

## 18 POPULATION AND HUMAN HEALTH

### 18.1 Introduction

This chapter describes the likely significant effects of the proposed development on population and human health.

The purpose of this assessment is to identify and assess the potential health and wellbeing effects of the proposed development on the surrounding population and local community during construction and operation, along with the likely economic significant effects at local and regional level. This assessment also considers the provision of commercial and residential opportunities in the study area, as well as any changes to the public open space (permitted under ABP Ref. 306569-20).

Population and Human Health is a broad ranging topic and addresses the existence, activities and wellbeing of people as groups or 'populations'.

Potential population and human health effects relating to the proposed development arise from traffic and transportation, air quality and climate, noise and vibration, townscape and visual, material assets and the risk of major accidents and/or disasters. These aspects are dealt with in the specific chapters in this EIAR dedicated to those topics. This chapter refers to the findings of those assessments included elsewhere in this EIAR for which human health effects might occur. **Chapter 3** provides a description of the proposed development whilst **Chapter 4** describes the construction strategy.

The following aspects are particularly relevant to the population and human health assessment:

- Design:
  - Aspects including the prime city centre location of the proposed development, and maximised design facilitating the incorporation of a range of uses which will provide residential and commercial opportunities.
- Construction:
  - Provision of temporary employment for construction workers;
  - Potential for significant effects on human health, including effects of emissions such as noise and dust from plant and equipment;
  - Potential for significant effects on population and human health associated with disturbance and annoyance, including construction traffic and how that may interact with human health; and
  - Upgrades to existing services and infrastructure and associated human health benefits (these will be done as part of the permitted development ABP Ref 306569-20).
- Operation:
  - Provision of much needed housing opportunities, and the enhancement of the local community;
  - Provision of permanent employment and commercial opportunities; and
  - Creation of new open space and amenity areas (permitted under ABP Ref: 306569-20 with minor amendments proposed to tie in with the new 'Block A' layout)

This assessment was undertaken by Clodagh O'Donovan of Arup. Clodagh holds a Bachelor of Engineering and MEng Sc and is the Planning Service Team Lead for Arup Ireland. Clodagh has significant experience in the management and delivery of complex multidisciplinary projects, with particular experience in the EIA, AA and statutory consent process.

Please refer to Chapter 1 for further details on her relevant qualifications and experience.

## 18.2 Assessment Methodology

### 18.2.1 General

Aspects examined in this chapter primarily relate to effects from the proposed development on the local population, including the provision of commercial and residential opportunities and likely effects on local community health. These two themes are discussed separately in this chapter.

### 18.2.2 Guidance and Legislation

This chapter has been prepared having regard to the following guidelines:

- Department of Housing, Planning and Local Government (2018) *Guidelines for Planning Authorities and an Bord Pleanála on carrying out Environmental Impact Assessment*, (August 2018)<sup>1</sup>;
- EPA (2017) *Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* (EPA, draft August 2017)<sup>2</sup>;
- EPA (2015) *Revised Guidelines on the Information to be Contained in Environmental Impact Statements* (Environmental Protection Agency, draft September 2015)<sup>3</sup>;
- EPA (2015) *Advice Notes for Preparing Environmental Impact Statements (Draft September 2015)*<sup>4</sup>;
- EPA (2003) *Advice Notes on Current Practice in the Preparation of Environmental Impact Statements*<sup>5</sup>;
- US EPA (2016) *Health Impact Assessment Resource and Tool Compilation*<sup>6</sup>;
- European Commission Guidance (2003) *Implementation of Directive 2001/42 on the assessment of the effects of certain plans and programmes on the environment*<sup>7</sup>;
- European Commission (2017) *Environmental Impact Assessment of Projects - Guidance on the preparation of the Environmental Impact Assessment Report*<sup>8</sup>;
- Fáilte Ireland (2011) *Guidelines for treatment of tourism in an Environmental Impact Statement*<sup>9</sup>;
- IEMA (2017) *Health in Environmental Impact Assessment - A Primer for a Proportionate Approach*<sup>10</sup>;
- IPI (2009) *Health Impact Assessment (Institute of Public Health Ireland 2009)*<sup>11</sup>;

<sup>1</sup> Department of Housing, Planning and Local Government (2018) *Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment*. Stationary Office, Dublin.

<sup>2</sup> EPA (2017) *Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports*. Dublin, Ireland.

<sup>3</sup> EPA (2015) *Revised Guidelines on the Information to be Contained in Environmental Impact Statements*. Dublin, Ireland.

<sup>4</sup> EPA (2015) *Advice Notes for Preparing Environmental Impact Statements*. Dublin, Ireland.

<sup>5</sup> EPA (2003) *Advice Notes on Current Practice in the Preparation of Environmental Impact Statements*. Dublin, Ireland.

<sup>6</sup> US EPA (2016) *Health Impact Assessment Resource and Tool Compilation*. Cincinnati, USA

<sup>7</sup> European Commission Guidance (2003) *Implementation of Directive 2001/42 on the assessment of the effects of certain plans and programmes on the environment*. Brussels, Belgium.

<sup>8</sup> European Commission (2017) *Environmental Impact Assessment of Projects - Guidance on the preparation of the Environmental Impact Assessment Report*. Brussels, Belgium.

<sup>9</sup> Fáilte Ireland (2011) *Guidelines for treatment of tourism in an Environmental Impact Statement*. Dublin, Ireland.

<sup>10</sup> Cave, B. Fothergill, J., Pyper, R. Gibson, G. and Saunders, P. (2017) *Health in Environmental Impact Assessment: A Primer for a Proportionate Approach*. Ben Cave Associates Ltd, IEMA and the Faculty of Public Health. Lincoln, England.

<sup>11</sup> IPI (2009) *Health Impact Assessment (Institute of Public Health Ireland 2009)*. Dublin, Ireland.

