted scheme. Whilst one further space in the existing scheme has now just fallen marginally below the Guidelines (1.4% achieved/ 1.5% target) the redesign of the tower itself has resulted in full compliance where previously one space did not achieve the BRE guidelines. Refer also to Appendix 8.2 for 'Daylight & Sunlight Analysis Report' prepared by IN2.

The quantitative analysis of neighbouring buildings determined that there would be no negative impact as a result of the proposed development.

1.11 Noise and Vibration

Chapter 9 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 impacts, the key sources relate to the short-term construction phase and the long-term impacts associated with the development 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, tram traffic and passing pedestrian traffic.

During the construction phase, which involves site clearance, substructure, piling, foundation construction, steel erection, main building construction works and landscaping, the assessment has

determined that there is the potential for some short-term significant noise and vibration impacts when works are undertaken within close proximity of 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 significant impacts are not predicted and will be in compliance with the construction criterion.

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 impacts are controlled to within the adopted criteria. Similarly, vibration impacts 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 be of imperceptible impact along the existing road network. No vibration impacts are predicted.

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 impacts 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.

1.12 Biodiversity

Chapter 10 provides an assessment of the impacts of the proposed development in question on the ecological environment, i.e. flora and fauna. The subject site is located at Parkgate Street, Dublin City. The lands in which the proposed development is located have no formal designations. The nearest European sites are located in Dublin Bay at Dublin Port and outer Dublin Bay.

The footprint of the proposed development is comprised of the existing buildings and artificial surfaces which make up the approaches from Parkgate St. and the Hickey's complex which is bordered to the south by the River Liffey.

There are no rare or protected habitats recorded in the study area. The buildings were surveyed for bats and there were no signs or records. There were no signs or records of badgers. While no signs of otters were recorded, there are records from the River Liffey adjacent to the site. The River Liffey itself is known to support Salmon and trout.

The site may be considered of Low Local Ecological Value. There are no predicted significant impacts on local ecology. Specific measures to protect the water quality of the River Liffey will be included in a Construction Environmental Management Plan.

None of the qualifying habitats or species of the European sites occur under the footprint of the proposed works areas.

There is connectivity via the River Liffey to the European sites located downstream in Dublin Bay. There will be no indirect impacts on the European sites in Dublin Bay given the avoidance measures proposed for the protection of the River Liffey during the construction phase.

The majority of developments granted permission in the vicinity of the proposed development area have been screened for predicted impacts on European sites and granted permission. Given the avoidance measures proposed for the protection of the River Liffey, the proposed development will have no predicted impacts on European sites, therefore cumulative impacts can be ruled out.

The development is located in an area of low local ecological value and, as such, is predicted to have a neutral and imperceptible effect on biodiversity.

1.13 Archaeology and Cultural Heritage

Chapter 11 identifies that 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 nonetheless 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 19th 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 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 18th 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 up to 5m of fill across the floodplain and the building of a boundary wall to the river.

Archaeology

Archaeological monitoring of site investigation works and archaeological test excavation have already taken place across the overall development site, including the proposed development area for Block A. It was confirmed that remains associated with the 19th century and later industrial activities on the site survive below ground. The piling required for Block A would have a moderate negative direct effect on these features. The cumulative effect of the proposed and consented (ABP-306569-20) developments on these features was also considered. Where the industrial features are located within or partly within areas to be excavated or otherwise disturbed, they will be directly affected by the consented development, resulting in a moderate negative permanent cumulative effect on the archaeological remains of 19th century industry on the site.

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 significant ground contamination (heavy metals etc.) within the proposed development site (and the consented development site). The presence of these contaminated deposits has led to a development design that leaves these fills in situ, with a consequent reduction in the depth of any ground disturbance. Given this and the depth of the made-ground, the potential to impact on any previously unknown archaeological deposits that may be present at pre-reclamation levels is limited. The piling required for the proposed development of Block A residential building would, nonetheless, result in a moderate negative permanent effect on any such deposits that may be present. The cumulative effect of the proposed and consented developments on these features was also considered; the piling required for the consented and proposed developments would result in a moderate negative permanent cumulative effect on any such deposits that may be present.

