

Area	No Formal Education	Primary Education	Secondary ¹	Higher Education ²	Under-graduate Degree ³	Post-graduate Degree ⁴	Total Persons
Highest Level of Education in 2011							
Dublin City	4,635	56,817	109,746	50,898	67,398	46,007	335,501
North City	28	140	574	529	790	530	2,591
Rotunda B	23	118	353	239	352	203	1,288
Rotunda A	38	257	692	431	422	287	2,127
Mountjoy A	56	483	722	455	474	291	2,481
Mansion House A	31	468	623	277	466	521	2,386
Royal Exchange A	26	221	415	343	582	450	2,037
North Dock C	46	413	608	328	573	425	2,393
Highest Level of Education in 2016							
Dublin City	1,435	8,816	30,167	20,004	17,946	9,190	87,558
North City	32	104	531	445	835	584	2,531
Rotunda B	29	102	213	216	344	254	1,158
Rotunda A	62	265	896	578	678	378	2,857
Mountjoy A	78	331	706	455	514	353	2,437
Mansion House A	48	343	574	339	568	548	2,420
Royal Exchange A	37	146	333	303	603	485	1,907
North Dock C	67	388	496	277	569	521	2,318

Table 5.6: Highest level of education in 2011 and 2016 (Source: www.cso.ie).

5.3.2.3 Labour Force Survey

The Labour Force Survey (LFS) is a large-scale, nationwide survey of households in Ireland carried out every three months. It generates labour force estimates which include the official measure of employment and unemployment for the state.

The LFS results nationally for Q4 2021 showed that there were 2,506,000 people employed in the state with 127,400 classified as unemployed (aged 15-64 years). In Q4 2021, the majority of people were employed in the broad occupations of 'Industry' or as 'Human Health and Social Work Activities' and 'Wholesale and Retail Trade'.

It is important to note that the effects of COVID-19 on the labour market in the results from the Labour Force Survey (LFS) in Quarter 1 (Q1) 2021. The results reflect some of the economic impacts of the COVID-19 situation. The LFS estimates that at the end of December 2021, the COVID-19 Adjusted Measure of Unemployment is currently estimated to have been 195,313 with an associated COVID-19 Adjusted Unemployment Rate of 7.4%

¹ Lower secondary and Upper secondary

² Higher Certificate, Advanced certificate/completed apprenticeship or Technical/vocational training

³ Ordinary bachelor's degree, Honours bachelor's degree/professional qualification

⁴ Postgraduate degree or Ph.D

5.3.2.4 Income

The below data in Table 5.7 is obtained from CSO Statbank (CIA02), this demonstrates the levels of total income and disposable income per person in the Dublin area are 15-20% higher over the study years than the State in 2018.

A similar pattern of income distribution is observed in data on disposable income per person.

The below data in Table 5.7 is obtained from CSO Statbank (CIA02), this demonstrates the levels of total income and disposable income per person in the Dublin area are 14-18% higher over the study years than the State in 2019.

A similar pattern of income distribution is observed in data on disposable income per person.

Area	Income	2017	2018	2019
State	Total Income per Person (€)	29,239	30,753	31,812
	Disposable Income per Person (€)	20,714	21,270	22,032
Dublin	Total Income per Person (€)	35,197	37,530	38,903
	Disposable Income per Person (€)	23,864	24,969	25,696

Table 5.7: Income per Person (Source: CSO Statbank CIA02).

5.3.2.5 Deprivation

Deprivation in small areas is mapped using the Pobal HP Deprivation Index. This Index draws on data from censuses and combines three dimensions of relative affluence and deprivation: Demographic Profile, Social Class Composition and Labour Market Situation. Figure 5.2 below shows a graphical representation of how the concepts of Demographic Growth, Social Class Composition and Labour Market Situation are measured by ten key socio-economic indicators from the Census of Population. In this EIA Report, the Relative Index Score is considered as the measure for deprivation, as these Relative Index Scores are rescaled such that the mean is 0 and the standard deviation is 10 at each census wave. This allows for the provision of descriptive labels with the scores, which are grouped by standard deviation as seen in Table 5.8 below.

Graphical representation of how the concepts of Demographic Growth, Social Class Composition and Labour Market Situation are measured by ten key socio-economic indicators from the Census of Population.

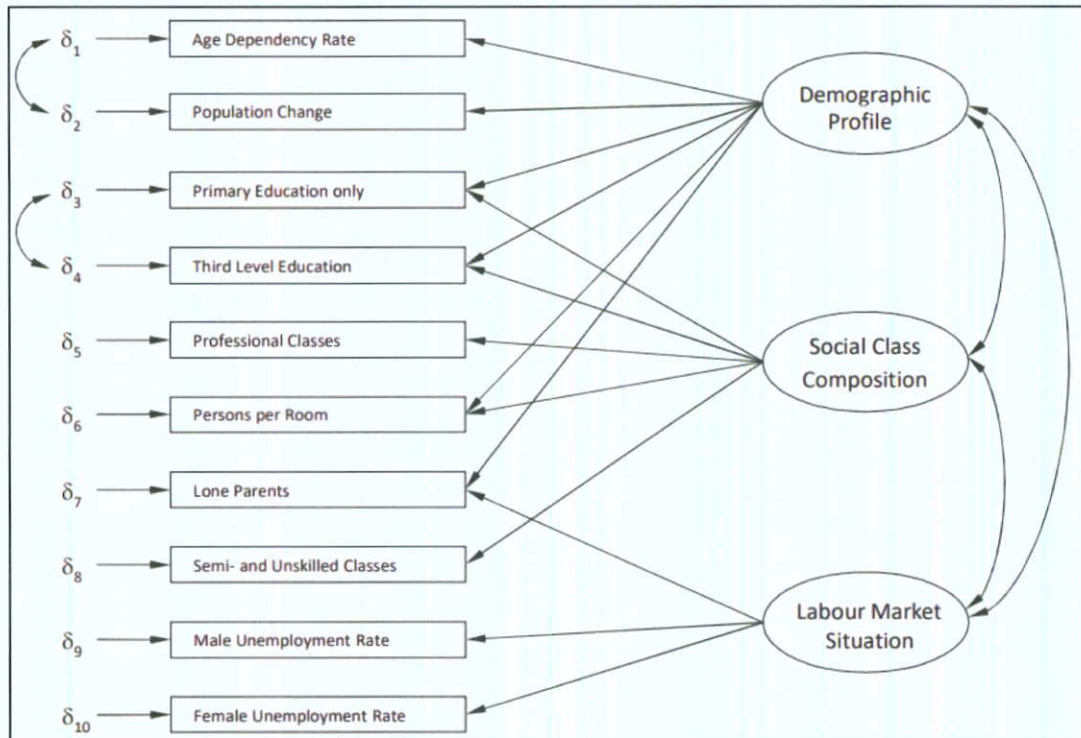


Figure 5.2: Basic Model of the Pobal HP Deprivation Index.

Relative Index Score	Standard Deviation	Label
> 30	> 3	Extremely affluent
20 – 30	2 – 3	Very affluent
10 – 20	1 – 2	Affluent
0 – 10	0 – 1	Marginally above average
0 – -10	0 – -1	Marginally below average
-10 – -20	-1 – -2	Disadvantaged
-20 – -30	-2 – -3	Very disadvantaged
< -30	< -3	Extremely disadvantaged

Table 5.8: Pobal HP Index Relevant Index Score labels (Source: Pobal HP Deprivation Index).

The data in Table 5.9 shows the Pobal HP Index Relevant Index Score Figures at a local and County level (Source: Pobal HP Deprivation Index). These figures show that the population living within the Study Area are generally classified as ‘Marginally above average’ and ‘Affluent’. The county of Dublin is classified as ‘Marginally above average’ for the year 2011. Figure 5.3 below presents the Pobal HP Index map illustrating the Study Area.

Area	Relative Index Score	Pobal HP Description 2011
Dublin County	3.74	Marginally above average
North City	14.97	Affluent
Rotunda B	8.95	Marginally above average
Rotunda A	3.64	Marginally below average
Mountjoy A	2.60	Marginally above average
Mansion House A	4.62	Marginally above average
Royal Exchange A	13.79	Affluent
North Dock C	4.61	Marginally above average

Table 5.9: Pobal HP Index Relevant Index (Source: Pobal HP Deprivation Index).

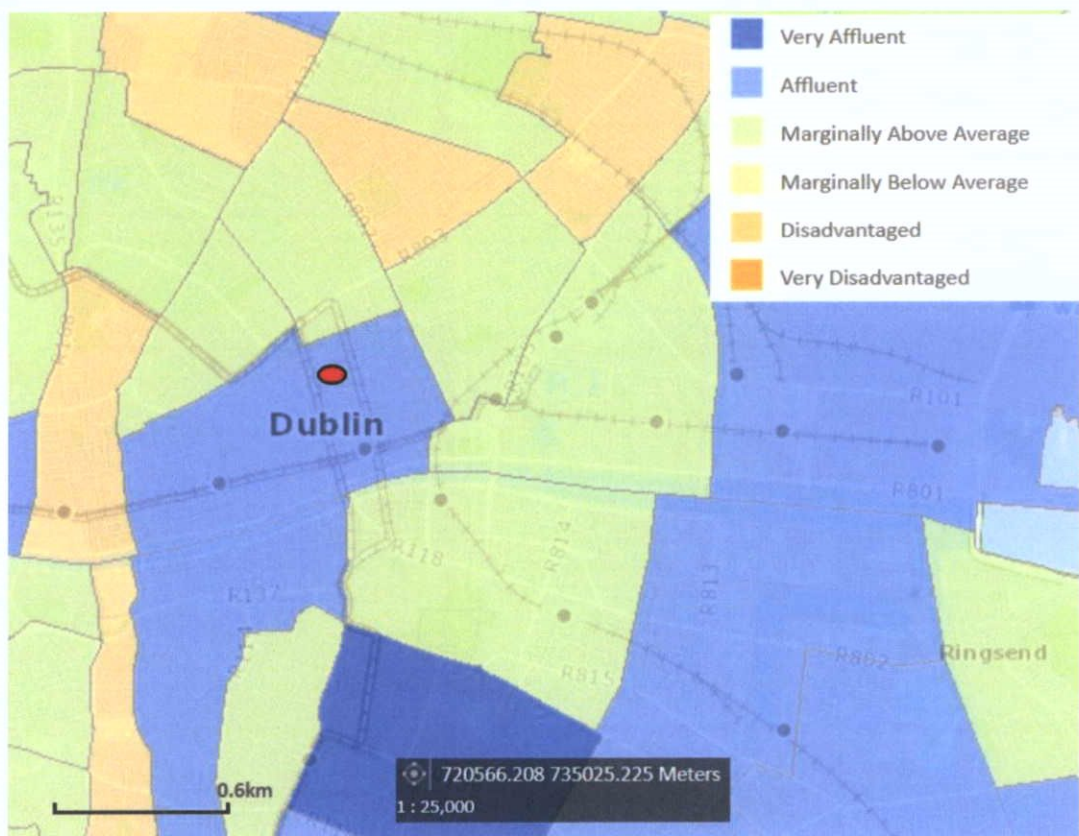


Figure 5.3: Pobal HP Index Electoral Division, Site is indicated with a red dot (Source: Pobal HP Deprivation Index).

5.3.3 Health

5.3.3.1 Physical Health

Life expectancy in Ireland by sex is a key metric for assessing population health; data for the study area is shown in Table 5.10. Dublin data shows that life expectancy for both males and females has increased consistently, with female life expectancy consistently higher than male.

Period Life Expectancy in Dublin by Sex					
Area	Sex	2002	2006	2011	2016
Dublin	Male	75.2	76.7	78.3	80.1
	Female	80.2	81.2	82.7	83.4

Table 5.10: Period Life Expectancy in Dublin by Sex.

Table 5.11 shows Circulatory Diseases Admission Rate per 100,000 Population at a National and County level (Source: Public Health Well Community Profiles). The rate of hospital admissions in Dublin City tends to generally fall in line with that of the State for all study years.

Circulatory Diseases Admission Rate per 100,000 Population					
Area	2010	2011	2013	2014	2015
State	4,308.6	4,026.8	4,495.6	4,644.6	3,794.9
Dublin City	3,805.56	3,498.7	3,950.4	4,716.7	3,425.8

Table 5.11: Circulatory Diseases (Source: Public Health Well Community Profiles).

Respiratory Diseases Admission Rate per 100,000 Population at a National and County level are shown in Table 5.12. The rate of hospital admissions in Dublin City tends to generally fall in line with that of the State for all study years.

Circulatory Diseases Admission Rate per 100,000 Population					
Area	2010	2011	2013	2014	2015
State	2,402.6	2,361.0	2,633.6	2,691.0	2,712.5
Dublin City	2,483.7	2,349.7	2,585.7	2,693.7	2,597.9

Table 5.12: Respiratory Diseases (Source: Public Health Well Community Profiles).

With respect to mental health the rates of death by suicide and intentional self-harm rate per 100,000 population is shown in Table 5.13 below. The rate in Dublin is overall lower over the study years compared with those in the State. The rate of death by suicide and intentional self-harm are generally decreasing year-on-year, this is generally in line with the pattern seen in the State.

Death by Suicide and Intentional Self Harm Rate per 100,000 Population				
Area	2014	2015	2016	2017
State	10.46	9.07	9.22	8.18
Dublin City	6.22	3.88	3.97	3.48

Table 5.13: Death by Suicide and Intentional Self Harm (Source: CSO Statbank DHA12).

The number of admissions to hospital for anxiety or depression per 1,000 people (Table 5.14) in Dublin City have followed the same pattern of the State, which shows a decline from 2013 to 2014. However, there was a steep incline in 2015 which occurred in Dublin City but did not occur for the overall State (Table 5.14).

Number of Admissions to Hospital for Anxiety Or Depression per 1,000 People			
Area	2013	2014	2015
State	2	1.8	1.8
Dublin City	2	1.4	24.9

Table 5.14: Number of admissions to hospital for anxiety or depression (Source: Public Health Well Community Profiles).

5.3.4 Social Infrastructure

5.3.4.1 Residential Dwellings

Currently, the proposed site has little to no residential units present. The nearest existing residential units to the Proposed Development are those located at Greeg Court Apartments, to the northwest of the site boundary, and Jurys Inn Hotel Parnell Street and Lynams Hotel, which are located beyond the north and east boundaries respectively. Other hotels in close proximity to the eastern site boundary are Holiday Inn Express and The Gresham Hotel on O'Connell Street.

As the site is centrally located within Dublin City centre there are a large number of commercial premises in close proximity including Henry Street to the South, and the nearby Jervis and Ilac Shopping Centres.

5.3.4.2 Schools

The area is well served by educational institutions. There are a number of primary and secondary schools in the vicinity of the Proposed Development including: -

- Central Model Infant School c. 214 m east of the site.
- Rutland National School c. 500 m east of the site.
- St. Marys Primary School c. 570 m north west of the site.
- Central Model Senior School c. 370 m east of the site.
- Mount Carmel Secondary School c. 470 m to the north west of the site.
- St. Pauls Secondary School c. 500 west of the site.

The closest third level institutions in the area include Trinity College Dublin (500 m to the south east), IBAT College Dublin (621 m to the south west) and the National College of Art and Design (1.3 km to the south west).

5.3.4.3 Health

The nearest hospital to the site is the Rotunda Hospital located c. 230 m to the north of the site. Talbot Street and Jervis Street Medical Centres are located c. 350 m to the east and west of the site respectively.

5.3.4.4 Security

The O'Connell street Garda Station is located 60 metres to the north with Store Street Garda Station located 640 m to the east.

5.3.5 Landscape Amenity and Tourism

In terms of landscape amenity of the Proposed Development site, there are no listed or scenic views, no landscape or amenity designations or protected trees pertaining to the site. There are a number of protected structures listed on the Sites and Monuments Record (SMR) in the Dublin City Centre area. Directly to the west bounding the site is No. 14 – 17 Moore Street (DU018-390). An historical Brickworks site is located to the north east of the site on Moore Land (DUB018-020506). See Chapter 16: Cultural Heritage (Archaeological).