- World Health Organisation (WHO) (2018) *Environmental Noise Guidelines for the European Region 2018*<sup>12</sup>;
- WHO (2009) *Night time Noise Guidelines for Europe*<sup>13</sup>;
- WHO (2005) *WHO Air Quality Guidelines for particulate matter, ozone, nitrogen dioxide and sulphur dioxide*<sup>14</sup>;
- WHO (1999) *Guidelines for Community Noise*<sup>15</sup>; and
- WHO (2014) *Regional Office for Europe. Health in impact assessments: opportunities not to be missed.*<sup>16</sup>

### 18.2.3 Study Area

The principal study area has been determined as the proposed development site (i.e. all areas within the planning boundary for the proposed development, which includes the permitted development, ABP Ref 306569-20). However, for the purposes of this assessment, the wider study area of the proposed development is examined in the context of the baseline environment, and with regard to the potential for significant effects on population and human health. The study area of the proposed development for the purposes of this assessment is therefore considered to be the 'Phoenix Park' CSO Electoral Division (ED). Electoral Divisions (EDs) are the smallest legally defined administrative areas in the State for which Small Area Population Statistics (SAPS) are published from the Census.

In order to contextualise the baseline environment of the study area, the Dublin city administrative area is also examined.

The proposed development is located within the 'Phoenix Park' ED, as illustrated in red in Figure 18.1. The Dublin City administrative area is illustrated in white in Figure 18.1.

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<sup>12</sup> World Health Organisation (WHO) (2018) *Environmental Noise Guidelines for the European Region 2018*. Copenhagen, Denmark.

<sup>13</sup> WHO (2009) *Night time Noise Guidelines for Europe*. Copenhagen, Denmark.

<sup>14</sup> WHO (2005) *WHO Air Quality Guidelines for particulate matter, ozone, nitrogen dioxide and sulphur dioxide*. Copenhagen, Denmark.

<sup>15</sup> WHO (1999) *Guidelines for Community Noise*. Copenhagen, Denmark.

<sup>16</sup> WHO (2014) *Regional Office for Europe. Health in impact assessments: opportunities not to be missed*. Copenhagen, Denmark.

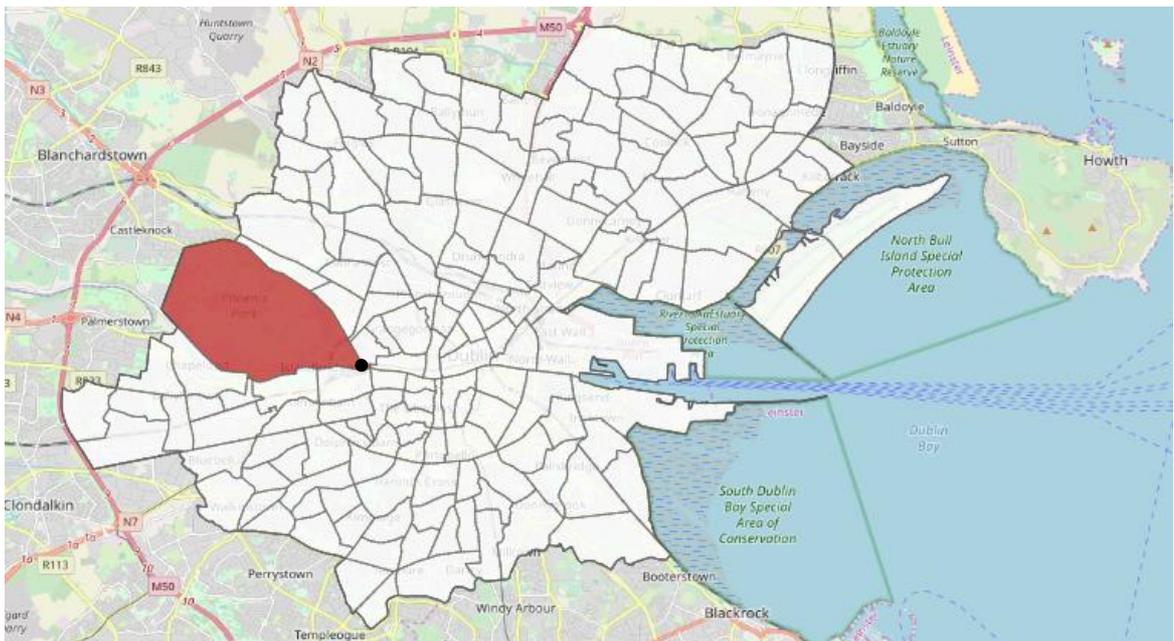


Figure 18.1: Phoenix Park Electoral Division (proposed development site indicated as black dot)

#### 18.2.4 Consultation

**Chapter 1**, Introduction details the various consultations which were carried out as part of the proposed development. No consultation specific to this assessment was undertaken.

#### 18.2.5 Categorisation of the Baseline Environment

An assessment of population and human health requires an understanding of the baseline environment and local community and is acquired through background research, site visits, and discussions with local people and community representatives where necessary. Specifically, data has been collected by means of:

- Primary data sources (e.g. demographic data from Census 2016 and preceding Census data produced by the Central Statistics Office [CSO]);
- Design drawings of the proposed development;
- Street maps of the study area obtained in April 2019;
- Other relevant environmental baseline data gathered and considered as part of this EIAR, especially traffic and air quality, noise, landscape and visual assessments, as well as the findings of the Social and Community Infrastructure Audit (see appendix 18.2), Childcare Needs Assessment (see appendix 18.1), and the Daylight, Sunlight and Wind Analysis (see appendices 8.1 and 8.2) for the proposed development;
- A review of relevant planning documentation including the Dublin City Development Plan 2016-2022<sup>17</sup> and Dublin City Local Economic and Community Plan 2016-2021<sup>18</sup> as well as the Pre-Draft Consultation Strategic Issues Paper for the upcoming Dublin City Development Plan 2022 - 2028<sup>19</sup>;

<sup>17</sup> Dublin City Council (2016) Dublin City Development Plan 2016-2022. Dublin, Ireland.