No evidence was found during the monitoring or testing for any pre-industrial archaeological remains. The ability to locate and identify Viking 'boulder clay or lacustrine' archaeology in deep test trenches in urban stratified sites is extremely limited and the excavation of further test trenches is unlikely to further define the pre-industrial archaeological potential of the site. In addition, the depths of the reclamation levels and the contaminated soils would present significant logistical and health and safety issues. For these reasons, archaeological monitoring is considered the appropriate mitigation. Archaeological monitoring will take place of any works requiring ground disturbance / excavation, including site preparation works for the piling regime, and any ground disturbance works associated with the propping / stabilisation of the historic turret and river wall. Should archaeological material be identified, the remains will be preserved by record through archaeological excavation. It should be noted that the significant ground contamination that exists within the site may restrict the manual excavation of some deposits based on health and safety concerns.

Prior to the demolition of the late 19th century warehouse / factory (consented under ABP-306569-20), which is associated with the Kingsbridge Woollen Factory (1880-1890), a full photographic and descriptive record of the upstanding remains will take place in order to add to the archaeological record of the subsurface industrial remains.

These mitigation measures are in line with an archaeological strategy that has been drawn up for the consented development site (including the proposed development area) for consultation with the City Archaeologist and the National Monuments Service (Department of Housing, Local Government and Heritage). The proposed strategy seeks to employ preservation by record and to archaeologically excavate the industrial remains that will be exposed as a result of the basement design for the development. It provides for the recording and for the removal of archaeological material acceptable to the planning authority as detailed in the Archaeological Assessment Report (O'Donovan 2020). This includes the following elements:

- Archaeological excavation to be carried out within the basement / undercroft footprint of the development (part of Block B and C);
- Archaeological monitoring to be carried out on the remainder of the site where any sub-surface works associated with the ground floor foundations of the development requires reduction. This will involve having the ground-breaking element of the development works monitored by an archaeologist. Should archaeological material be identified, further archaeological excavation shall proceed;
- Prior to the demolition of existing historic buildings on site, a full photographic and descriptive record of the upstanding remains in relation to the Phoenix Iron Works (c. 1800-1878) and Kingsbridge Woollen Factory (1880-1890) will take place in order to add to the archaeological record of the sub-surface industrial remains;

The strategy acknowledges that significant ground contamination with heavy metals etc. exists on the site and that this may restrict the manual excavation of some deposits based on health and safety concerns. The presence of these contaminated deposits has led to a development design leaving these fills in situ which has a consequent reduction in the area requiring archaeological excavation.

Cultural Heritage

The demolition of the existing late 19th century factory / warehouse and the addition of a new building and function, as part of the proposed development, will have a slight negative effect on the cultural heritage of the site. Taking into account the removal of some of the existing heritage buildings and features in the overall site, and the addition of new buildings and functions, as required for the consented and proposed developments together, this would result in a slight negative cumulative effect on the cultural heritage of the site.

However, it is planned to retain some of the large cast iron structural elements for use in the new development. In addition, the majority of the architecturally or industrially significant buildings will be retained, restored and integrated into the new development (a best practice approach) (see Chapter 12, Architectural Heritage Impact Assessment). This includes the river wall and turret located at the boundaries of the proposed development area. Furthermore, the site itself will be partly opened up to the public and will receive new legibility in terms of the relationship of the historic structures with Parkgate Street and the river (their original context), and to the broader cultural heritage context and its industrial past, e.g. the interrelationship between the site and Sean Heuston Bridge and Heuston Station. The provision of heritage information panels, placed in the communal lobby or public square of the development, will also assist in the recognition and preservation of the history of the site. This is considered an overall slight positive permanent effect on an otherwise hidden but historic site.