The primary areas of landscape amenity in the immediate vicinity of the Proposed Development site are Mountjoy Square Park (620 m to the north east) and Kings Inn Park (c. 700 m to the north west), which are all small recreational parks. Primary amenity areas such as Stephen's Green Park, Dublin Bay and the Phoenix Park are located c. 1.4 km to the south, 4 km to the south east and c. 2.3 km west of the site, respectively.

The Proposed Development site is not considered to be significant or sensitive from a natural landscape aspect due to its city central location. The lands are appropriately zoned in the Dublin City Development Plan 2016 – 2022 as Z5 – *'To consolidate and facilitate the development of the central area, and to identify, reinforce, strengthen and protect its civic design character and dignity'*. The immediate surrounding area is contained within an environment of an established city centre setting.

Tourism is a major industry in the immediate environs of the Proposed Development site; with the General Post Office, O'Connell Street, Moore Street bounding the site. Section 6.5.3 of the Dublin City Development Plan lists a number of policy's to promote and facilitate tourism in the city centre area. A number of hotels are located in and around the Proposed Development site with a large number of hotels opening in Dublin City in the last number of years the closest of these would be Jury's Inn Parnell Street bounding the site to the north, and the Gresham Hotel 20 metres to the east.

5.3.6 Natural Resources

Natural resources and land use in the hinterland of the Proposed Development have also been considered as they may have implications for the development of the lands.

The site is within the historical centre of Dublin City. Historical Ordnance Survey (OS) maps indicate that much of the surrounding land has been in a similar use for over 200 years.

Data from the Geological Survey of Ireland indicates that there are no areas of geological heritage within the vicinity of the proposed site. In terms of extractive industries, the closest active quarries are the Huntstown Quarry in Finglas (c. 7.4 km north west of the site) and the Belgard Quarry in West Dublin (c. 10.5 km south west of the site), both of which are operated by Roadstone Ltd. There are no anticipated impacts on these facilities from the Proposed Development. Further detail on extractive industries is presented in Chapter 7: Land, Soils & Geology.

5.4 CHARACTERISTICS OF PROPOSED DEVELOPMENT

5.4.1 Dublin Central Masterplan

The Dublin Central project is an expansive (c.2.2 Ha) and complex regeneration project. It needs to be delivered in stages to overcome site and project constraints.

A site wide cumulative masterplan has been prepared by 'the Applicant' to set out the overall development vision for the Dublin Central project.

The Dublin Central Masterplan area encompasses almost entirely three urban blocks. The area is bounded generally by O'Connell Street Upper and Henry Place to the east, Henry Street to the south, Moore Street to the west, and O'Rahilly Parade and Parnell Street to the north. Moore Lane extends south from Parnell Street through the centre of the masterplan area, as far as its junction with Henry Place.

A detailed description of the development site context is presented in Chapter 3: Description of Proposed Development.

5.4.2 Proposed Development – Site 2 & No. 61 O'Connell Street Upper

Site 2 comprises a mixed-use scheme incorporating retail, office, hotel, residential uses, associated car parking, landscaping and an interface with the underground Metro Station (to be provided by TII should planning permission be granted for the scheme). Its development will be guided by the Dublin Central Masterplan which will consist of at least five separate phases.

No. 61 O'Connell Street Upper comprises the refurbishment of the existing building as residential use (comprising 3no. 2-bed apartment units) from 1st to 3rd floor including the creation of a new covered pedestrian link through part of the ground floor connecting O'Connell Street Upper and Henry Place. 2no. café / restaurant units are proposed at ground floor onto O'Connell Street and Henry Place. A leisure studio / gym is proposed at basement including the provision of 2no. changing rooms.

A detailed description of the development site context is presented in Chapter 3: Description of Proposed Development.

5.5 POTENTIAL IMPACTS

5.5.1 Dublin Central Masterplan

The impact of construction, commissioning, operation and decommissioning of the Dublin Central Masterplan is considered below. As the study area is based on Local Electoral Districts the impacts and mitigation measures for both the Dublin Central Masterplan and the Proposed Development (Site 2 and No. 61 O'Connell Street Upper) will be similar or identical for some of the criteria listed.

5.5.1.1 Construction Stage

5.5.1.1.1 Impacts on Business and Residences

The main potential impacts on local businesses and residences associated with the implementation of the Dublin Central Masterplan will be in relation to air quality, noise, visual impact and traffic. The potential impacts and mitigation measures to address them are dealt with within the corresponding chapters of this EIAR as follows: -

- Chapter 9: Climate (Air Quality and Climate Change).
- Chapter 10: Climate (Sunlight & Daylight).
- Chapter 11: Air (Noise & Vibration).
- Chapter 12: Landscape and Visual Impact.
- Chapter 13: Material Assets (Transportation).

It is predicted that there will be a slight positive impact on local business activity during the construction phase with the increased presence of up to 400no. construction workers using local facilities. It is also believed there will be a long-term positive impact during the operational phase due to the residential aspect of the scheme and the increase in people requiring the use of the City Centre Facilities.

There may be a short term slight negative impact on the local residential population during the construction phase and the operational phase, as well as the potential additional housing demand in the wider commuter area as a result of increased employment provided by the implementation of the Dublin Central Masterplan. It is also anticipated that the implementation of the Dublin Central Masterplan will have indirect positive effects on employment in terms of construction material manufacture, maintenance contracts, equipment supply, landscaping etc.

The potential increase in the temporary population of the area during construction as a result of the employment of workers from outside the wider Dublin area that may choose to reside in the immediate and wider local area is likely to amount to only a small percentage of the workforce employed during the construction phase but will result in some additional trade for local accommodation and services. It is expected that the majority of the work force will travel from existing places of residence to the construction site rather than reside in the immediate environs of the site. However, some local employment from within the wider local area is expected.

Construction will have an indirect positive effect on support industries such as builder suppliers, construction material manufacture, maintenance contracts, equipment supply, landscaping and other local services. There will also be a need to bring in specialist workers on a regular basis that may increase the above estimated working population at times. Specialists are only likely to stay for shorter periods depending on the nature of the work. The construction phase, therefore, is considered to have the potential to have a **positive, moderate, short to medium term impact** on the economy and employment of the local and wider area.

The completed development will also have a positive impact in the provision of additional capacity for residential units in the city centre, the demand for which remains high due to the current nationwide housing crisis.

5.5.1.1.2 Impact on Human Health from Air Quality

As outlined in Chapter 9: Climate (Air Quality and Climate Change) of this EIAR, National and European statutory bodies have set limit values in ambient air for a range of air pollutants. These limit values or "Air Quality Standards" are based on the protection of the environment as well as the protection of human health. Additional factors such as natural background levels, environmental conditions and socio-economic factors are also considered in the limit values which are set (see Chapter 9, Table 9.1). The ambient air quality standards established are designed to minimise harmful effects to health.

Dust emissions from the demolition and construction phase of the Proposed Development have the potential to impact human health through the release of PM₁₀ and PM_{2.5} emissions. As per Table 9.6 the surrounding area is considered of low sensitivity to significant dust related human health impacts. There is an overall medium risk of human health impacts as a result of the demolition and construction works from the implementation of the Dublin Central Masterplan (see Table 9.11). Therefore, in the absence of mitigation there is the potential for **negative, slight and short-term** impact to human health as a result of the Proposed Development.

Traffic emissions from construction vehicles also have the potential to impact human health. However, as per Section 9.5.1.1.1 the change in local air quality as a result of construction traffic is considered **negative, imperceptible and short-term** impact in the absence of mitigation.

5.5.1.1.3 Impact on Human Health from Noise & Vibration

Noise and vibration impacts associated with the implementation of the Dublin Central Masterplan have been fully considered within Chapter 11: Air (Noise & Vibration) of this EIAR. Commentary on the impact assessment and related noise levels are summarised below with respect to potential environmental health impacts.

As detailed in Chapter 11, there will be some impact on nearby noise sensitive properties due to noise emissions from site activity and traffic. The application of noise limits and limits on the hours of operation, along with implementation of appropriate noise and vibration control measures, will ensure that noise and vibration impact is kept to a minimum. In addition, due to the distance between the site and the nearest sensitive locations, vibration impacts generated during construction are expected to be negligible. Therefore, it is expected in the absence of specific mitigation measures that there will be **negative, slight to moderate and short term noise** impact at the closest receptors while the vibration impact will be **neutral, not significant and temporary**.

5.5.1.1.4 Impact on Local Amenities and Tourism

There are no listed or scenic views, no landscape or amenity designations or protected trees pertaining to the site, and no protected structures or National Monuments within the boundary of the Dublin Central Masterplan area. There are a number of protected structures listed on the Sites and Monuments Record (SMR) in the Dublin City Centre area. Directly to the west bounding the site is 14-17 Moore Street (DU018-390). A historical Brickworks site is located to the north east of the site on Moore Land (DUB018-020506). These will be protected and not impacted by the proposed construction and demolition works.

During construction and demolition works there may be a **negative, slight** and **short-term impact** on the surrounding tourist attraction of the GPO to the south and north O'Connell Street due to works. There will be no impacts to the nearby park amenities identified above.

The Dublin Central Masterplan will create a wastewater discharge but will not have an impact on local amenities or the local population.

5.5.1.1.5 Impact on Material Assets

The Proposed Development will require connections to the utility networks and the requirements for this supply have been detailed in the Outline Construction & Demolition Management Plan – Masterplan, prepared by Waterman Moylan Consulting Engineers Limited.

5.5.1.1.6 Impacts from Additional Traffic

An assessment of the additional traffic movements associated with the implementation of the Dublin Central Masterplan during the construction and operational phases is presented in Chapter 13: Material Assets (Transportation).

As stated in Section 13.5.1.1.16 of Chapter 13, the increase in traffic volumes, the reduction in the width or local carriageways, temporary road closures, reduction in width of select pathways etc associated with the construction and demolition phase would lead to a **likely slight negative** and **short-term** impact.

5.5.1.1.7 Impacts from Unplanned Events / Impacts on Health and Safety

The Dublin Central Masterplan has been designed in accordance with the Safety, Health and Welfare at Work Act 2005 (S.I. 10 of 2005) as amended and the Safety, Health and Welfare at Work (General Application) Regulations 2007 (S.I. 299 of 2007) as amended and associated regulations. The plant has been designed by skilled personnel in accordance with internationally recognised standards, design codes, legislation, good practice and experience based on a number of similar existing facilities operated by the operator.

The implementation of the Dublin Central Masterplan has the potential for an impact on the health and safety of workers employed on the site, particularly during the construction phase. The activities of contractors during the construction phase will be carried out in accordance with the Safety, Health and Welfare at Work (Construction) Regulations 2013 (S.I. No. 291 of 2013) as amended to minimise the likelihood of any impacts on worker's health and safety. The health and safety planning for the construction phase of the Dublin Central Masterplan will consider any appropriate measures to safeguard workers' health and safety with regards to Covid-19.

During the operational phase of the Dublin Central Masterplan, the operator will implement an Environmental Safety and Health (EH&S) Management System and associated procedures at the facility. Full training in the EH&S Management System and relevant procedures will be provided to all employees. The Operator will also implement any appropriate health and safety measures to safeguard workers' health and safety with regards to Covid-19.

The 2014 EIA Directive, 2018 EIA Regulations and associated EPA EIA Report Guidelines 2022 require that the vulnerability of the project to major accidents and / or natural disasters (such as earthquakes, landslides, flooding, sea level rise etc.) is considered in the EIA Report.

The site has been assessed in relation to the following external natural disasters; landslides, seismic activity, volcanic activity and sea level rise / flooding as outlined below. The potential for major accidents to occur at the facility has also been considered with reference to Seveso / Control of Major Accident Hazards (COMAH) Regulations. See Chapter 17: Risk Management (Major Accidents and Disasters) for more details.

There is a negligible risk of landslides occurring at the site and in the immediate vicinity due to the topography and soil profile of the site and surrounding areas. There is no history of seismic activity in the vicinity of the site. There are no active volcanoes in Ireland so there is no risk of volcanic activity.

The potential risk of flooding on the site was also assessed. A site-specific flood risk assessment was carried out by the project engineers, Waterman Moylan Consulting Engineers and it was concluded that there is a very low risk of flooding. Furthermore, the Dublin Central Masterplan design has adequate attenuation etc. to ensure there is no potential impact on flood risk for other neighbouring properties, nor is the site at risk from sea level rise.

The Dublin Central Masterplan will not be a Seveso / COMAH facility. The only substance stored on site controlled under Seveso / COMAH will be diesel for generators and the amounts proposed do not exceed the relevant thresholds of the Seveso Directive. The Dublin Central Masterplan site is not located within the consultation distance of any COMAH establishment that is notified to the HSA.

There is a potential impact on the receiving environment as a result of minor accidents / leaks of fuel / oils during the construction and operational phases. However, the implementation of the mitigation measures set out in Chapter 7: Land, Soils & Geology and Chapter 8: Water of the EIA Report will ensure the risk of a minor / accident is low and that the residual effect on the environment is imperceptible.

5.5.1.2 Operational Stage

5.5.1.2.1 Impacts on Business and Residences

The implementation of the Dublin Central Masterplan will result in significant and positive impact to local residents in the area. There will be a varied mix of residential and employment opportunities provided which will be of direct benefit, allowing a diverse range of community to work, and live within the city centre.

The implementation of the Dublin Central Masterplan will result in increased employment during the operational phase and will significantly reduce the pressure on local housing supply. The provision of residential units will benefit the adjacent businesses.

As stated in Chapter 10: Climate (Sunlight & Daylight) of this EIAR. The BRE 209 Guideline recommends that in all relevant amenity spaces; at least half of the area should receive at least two hours of sunlight on 21st March. The Proposed Development will have a slight overshadowing impact on the new Dublin Central Site 4 amenity space. The residential amenity space within Site 4 is at 1st floor level in a courtyard and receives at least 2 hours of direct sunlight on over 80% of the designated amenity area for residents (see Figure 10.12 of Chapter 10). It is clear that residents will receive high levels of sunlight and the BRE 209 Guidelines are met. The analysis carried out in Chapter 10 demonstrates that the design of Dublin Central Masterplan maximises access to sunlight in amenity spaces for both residents and the public and so the BRE 209 Guidelines are easily achieved.

In the case of Site 2, there are no existing residential properties impacted by overshadowing due to the site location and orientation to other existing buildings. Whilst it should be noted there are apartments on the North of Moore Street that face the existing Jurys Inn, Parnell Street; Sunlight analysis completed by shows the roof top amenity space is not affected by the Proposed

Development due to the orientation and height relative to the building. The apartment windows are facing Northeast and therefore are overshadowed by the existing Jurys Inn and as the elevation angle is more than 90 degrees from due south the impact on sunlight is not significant or considered relevant under BRE 209 guidance.

The extent of the impact of a development is usually proportional to the extent to which that development is large in scale and / or height and its proximity to the location. This proportionality may be modified by the extent to which the development is seen as culturally or socially acceptable, and on the interaction between the Proposed Development, the character of the existing shadow environment and the land use pattern of the receiving environment.

The impact of the Dublin Central Masterplan on sunlight access to the adjacent properties is therefore defined as **Not Significant**: An effect which causes noticeable changes in the character of the environment but without significant consequences. This is the second lowest definition of impact taken from the Guidelines on the Information to be contained in Environmental Impact Statements prepared by the Environmental Protection Agency (2022).

5.5.1.2.2 Impact on Human Health from Air Quality

Traffic related air emissions have the potential to impact human health if they do not comply with the ambient Air Quality Standards detailed in Table 9.1 of Chapter 9: Climate (Air Quality & Climate Change). However, as there is minimal car parking associated with the Proposed Development, the traffic generated does not satisfy the assessment criteria to require an air modelling assessment as outlined in Section 9.2.3.1 of Chapter 9 and therefore there is no potential for significant impacts. It can be determined that the impact to human health during the operational stage is **negative, imperceptible and, long-term**.

5.5.1.2.3 Impact on Human Health from Noise & Vibration

As detailed in Chapter 11: Air (Noise & Vibration), noise modelling was undertaken to assess the impact of the Dublin Central Masterplan with reference to noise limits typically applied by DCC and the EPA. The predicted noise emissions associated with the implementation of the Dublin Central Masterplan during the operational phases (included in Section 11.5.1.2.1) should be compliant with the adopted noise limit values which are based with due consideration of the effect on human health. Furthermore, any change in noise levels associated with additional vehicles at road junctions in the vicinity of the Dublin Central Masterplan is expected to be imperceptible. In essence, the noise levels that are encountered at the nearest noise sensitive locations are predicted to be within relevant noise criteria that have been adopted here for the operation of the Proposed Development and associated infrastructure. These criteria have been selected with due consideration to human health, therefore, will not result in a significant impact on human health

The resulting likely impact of traffic additional along the surrounding road network is **neutral, imperceptible and long-term**.