<sup>18</sup> Dublin City Council (2016) Dublin Local Economic and Community Plan 2016-2021. Dublin, Ireland.

<sup>19</sup> Dublin City Council (2020) Dublin City Development Plan 2022 – 2028 – Pre-draft Consultation Strategic Issues Paper. Dublin, Ireland. <https://www.dublincity.ie/sites/default/files/2021-01/full-document-pre-draft-consultation-strategic-issues-paper.pdf>

- Observation of local settlement, travel patterns and amenity activity along with identification of community facilities; and
- Available community health profiles including the Health Profile completed by the HSE for the area (Health Profile 2015, Dublin City<sup>20</sup>).

### 18.2.6 Impact Assessment Methodology

The requirement to carry out an assessment of potential effects on population and human health is set out in the new EIA Directive (2014/52/EU)<sup>21</sup>. The recitals to the 1985 and 2011 Directives refer to 'Human Health' and include 'Human Beings' as the corresponding environmental factor. The 2014 Directive changes the title of this factor to 'Population and Human Health'.

European Commission guidance relating to the implementation of the 2014 Directive, in reference to "human health" states "Human health is a very broad factor that would be highly project dependent. The notion of human health should be considered in the context of other factors in Article 3(1) of the EIA Directive and thus environmentally related health issues (such as health effects caused by the release of toxic substances to the environment, health risks arising from major hazards associated with the Project, effects caused by changes in disease vectors caused by the Project, changes in living conditions, effects on vulnerable groups, exposure to traffic noise or air pollutants) are obvious aspects to study<sup>22</sup>."

According to the Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (EPA, 2017)<sup>2</sup> "in an EIAR, the assessment of impacts on population and human health should refer to the assessments of those factors under which human health effects might occur, as addressed elsewhere in this EIAR e.g. under the environmental factors of air, water, soil etc."

Section 3.3.6 of the Draft Guidelines also note that:

*"The legislation does not generally require assessment of land-use planning, demographic issues or detailed socio-economic analysis. Coverage of these can be provided in a separate Planning Application Report to accompany an application for planning permission"*

Potential effects of the proposed development on population and human health arise from traffic and transportation, air quality and climate, noise and vibration, townscape and visual, material assets: utilities and the risk of major accidents and/or disasters.

These aspects are dealt with in the specific chapters in this EIAR dedicated to those topics, and this chapter refers to the findings of those assessments included elsewhere in this EIAR for which human health effects might occur.

The initial assessment as outlined in **Section 18.3** examines the existing population statistics and the status of human health in the proposed study area.

The likely significant effects are subsequently outlined in **Section 18.4**.

It should be noted that human health aspects are primarily considered through an assessment of the environmental pathways by which health may be affected (i.e. the determinants of health) such as air, noise, water or soil. The assessment on human health therefore draws on the findings of other sections of the EIAR as necessary to ensure that the likely significant effects that have the potential for significant effects on human health are considered herein.

<sup>20</sup> HSE (2015) *Health Profile 2015 Dublin City*. Dublin, Ireland

<sup>21</sup> European Commission (2014) *Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment Text with EEA relevance*. Brussels, Belgium

<sup>22</sup> *Environmental Impact Assessment of Projects: Guidance on the preparation of the Environmental Impact Assessment Report*, European Commission, 2017 <http://ec.europa.eu/environment/eia/eia-support.htm>

Impact assessment criteria are based on those outlined in the EPA guidelines<sup>2</sup>, as reproduced in Section 1.3 of **Chapter 1**.

Following the assessment of effects, specific mitigation and monitoring measures have been developed to avoid, reduce and, if possible, remedy any negative effects on population and human health. These are described in **Section 18.5**.

Residual effects are described in **Section 18.6**.

### 18.3 Baseline Environment

#### 18.3.1 Overview

This section provides an overview of the existing population and health status of the study area. As described in **Section 18.2.3**, the representative study area of the population and human health assessment is the Phoenix Park ED, and the Dublin City administrative area. The description of the baseline environment of those factors under which human health effects might occur has been addressed elsewhere in this EIAR, under the environmental factors of traffic and transportation, air quality and climate, noise and vibration, townscape and visual and material assets. It should be noted that the extent of the study area may differ in the various baseline assessments and may not be directly applicable or comparable.

#### 18.3.2 Population

2016 is the latest census, with the next census due in 2022 (postponed due to COVID). The 2016 Census results indicate that the total population of the Phoenix Park ED was 1,534 in 2016. This represents a 1% decrease in population from 2011 figures, and a -3% decrease in population from 2006 figures. Figure 18.2 illustrates population trends in the Phoenix Park ED.



**Figure 18.2:** trends in Phoenix Park ED 2011-2016 (Source: CSO, 2016)

The population trends relative to the study area suggest an area that is in decline, and are not representative of the wider Dublin City administrative area. In 2016, the population of the Dublin City administrative area was recorded as being 553,165. This represents a population increase of 4.6% in the last inter-censal period from 2011 to 2016. Figure 18.3 illustrates population increase in Dublin City.



**Figure 18.3** Population trends in Dublin City 1991-2016 (Source CSO, 2016)

In 2016, approximately 50% of the population of the Phoenix Park ED, were young adults (20-39 years old), at 806 individuals. This is higher than the comparative figure for Dublin City, where 213,801 individuals or 39% of the population were recorded as being between the ages of 20-39.

Dependency ratios are used to give a useful indication of the age structure of a population with young (0-14 years) and old (60+ years) shown as a percentage of the population of working age (15-64 years). In the Phoenix Park ED, the total dependency ratio was 28% in 2016. This is lower than the total dependency ratio of 39% in Dublin City. This can be attributed to the high level of young adults living in the study area.

Figure 18.4 illustrates the age distribution of the Phoenix Park A ED, and Figure 18.5 illustrates the age distribution of Dublin city.