The surviving above-ground structures associated with the industrial heritage on the site are assessed in Chapter 12, Architectural Heritage Impact Assessment. The setting of the historic buildings / monuments in the surrounding urban landscape are assessed in Chapter 12, Architectural Heritage Impact Assessment and in Chapter 13, Landscape and Visual Impact Assessment. These are summarised in Sections 1.13 and 1.14 below.

1.14 Architectural Heritage Impact Assessment

Chapter 12 describes the likely significant effects on architectural heritage arising from the existence of a proposed residential landmark building on former industrial lands at 42A Parkgate Street, Dublin. These lands were formerly occupied by the Hickey Home Focus fabric company.

The overall site at 42A Parkgate Street lies at the eastern end of an historic strip of land along the north bank of the River Liffey sloping down from Conyngham Road and Parkgate Street and the River, running west from Parkgate street all the way to Chapelizod. This strip of land is referred to on Rocque's Map of 1773 and on other maps of the late 18th and early 19th centuries, as the Long Meadows. The first buildings on the Long Meadows appear to have been the buildings of the Phoenix Ironworks, founded by Richard Robinson in 1808. In the late 19th century the site was occupied by the Kingsbridge Woollen Works, during the latter part of the First World War it was a munitions factory and from circa 1925 to circa 1975 it was occupied by Cahill's Printers.

Four structures listed in the Record of Protected Structures on the wider 42A Parkgate Street site, at RPS No 6320, where they are described 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.

No works to any of the protected structures or heritage buildings on the 42A Parkgate Street site are proposed as part of the current application and so the existence of the proposed residential landmark building will not give rise to any direct effects on the architectural heritage of these structures.

The proposed residential landmark building, where visible from any of the protected structures, will be seen in the context of an extensive approved development on the larger western portion of the 42A Parkgate Street site. The likely effects on the setting of architectural heritage in the wider surrounding urban area arising from this approved development, taken together with effects arising from a residential landmark building of an earlier design than that now proposed but of a similar scale, were assessed in Chapters 12 and 13 of a previous Environmental Impact Assessment Report that formed part of the documents lodged under An Bord Pleanála reference ABP-306569-20. No new impacts are identified on foot of the proposed development.

1.15 Landscape Visual Impact Assessment

In Chapter 13 it is identified that the *Dublin City Development Plan 2016-2022* includes a number of policies supporting strategic development in the City with a view to promoting coherent legible urban structure. Among these are policies to develop a new urban gateway character area focused on the transport node of Heuston Station, as a western counterpoint to the Docklands. Heuston and Environs is designated as one of 18 strategic development and regeneration areas (SDRAs) and an area where there is a potential for buildings over 50 metres to provide a new urban identity.

The scale of the proposed residential landmark building 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. Thereby, the proposed landmark building has potential to give rise to landscape and visual effects that contribute to positive place making and increasing legibility in the City. Located at the western termination of the public Liffey Quays the proposed development will, inevitably, have a strong visual connection with the River Liffey and with the Liffey Quays. There must also be a strong visual relationship with Heuston Station, the Guinness Brewery and the Phoenix Park. Under the objectives of SDRA7, in addition to the subject site, there are several other sites proposed for major development in the Heuston and Environs area and development on any of these lands will also give rise to widely perceived landscape and visual effects.

1.16 Water

Chapter 14 considers the likely effects of the proposed development in relation to surface water and the hydrological regime, wastewater, water supply (potable water) and flood risk.

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.

There is no historic record of the site having flooded in the past. The risk of fluvial and tidal flooding from the River Liffey to the main area of the site (including the area bounded by the proposed development) is very low. A small low lying area of the site immediately adjacent to the river boundary is at risk of flooding. 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. While flood risk to the main area of the site is very low, a Justification Test for the proposed development has been undertaken given that a small low lying area adjacent to the river is deemed to be at risk. Both the Plan Making and Development Management Justification elements of the Justification Test have been assessed as part of the FRA and both are deemed to be passed.