The likely impact from mechanical and electrical services serving the Proposed Development will be **neutral, imperceptible and long-term**.

The Proposed Development will not generate any perceptible levels of vibration during operation and will have a negligible significance of effect with respect to human health. Therefore, there will be no impact from vibration on human health.

Overall, the noise and vibration levels that are encountered at the nearest sensitive onsite and offsite locations are predicted to be within relevant noise criteria that have been adopted here for the operation of the Proposed Development. These criteria have been selected with due consideration to human health, therefore, will not result in a significant effect on human health.

5.5.1.2.4 Impact on Local Amenities and Tourism

Once operation the Proposed Master Development will have significant and positive impact upon the availability and quality of local amenities and also upon tourism.

The implementation of the Dublin Central Masterplan will provide increased leisure opportunities, public open spaces, community meetings areas and cultural facilities, all of which will have significant and positive impact on local amenities. Access to other amenities in the area will remain unaffected.

The implementation of the Dublin Central Masterplan will improve tourism resources in Dublin City, providing increased tourism accommodation which will be augmented by the provision of retail, cafes, restaurants and the aforementioned leisure, community and cultural provisions.

5.5.1.2.5 Impact on Material Assets

The implementation of the Dublin Central Masterplan will require power supply, fresh water and foul sewerage. It is intended that the national grid will supply power to site. The utility providers have provided confirmation that there is sufficient capacity in the area network for the required power demand and as such there will be no impact on power supply to local residential or business users, who may be reliant upon these areas for healthcare.

Dublin City Council and Irish Water have been consulted and there is capacity within the public water system and the foul sewerage system for the Proposed Development, and as such will not impact upon any individuals relying on these services for healthcare reasons.

5.5.1.2.6 Impacts from Additional Traffic

There will be an increase in traffic arising from the operational phase of the implementation of the Dublin Central Masterplan. As detailed in Chapter 13: Material Assets (Transportation) of this EIAR, there will be no discernible impact to human health arising from the noise and air quality related to additional traffic.

5.5.1.2.7 Impacts from Unplanned Events / Impacts on Health and Safety

The Dublin Central Masterplan has been designed by skilled personnel in accordance with internationally recognised standards, design codes, legislation, good practice and experience based on a number of similar existing developments.

5.5.1.3 Do-Nothing Impact

If the Dublin Central Masterplan were not to proceed, the subject land would for the short term remain as it is in which case there is no potential for the positive impacts associated with increased housing supply, increased tourist revenue, and increased local amenities and community spaces.

In the long-term, it is likely that the lands would be developed in time for another similar development in line with the zoning of the site.

5.5.2 Proposed Development – Site 2 & No. 61 O'Connell Street Upper

5.5.2.1 Construction Stage

The Potential Impacts of the Proposed Development (Site 2) are the same as the Potential Impacts of the Dublin Central Masterplan described in Section 5.5.1.1. Any differing sections are covered below.

5.5.2.1.1 Impact on Material Assets

The Proposed Development will require connections to the utility networks and the requirements for this supply have been detailed in the Outline Construction & Demolition Management Plan – Site 2 and No. 61 O'Connell Street Upper, prepared by Waterman Moylan Consulting Engineers Limited.

5.5.2.2 Operational Stage

The Potential Impacts of the Proposed Development (Site 2) are the same as the Potential Impacts of the Dublin Central Masterplan described in Section 5.5.1.2

5.5.2.3 Do-Nothing Impact

If the Proposed Development were not to proceed, the subject land would for the short term remain as it is in which case there is no potential for the positive impacts associated with increased housing supply, increased tourist revenue, and increased local amenities and community spaces.

In the long-term it is likely that the lands would be developed in time for another similar development in line with the zoning of the site.

5.5.3 Cumulative

5.5.3.1 Construction Stage

The cumulative impact of other potential impacts on human health from air quality, noise quality and traffic have been incorporated into the various models and assessments that have contributed to Section 5.5.1 of this EIAR.

5.5.3.2 Operational Stage

The cumulative impact of other potential impacts on human health from air quality, noise quality and traffic have been incorporated into the various models and assessment that have contributed to Section 5.5.1 of this EIAR.

5.6 MITIGATION MEASURES (AMELIORATIVE, REMEDIAL OR REDUCTIVE MEASURES)

The impacts on the local population in terms of residents and businesses are considered to be mainly positive in the sense of creating direct employment opportunities and indirect additional business, both during the construction and operational phases. Once operational there will be significant positive contributions to the residential, community and cultural aspects of Dublin City Centre.

Mitigation measures proposed to minimise the potential impacts on human health in terms of Climate (Air Quality and Climate Change), Climate (Daylight & Sunlight), Air (Noise and Vibration), Landscape and Visual Impact Assessment and Material Assets (Transportation) are discussed in the relevant sections of Chapters 9, 10, 11, 12 and 13 of this EIAR respectively.

Similarly, mitigation measures set out in Chapter 7: Land, Soils & Geology and Chapter 8: Water of the EIAR will ensure the risk of impacts to Human Health is low and that the residual effect on the environment is imperceptible.

5.6.1 Dublin Central Masterplan

5.6.1.1 Construction Stage

Prior to the commencement of construction, the appointed contractor will be required to obtain formal agreement from the Local Authority on pollution prevention measures as well the overall approach and emergency procedures for all construction stages. All demolition works are to be in accordance with the following guidelines:

- BS 6187:2000 '*Code of practice for demolition*'
- Health and Safety Executive Guidance Notes GS 29 / 1, 2, 3 & 4.
- S.I. 504 Safety, Health & Welfare at Work (Construction) regulations 2013
- Air Pollution Act 1987
- Environmental Protection Agency Act 1992
- BS 5228:2009 Part 1 '*Noise Control on Construction & Open Sites*'.

Prior to the works commencing, detailed photograph surveys (condition schedules) of adjoining walls, roads, footpaths, grass verges etc. are to be prepared. Copies of the relevant parts are to be made available to adjoining owners and Dublin City Council. This record will form the basis of assessing repairs to adjoining areas in the future should a dispute arise as to their cause.

Roadways are to be kept clean of dirt and other debris. A road sweeping truck is to be provided if necessary, to ensure that this is so.

The Contractor will be responsible for the security of the site. The Contractor will be required to: -

- Operate a site induction process for all site staff.
- Ensure all site staff shall have current 'safe pass' cards.
- Install adequate site hoarding to the site boundary.
- Maintain site security staff at all times.
- Separate pedestrian access from construction at the main site entrance off the Naas Road and provide a safe walkway for pedestrians along the main access road into the site.
- Ensure restricted access is maintained to the works.

The construction works will be hoarded off or fenced off from the public at all times. A 2.4 m minimum high plywood painted timber hoarding will be provided along the long-term boundaries at the entrance, and at other areas around the site where the perimeter fence/wall is not deemed sufficient for safety and security reasons. Heras type fencing will be used on short term site boundaries where appropriate to suit the works.

Controlled access points to the site, in the form of gates or doors/turnstiles, will be kept locked any time that these areas are not monitored (e.g., outside working hours). During working hours, a gates person will control traffic movements and deliveries at any active site access to ensure safe access and egress to and from site onto the public roads.

A Traffic Management Plan has been prepared by the contractor and will be agreed with Dublin City Council's Transportation Department and An Garda Siochana, to mitigate any impact of construction on the surrounding road network (Further details are provided in Chapter 13: Material Assets (Transportation) of this EIAR and in the Traffic Management Plan).

As detailed in Chapter 7: Land, Soil & Geology of this EIAR, there is no evidence of a significant soil hazard on site or requirement for dewatering of groundwater. Waste Acceptance Criteria (WAC) testing was carried out on soil samples. In RC-8 and W-2, the levels of sulphate, total dissolved solids, TPH and PAHs exceeded the inert waste WAC. However, all of the levels were less than the non-hazardous WAC. In BH-12, which was located on the southeast perimeter of the site TPH and mercury were detected above the inert waste WAC in the upper fill sample; however the levels of these parameters in the underlying fill and natural ground were less than the inert WAC.

Chapter 8: Water of this EIAR states that there is no potential for flooding and the proposed design incorporates attenuation measures to ensure development will not result in increased flooding off site. In order to mitigate the potential dust-related health impacts during the construction phase, a dust minimisation plan will be formulated. This plan will draw upon best practice mitigation measures from Ireland, the UK and the USA to ensure the highest level of mitigation possible. Further detail is provided in Chapter 9: Climate (Air Quality and Climate Change) of this EIAR.

Best practice noise and vibration control measures will be employed by the contractor during the construction phase in order to avoid significant impacts at the nearest sensitive buildings. The best practice measures set out in BS 5228 (2009) Parts 1 and 2 will be complied with. Further details are provided in Chapter 11: Air (Noise & Vibration).

5.6.1.2 Operational Stage

In light of the fact that any of the impacts associated with the operation of the Dublin Central Masterplan on Human Health and Population are either not significant or positive, no further mitigation measures are required. Notwithstanding the lack of need for mitigation measures, Section 11.6.2 of Chapter 11: Air (Noise & Vibration) of this EIAR outlines a number of noise mitigation measures which will further reduce the likely noise impacts arising from entertainment noise and internal building façade noise.

5.6.2 Proposed Development – Site 2 & No. 61 O'Connell Street Upper

5.6.2.1 Construction Stage

The mitigation measures of the Proposed Development are the same as the mitigation measures of the Dublin Central Masterplan described in Section 5.6.1.1.

5.6.2.2 Operational Stage

The mitigation measures of the Proposed Development are the same as the mitigation measures of the Dublin Central Masterplan described in Section 5.6.1.2.

5.7 RESIDUAL IMPACT

5.7.1 Dublin Central Masterplan

5.7.1.1 Construction Stage

5.7.1.1.1 Residual Impacts on Business and Residences

Taking into account the mitigation measures outlined in Section 5.6.6.1 it is predicted that there will be no likely significant effect with regard to the construction phase on business and residences.

5.7.1.1.2 Residual Impacts on Human Health from Air Quality

The greatest residual impact on air quality during the demolition and construction phase of the Dublin Central Masterplan is from construction dust emissions and the potential for nuisance dust. Taking into account the mitigation measures in Section 9.6 (and Appendix 9.2 'Dust Minimisation Plan') of this EIAR, there will be no residual impact to human health arising from air quality impact

5.7.1.1.3 Residual Impacts on Human Health from Noise & Vibration

Taking into account the mitigation measures and design recommendations outlined in Section 11.6 of Chapter 11: Air (Noise & Vibration) of this EIAR, there will be no residual impact to human health arising from noise and vibration impact.

5.7.1.1.4 Residual Impacts on Local Amenities and Tourism

It is predicted that there will be no likely significant effect of the residual impacts of the construction of the Dublin Central Masterplan on material assets.

5.7.1.1.5 Residual Impacts from Additional Traffic & Roadworks

Taking into account mitigation measures outlined in Chapter 13: Material Assets (Transportation) it is predicted that the predicted residual impacts with regard to the construction phase on the local population is concluded to be **temporary, short-term, slight and negative**.

5.7.1.1.6 Unplanned Events / Impacts on Health and Safety

Taking into account the mitigation measures outlined in Section 5.6 it is predicted that there will be no likely significant effect arising from the predicted residual impacts with regard to the construction phase for unplanned events and human health and safety.

5.7.1.2 Operational Stage

5.7.1.2.1 Residual Impacts on Businesses and Residences

Taking into account the mitigation measures outlined in Section 5.6 the predicted residual impacts with regard to the operational phase on business and residences is concluded to be **positive and significant**.

5.7.1.2.2 Residual Impacts on Human Health from Air Quality

It is predicted that there will be no likely significant effect of the residual impact of air quality on Human Health.

5.7.1.2.3 Residual Impacts on Human Health from Noise & Vibration

Taking into account the mitigation measures and design recommendations outlined in Section 11.6 of Chapter 11: Air (Noise & Vibration) of this EIAR, there will be no residual impact to human health arising from noise and vibration impact.

5.7.1.2.4 Residual Impacts on Local Amenities and Tourism

It is predicted that there will be no likely significant effect of the residual impact of the operational phase of the Dublin Central Masterplan on local amenities and tourism.

5.7.1.2.5 Residual Impacts on Material Assets

It is predicted that there will be no likely significant effect of the residual impact of the operational phase of the Dublin Central Masterplan on material assets.

5.7.1.2.6 Residual Impacts from Additional Traffic

Taking into account the mitigation measures and design recommendations outlined in Section 13.6 of Chapter 13: Material Assets (Transportation) of this EIAR, there will be no residual impact to human health arising from noise and vibration impact.

5.7.1.2.7 Unplanned Events / Impacts on Health and Safety

It is predicted that there will be no likely significant effect of the residual impact of the operational phase of the Dublin Central Masterplan on unplanned events and human health and safety.

5.7.1.3 Worst Case Effect

The precautionary principle has been applied throughout this assessment.

5.7.2 Proposed Development – Site 2 & No. 61 O'Connell Street Upper

5.7.2.1 Construction Stage

The residual impacts of the Proposed Development are the same as the remedial impacts of the Dublin Central Masterplan described in Section 5.7.1.1.

5.7.2.2 Operational Stage

The residual impacts of the Proposed Development are the same as the remedial impacts of the Dublin Central Masterplan described in Section 5.7.1.2.

5.7.2.3 Worst Case Impact

The precautionary principle has been applied throughout this assessment.

5.7.3 Cumulative

5.7.3.1 Construction Stage

The cumulative impact of other potential impacts on human health from air quality, noise quality and traffic have been incorporated into the various models and assessments that have contributed to Section 5.5 of this EIAR.

5.7.3.2 Operational Stage

The cumulative impact of other potential impacts on human health from air quality, noise quality and traffic have been incorporated into the various models and assessment that have contributed to Section 5.5 of this EIAR.

5.8 MONITORING

5.8.1 Dublin Central Masterplan

5.8.1.1 Construction Stage

A monitoring regime will be put in place to protect neighbours & neighbouring properties with a full and detailed vibration, noise, dust, and groundwater monitoring regime put in place for the duration of the works.

The Contractor will be obligated to work in compliance with the Outline Construction & Demolition Management Plan (C&D MP) which is submitted as part of this planning application. The Contractor will appoint a competent person to be referred to as the Surveying, Instrumentation and Monitoring Subcontractor (MSC) and together with them will prepare and maintain and the vibration, noise, dust and groundwater monitoring plan.

The MSC will be responsible for preparing or organizing the preparation of condition surveys of surrounding buildings, walls, hardstanding area etc. prior to the carrying out of any works on site.

The condition surveys shall be carried out to a level of detail, suitable to the nature and extent of conditions encountered in order to obtain an understanding of the general structural condition of the property / structure and / or external environments.

Additional monitoring requirements are set out in Chapters 7: Land, Soil & Geology, 8: Water, 9: Climate (Air Quality and Climate Change), 10: Climate (Sunlight & Daylight), 11: Air (Noise & Vibration), 12: Landscape and Visual Impact Assessment and 13: Material Assets (Transportation) of this EIAR.

5.8.1.2 Operational Stage

No additional monitoring other than that which is set out in Chapters 7: Land, Soil & Geology, 8: Water, 9: Climate (Air Quality and Climate Change), 10: Climate (Sunlight & Daylight), 11: Air (Noise & Vibration), 12: Landscape and Visual Impact Assessment and 13: Material Assets (Transportation) of this EIAR required.

5.8.2 Proposed Development – Site 2 & No. 61 O'Connell Street Upper

5.8.2.1 Construction Stage

The monitoring requirements are the same as those of the Dublin Central Masterplan described in Section 5.8.1.1

5.8.2.2 Operational Stage

The monitoring requirements are the same as those of the Dublin Central Masterplan described in Section 5.8.1.2

5.9 REINSTATEMENT

This is not applicable to Chapter 5 of this EIAR.

5.10 DIFFICULTIES ENCOUNTERED

No difficulties were encountered during the drafting of this chapter.