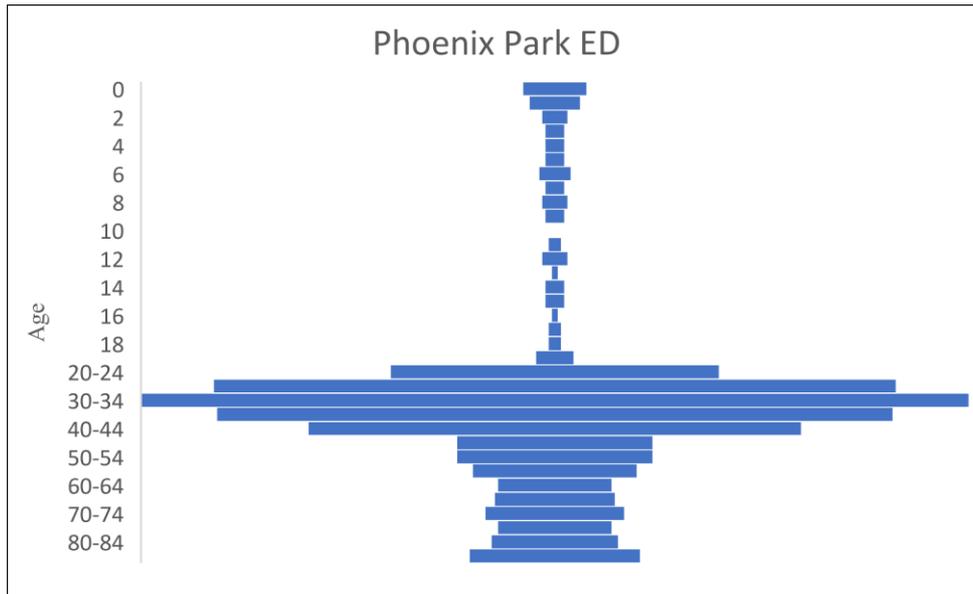


Figure 18.4 Age distribution in Phoenix Park A (Source: CSO, 2016)

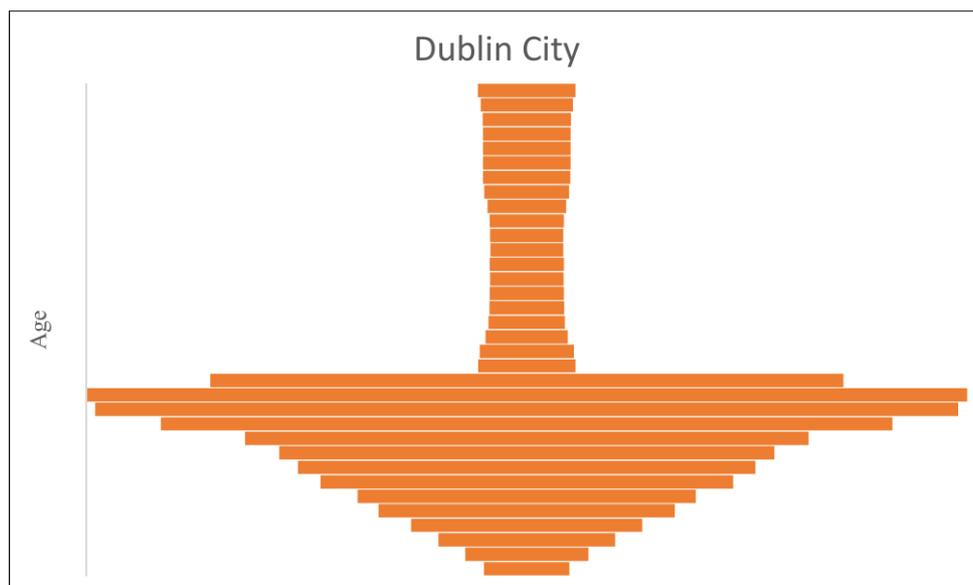


Figure 18.5 Age distribution in Dublin city (Source: CSO, 2016)

According to the 2016 census, some 45% of the population of the Phoenix Park ED were noted as living as a family, in 2016. This is lower than the Dublin city comparison of 60% in 2016.

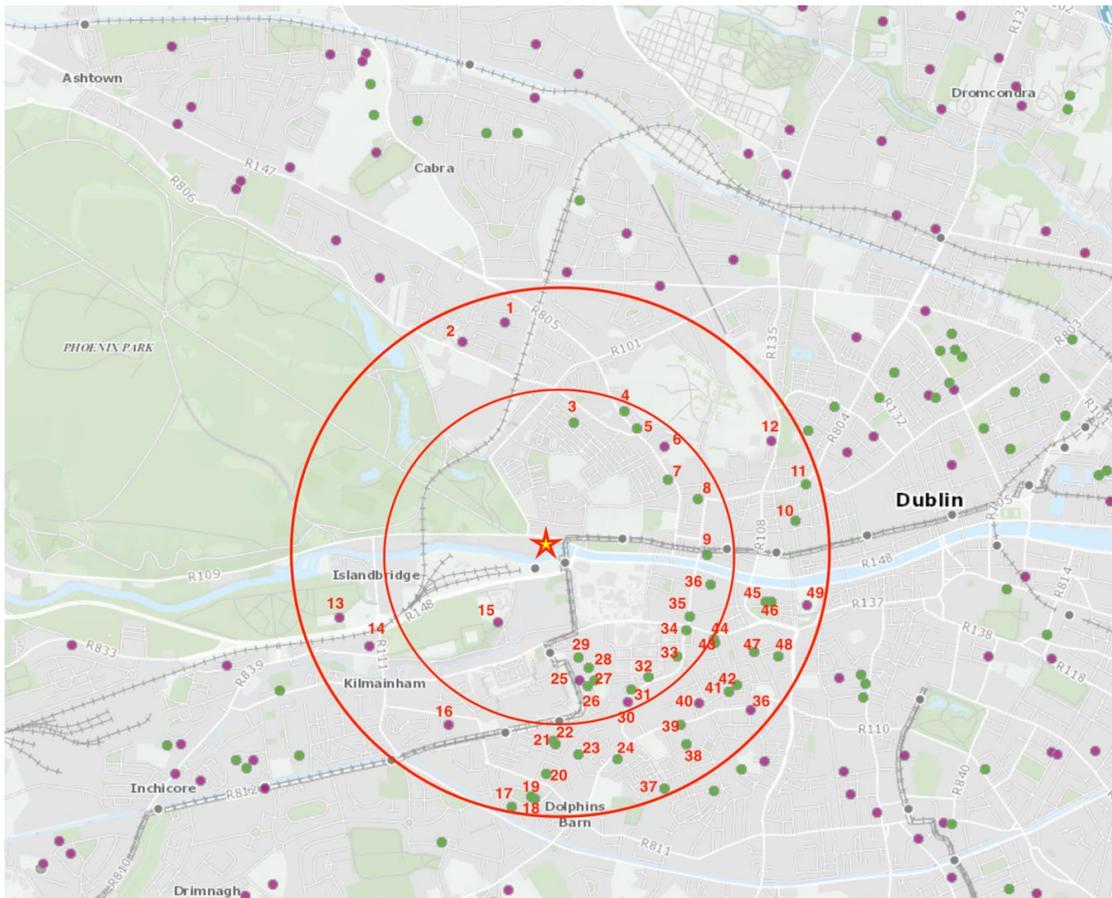
Stephen Little Associates (SLA) carried out a ‘childcare needs assessment’ in respect of the proposed development (Refer to **Appendix 18.1**). In order to determine if a childcare facility is required at the proposed development site, it was considered appropriate to review existing childcare facilities in the vicinity of the proposed development site and underlying demographic trends. It should be noted that a similar assessment for the permitted development (ABP Ref 306569-20) determined that no childcare facility was needed.