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 was previously in operation as a warehouse however this is now closed and as such there is no wastewater discharge or potable water demand.

The proposed development includes drainage works to manage the discharge of surface water runoff and this will consist of the construction of a new stormwater drainage network and include Sustainable Urban Drainage (SuDS) features.

The proposed development includes the construction of a new wastewater network and water supply network in order to service the Block A tower. 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 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, a section of the existing sewer network on Parkgate Street shall be upgraded as part of the consented scheme. This will create capacity for the wastewater discharge from the consented and proposed development in the combined sewer. As such the proposed development is predicted to have an overall neutral impact within the study area in relation to wastewater.

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. A project-specific Construction Environmental Management Plan (CEMP) will be implemented by the contractor for the duration of the construction phase. 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 to ensure that the existing drainage regime of the site is not impacted by the proposed development. No monitoring measures are required during the operational phase of the proposed development

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.

1.17 Land and Soils

Chapter 15 of the Parkgate Street Block A 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 1.3 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 of Appendix 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 of Chapter 15 – Land and Soils 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.

1.18 Hydrogeology

Chapter 16 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 1.3 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 of Appendix 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 of Chapter 16 – Hydrogeology 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.

1.19 Material Assets - Waste Management

AWN Consulting Ltd. carried out an assessment of the potential impacts associated with waste management during the construction and operational phases of the proposed development in Chapter 17 of the EIAR. The receiving environment is largely defined by Dublin City 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 construction phase, typical construction 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. There will be small quantities of soil, stone, gravel, made ground and clay excavated to facilitate site preparation for construction and foundation excavations. However, the majority of excavation will occur under the consented application ABP Ref. 306569-20. When excavated materials, which are either unsuitable for use as fill, or not required for use as fill, they will be exported off site. Excavated material which is to be taken offsite will be taken for offsite reuse, recovery, recycling and/or disposal.

Provided the mitigation measures outlined in Chapter 17 and the Construction & Demolition Waste Management Plan (Appendix 17.1) are adhered to during the construction phase, the predicted effect of the construction phase on the environment will be short-term, imperceptible and neutral.

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 larger development located under Block B1, 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 re-use, 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 and the OWMP (Appendix 17.2) are implemented, along with achieving a high rate of reuse, recycling and recovery at the development,

through the implementation of these items, then the predicted effect of the operational phase on the environment will be long-term, neutral and imperceptible.

1.20 Population and Human Health

In Chapter 18, the purpose 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, along with the likely economic significant effects at local and regional level.

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.

The construction phase of the proposed development may result in some temporary community disturbance, for example from the presence of site hoarding/fencing. Any disturbance is predicted to be commensurate with the normal disturbance associated with the construction industry where a site is efficiently and properly managed. In order to mitigate potential temporary community disturbance during construction, a Construction Environmental Management Plan (CEMP) has been prepared.

The construction phase of the proposed development has the potential to give rise to dust emissions. However, mitigation measures which have been incorporated into the CEMP will work to offset potential effects on human health from dust. It is also possible that Asbestos Containing Materials (ACMs) will be released to atmosphere during construction activities. However, where asbestos is uncovered on site during construction, the ACM will be double-bagged and removed from the site by a competent contractor and disposed of in accordance with the relevant procedures and legislation. Traffic generation during construction will not be significant, and no subsequent likely effects on air quality are predicted. The greenhouse gas emissions predicted during the construction phase of the proposed development effect are not considered significant.

During the construction phase, there is the potential for negative, moderate and short-term noise, and subsequent human health effects when works are undertaken within close proximity to the receptor locations. However, 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 the construction phase will ensure any potential human health effects from noise are controlled to within the adopted criteria. Where required, construction noise monitoring will be undertaken.