6 BIODIVERSITY

6.1 INTRODUCTION

DCC PLAN NO. 5432/22
 DATED: 13/12/2022

The Biodiversity Chapter of the Environmental Impact Assessment Report (EIAR) provides an assessment of the potential ecological effects of the Proposed Development. Dublin Central is underpinned by a Masterplan (refer to Figure 6.1 below, indicating the Dublin Central Masterplan area) which has been assessed as part of the cumulative assessment within this Chapter. The Proposed Development is used to describe the entire of the Proposed Development within 2no. separate and concurrent planning applications for Site 2 and No. 61 O'Connell Street Upper. Site 2 is subdivided into Site 2AB, and 2C. A detailed description of the Proposed Development is included in Chapter 3: Description of Proposed Development.

The Proposed Development site is located in the 10km Grid Square O13 at O 15795 34831 in Dublin city centre, bounded by O'Connell Street Upper to the east, Parnell Street to the north, Henry Place and Henry Street to the south and Moore Lane to the west. The site is urban in nature, composed of hard standing, buildings, and artificial surfaces. The surrounding habitat of inner-city Dublin is largely similar to the Proposed Development site, with retail units, hotels, and transport infrastructure in the immediate environs.



Figure 6.1: Site Location Plan¹ (Source: Google Earth, 2022).

¹ Chapter 3 Description of the Proposed Development, Dublin Central Masterplan / Dublin Central Site 2 & No. 61 O'Connell Street (Stephen Little & Associates, 2022).

The purpose of the chapter is to -

- Establish and evaluate the baseline ecological environment, as relevant to the Dublin Central Proposed Development Site (i.e. Site 2 and No. 61 O'Connell Street Upper) within the context of the Dublin Central Masterplan
- Identify, describe and assess all potentially significant ecological effects associated with the Proposed Development (i.e. Site 2 and No. 61 O'Connell Street Upper).
- Set out the mitigation measures required to address any potentially significant ecological effects and ensure compliance with relevant nature conservation legislation.
- Provide an assessment of the significance of any residual ecological effects.
- Identify any appropriate compensation, enhancement or post-construction monitoring requirements.

An Appropriate Assessment (AA) Screening has been prepared (under separate cover (Scott Cawley Ltd 2022) for submission with the planning applications. It contains information required for the competent authority to undertake a screening for AA. It provides information on and assesses the potential for the Proposed Development to impact on the Natura 2000 network.

6.1.1 Planning, Policy and Legislation

The collation of ecological baseline data and the preparation of this assessment has had regard to the following legislation and policy documents. This is not an exhaustive list but the most relevant legislative and policy basis for the purposes of preparing this chapter.

The following international legislation is relevant to the Proposed Development: -

- Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora; hereafter, referred to as the 'Habitats Directive'. The Habitats Directive is the legislation under which the Natura 2000 network² was established, and Special Areas of Conservation (SACs) are designated for the protection of natural habitat types listed in Annex I, and habitats of the species listed in Annex II, of that directive.
- Directive 2009/147/EEC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds; hereafter, referred to as the 'Birds Directive'. The Birds Directive is the legislation under which Special Protection Areas (SPAs) are designated for the protection of endangered species of wild birds listed in Annex I of that directive.
- Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy hereafter, referred to as the 'Water Framework Directive'. The Water Framework Directive' is the legislation requiring the protection and improvement of water quality in all waters (rivers, lakes, groundwater, and transitional coastal waters) with the aim of achieving good ecological status by 2015 or, at the latest, by 2027.
- The following national legislation is relevant to the Proposed Development: -

² The Natura 2000 network is a European network of important ecological sites, as defined under Article 3 of the Habitats Directive 92/43/EEC, which comprises both special areas of conservation and special protection areas. Special conservation areas are sites hosting the natural habitat types listed in Annex I, and habitats of the species listed in Annex II, of the Habitats Directive, and are established under the Habitats Directive itself. Special protection areas are established under Article 4 of the Birds Directive 2009/147/EC for the protection of endangered species of wild birds. The aim of the network is to aid the long-term survival of Europe's most valuable and threatened species and habitats.

In Ireland these sites are designed as *European sites* - defined under the Planning Acts and/or the Birds and Habitats Regulations as (a) a candidate site of Community importance, (b) a site of Community importance, (c) a candidate special area of conservation, (d) a special area of conservation, (e) a candidate special protection area, or (f) a special protection area. They are commonly referred to in Ireland as Special Areas of Conservation (SACs) and Special Protection Areas (SPAs).

- *Wildlife Acts 1976 to 2022*; hereafter collectively referred to as the 'Wildlife Acts'. The Wildlife Acts are the principal pieces of legislation at national level for the protection of wildlife and for the control of activities that may harm wildlife. All bird species, 22 other animal species or groups of species, and 86 species of flora are protected under this legislation.
- *Planning and Development Act 2000*, as amended; hereafter collectively referred to as the 'Planning and Development Acts'. This piece of legislation is the basis for Irish planning. Under the legislation, development plans (usually implemented at local authority level) must include mandatory objectives for the conservation of natural heritage and for the conservation of European Sites. It also sets out the requirements in relation to environmental assessment with respect to planning matters, including transposition of the Habitats and Birds Directive into Irish law.
- *European Communities (Birds and Natural Habitats) Regulations 2011*, as amended; hereafter the 'Birds and Habitats Regulations'. This legislation transposes the Habitats and Birds Directives into Irish law. It also contains regulations (49 and 50) that deal with invasive species (those included within the Third Schedule of the regulations).
- *European Communities (Water Policy) Regulations 2003 (S.I. No. 722 of 2003)*. This legislation transposes the Water Framework Directive into Irish Law.
- *Flora (Protection) Order, 2022*. This lists species of plant protected under Section 21 of the Wildlife Acts.

The following plans and policies are relevant to the Proposed Development: -

- *National Biodiversity Action Plan 2017 – 2021* (Department of Culture Heritage and the Gaeltacht, 2017).
- *Dublin City Development Plan 2016 – 2022* (Dublin City Council, 2016)
- *Draft Dublin City Development Plan 2022 – 2028* (Dublin City Council, 2022)
- *Dublin City Biodiversity Action Plan 2015 – 2020* (Dublin City Council, 2016)³.

6.2 ASSESSMENT METHODOLOGY

6.2.1 Author Statement

This Chapter was authored by Síofra Quigley, and reviewed by Niamh Burke of Coiscéim Ecology and Tim Ryle of Scott Cawley Ltd.

Síofra Quigley is a Senior Consultant Ecologist with Scott Cawley. She obtained an honours degree in Zoology, from National University of Ireland Galway, and a Masters in Wildlife Biology and Conservation from Edinburgh Napier University. She has four years' professional experience working in the UK on large to small scale infrastructure projects, with governmental and private clients. Síofra is experienced in carrying out field surveys in several protected species including bat, otter, badger, red squirrel, reptile, pine marten and mountain hare. She has also been involved in radio tracking mountain hares and bats, bat call analysis, badger bait marking, acting as an Ecological Clerk of Works, undertaken Phase 1 habitat surveys and reports (JNCC Standard), Fossitt habitat surveys to level 3, and desk top studies. Since joining Scott Cawley, Síofra's work involves the preparation of reports, including Ecological Impact Assessment and Appropriate Assessment reports for residential, commercial, and infrastructural projects across Ireland.

Niamh Burke is Principal Ecologist with Coiscéim Ecology. She holds a BSc in Natural Sciences with Environmental Science and a PhD in salmonid ecology. She is a Chartered Environmentalist (CEnv) with the Society for the Environment (Soc Env) and a Full Member of the CIEEM. Niamh is a senior scientist with academic research and consulting experience in terrestrial ecology, aquatic ecology and fluvial geomorphology. She is an experienced project manager with a full working knowledge of EIA,

³ The Draft *Dublin City Biodiversity Action Plan 2021 – 2025* is published but not formally adopted as of yet.

the planning process and relevant environmental legislation, both national and European. With a specialism in aquatic habitats, she also has experience of terrestrial species' surveys and mitigation approaches. In her extensive consultancy roles she has acted as reviewer for all ecological reporting and ensured consistency of standards and approach.

Tim Ryle is a Principal Ecologist with Scott Cawley Ltd. He holds an honours degree in Botany from University College Dublin and was later awarded a Ph.D. from the same institution. He is a full Member of the Institute of Environmental Scientists. Tim is an experienced ecological consultant with twenty years' experience in private consultancy in designing, undertaking and managing a wide range of ecological survey and in assessing impacts and designing mitigation measures and biodiversity enhancements, in particular for protected species including badgers, otters, bats, birds, amphibians as well as habitats of conservation importance. He is also experienced in undertaking appropriate Assessment for small-scale development projects and larger infrastructural projects, land plans as well as national/government plans.

6.2.2 Scope of the assessment

The study area is defined by the zone of influence of the Proposed Development with respect to the ecological receptors that could potentially be affected.

The Zone of Influence (Zol), or distance over which potentially significant effects may occur, will differ across the Key Ecological Receptors (KERs), depending on the potential impact pathway(s). The results of both the desk study and the suite of ecological field surveys undertaken, have established the habitats and species present within and in the vicinity of, the Proposed Development site. The Zol and study area was then informed and defined by the sensitivities of each of the KERs present, in conjunction with the nature and potential impacts associated with the Proposed Development.

The Zol of habitat loss impacts will be confined to within the Proposed Development boundary.

The Zol of general construction activities (i.e. risk of spreading/introducing non-native invasive species, dust deposition and disturbance due to increased noise, vibration, human presence and lighting) is not likely to extend more than several hundred metres from the Proposed Development.

Excavation spoil and waste material will need to be removed off site due to limited opportunities for reuse on site. It is anticipated that the surplus material will be suitable for acceptance at either inert or non-hazardous soil recovery facilities/landfills in Ireland or, in the unlikely event of hazardous material being encountered, be transported for treatment/recovery, or exported abroad for disposal at suitable facilities. This could potentially extend the Zol to areas where the material will be deposited, however the waste will be classified in accordance with the EPA publication Waste Classification, with environmental soil analysis carried out prior to removal of the material, in accordance with the requirements for acceptance of waste at landfills⁴.

The Proposed Development site, including the existing (and proposed) surface water drainage network drains to the River Liffey, and therefore, the hydrological Zol extends downstream to Dublin Bay.

6.2.3 Desk Study

A desk study was undertaken in August 2022 to collate available information on the local ecological environment. The following resources were used to inform the assessment presented in this chapter: -

- Data on European sites, Natural Heritage Areas (NHAs) or proposed Natural Heritage Areas (pNHAs) as held by the National Parks and Wildlife Service (NPWS) from <https://www.npws.ie/protected-sites> and <https://www.npws.ie/maps-and-data> – refer to Appendix 6.1 for descriptions and locations of protected sites in the vicinity of the Proposed Development.

⁴ Chapter 15: Material Assets (Waste), AWN Consulting (2022).

- Records of rare and protected species for the 10km grid square(s), as held by the National Biodiversity Data Centre www.biodiversityireland.ie or the NPWS – refer to Appendix 6.2 for all desk study flora and fauna records.
- Spatial information relevant to the planning process including land zoning and planning applications from Department of Housing Planning, Community and Local Government web map portal. Available from <https://myplan.ie/>.
- Ordnance Survey Ireland mapping and aerial photography from <http://map.geohive.ie/>
- Data on waterbodies, available for download from the Environmental Protection Agency (EPA) web map service. Available from <https://gis.epa.ie/EPAMaps/>.
- Information on soils, geology and hydrogeology in the area available from the Geological Survey Ireland (GSI) online Spatial Resources service. Available from <https://www.gsi.ie/en-ie/data-and-maps/Pages/Groundwater.aspx>.
- Information on the conservation status of birds in Ireland from Birds of Conservation Concern in Ireland (Gilbert *et al.*, 2021)⁵
- Information on the location, nature and design of the Proposed Development supplied by the applicant's design team.
- Records of bat roosts within 10km, as held by Bat Conservation Ireland (BCI) Database – refer to Appendix 6.2 for all desk study flora and fauna records

6.2.4 Field Survey

Ecological field surveys were carried out following the best practice professional guidelines in June and July 2020, and April 2022. The surveys and survey dates are presented in Table 6.1.

Habitat and flora surveys, terrestrial fauna surveys, ground-level assessment of buildings, and breeding bird checks were undertaken on the 26 June 2020 and 1 April 2022 by Síofra Quigley BSc (Hons) MSc. Internal building inspections for bats were undertaken by Síofra Quigley and Niall McHugh BSc (Hons) MSc on the 13 July 2020, and 1 April 2022 by Síofra Quigley and bat activity survey were undertaken by Niall McHugh, Nicholas Fettes BSc (Hons) MSc, and Adele Goulding Sheehan BSc on the 2 and 24 July 2020.

Survey	Survey Date(s)	Surveyor(s)
Multidisciplinary survey	26 June 2020	Scott Cawley Ltd.
Internal building inspections	13 July 2020	Scott Cawley Ltd.
Bat activity surveys	2 & 24 July 2020	Scott Cawley Ltd.
Multidisciplinary survey and building inspections (external and internal)	1 April 2022	Scott Cawley Ltd.

Table 6.1: Ecological surveys and survey dates.

6.2.4.1 Habitats and Flora

A habitat survey was undertaken of the Proposed Development site on the 26 June 2020 and 1 April 2022 by Síofra Quigley following the methodology described in Best Practice Guidance for Habitat

⁵ Gilbert G., Stanbury A., Lewis L (2021). *Birds of Conservation Concern in Ireland 2020–2026*,

Survey and Mapping⁶. All habitat types were classified using the Guide to Habitats in Ireland⁷, recording the indicator species and abundance using the DAFOR scale⁸ and recording any species of conservation interest. Vascular and bryophyte plant nomenclature generally follow that of The National Vegetation Database⁹, having regard to more recent taxonomic changes to species names after the New Flora of the British Isles¹⁰ and the British Bryological Society's Mosses and Liverworts of Britain and Ireland: A Field Guide^{11 12}. Invasive species as listed on the Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011-2015, were also surveyed for within the lands of the Proposed Development site¹³.

6.2.4.2 Fauna

6.2.4.2.1 Terrestrial Mammals (Excluding bats)

A terrestrial fauna survey (excluding bats) was undertaken on the 26th June 2020 and 1 April 2022 by Síofra Quigley. The presence/absence of terrestrial fauna species were surveyed through the detection of field signs such as tracks, markings, feeding signs, and droppings, as well as by direct observation. The habitats on site were assessed for signs of usage by protected/red-listed fauna species, and their potential to support these species.

6.2.4.2.2 Bats

A ground-level assessment of structures and buildings within the Proposed Development site, to examine their suitability to support roosting bats and potential to act as important landscape features for commuting/foraging bats, was based on guidelines (see Table 6.2) in Bat Surveys for Professional Ecologists: Good Practice Guidance (Collins ed., 2016) and included inspections of structures and buildings for potential roost features (PRFs), and for signs of bats (staining at roost entrances, droppings, carcasses, insect remains).

Buildings identified as having PRFs from the ground level assessment surveys, or buildings that could not be fully accessed externally, were then examined internally where possible. Seven building within the Masterplan, and one within the Proposed Development were accessed internally via roof, attic space/loft, or top floor access and were surveyed for any signs of bats (droppings, staining, etc.) (see Figure 6.2). No other buildings within the Proposed Development site were surveyed internally, due to lack of attic / loft space, and / or lack of PRFs.

⁶ Smith, G.F., O'Donoghue, P., O'Hora, K. & Delaney, E. (2011). Best Practice Guidance for Habitat Survey and Mapping. The Heritage Council Church Lane, Kilkenny, Ireland.

⁷ Fossitt, J.A. (2000). A Guide to Habitats in Ireland. Heritage Council, Kilkenny.

⁸ The DAFOR scale is an ordinal or semi-quantitative scale for recording the relative abundance of plant species. The name DAFOR is an acronym for the abundance levels recorded: Dominant, Abundant, Frequent, Occasional and Rare.

⁹ Weekes, L.C. & FitzPatrick, Ú. (2010). The National Vegetation Database: Guidelines and Standards for the Collection and Storage of Vegetation Data in Ireland. Version 1.0. Irish Wildlife Manuals, No. 49. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland.