According to the findings of the childcare needs assessment for the proposed development, it is estimated that there are:

- c.60 no. existing childcare facilities (containing approximately of 792 no. existing childcare spaces) within c. 1.5km radius of the proposed development site, with more than 52 no. currently available childcare spaces; and
- an additional 180 no. childcare spaces pending and permitted within c. 1.5km of the subject site.

It is worth noting that many of the existing childcare facilities are not operating at full capacity due to the current Covid-19 public health and safety restrictions and a number of childcare facilities have been temporarily closed for this reason. It may be assumed therefore that childcare spaces will become available over time as the government begins to ease restrictions.

Refer to Figure 18.6 for the childcare facilities located in proximity to the proposed development.

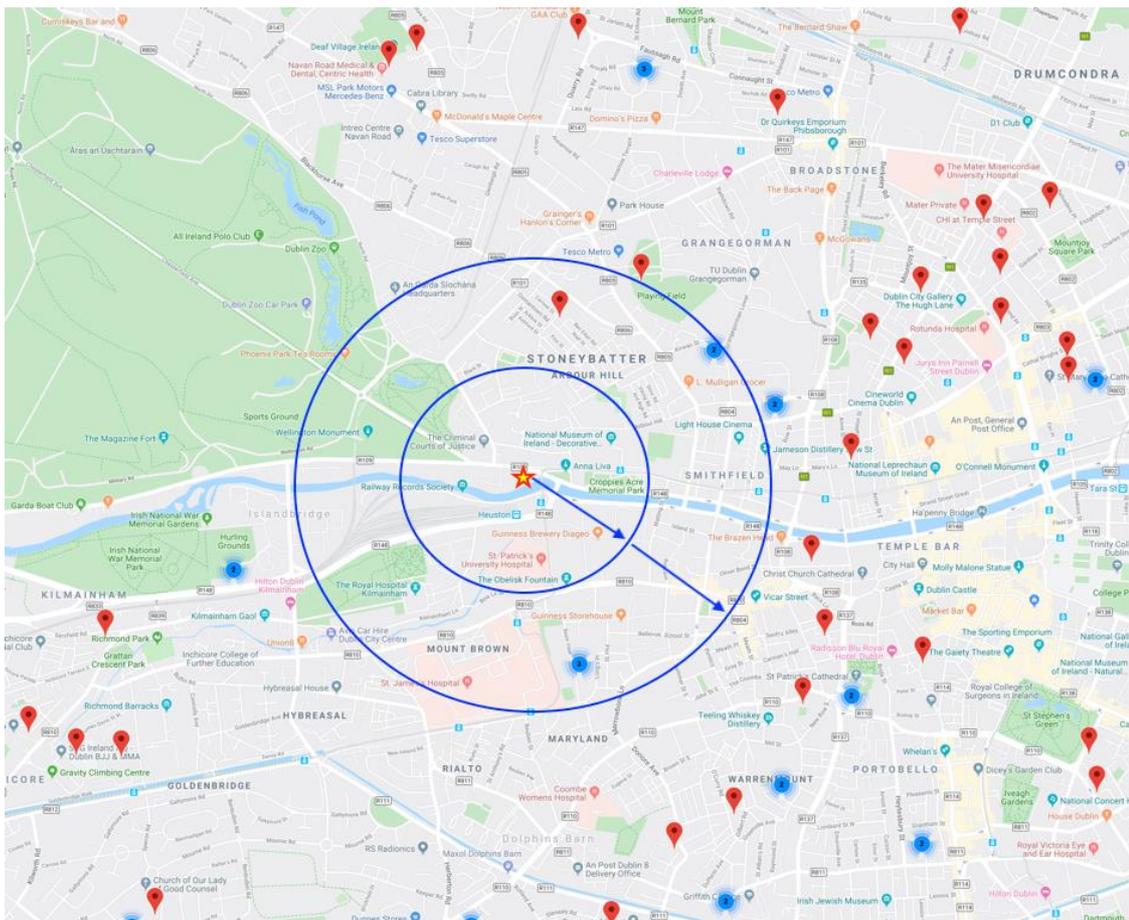


**Figure 18.1** Extract from Pobal Maps which identifies TUSLA registered childcare facilities. The subject site is identified (star) with an indicative 1.5 km radius shown in red (Overlay by SLA).