The construction phase of the proposed development has the potential to alter the water quality and hydrological regime temporarily in the study area, which has the potential to give rise to human health effects. However, mitigation measures which have been incorporated into the CEMP will work to offset potential effects on human health from contamination of nearby water bodies.

Waste generated during the construction phase of the proposed development will be segregated at source and disposed of appropriately. No potential effects on human health are therefore identified. The management of waste during the construction phase will be monitored by the site manager.

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. Should any utility/service diversions or disturbances be required, these will only be carried out in agreement with the relevant service providers, and with notice to the affected public.

Once operational, the proposed development will provide much needed residential opportunities in a prime city centre area, which will help cater for the considerable and consistent demand in housing in Dublin. Some 198 residential units will be provided as part of the proposed development, which in combination with the consented development (321no. residential units), has potential to accommodate over 1,100no. residents. In addition, some 52no. social housing units will be provided. This is likely to result in a likely, positive and permanent effect on the local population and will ensure that the community is accessible to a range of demographics and ensuring delivery of a healthy

balanced community. The operational phase of the proposed development will also provide significant commercial opportunities in the local area, through the provision of office space (permitted development, ABP Ref 306569-20) as well as cafe/restaurant space. The proposed development will improve the vibrancy and vitality of the area; providing 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 of the proposed development to public transport networks will likely result in a positive effect on those living and working in the proposed development, once operational. No additional car parking provision is included in the proposed development. As a result, the proposed development is expected to have a negligible impact on the local road network.

Significant new public open space is delivered within the site as part to the consented scheme, including a new public plaza, connecting Parkgate Street (physically and visually) to the new river side walkway. The spaces can be used in a casual, social and incidental way, but also have potential to facilitate programmed cultural activities/uses such as markets, cinema screening etc, subject to separate consent or licensing as necessary.

There is sufficient capacity in the existing registered and permitted childcare facilities, as well as existing educational facilities in the identified catchment to absorb the predicted demand in childcare and educational needs as a result of the new residential opportunities.

No likely significant effects on air quality are predicted during the operational phase of the proposed development. The sunlight and daylight assessment identified that the tower redesign has no impact on the overall daylight compliance rate of the development when compared against the previous submitted scheme (ABP Ref 306569-20).

No human health effects resulting from noise generation during operation are identified in the operational phase of the proposed development. An inward noise assessment was also undertaken and no significant effect is predicted.

The proposed development will result in an additional effluent volume discharging to the public sewer. To address this, a section of the existing sewer network on Parkgate Street will be upgraded as part of the consented scheme (ABP Ref 306569-20) to create additional capacity. No water related human health effects are therefore identified. The proposed development will incorporate SuDS features in order to improve water quality and reduce the quantity of surface water discharging into the receiving system. The water supply network will include low flow devices with the aim of minimising water usage.

Waste will be collected from the designated waste collection areas by permitted waste contractors and removed off-site for re-use, recycling, recovery and/or disposal. Thus, no waste related human health effects are identified. A project specific Operational Waste Management Plan (OWMP) has been prepared. Implementation of this OWMP will ensure a high level of recycling, reuse and recovery at the development.

The operational phase of the proposed development is unlikely to give rise to any significant effects in terms of health and safety.

1.21 Material Assets – Utilities and Telecommunications

Chapter 19 describes the likely significant effects of the proposed development on material assets. A desk study has been carried out to identify the existing material assets (including electricity and telecommunications infrastructure, gas networks, water supply infrastructure and drainage infrastructure and street furniture) within and adjacent to the site to determine the likely significant effects of the construction and operation of the proposed development on those material assets.

The lands, subject of the proposed development, included in the red line boundary are within the ownership of the developer, Ruirside Developments Ltd. No acquisition of land will be required during the construction phase of the proposed development.

The consented development includes the removal and relocation of the existing Dublin Bikes stand and waste bins on Parkgate Street.