¹⁰ Stace, C. (2019). New Flora of the British Isles. 4th Edition. C&M Floristics.

¹¹ Atherton, I., Bosanquet, S. & Lawley, M. (2010). Mosses and Liverworts of Britain and Ireland: A Field Guide. Latimer Trend & Co., Plymouth.

¹² Atherton, I., Bosanquet, S. & Lawley, M. (2010). *Mosses and Liverworts of Britain and Ireland: A Field Guide*. Latimer Trend & Co., Plymouth.

¹³ *The Management of Invasive Alien Plant Species on National Roads – Technical Guidance*. Transport Infrastructure Ireland, GE-ENV-01105, December 2020.

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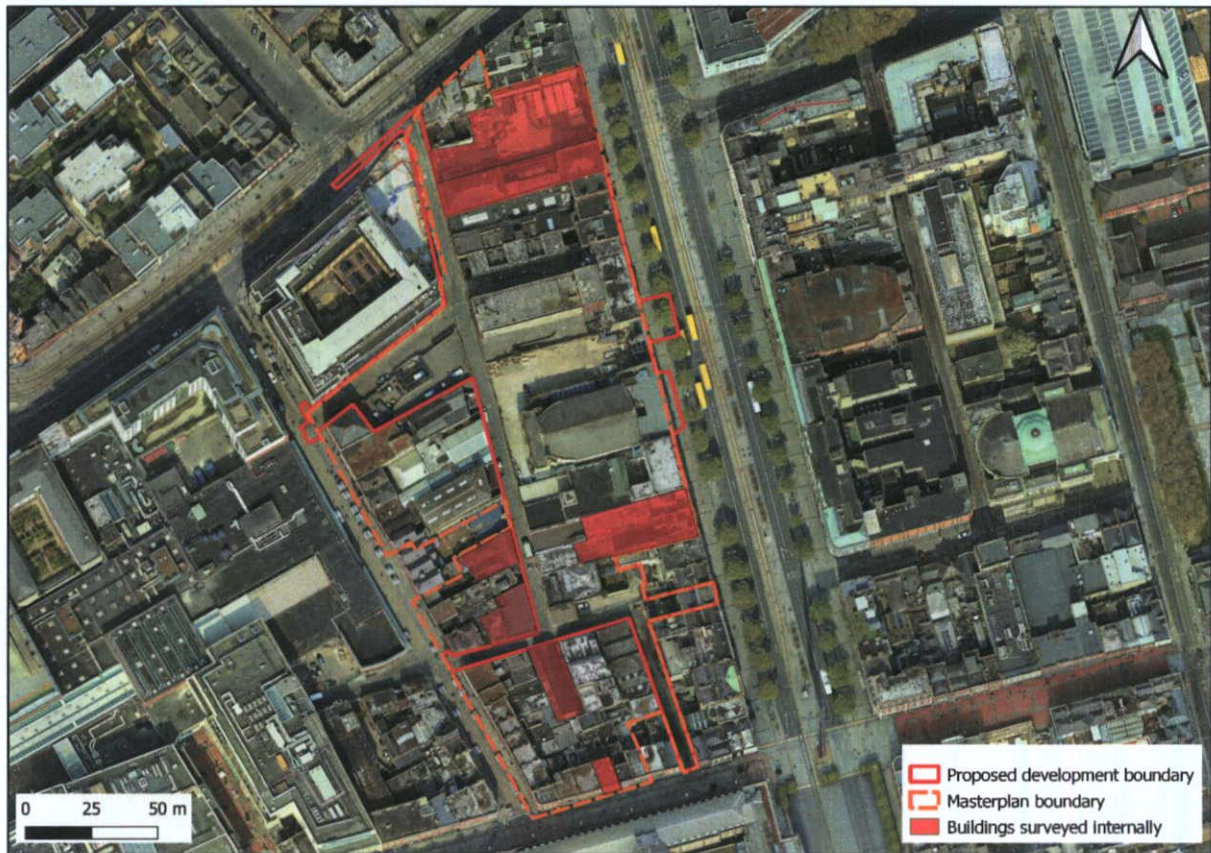


Figure 6.2: Locations of buildings accessed internally.

Suitability	Description Roosting habitats	Commuting and foraging habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	<p>A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).</p> <p>A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.</p>	<p>Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat.</p> <p>Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.</p>
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	<p>Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens.</p> <p>Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.</p>
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams,

Suitability	Description Roosting habitats	Commuting and foraging habitats
	their size, shelter, protection, conditions and surrounding habitat.	hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, treelined watercourses and grazed parkland. Site is close to and connected to known roosts.

Table 6.2: Guidelines for assessing the potential suitability of Proposed Development sites for bats, based on the presence of habitat features within the landscape, applied according to professional judgement (Taken from Collins (2016)).

Two separate bat roost emergence / re-entry and activity surveys were undertaken within the lands by surveyors who are experienced in bat surveys. The surveys were designed with reference to methodologies in *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn.) (Collins, 2016). Observations of bat activity were recorded, and where necessary, data collected in the field was analysed using specialist software (Elekon BatExplorer) to aid in the identification of bat species by their calls. Data generated from the activity surveys was analysed using Elekon BatExplorer software, whereby calls were identified to species level (where this was possible), through professional judgement and with reference *British Bat Calls: A Guide to Species Identification* (Russ, 2012).

6.2.4.2.3 Birds

Breeding bird checks were undertaken on the 26 June 2020 and 1 April 2022 by Síofra Quigley using a methodology adapted from the *Bird Monitoring Methods - A Manual of Techniques for Key UK Species*¹⁴. Due to the urban nature of the site, and the lack of vegetation within the site or in the wider environs, the area was checked for evidence of breeding / nesting birds on rooftops or within attic/loft spaces of the buildings. Birds present were identified by sight and song, and general location and activity were recorded using the British Trust for Ornithology (BTO) species and activity codes.

6.2.5 Ecological Evaluation and Impact Assessment

6.2.5.1 Ecological Evaluation

Ecological receptors (including identified sites of ecological importance) are valued with regard to the ecological valuation examples set out in *Guidelines for Assessment of Ecological Impacts of National Roads Schemes: Revision 2*¹⁵ and the guidance provided in *Guidelines for Ecological Impact Assessment in the UK and Ireland*¹⁶ – refer to Appendix 6.3 for examples of how ecological importance is assigned. In accordance with these guidelines, important ecological features within what is referred to as the Zone of Influence (Zoi) of the Proposed Development which are “both of sufficient value to be material in decision making and likely to be affected significantly” are deemed to be ‘Key Ecological Receptors’ (KERs). These are the ecological receptors which may be subject to significant effects from

¹⁴ Gilbert, G., Gibbons, D.W. & Evans, J. (1998). *Bird Monitoring Methods - A Manual of Techniques for Key UK Species*. RSPB: Sandy

¹⁵ NRA (2009). *Guidelines for Assessment of Ecological Impacts of National Roads Schemes: Revision 2*. National Roads Authority.

¹⁶ CIEEM (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland*. Chartered Institute of Ecology and Environmental Management, Winchester, UK.

the Proposed Development, either directly or indirectly. KERs are those biodiversity receptors with an ecological value of local importance (higher value) or greater.

6.2.5.2 Impact Assessment

Ecological impact assessment is conducted following a standard source-pathway-receptor model, where, in order for an impact to be established all three elements of this mechanism must be in place. The absence or removal of one of the elements of the mechanism is sufficient to conclude that a potentially significant effect would not occur.

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- Source(s) – e.g. pollutant run-off from proposed works.
- Pathway(s) – e.g. groundwater connecting to nearby qualifying wetland habitats.
- Receptor(s) – e.g. wetland habitats and the fauna and flora species they support.

6.2.5.3 Characterising and Describing the Impacts

The parameters considered in characterising and describing the potential impacts of the Proposed Development are per the EPA's Guidelines on the Information to be Contained in Environmental Impact Assessment Reports¹⁷ and CIEEM's Guidelines for Ecological Impact Assessment in the UK and Ireland: whether the effect is positive, neutral or negative; the significance of the effects; the extent and context of the effect; the probability, duration and frequency of effects; and, cumulative effects.

Cumulative effects can result from individually insignificant but collectively significant actions taking place over a period of time or concentrated in a location. The following development types are included in considering cumulative effects: -

- Existing projects (under construction or operational).
- Projects which have been granted consent but not yet started.
- Projects for which consent has been applied for which are awaiting a decision, including those under appeal.
- Projects proposed at a plan level, if relevant (e.g. future strategic infrastructure such as roads or greenways).

The likelihood of an impact occurring, and the predicted effects, can also be an important consideration in characterising impacts. In some cases, it may not be possible to definitively conclude that an impact will not occur. In these cases, the evaluation of significant effects is based on the best available scientific evidence but where reasonable doubt still remains then the precautionary principle is applied, and it may need to be assumed that significant effects may occur. Professional judgement is used in considering the contribution of all relevant criteria in determining the overall magnitude of an impact.

6.2.5.4 Significant Effects

In determining whether potential impacts will result in significant effects, the CIEEM guidelines were followed. The approach considers that significant effects will occur when there are impacts on either:

- the structure and function (or integrity) of defined sites, habitats or ecosystems; or
- the conservation status of habitats and species (including extent, abundance and distribution).

¹⁷ Environmental Protection Agency. (2022) Guidelines on the information to be contained in Environmental Impact Assessment Reports. Draft, May 2022. (refer to Table 3.4)

Integrity

The term “integrity” may be regarded as the coherence of ecological structure and function, across the entirety of a site that enables it to sustain all of the biodiversity or ecological resources for which it has been valued (NRA, 2009).

The term “integrity” is most often used when determining impact significance in relation to designated areas for nature conservation (e.g. SACs, SPAs or pNHA/NHAs) but can also be the most appropriate method to use for non-designated areas of biodiversity value where the component habitats and/or species exist with a defined ecosystem at a given geographic scale.

An impact on the integrity of an ecological site or ecosystem is considered to be significant if it moves the condition of the ecosystem away from a favourable condition: removing or changing the processes that support the sites’ habitats and / or species; affect the nature, extent, structure and functioning of component habitats; and / or, affect the population size and viability of component species.

Conservation Status

Similar definitions for conservation status given in the EU Habitats Directive 92/43/EEC, in relation to habitats and species, are also used in the CIEEM (2018) and NRA (2009) guidance which are summarised as follows:

- For natural habitats, conservation status means the sum of the influences acting on the natural habitat and its typical species, that may affect its extent, structure and functions as well as its distribution, or the long-term survival of its typical species, at the appropriate geographical scale.
- For species, conservation status means the sum of influences acting on the species concerned that may affect the abundance of its populations, as well as its distribution, at the appropriate geographical scale.

An impact on the conservation status of a habitat or species is considered to be significant if it will result in a change in conservation status, having regard to the definitions of favourable conservation status provided in the EU Habitats Directive 92/43/EEC – i.e. into the future, the range, area and quality of habitats are likely to be maintained / increased and species populations are likely to be maintained / increased.

According to the CIEEM methodology, if it is determined that the integrity and/or conservation status of an ecological receptor will be impacted on, then the level of significance of that impact is related to the geographical scale at which the impact will occur (i.e. local, county, national, international). In some cases an impact may not be significant at the geographic scale at which the ecological feature has been valued but may be significant at a lower geographical level. For example, a particular impact may not be considered likely to have a negative effect on the overall conservation status of a species which is considered to be internationally important. However, an impact may occur at a local level on this internationally important species. In this case, the impact on an internationally important species is considered to be significant at only a local, rather than an international level.

6.3 RECEIVING ENVIRONMENT

The receiving environment in terms of biodiversity is the same for the Dublin Central Masterplan and each individual sites of the development. Therefore, the following sections detail the existing baseline ecological environment and do not differentiate between the Dublin Central Masterplan development or Site 2 and No. 61 O’Connell Street Upper of the development being assessed within this EIAR chapter.

6.3.1 Designated Sites

6.3.1.1 European Sites

Special Areas of Conservation (SAC) are designated under the EC Habitats Directive (92/43/EEC) for the protection of habitats listed on Annex I and / or species listed on Annex II of the Directive. Special Protection Areas (SPAs) are designated under the Birds Directive (2009/147/EC) for the protection of bird species listed on Annex I of the Directive, regularly occurring populations of migratory species (such as ducks, geese or waders), and areas of international importance for migratory birds.

SACs and SPAs are offered additional protection under development plans, as is the case for the Dublin City Development Plan 2016 – 2022 through Policy GI2 and GI24 and Draft Dublin City Development Plan 2022 – 2028 through Policy GI9, GI10 and GI13 on Natura 2000 sites which requires that planning authorities give due regard to their protection in planning policies and decisions (Dublin City Council, 2016, 2022).

There are thirteen European sites within the vicinity of the Proposed Development. The Proposed Development does not overlap with any European sites. The nearest European site is South Dublin Bay and River Tolka Estuary SPA, located c. 2.3km to the north-east of the Proposed Development site in Dublin Bay. South Dublin Bay SAC is the next closest European site, c. 3.5km south-east of the Proposed Development. Other nearby sites in Dublin Bay include North Dublin Bay SAC and North Bull Island SPA, both c. 5.3km north-east of the Proposed Development site, Howth Head SAC and Howth Head Coast SPA, located c. 11km and c. 13km east, respectively, and Rockabill to Dalkey Island SAC located c. 11.3km east of the site. These European sites are considered to be within the potential zone of influence of the Proposed Development, as all of these sites are located downstream of the Proposed Development site within Dublin Bay. There is no direct surface water hydrological link between the proposed site and these European sites, however surface waters will drain to the existing surface water drainage network ultimately discharging into Dublin Bay, with wastewaters draining via the combined sewer to Ringsend WWTP for treatment prior to discharge into Dublin Bay.

The SAC and SPA sites in the vicinity of the Proposed Development, their distance from the Proposed Development and their qualifying interests / special conservation interests are presented in Appendix 6.1.

The locations of those European sites – SACs and SPAs, sites relative to the Proposed Development are illustrated on Figure 6.3 below.



Figure 6.3: European sites in the vicinity of the Proposed Development.

6.3.1.2 Nationally Designated Sites

Natural Heritage Areas (NHAs) are designated under the Wildlife Acts to protect habitats, species or geology of national importance. In addition to NHAs there are proposed NHAs (referred to as pNHAs), which are also sites of significance for wildlife and habitats and were published on a non-statutory basis in 1995, but have not since been statutorily proposed or designated. Proposed NHAs are offered protection under county development plans, as is the case for the Dublin City Development Plan 2016 – 2022 through Policy GI24 on Natural Heritage Areas which requires that planning authorities give due regard to their protection in planning policies and decisions (Dublin City Council, 2016). For convenience, these are described as “national sites”.

There are 20 national sites within the vicinity of the Proposed Development, all of which are pNHAs. The Proposed Development does not overlap with any national sites. The nearest national sites are the Royal Canal pNHA, located c. 1.3km north-east, and the Grand Canal pNHA located c. 1.6km south-east of the Proposed Development. The Proposed Development is not hydrologically or otherwise connected to these National sites. South Dublin Bay pNHA, located c. 3.5km east, Dolphins, Dublin Docks pNHA located, 4.4km east and North Dublin Bay pNHA located 5.3km north-east, are potentially within the zone of influence of the Proposed Development, as all of these National sites are located downstream of the Proposed Development in Dublin Bay. There is no direct surface water hydrological link between the proposed site and these National sites, however surface waters will drain to the existing surface water drainage network ultimately discharging into Dublin Bay, with wastewaters draining via the combined sewer to Ringsend WWTP for treatment prior to discharge into Dublin Bay.

The pNHA sites in the vicinity of the Proposed Development, their distance from the Proposed Development and their qualifying interests / special conservation interests are presented in Appendix 6.1.

The locations of those pNHA sites relative to the Proposed Development are illustrated on Figure 6.4 below.