It is the opinion of SLA that a further childcare facility to accommodate the proposed residential development at the application site is not required. There is sufficient capacity in the existing registered and permitted childcare facilities in the identified catchment to cater for existing and future childcare needs in this area.

A schools assessment was also carried out by SLA as part of the Community and Social Infrastructure Audit (see Appendix 18.2), to determine if the proposed development will be adequately served by primary and post-primary schools facilities.

According to the assessment, four primary and two post-primary schools are located within 1km of the proposed development and there are 40 no. primary schools and 13 no. post-primary schools in the surrounding Dublin 8 and Dublin 7 area. Refer to Figure 18.7 for the primary and post primary schools in the vicinity of the proposed development.



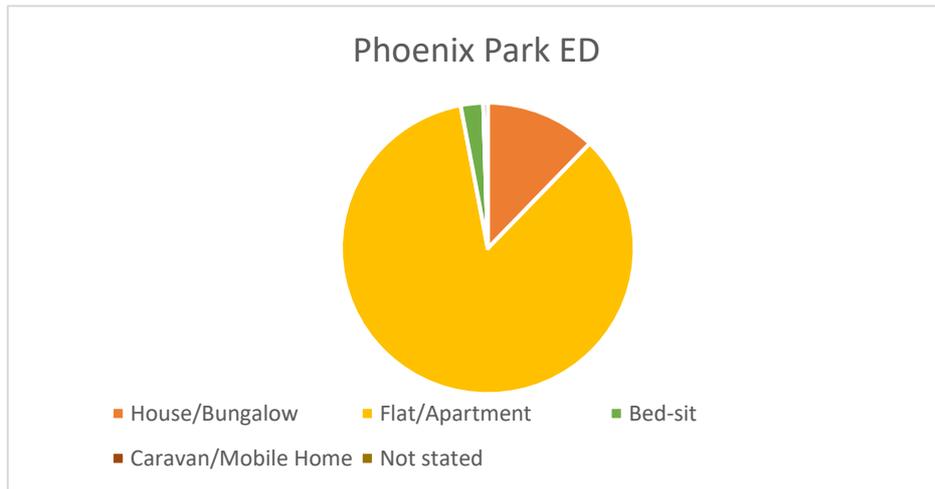
**Figure 18.7** Primary and post-primary schools in the vicinity of the proposed development

The unemployment rate recorded in the Phoenix Park ED was 6.5% in 2016, and 6.1% in Dublin City, in the final quarter of 2017. These are both considerably lower than the peak unemployment rate in 2011, which was 13.7%.

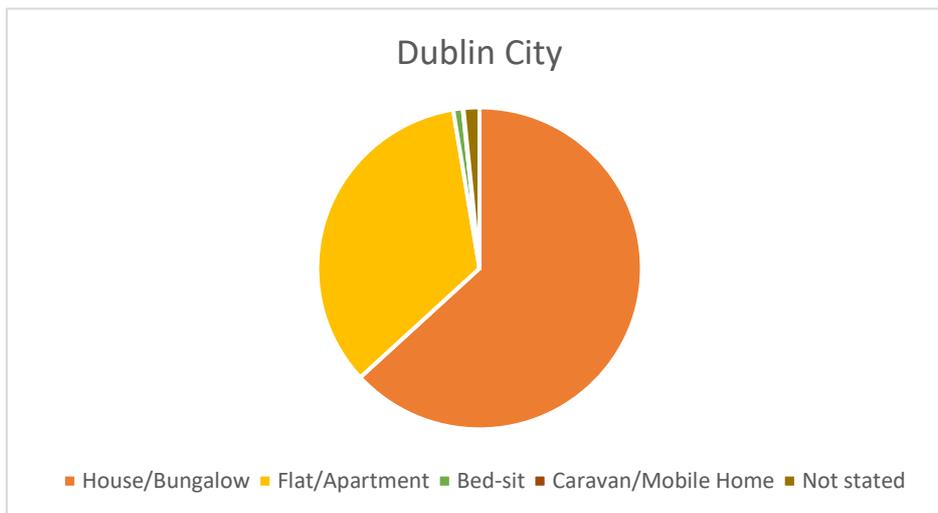
Clearly, unemployment, both locally, and in the country as a whole has been impacted over the past year, due to the COVID pandemic. While the seasonally adjusted national unemployment rate (traditional unemployment) was 5.3% in February 2021, the COVID-19 adjusted unemployment rate in the same month was 23.8%. It is expected that Dublin City and the Phoenix Park ED will follow this same trend, although perhaps at a higher level, given the demographics of the ED.

The study area of the proposed development is notably more diverse than other parts of the city, with some 29% of the usually resident population of the Phoenix Park ED being recorded as being of Non-Irish nationality in 2016, compared to 17% in Dublin City as a whole.

According to the 2016 Census, the primary form of accommodation within Phoenix Park ED is flats/apartments, whereas the primary form of accommodation throughout Dublin city as a whole, is houses/bungalows, as illustrated in Figure 18.8 and 18.9.



**Figure 18.8** Accommodation types in Phoenix Park ED



**Figure 18.9** Accommodation types in Dublin city

Only 18% of households in the Phoenix Park ED were recorded as being ‘owner occupied’ in 2016. This is significantly lower than the number of owner occupied households in Dublin city in 2016; which was recorded as being 51%.

In summary, the study area of the proposed development is primarily made up of young adults, occupying rented apartments. The study area has a high non-Irish population, and a small dependant population. The area is also in population decline.

### 18.3.3 Human Health

The 2016 Census recorded the self-perceived health of the city. In 2016, 79% of the population of the Phoenix Park ED classified themselves as being of 'good' or 'very good' health. This is marginally lower than the Dublin city comparison of 83%.

Further, some 3% of the population of the Phoenix Park ED identified themselves as being of 'bad' or 'very bad' health. This is marginally higher than the Dublin city comparison of 2%.