A temporary connection to existing infrastructure will facilitate electricity supply to the site during construction, subject to the appropriate agreements. The power demands during the construction phase on the existing electricity network are considered to be a slight, negative and short-term effect. Existing electricity supply will be disconnected, and the services terminated from entering the site. Disconnections will be phased corresponding to the proposed progress of demolition and construction works on site.

There is no existing telecommunications infrastructure within the site of the proposed development- all existing telecommunication cables run along Parkgate Street. As such, there will be no likely significant effects on telecommunications infrastructure during the construction phase of the proposed development. However, 2 No. telecommunications channels have been identified that will potentially be affected by the height and scale of the proposed development. The effect of the proposed development on these microwave link dishes will likely occur during the construction period but continue during operation.

To mitigate this effect, the proposed development includes provision for a new hop site to enable continuation of existing transmission. Following implementation of this mitigation, the residual impact on telecommunication services is considered to be imperceptible

There is no existing gas infrastructure within the subject site, all existing gas pipelines run along Parkgate Street. As such, there will be no likely significant effects on gas infrastructure during the construction phase of the proposed development.

The site is currently serviced by a connection to an existing 150mm public water main on Parkgate Street which will continue to service the contractors' compound throughout the construction phase of the proposed development. The water demands during the construction phase on the existing water supply network are considered to be an imperceptible and short-term effect.

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.

Once operational, 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.

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 consented development provides for a new wastewater drainage network for the site, and as such, 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. 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

1.22 Major Accidents and Disasters

In Chapter 20 the 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.

1.23 Cumulative and Interactive Effects

Chapter 21 identifies the principal interactions between the potential impacts of the environmental factors identified in Chapters 6 – 20 inclusive, and as well as cumulative impacts arising based on best scientific knowledge. All potential interactions have been addressed as required throughout the EIAR.

During each stage of the assessment contributors have liaised with each other (where relevant) to ensure that all such potential interactions have been addressed.

	Transport	Air Quality	Climate	Noise and Vibration	Biodiversity	Archaeology and Cultural Heritage	Architectural Heritage	Landscape and Visual Impact	Water	Land, Soils	Hydrogeology	Material Assets - Waste Management	Population and Human Health	Material Assets	Major Accidents and Disasters
Transport		CO	CO	C	-	-	-	-	-	C	-	CO	CO	-	-
Air Quality	CO		CO	-	C	-	-	-	C	C	-	-	C	-	-
Climate	CO	CO		-	-	-	-	-	O	-	-	-	CO	-	-
Noise and Vibration	C	-	-		-	-	C	-	-	C	-	-	C	O	-
Biodiversity	-	C	-	-		-	-	O	CO	-	-	-	-	-	-
Archaeology and Cultural Heritage	-	-	-	-	-		CO	-	-	-	-	-	-	-	-
Architectural Heritage	-	-	-	C	-	C		CO	-	-	-	-	-	-	C
Landscape and Visual Impact Assessment	-	-	-	-	O	-	CO		-	C	-	-	-	O	
Water	-	C	O	-	CO	-	-	-		C	C	-	CO	CO	-
Land Soils	C	C	-	C	-	-	-	C	C		C	C	-	C	-
Hydrogeology	-	-	-	-	-	-	-	-	C	C		C	-	-	-
Material Assets - Waste Management	CO	-	-	-	-	-	-	-	-	C	C		-	-	-
Population and Human Health	CO	C	CO	C	-	-	-	CO	CO	-	-	-		CO	CO
Material Assets	-	-	-	-	O	-	-	O	CO	C	-	-	CO		-
Major Accidents and Disasters	-	-	-	-	-	-	C	-	-	-	-	-	CO	-	

Table 21. 1: Potential for Interactive Effects of Significance

1.24 Mitigation, Monitoring and Residual Effects

Chapter 22 provides a summary of all the mitigation and monitoring measures proposed throughout the EIAR document, as well as residual effects for ease of reference for the consent authority and all other interested parties.