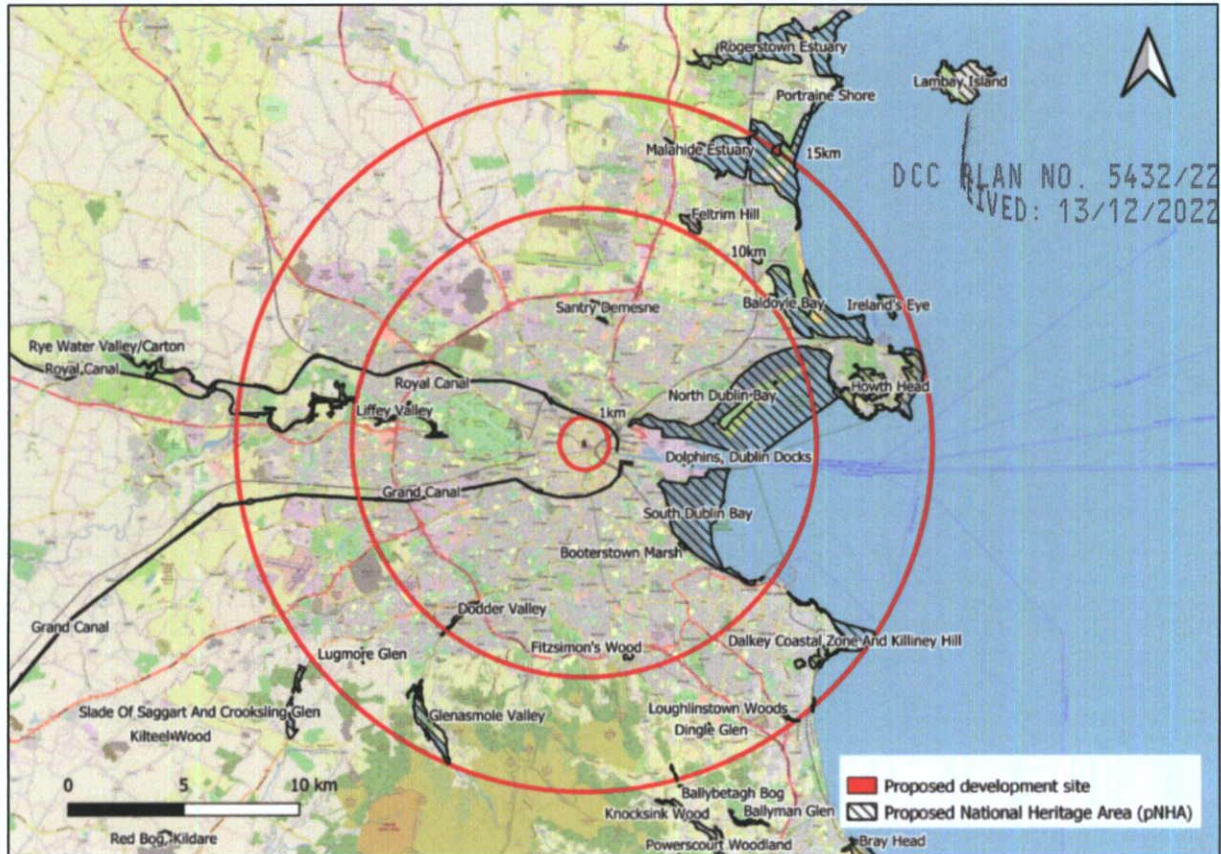


Figure 6.4: National Sites in the vicinity of the Proposed Development.

6.3.2 Habitats and Flora

6.3.2.1 Habitats

Due to the urban nature of the site, the only habitats identified within the Proposed Development were buildings and artificial surfaces (BL3), with small, isolated areas of ornamental / non-native scrub (WS3) growing on built surfaces (which have not been mapped). The buildings and artificial surfaces habitat encompassed the majority of the site, and included; all buildings within the site, roads going through the site (Moore Land and Henry Place), and paths along O'Connell Street and Henry Street. Also found sporadically throughout the site was ornamental / non-native scrub, comprising of butterfly bush *Buddleia davidii*, mainly growing from the sides of buildings or on rooftops in isolated areas.

As these areas have little to no ecological value due to the lack of vegetation and urbanised environment, the habitats within the Proposed Development site are valued as being of local importance (lower value).



Figure 6.4: Habitat map of the Proposed Development (Site 2 and No. 61 O'Connell Street Upper).

6.3.2.2 Flora

The NBDC holds five records for protected and/or rare plant species within 2km of the Proposed Development site; *Centaurea cyanus*, *Hordeum secalinum*, *Geranium rotundifolium*, *Hottonia palustris*, and *Groenlandia densa*. In respect of these *Centaurea cyanus* is listed as 'Regionally Extinct', *Hottonia pallustris* is listed as 'Critically Endangered', *Hordeum secalinum*, is listed as 'Vulnerable', *Groenlandia densa* is listed as 'Near Threatened', and *Geranium rotundifolium* is listed as 'Least Concern' and within *Ireland Red List No. 10: Vascular Plants* (Wyse Jackson *et al.*, 2016). *Hordeum secalinum* and *Groenlandia densa* are both listed within the Flora (Protection) Order, 2015. There is no suitable habitat for these species within the Proposed Development site however, as it is mostly hard standing and buildings.

With regards to invasive non-native species, there were records of seven species on NBDC database for species listed on Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 – 2015 within c. 2km of the Proposed Development; *Azolla filiculoides*, *Crassula helmsii*, *Heracleum mantegazzianum*, *Fallopia japonica*, *Impatiens glandulifera*, *Elodea nuttallii*, and *Allium triquetrum*. Although records of these invasive species are within c. 2km of the proposed site, none of the aforementioned species are located in the immediate or nearby vicinity of the site, with the closest (*Allium triquetrum*) located c. 200m east of the Proposed Development site.

No protected and / or rare species listed in the Flora Protection Order or in Red Lists, nor invasive non-native species listed on Third Schedule of the European Communities (Birds and Natural Habitats) Regulations 2011 – 2015 were found to be present onsite at the time of the survey. One non-scheduled non-native invasive species, *Buddleja davidii* was recorded within the Proposed Development site boundary in single strands, mostly on rooftops or growing from the sides of buildings.

6.3.3 Fauna

6.3.3.1 Terrestrial Fauna (excluding bats)

6.3.3.1.1 Badger

Badger *Meles meles*, and their breeding and resting places, are protected under the Wildlife Acts. The NBDC data search and NPWS identified one record of badger c. 2km of the site from 2009.

No evidence of badgers, such as setts, snuffle holes or scat, was found onsite.

The habitats found within the Proposed Development site, buildings and artificial surfaces, provide no suitable habitat for badgers.

The local badger populations are valued to be of local importance (lower value). However, as there is no suitable habitat within or near the proposed development for this species, and as no evidence was identified, badgers are not considered further.

6.3.3.1.2 Small mammals

Small mammals, pygmy shrew *Sorex minutus* and red squirrel *Sciurus vulgaris* are protected under the Wildlife Acts. The NBDC database search identified one record of pygmy shrew and red squirrel, c. 2km of the site.

No evidence of any of the small mammal species were found onsite. There was no suitable habitat for pygmy shrew or red squirrel on the Proposed Development site due to the urban environment, and as both species are typically found in woodlands.

The local small mammal populations are valued to be of local importance (lower value). However, as there is no suitable habitat within or near the proposed development for this species, and as no evidence was identified, small mammals are not considered further.

6.3.3.2 Birds

All wild birds, and their nests and eggs, are protected under the Wildlife Acts. Some bird species are also listed on Annex I of the EU Birds Directive. The following birds were observed within or in the vicinity of the Proposed Development: herring gull *Larus argentatus*, feral pigeon *Columba livia* f. *domestica*, and rook *Corvus frugilegus*. Feral pigeon and rook are green-listed (i.e. of low conservation concern) in the most recent evaluation of bird populations in Ireland in Birds of Conservation Concern in Ireland (Gilbert *et al.*, 2021) and commonly occupy urban environments. Herring gull are amber-listed (of medium conservation concern), due to short term declines in populations on a national level, and have been forced by anthropogenic pressures to occupy and breed in urban environments.

Breeding birds use various habitats, including trees, structures and scrub, for nesting. Three juvenile herring gulls were identified on a building roof off Henry Street within the Proposed Development site, with other potential nests noted from the presence of adolescent herring gulls on other rooftops within the Proposed Development site. No herring gull nests were observed, however. From the internal building inspection surveys, the majority of the buildings surveyed were run-down and partially dilapidated. Feral pigeons were identified using these spaces as potential nesting sites, with droppings and carcasses present in many of the buildings. The older buildings provide good shelter and protection so are ideal for urban nesting sites.

The breeding birds within the Proposed Development site are considered to be of local importance (higher value).

6.3.3.3 Bats

Bats, and their breeding and resting places, are protected under the Wildlife Acts. All bat species are also listed on Annex IV of the EU Habitats Directive (with the lesser horseshoe bat also listed on Annex II) and are afforded strict protection under the Habitats Directive and the European Communities (Birds and Natural Habitats) Regulations, 2011 (as amended).

The NBDC and NPWS hold records of the following bat species in the vicinity of the Proposed Development site: common pipistrelle *Pipistrellus pipistrellus*, eight records from the NBDC recorded within c. 2km of the site from 2010; Leisler's bat *Nyctalus leisleri*, 10 records from the NBDC recorded within c. 2km of the site from 2010; whiskered bat *Myotis mystacinus*, one record from 1997; soprano pipistrelle *Pipistrellus pygmaeus*, five records from the NBDC recorded within c. 2km of the site from 2008; and Nathusius's pipistrelle *Pipistrellus nathusii*, one record from the NBDC recorded within c. 2km of the site from 2010.

The review of records held by Bat Conservation Ireland returned 49 records of bat roosts from within c. 10km of the Proposed Development site (Appendix 7.2). The closest bat roost to the Proposed Development site was a soprano pipistrelle roost by Iveagh Gardens, located c. 1.7km south. A Leisler's bat roost and common pipistrelle bat roost was located c. 1.8km south-east of the Proposed Development in Grand Canal Docks, and an identified bat roost was also located c. 1.9km south west of the Proposed Development, near Portobello. The remaining roosts were over c. 2km away from the Proposed Development.

In total, two passes of a single bat species were recorded during the dusk survey carried out on the 2nd July 2020; Leisler's bat, recorded on Henry Street (Figure 6.5). This was recorded as very brief passes by a Leisler's bat, likely commuting near the site to suitable foraging habitat, no other activity or any emergences or re-entries at the buildings were recorded during bat surveys.

One building within the Proposed Development boundary was deemed as having low suitability for roosting bats during external building surveys. There were a number of potential roost features evident from external checks, however due to the surrounding urban environment and lack of connecting habitat to more suitable foraging/commuting areas, the building was assessed as low suitability for the likelihood of supporting roosting bat species. No bat evidence was noted during external building surveys. The remaining buildings within the Proposed Development had negligible suitability for roosting bats from ground assessments due to lack of PRFs and any kind of attic/roof space, and the surrounding habitat was deemed to have negligible suitability for commuting and foraging bats.

The other buildings within the Masterplan boundary that were identified as having low potential for roosting bats, were assessed internally for evidence of bats with roof / loft access (Appendix 6.4). No evidence of bats was noted in any of the buildings surveyed or adjacent to these properties. A number of PRFs were identified on these buildings, providing access into attic spaces in some, while others provided access into the buildings or had PRFs on external walls with crevices / gaps suitable for roosting bats (see Figure 6.2 for building locations).



Figure 6.5: Location of Leisler's bat identified during activity surveys.

From internal and external building inspections in June 2020 and April 2022, and bat activity surveys undertaken in June and July 2020, it can be concluded that the Proposed Development site, while it does contain potential roost features within the aforementioned buildings, there is no suitable habitat for bats connecting this site to other suitable habitat. The heavily urbanized environment surrounding the site, with constant light and noise disturbance from O'Connell Street, together with the lack of vegetation and surrounding habitat deem this site unsuitable for roosting bats. The two bat calls identified during surveys, and no emergences or re-entries of bats from or into the building confirms this conclusion. Furthermore, the species that was identified flying over the site during surveys, Leisler's bat, is a high flying species, that typically is not deterred by artificial light, as opposed to low flying species, such as pipistrelles.

Therefore, the local bat population is valued as being of local importance (lower value).

6.3.4 Summary of Ecological Evaluation

Table 6.3 below summarises the ecological evaluation of all receptors taking into consideration legal protection, conservation status and local abundance, and identifies the Key Ecological Receptors (KERs). Species, habitats and features not qualifying as KERs are not subjected to impact assessment in line with current best practice of assessing the impacts on what are determined to be important ecological or biodiversity features: CIEEM and TII guidelines (CIEEM, 2018 and National Roads Authority, 2009).

Ecological Receptor	Ecological Valuation	KER?
Designated Sites		
North Dublin Bay SAC	International	Yes
South Dublin Bay SAC	International	Yes
Rockabill to Dalkey Island SAC	International	Yes
Howth Head SAC	International	Yes
North Bull Island SPA	International	Yes
South Dublin Bay and River Tolka Estuary SPA	International	Yes
Howth Head Coast SPA	International	Yes
All other SAC/SPA sites	International	No
North Dublin Bay pNHA	National	Yes
South Dublin Bay pNHA	National	Yes
Royal Canal pNHA	National	Yes
Dolphins, Dublin Docks pNHA	National	Yes
Grand Canal pNHA	National	Yes
All other NHA/pNHA sites	National	No
Habitats		
Building and artificial surfaces (BL3)	Local Importance (lower value)	No
Ornamental/non-native scrub (WS3)	Local importance (lower value)	No
Fauna Species		
Bats	Local importance (lower value)	No
Breeding birds	Local Importance (higher value)	Yes
Badgers	N/a	No
Other mammal species	N/a	No

Table 6.3: Summary of the ecological evaluation of KER identified within the vicinity of the Proposed Development.

6.4 CHARACTERISTICS OF PROPOSED DEVELOPMENT

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6.4.1 Dublin Central Masterplan

The Dublin Central project is an expansive (c.2.2 Ha) and complex regeneration project. It needs to be delivered in multiple separate projects to overcome site and project constraints.

A site-wide cumulative masterplan has been prepared by 'the Applicant' to set out the overall development vision for the Dublin Central project, the Dublin Central Masterplan ('the Masterplan').

'The Masterplan' area encompasses almost entirely three urban blocks. The area is bounded generally by O'Connell Street Upper and Henry Place to the east, Henry Street to the south, Moore Street to the west, and O'Rahilly Parade and Parnell Street to the north. Moore Lane extends south from Parnell Street through the centre of the masterplan area, as far as its junction with Henry Place.

The Masterplan represents the full development planned by the Applicant for the entire of these urban blocks. The Masterplan area has been divided into six identifiable sites for the purpose of making planning applications.

The development 'proposed' at this time is that subject of planning applications for Site 2 and No. 61 O'Connell Street Upper. Site 2 consists of both Site 2AB and 2C for the purpose of making this planning application. This is described in Section 6.4.2 below.

Those elements outside the planning application site boundaries for the Proposed Development are not yet fixed. Separate planning applications for Sites 3, 4 and 5 were submitted to Dublin City Council on 1 June 2021. These applications are currently being assessed by Dublin City Council or An Bord Pleanála. Site 1 is not yet subject of any planning application.

For the purpose of making planning application for the Proposed Development, and considering the cumulative effect of the proposed and planned project, the Masterplan represents the planning applications for Sites 3, 4 and 5 as submitted Dublin City Council on 1 June 2021 and the interim design for Site 1 (March 2021). This is notwithstanding that further progress on planning design is being worked up in the meantime.

All references to the Masterplan in the plans and particulars that form part of the Proposed Development planning application, should be understood to refer to the Dublin Central Masterplan.

The Masterplan vision for Site 1, 3, 4 and 5 should not be referred to as 'the Proposed Development' at this time. Rather these sites form part of the envisaged or planned cumulative future development for Dublin Central. The design and layout for Site 1, in particular, is subject to design change in advance of planning application(s) being made for this site.