Table 18.1 provides information on the health status of Dublin (note this includes Dublin City and County).

Indicator	Persons <sup>23</sup>
Persons with blindness or a serious vision impairment	7,560
Persons with deafness or a serious hearing impairment	12,480
Persons with a condition that limits basic physical activities	32,681
Persons with an intellectual disability	6,307
Persons with a difficulty in learning, remembering or concentrating	16,993
Persons with psychological or emotional condition	13,941
Persons with other disability including chronic illness	37,676
Persons with a difficulty in dressing/bathing/getting around the home	15,166
Persons with a difficulty in working or attending school/college	23,312
Persons with a difficulty in going outside home alone	21,423
Persons with a difficulty in participating in other activities	25,922
Deaths from cancer - all ages	11,468

**Table 18.1** Health Status of Dublin (City and County) (Source: HSE, Health Profile 2015 Dublin City)

According to the 2016 Census results, some 382 people in the Phoenix Park ED classified themselves as having a disability, accounting for some 25% of the population. This is significantly greater than the Dublin city comparison of 15%.

In addition, 3% of the population of the Phoenix Park ED classified themselves as 'carers' in 2016. This is marginally lower than the Dublin city comparison of 4%. A total of 20,808 carers were providing an average of 36.5 hours of unpaid help per week in Dublin City in 2016, with women providing 64 per cent of the total number of unpaid hours per week.

Figure 18.9 shows the geographical spread of people with a disability in Dublin city, with high rates identified in the Phoenix Park ED. In 2016, the unemployment rate amongst persons with a disability was 26.3% in Dublin city. In 2016, the Health Research Board (HRB) reported that there were 1,397 individuals registered in the Community Healthcare Organisation CHO Area 9 Dublin North City and County area, registered on the National Physical and Sensory Disability Database (NPSDD) in December 2016, with a physical or sensory disability. CHO Area 9 includes the Dublin North, Dublin North Central and Dublin North West areas<sup>24</sup>.

<sup>23</sup> Dublin City and Dublin County, Census 2011

<sup>24</sup> Tusla Child and Family Agency (2018), *Dublin City North CYPSC Health and Wellbeing Action Plan*. Dublin, Ireland.

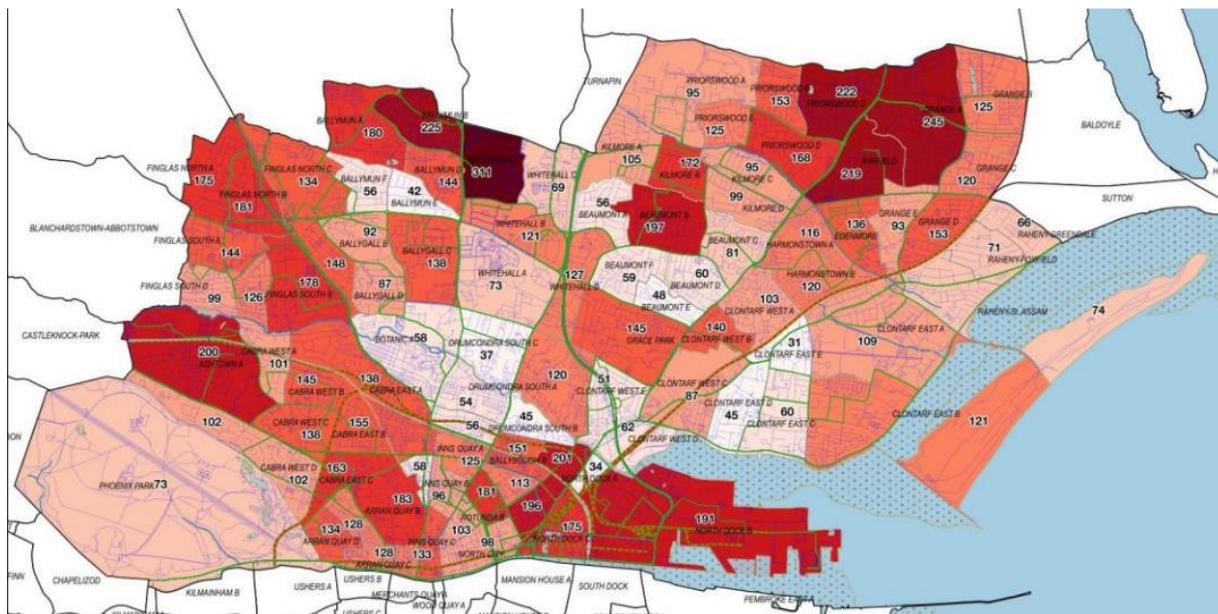


Figure 18.10 People with a Disability in Dublin City North (Source: CSO, Census 2016)

According to the 2016 Census, the average age of first time mothers in Dublin City was 31.2 years. This is above the State average of 30.9 years and is slightly lower than the Dublin regional average of 31.3 years. Based on the population of females aged 10 to 17, the rate of births to mothers aged 10 to 17 in Dublin City was 6.8 per 10,000. Relative to other areas this was the third highest rate in the State.

According to the 2016 Census, an infant death is defined as the death of an infant aged less than one year. The infant mortality rate is calculated as the number of infant deaths per 1,000 births. In 2016, 27 infant deaths occurred in Dublin City, this represents an infant mortality rate of 3.7 per 1,000 births. This rate was higher than the State average of 3.3 and equal to the Dublin regional average of 3.7.

The greatest health risk from radiation in Ireland is caused by radon. It accounts for more than half of the total radiation dose received by the Irish population. As a known carcinogen, in the same category as tobacco smoke and asbestos it is a cause of lung cancer. Approximately 300 cases of lung cancer in Ireland every year can be linked to radon. These lung cancer cases are principally associated with exposure to radon in the home, but exposure in the workplace is also a contributor. In the workplace, the employer must protect the health of workers from this identifiable risk.