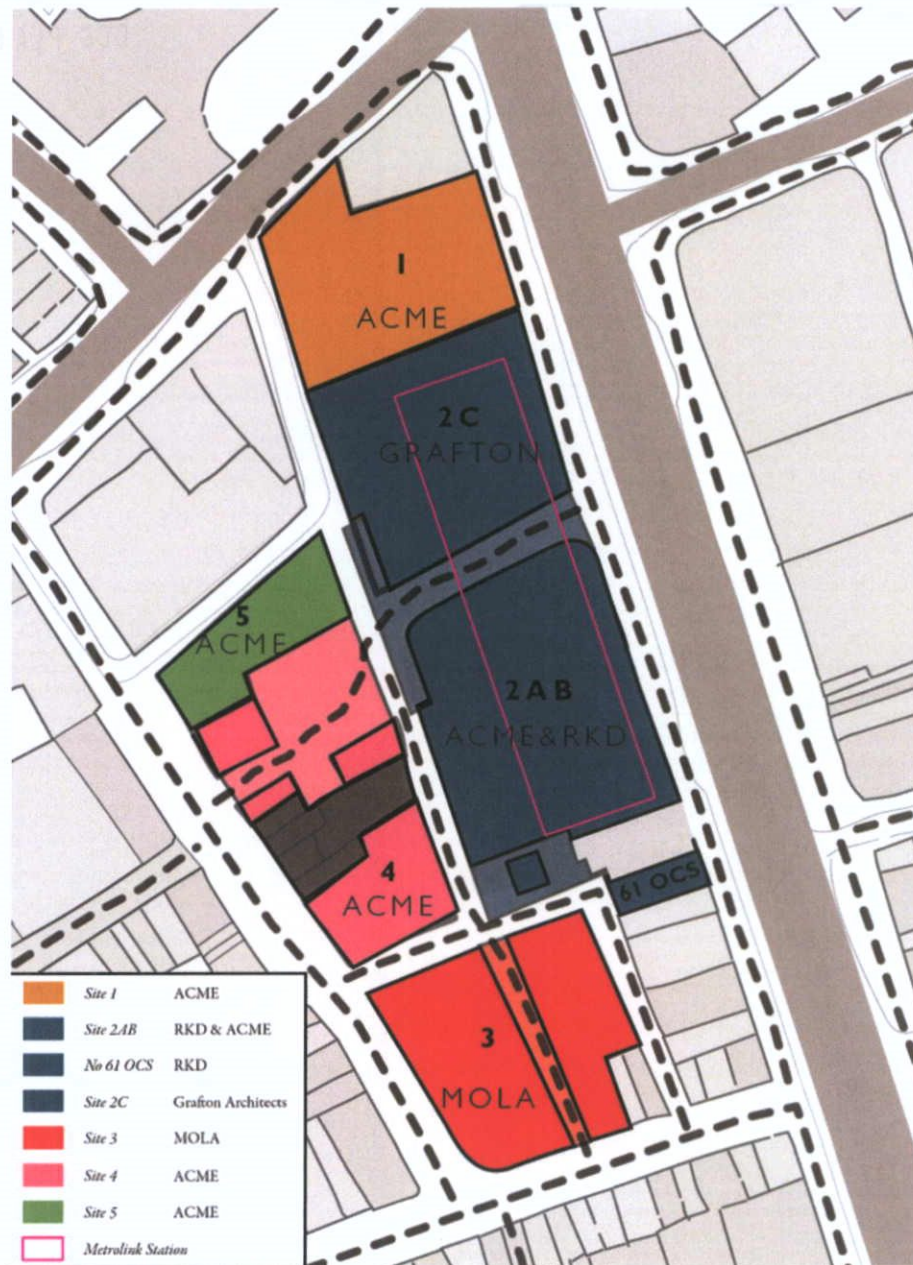


Figure 6.6: Dublin Central Masterplan.

The subject site is currently 100% hardstanding with surface water drains on each site draining to the existing surrounding combined sewer network. The development of this site will provide a significant gain to Dublin City Council in reducing surface water runoff to the combined sewers and ultimately to the Ringsend Waste Water Treatment Plant (WWTP).

The surface water runoff for the subject site is 278l/s unrestricted flow. Dublin City Council require that surface water discharge from the site is restricted to 2l/s/ha. With the overall site area of 2.2Ha, the allowable outfall from the entire development is 4.46 l/s. Therefore, it is proposed that each site will attenuate to 2l/s, with attenuation storage within each site provided at roof level and below ground level. This discharge from each site will be to a common internal surface water network which would run along Moore Lane and the other internal roads/pedestrian areas. The runoff from the internal road/pedestrian areas would drain direct to this common network and then discharge to the public sewer at the permitted restricted rate. Attenuation will be provided in an underground tank beneath the main internal square for the common areas, including the surplus attenuation arising from the fact that each site is discharging 2l/s into the common network.

Green and blue roofs are also proposed for inclusion within the remit of the development design. Blue roofs will involve the attenuation of surface water by way of using storage cells under roof terraces/podium/green roofs. At least 37% of the roof area in each site is proposed to include blue roof attenuation, with between 5 – 43% green roof cover proposed.

Blue roofs comprise of a combined drainage and attenuation void within the roof structure and a roof outlet system designed to release the attenuated water at a controlled discharge rate via a restrictor chamber. Rainwater will discharge from the blue roofs at a controlled rate, with water accumulating at the roofs only when this rate is exceeded. A secondary emergency drainage outlet will be provided as a method of drainage to facilitate the removal of excess rainfall if the designed capacity is exceeded.

Green sedum¹⁸ roofing will act as a source control device. The substrate and the plant layers in a sedum roof absorb large amount of rainwater and release it back into the atmosphere by transportation and evaporation. They also filter water as it passes through the layers, so the run-off, when it is produced, has fewer pollutants. Rainfall not retained by green roofs is detained, effectively increasing the time to peak and slowing peak flows.

It is an objective of the Greater Dublin Strategic Drainage Study, the Dublin City Development Plan 2016-2022, and the Draft Dublin City Development Plan 2022 - 2028 to incorporate Sustainable Urban Drainage Systems (SUDS) within new developments. The SUDS features associated with the Proposed Development are not included within the design to avoid or reduce any potential harmful effects to any European sites. They have not been considered, and are not necessary, in reaching the conclusion of this assessment as to the potential for the Proposed Development to result in significant effects on any European sites.

Foul water drainage will discharge to existing combined sewer which run around and through the Dublin Central site. These will simply be a connection from the building direct to the combined sewer. Waste water from this development will discharge to the combined sewers and ultimately end up at Ringsend WWTP for treatment prior to discharge into Dublin Bay. The estimated foul water per day for the Proposed Development is calculated as 803,386, with a peak flow of 55.791l/s.

6.4.2 Proposed Development – Site 2 & No. 61 O'Connell Street Upper

6.4.2.1 Site 2

Site 2 comprises a mixed-use scheme (c. 38,479 sq. m gross floor area) ranging in height from 2 – 8 storeys over single level basements including a new street between O'Connell Street Upper and Moore Lane, a new controlled Laneway from Moore Lane (adjacent No. 42 O'Connell Street Upper – a Protected Structure). The proposed development accommodates: -

- 6no. units for use as a 'licensed restaurant / café units with takeaway / collection facility' at ground floor level (Unit 1 – c. 67 sq. m and Unit 2 – c. 244 sq. m on Moore Lane, Unit 3 – c. 178 sq. m and Unit 4 – c. 75sq. m on O'Connell Street Upper, Unit 5 – c. 58 sq. m on New Street and Unit 6 – c. 296 sq. m on Moore Lane and New Street;
- 1no. unit for use as a 'licensed restaurant / café units with takeaway / collection facility' across basement, ground, 1st and 2nd floor (c. 878 sq. m) on O'Connell Street Upper;
- 8no. retail units, each for use as a 'shop' or 'licensed restaurant / café units with takeaway / collection facility' at ground floor level (Unit 1 – c. 1,041 sq. m on O'Connell Street Upper and Moore Lane, Unit 2 – c. 311 sq. m and Unit 3 – c. 260 sq. m on O'Connell Street Upper and New Street, Unit 4 – c. 452 sq. m on New Street, Units 5 – c. 251 sq. m on Moore Lane, Unit 6 – c. 162 sq. m and Units 7 – c. 58 sq. m on O'Connell Street Upper and Unit 8 – c. 40 sq. m on Moore Lane and new controlled Laneway); Temporary use of retail Unit 8 (c. 40 sq. m) as a delivery hub, pending the completion of same at Site 5 under DCC Reg. Ref. 2863/21;

¹⁸ Stonecrop or *Sedum* species is a species that is often specified for green roofs.

- Office use (c. 33,714 sq. m) from 1st to 7th floor with access from O'Connell Street Upper, rear of No. 59 O'Connell Street upper and new plaza on Henry Place and new controlled Laneway. Terrace proposed at 1st, 3rd, 4th, 6th and 7th floor are proposed;
- Refurbishment of the 'Reading Room' (rear of No. 59 O'Connell Street Upper, Dublin 1) as 'licensed restaurant / café units with takeaway / collection facility' at ground floor level and ancillary café use at basement level (c. 244 sq. m in total).
- The single level basement comprises: -
 - Access ramp from Moore Lane.
 - 32no. car parking space.
 - 372no. bicycle parking spaces with access to secure bicycle storage areas from the new plaza on Henry Place and the new controlled laneway from Moore Lane.
 - Plant and waste storage areas.
- A structural box (120m length, 26m width, 34.5m depth) beneath the ground floor level that has been designed to accommodate the independent construction and operation of the planned O'Connell Street MetroLink Station by Transport Infrastructure Ireland, including provision of the structural envelope and co-ordinated voids to accommodate station entrances, ventilation and fire escape shafts through this part of the Dublin Central proposed development. These ensure that the Dublin Central proposed development is structurally independent of, and not prejudicial to, the MetroLink project. The MetroLink project will be the subject of a separate application for approval to be made by Transport Infrastructure Ireland. This part of the Dublin Central proposed development is referred to as the MetroLink Enabling Works.

All associated and ancillary site development and landscape works, conservation, demolition, landscaping, temporary works, including: -

- Conservation, repair, refurbishment, and adaptive reuse of part of the existing building fabric, including: -
 - Retention of part of the rear of Nos. 59 O'Connell Street Upper (known as the 'Reading Room') internal and external modifications and new shopfronts;
 - Retention of the facades of Nos. 57 – 58 O'Connell Street Upper (Protected Structures);
 - Retention of the facades of Nos. 52 – 54 O'Connell Street Upper (Carlton Cinema – Protected Structures) including the reinstatement of the canopies;
 - Retention of the facades of Nos. 43 – 44 O'Connell Street Upper (Protected Structures);
 - Retention of the facade of No. 45 O'Connell Street Upper;
 - Works to include repair and upgrade works (where required) of retained masonry, external and internal joinery, plasterwork and features of significance;
 - Conservation and repair of existing lightwells on O'Connell Street Upper;
- Demolition of all other existing buildings and structures on site (c. 22,521 sq. m) including No. 13 Moore Lane and No. 14 Moore Lane (otherwise known as Nos. 1 – 3 O'Rahilly Parade and Nos. 14 – 15 Moore Lane or Nos. 1 – 8 O'Rahilly Parade and Nos. 14 – 15 Moore Lane) to facilitate a temporary construction compound;
- Laying of services in Parnell Street westwards from Moore Lane for approximately 49 metres;
- Improvement works to the public realm on O'Rahilly Parade, Moore Lane, Henry Place, including the provision of a new entrance off O'Connell Street Upper for deliveries / emergency access. There are also adjustments and improvement works proposed at the junctions of Moore Street with Henry Place and with O'Rahilly Parade;
- Creation of a new street connecting O'Connell Street Upper with Moore Lane and provision of a new plaza at the junction of Moore Lane and Henry Place;

- 3no. telecommunication lattice towers which can accommodate 3no. 800mm antenna and 2no. 300mm microwave link dishes with associated equipment on the rooftop of Block 2C.
- 2no. ESB sub-stations;
- Building signage zones and retractable canopies.

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MetroLink Enabling Works (MEW)

The Applicant has agreed a Memorandum of Understanding with the NTA/TII to complete the enabling works that would accommodate the planned future MetroLink O'Connell Street station under Dublin Central Site 2AB and Site 2C. This would also ensure that the Applicant's project is structurally independent of, and not prejudicial to, the TII MetroLink Project. It should be noted that no metro enabling works will be undertaken by the Applicant until the NTA / TII have secured an enforceable railway order.

The Site 2 proposals accommodate a structural box beneath ground floor level that has been designed to accommodate the independent construction and operation of the planned O'Connell Street MetroLink Station by Transport Infrastructure Ireland (TII), including provision of the structural envelope and co-ordinated voids to accommodate station entrances, ventilation and fire escape shafts through this part of the proposed development. These MetroLink Enabling Works (MEW) ensure that the Dublin Central proposed development is structurally independent of, and not prejudicial to, the MetroLink project. This application does not include any request for permission for railway works, the use of railway works or the operation of a railway. The MetroLink project will be the subject of a separate application for Railway Order to be made by TII. In the event that MetroLink project is delayed or does not proceed, the Dublin Central proposed development can be completed, occupied and used regardless. The Dublin Central proposed development is not dependent on the MetroLink project in any way, whether functionally or otherwise. The MetroLink project is not, therefore, part of the project the subject of this application or its accompanying EIAR.

This EIAR describes, in outline, the likely evolution of the current state of the environment (the baseline scenario), both with and without the MetroLink project. This outline has been completed with reasonable effort on the basis of available information, at the date of this application. For this purpose, the potential for the Proposed Development to impact on a future environment that includes the MetroLink project has been carefully considered, by the Applicant and TII. The MEW has been designed and incorporated to the Proposed Development to ensure that it is structurally independent of, and not prejudicial to, the MetroLink project. It follows that the Proposed Development is not likely to have any significant impact on the MetroLink project to report within this EIAR, or any different effect on the environment, after its evolution to include the MetroLink project.

Surface Water

The option to discharge to the surface water network was determined not to be feasible for Site 2AB given the shallow depth of the existing sewer and given the flat gradients of the surrounding road network.

It is proposed to drain surface water from Site 2AB to the existing public combined water sewer adjacent to the site in O'Connell Street Upper. Nonetheless, private foul and surface water will be drained on completely separate systems throughout the development, with a view to connecting to any future separate surface water network that could be introduced in the area. Surface water will be discharged from Site 2AB at a controlled rate limited to the practical minimum rate of 2 l/s.

For Site 2C, it has been determined to be feasible to discharge to the surface water network. It is proposed to extend the existing sewer along Parnell Street as far as Moore Lane, continuing south along Moore Lane as far as Site 2C. Surface water will discharge from Site 2C to the surface water network at a controlled rate limited to the practical minimum rate of 2 l/s.

A mixture of hard and soft landscaping is proposed which will incorporate a range of permeable material and water attenuation measures. Sustainable Urban Drainage systems (SuDS) for managing stormwater for Site 2 include: -

- Green and Blue Roofs.
- Underground Attenuation and Flow Control.

It is proposed to incorporate a Storm Water Management Plan through the use of various SuDS techniques to treat and minimise surface water runoff from the site.

Surface water will be discharged at a controlled rate limited to the practical minimum rate of 2 l/s. This discharge rate has been discussed and agreed with Dublin City Council Drainage Division. Excess surface water runoff during storm events will be attenuated using a combination of blue roofs and an underground concrete attenuation tank.

The existing site is almost entirely hardstanding, without such SuDS features, and as such the introduction of any SuDS features will result in a net reduction in the surface water discharging from the site compared to the current scenario. The site currently discharges unrestricted and unattenuated to the combined network, so the introduction of flow control devices and attenuation storage will significantly reduce the runoff rate during storm events.

Foul Water

It is proposed to provide 2no. new 225mm connections to the existing public network, 1no. for Site 2AB and 1no. for Site 2C. Both connections will be made to the existing sewers in Moore Lane, to the west of the site. A new manhole will be constructed at each of the two connection points.

Any existing drainage connections at the site are to be decommissioned, with the existing drain capped from within the site to decommission the pipe. Although the existing drainage infrastructure consists of combined foul and surface water sewers, private foul and surface water drainage will be drained on completely separate systems throughout the development.

Irish Water issued a Confirmation of Feasibility (CoF) for the proposal, dated 12 May 2022 (refer to Engineering Assessment Report, prepared by Waterman Moylan Consulting Engineers). The CoF notes that connection to the existing wastewater network is feasible without the need for any infrastructure upgrade works by Irish Water.

6.4.2.2 No. 61 O'Connell Street Upper

No. 61 O'Connell Street Upper comprises the conservation, repair, refurbishment and adaptive reuse of an existing commercial building (4 storey over basement) to include: -

- A licensed restaurant / café unit with takeaway / collection facility unit (c. 35 sq. m gfa) at ground floor level on O'Connell Street Upper and a licensed restaurant / café unit with takeaway / collection facility unit (c. 10 sq. m gfa) at ground floor level on Henry Place;
- 3no. 2bed apartments from 1st to 3rd floor (1no. unit per storey); 1no. gym / leisure studio (c. 172 sq. m gfa) at basement level;

All associated and ancillary site development works, conservation, demolition, landscaping, temporary works, including: -

- The creation of a new pedestrian link through part of the ground floor connecting O'Connell Street Upper and Henry Place;
- Bicycle (8no.) and bin storage to rear of No. 61 O'Connell Street at ground floor level;
- Building signage zones and retractable canopy.

Foul water

Foul water will continue to discharge from No. 61 O'Connell Street Upper via the same connection to the existing 2,200mm x 760mm foul water sewer in O'Connell Street Upper.

Irish Water issued a Confirmation of Feasibility (CoF) for the proposal, dated 12 May 2022 (refer to Engineering Assessment Report, prepared by Waterman Moylan Consulting Engineers). The CoF notes that connection to the existing wastewater network is feasible without the need for any infrastructure upgrade works by Irish Water.

Surface Water

Surface water will continue to discharge from No. 61 O'Connell Street Upper via the same connection to the existing 2,200mm x 760mm foul water sewer in O'Connell Street Upper.

6.5 POTENTIAL IMPACTS

6.5.1 Dublin Central Masterplan

As per the relevant guidelines, likely significant effects have only been assessed for KERs, as listed in Table 6.3. An impact is considered to be ecologically significant if it is predicted to affect the integrity or conservation status of a KER at a specified geographical scale. All impacts are described in the absence of mitigation.

6.5.1.1 Potential Impact on Designated Sites During Construction Stage

This section describes and assesses the potential for the Dublin Central Masterplan (including Site 2 and No. 61 O'Connell Street Upper) to result in likely significant effects on European sites that lie within the ZoI of the Dublin Central Masterplan. In the context of European sites this is focussed on the habitats and species for which the sites are selected (Qualifying Interests (QIs) for SACs and Special Conservation Interests (SCIs) for SPAs) and the conservation objectives supporting their conservation status in each site. The assessment required under the Habitats Directive is presented in the Appropriate Assessment Screening Report for the Proposed Development (i.e. Site 2 and 61 O'Connell Street Upper that accompanies this planning application).

In the case of NHAs and pNHAs the assessment considers whether the integrity of any such site would be affected by the development of the Dublin Central Masterplan with reference to the ecological features for which the site is designated, or is proposed.

6.5.1.1.1 European Sites

The assessment presented in the Appropriate Assessment Screening Report concluded that the potential impacts associated with the development of the Dublin Central Masterplan do not have the potential to affect the receiving environment and, consequently, do not have the potential to affect the conservation objectives supporting the qualifying interests or special conservation interests of any European sites; either alone or in combination with any other plans or projects.

As the Dublin Central Masterplan does not traverse any European sites there is no potential for habitat fragmentation to occur.

There are no plant species listed on the Third Schedule of the *European Communities (Birds and Natural Habitats) Regulations, 2011* on the Dublin Central Masterplan site. The Dublin Central Masterplan site is hydrologically connected to European sites in Dublin Bay through the combined surface and foul water drainage network, however, due to the absence of Third Schedule non-native invasive species within the Dublin Central Masterplan site, there is no risk of non-native invasive species spreading from the Dublin Central Masterplan site to any European site.

Herring gulls are an SCI species of nearby European sites, and are known to nest on flat roof tops in urban areas. The development of the Dublin Central Masterplan may therefore temporarily remove suitable *ex-situ* breeding habitat for this species. However there will not be any permanent impacts on herring gulls as the current roofs will be replaced by similar structures, and as the construction programme will be on a phased basis, the demolition of buildings will be gradual. The installation of green and blue roofs in some areas may also increase suitability for a wider range of bird species, including; skylark, oystercatcher, ringed and little plovers, common tern and lapwings¹⁹.

Construction-related disturbance and displacement of fauna species could potentially occur within the vicinity of the Dublin Central Masterplan. For birds, disturbance effects would not be expected to extend beyond a distance of c. 300m, as noise levels associated with general construction activities would attenuate to close to background levels at that distance²⁰. There are no European sites within the disturbance Zol; the next nearest European site to the Dublin Central Masterplan is c. 2.4km away.

There is some potential for contaminants arising from the construction phase of the development of the Dublin Central Masterplan to enter the downstream receiving environment via the existing surface water mains. Notwithstanding the location of the aforementioned designated sites in the downstream receiving environment, there is not considered to be any potential for significant effects arising from the construction or operation of the development of the Dublin Central Masterplan. This is because: -

- South Dublin Bay SAC (000210) (which overlaps with South Dublin Bay pNHA) is located to the east along c. 5.4km of the River Liffey channel from the Dublin Central Masterplan, and South Dublin Bay and River Tolka Estuary SPA (004024) is located to the east along c. 4.7km of the River Liffey channel. There is therefore a large freshwater and estuarine water buffer separating the designated sites from the Dublin Central Masterplan over which it is anticipated that any potential pollutants would be absorbed and diluted to an extent that they would not be perceptible at the designated sites.
- North Bull Island SPA (004006) (which partially overlaps with North Dublin Bay pNHA) is located to the east along c. 6.4km of the River Liffey channel (and the sea waters of the Dublin Bay) from the Dublin Central Masterplan, and North Dublin Bay SAC (000206) is located to the east along c. 6.4km of the River Liffey channel (and the sea waters of the Dublin Bay). There is therefore a very large freshwater and estuarine water buffer separating the designated sites from the Dublin Central Masterplan over which it is anticipated that any potential pollutants would be absorbed and diluted to an extent that they would not be perceptible at the designated sites.
- Rockabill to Dalkey Island SAC (003000) (which partially overlaps with Dalkey Coastal Zone And Killiney Hill pNHA) is located c. 11.3km from the Dublin Central Masterplan along the River Liffey channel (and the sea waters of the Dublin Bay). There is therefore a very large marine and freshwater water buffer separating the designated site from the Dublin Central Masterplan over which it is anticipated that any potential pollutants would be absorbed and diluted to an extent that they would not be perceptible at the designated site.
- Howth Head SAC (000202) (which overlaps with Howth Head Coast SPA) is located c. 11km north-east of the Dublin Central Masterplan site along the River Liffey channel (and the sea waters of the Dublin Bay). There is therefore a very large marine and freshwater water buffer separating the designated site from the Dublin Central Masterplan over which it is anticipated

¹⁹ Biodiversity and Green Roofs – Green Roof Services, Living Roofs. Accessed here: <https://livingroofs.org/biodiversity-and-wildlife/>

²⁰ The disturbance zone of influence for waterbirds is based on the relationship between the noise levels generated by general construction traffic/works (BS 5228:2009 Code of Practice for Noise and Vibration Control on Construction and Open Sites – Part 1 Noise) and the proximity of those noise levels to birds – as assessed in Cutts, N. Phelps, A. & Burdon, D. (2009) Construction and Waterfowl: Defining Sensitivity, Response, Impacts and Guidance, and Wright, M., Goodman, P & Cameron, T. (2010) Exploring Behavioural Responses of Shorebirds to Impulsive Noise. *Wildfowl* (2010) 60: 150–167. At 300m, noise levels are below 60dB or, in most cases, are approaching the 50dB threshold below which no disturbance or displacement effects would arise.

that any potential pollutants would be absorbed and diluted to an extent that they would not be perceptible at the designated site.

Any discharge of silt laden water to gravels or stormwater would not result in any exceedances within the River Liffey as settlement would occur in the gravel deposits or stormwater lines close to the site boundary²¹. Furthermore, it is an objective of the Greater Dublin Strategic Drainage Study, and the Dublin City Development Plan 2016 – 2022, to incorporate Sustainable Urban Drainage Systems (SuDS) within new developments.

The SuDS features associated with the Proposed Development are not included within the design to avoid or reduce any potential harmful effects to any European sites. They have not been considered, and are not necessary, in reaching the conclusion of this assessment as to the potential for the Proposed Development to result in significant effects on any European sites as assessed in the Appropriate Screening (Scott Cawley Ltd. 2022).

Due to the above reasons, there are no hydrological or hydrogeological risks associated with the development of the Dublin Central Masterplan, and therefore there are no European sites at risk of habitat degradation.

6.5.1.1.2 National Sites

In the case of NHAs and pNHAs the assessment considers whether the integrity²² of any such site would be affected by the development of the Dublin Central Masterplan with reference to the ecological features for which the site is designated, or is proposed.

The Dublin Central Masterplan does not overlap with any nationally designated sites.

As outlined within Section 6.5.2 of this chapter, the zone of influence of the Dublin Central Masterplan in relation to designated sites extends to NHAs / pNHAs and European sites downstream of the Dublin Central Masterplan in Dublin Bay. Therefore, the only nationally designated sites within the potential zone of influence of the Dublin Central Masterplan are; South Dublin Bay pNHA (000210), Dolphins, Dublin Docks pNHA (000201), and North Dublin Bay pNHA (000206). These designated sites are in the downstream receiving environment within Dublin Bay, to which the surface waters from the lands ultimately discharge via the River Liffey. There is not considered to be any potential for significant effects arising from construction of the Dublin Central Masterplan for the same reasons as European sites above. Dolphins, Dublin Docks pNHA, is designated for nesting terns, and as noise from the development is not predicted to extend more than a few hundred metres¹⁴ from the site, no significant effects are predicted on this National site.

Grand Canal pNHA (002104) located c. 1.6km south and the Royal Canal pNHA (002103) located c. 1.3km north of the Dublin Central Masterplan site, are not hydrologically connected or otherwise to the Dublin Central Masterplan site, therefore no significant effects are predicted on these National sites.

As the implementation of the Dublin Central Masterplan will not result in significant effects on nationally designated sites on its own, there is no potential for cumulative effects arising from the proposal in-combination with other plans or projects.

6.5.1.2 Potential Impact of the Masterplan Proposal on Habitats during Construction Stage

There are no habitats of importance within the Dublin Central Masterplan site, or in the immediate environs. Landscaping plans for the Dublin Central Masterplan will enhance the urban nature of the site. Therefore, the implementation of the Dublin Central Masterplan will not result in significant effects on habitats at any geographical scale.

²¹ Hydrological & Hydrogeological Qualitative Risk Assessment for Dublin Central Project, Dublin 1, AWN Consulting (2022).

²² Refer to Section 6.2.5 for definition and impact assessment methodology.

6.5.1.3 Potential Impact of the Masterplan Proposal on Birds during Construction Stage

6.5.1.3.1 Effects on Mortality and Disturbance

There is considered to be temporary displacement of nesting herring gull and pigeon habitat (as well as the potential for bird injury/mortality) on the roof tops of the buildings if works are undertaken during the breeding bird season (i.e. 1st March to 31st August, inclusive). Feral pigeon are a green-listed species in Ireland and are commonly occurring within urban environments. Herring gull although an amber-listed species in Ireland have been forced by anthropogenic pressures to occupy and breed in urban environments.

If site clearance works were to be undertaken during the bird breeding season (March to August, inclusive) it is likely that nesting sites holding eggs or chicks will be destroyed and birds killed. Mortality of birds at the scale of the Dublin Central Masterplan (given the relatively low area of vegetation roof cover in the wider context that will be lost), over what is likely to be a single breeding bird season in terms of completing site clearance works, could only have a short-term effect on local breeding bird population abundance. However, in the longer-term this would be unlikely to affect the abundance or distribution of the breeding bird species recorded in the study area nor would it be likely to affect the long-term viability of the local populations. The landscape planting proposed as part of the design, may also over time serve to provide additional nesting and foraging opportunities, and upon the completion of the development the rooftops would continue to provide nesting opportunities for herring gulls.

The noise, vibration, increased human presence and the visual deterrent of construction traffic associated with site clearance and construction will disturb breeding bird species and is likely to displace breeding birds from habitat areas adjacent to the Dublin Central Masterplan boundary. Although it is not possible to quantify the magnitude of this potential impact (or the potential effect zone) it could potentially extend for several hundred metres from the Dublin Central Masterplan site. Given the abundance of rooftops and buildings in the surrounding environs, disturbance or displacement effects will also be over the short-term and are therefore not likely to affect the conservation status of the local breeding bird populations.

Overall, the site clearance and physical disturbance associated with the implementation of the Dublin Central Masterplan is not likely to result in long-term effects on local breeding bird populations, however, will result in a likely short-term significant negative effect, at a local geographic scale.

6.5.1.4 Operational Stage

6.5.1.5 Potential Impacts of the Masterplan Proposal on Habitats during Operational stage

No operational phase impacts are predicted on habitats as a result of the Dublin Central Masterplan proposal.

6.5.1.6 Potential Impacts of the Masterplan Proposal on Birds during Operational Stage

6.5.1.6.1 Disturbance

It is possible that birds using the site and environs may be temporarily disturbed as a result of increased noise and human activity levels during operation of the Dublin Central Masterplan. This could potentially result in the temporary disturbance and displacement of birds until they habituate to the increased levels of noise and human activity. Birds recorded within the Dublin Central Masterplan site are typical urban species which are considered to tolerate increased levels of disturbance providing suitable habitat remains which birds use as a refuge. The increase in vegetation and planting, will also provide habitat for other local bird species, in what is a heavily urbanised environment. Overall, the disturbance during operation is unlikely to result in a significant effect at any geographic scale.

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6.5.1.7 Cumulative Assessment

The Dublin Central Masterplan site is currently zoned as Z5 "City / Town / Village Centre, Central Area" with the zoning objective "to consolidate and facilitate the development of the central area, and to identify, reinforce, strengthen and protect its civic design character and dignity" within the Dublin City Development Plan 2016 – 2022²³.

This section of the chapter assesses the potential for any other Proposed Developments to act cumulatively with the development of the Dublin Central Masterplan, to give rise to likely significant effects on biodiversity.

Based on a search of active or recent planning applications in the immediate environs of the Dublin Central Masterplan site²⁴, most applications relate to minor additions or amendments to existing buildings, including installation of platform lifts, improved access facilities etc.

Potential cumulative impacts may arise during construction and operation, as a consequence of the development of the Dublin Central Masterplan acting in-combination with other plans and projects, on water quality in the downstream surface water environment, and on disturbance and habitat loss to birds.

There is potential for cumulative impacts to arise with other local developments that would also result in increased noise, vibration, and human presence. However, as any disturbance effects from other such local developments are likely to be of a minor nature, temporary, localised and over a short-duration, they are not likely to cumulatively affect the local breeding bird populations in conjunction with the implementation of the Dublin Central Masterplan.

Considering the predicted impacts associated with the implementation of the Dublin Central Masterplan, the mitigation measures proposed to protect the local biodiversity resource and the receiving environment, and the protective policies and objectives on the land-use plans that will direct future development locally, significant cumulative negative effects on biodiversity are not predicted.

6.5.1.8 Do-Nothing Impact

Under the do-nothing scenario, the site would continue to degrade and provide habitat for nesting gull species, and feral pigeons. The minor areas of non-native ornamental scrub would likely continue to grow and spread across the site, potentially providing nesting opportunities for bird species, and invertebrate populations.

6.5.2 Proposed Development – Site 2 & No. 61 O'Connell Street Upper

As per the relevant guidelines, likely significant effects have only been assessed for KERs, as listed in Table 6.3. An impact is considered to be ecologically significant if it is predicted to affect the integrity or conservation status of a KER at a specified geographical scale. All impacts are described in the absence of mitigation.

6.5.2.1 Potential Impact of the Proposed Development on Designated Sites during Construction Stage

This section describes and assesses the potential for the Proposed Development (i.e. Site 2 and 61 O'Connell Street Upper) to result in likely significant effects on European sites that lie within the Zol of the Proposed Development. In the context of European sites this is focussed on the habitats and species for which the sites are selected (QIs for SACs and SCIs for SPAs) and the conservation objectives supporting their conservation status in each site. This assessment is directly related to the assessment methodology for European sites required under the Habitats Directive, which is

²³ The zoning of the site remains the same as is currently zoned in the draft Dublin City Development Plan (2022 – 2028)

²⁴ Planning applications accessed via myplan.ie in August 2022. Only planning applications that have been granted permission within the last five years were considered.