Certain areas of the country are more likely to have a high number of homes with excessive levels of radon and these areas are known as High Radon Areas. According to the EPA, some 3.8% of the homes within the 10km grid square of the proposed development site are estimated to be above the Reference Level for Radon and thus it is classified as a High Radon Area.

The availability of public amenities plays an important role in the health and well-being of any city community. The recreational open spaces available to the population of Dublin city are comprised of approximately: 120 large open spaces, 260 playing fields, 120 playgrounds, 88 public parks (including open spaces and gardens), 4 beaches, 2 nature reserves, 1 main river and its associated boat clubs and walks and 2 canals. According to the Community and Social Infrastructure Audit (Refer to **Appendix 18.2**), there are four sports and recreational facilities within 500m of the proposed development: the Phoenix Park, Anytime Fitness Kilmainham, Avona Boxing Club and The Croppies Acre Park.

A number of social and community services are also located within 1000m of the proposed development site: St. Catherine’s Community Centre, Aughrim Street Sports Hall, St. James’s Parochial Hall, Blackhall

Street St. Pauls Community Hall, Stoneybatter Community Training Centre and Aughrim Street Scout Group.

Art and culture amenities located within 500m of the proposed development site include: the National Museum of Ireland, Pearse Lyons Distillery and Guinness Open Gate Brewery.

The site is well served by local amenities and easily within walking distance of most of the key amenities of the city centre. Directly adjacent to the subject site are local neighbourhood facilities such as Londis, a Post Office and numerous café/restaurant units including The Natural Bakery, FX Buckley, The Sandwich Market. Heuston South Quarter and Thomas Street are located within 1 km of the subject site, which contains a wide array of amenities such as banks, post office, local offices, restaurants, public houses, community and cultural facilities.

Phoenix Park is located to the north west of the subject site which provides a significant amount of open space including facilities such as playing pitches, polo and cricket grounds and a children's playground. The subject site is in close proximity to a number of other open spaces including The Croppies Acre (within 300m), Irish Museum of Modern Art Gardens, Irish War Memorial Gardens and Grangegorman Playing Fields.

The baseline environment of other indicators of public health, such as air quality and water supply, are included in the relevant chapters in this EIAR.

## **18.4 Likely Significant Effects**

### **18.4.1 Do-Nothing Scenario**

It is not practicable to complete the consented scheme (ABP-306569-20, Blocks B & C) without a further grant of permission for development that resolves the eastern elevation of Block B2, at the site of proposed Block A.

As such, in the scenario where the proposed development does not proceed as planned, no new residential, commercial or amenity opportunities would be provided in the area. Thus, the population dynamics, economy and urban realm of the study area would remain as it is currently, as described in **Section 18.3.2**.

### **18.4.2 Construction Phase**

#### **18.4.2.1 Population**

Potential effects on the population during construction relate to issues such as employment generation and community disturbance.

The construction phase of the proposed development will provide for the temporary employment of c. 600-700 no. construction workers (works will be undertaken in parallel with the permitted development, ABP Ref 306569-20, so this is the cumulative no. of construction workers associated with both developments). The multiplier effect arising from these additional construction jobs will also lead to an increase in employment in local businesses providing services to construction workers. The construction phase of the proposed development will therefore have a likely significant positive short-term effect on employment, and subsequently on the population.

The construction phase of the proposed development may result in some temporary community disturbance in terms of site hoarding/fencing, additional signage, reduced local access (pathways etc.), increased number of people accessing local services etc. Any disturbance is predicted to be commensurate with the normal disturbance associated with the construction industry where a site is efficiently and properly managed having regard to neighbouring activities. The level of construction generated traffic is not expected to be significant. Proposed access routes will keep trucks to an established HGV route, minimising their impact on residential areas. The potential disturbance is likely to result in a slight negative temporary effect on the population.

### 18.4.2.2 Human Health

Potential effects on human health arising during the construction phase of the proposed development relate generally to quality of life including; air quality, climate, noise, water and hydrology, resource and waste management, potential disruption of services and the risk of major accidents/disasters. While the assessment of effects relating to each of these environmental factors are dealt with separately elsewhere in this EIAR (Refer to **Chapters 6- 20**), this Section provides a summary as to how these effects have the potential to give rise to human health effects.

Poor air quality has the potential to affect human health by increasing the risk of asthma and other respiratory diseases. As outlined in **Chapter 7**, Air Quality, the construction phase of the proposed development has the potential to give rise to 'significant impact from soiling' with regards dust emissions. This will occur during activities such as: building demolition, excavation works, piling etc. It is also possible that Asbestos Containing Materials (ACMs) will be released to atmosphere during construction activities. Traffic generation during construction will not be significant, and no subsequent likely effects on air quality are predicted. There is therefore potential for air quality effects during construction to affect human health.

Climate change affects social and environmental determinants of health – clean air, safe drinking water, sufficient food and secure shelter. A climate impact assessment was carried out in order to determine the likely significant effects of greenhouse gas emissions predicted due to the construction phase of the proposed development. The greenhouse gas emissions predicted during the construction phase of the proposed development effect are not considered significant. No direct or indirect effects with regards sunlight, daylight or wind are predicted during the construction phase of the proposed development. There is therefore no potential for significant climate related human health effects during the construction phase of the proposed development.

According to the 2015 European Commission report '*Noise Impacts on Health*'<sup>25</sup>, the most common effects of excessive noise on people include annoyance, sleep disruption, heart and circulation problems, quality of life, cognitive process disruption and hearing problems. As outlined in Chapter 9, Noise and Vibration, the assessment has determined that, during the construction phase, there is the potential for negative, moderate and short-term noise effects when works are undertaken within close proximity to the receptor locations. There is therefore potential for noise generated during construction to affect human health.

Contaminated water can result in the spreading of infectious diseases such as gastrointestinal illnesses, respiratory diseases and eye, ear, nose and throat symptoms. As outlined in **Chapter 14**, Water, the construction phase of the proposed development has the potential to alter the water quality and hydrological regime temporarily in the study area. Any effect on water quality has the potential to give rise to human health effects.

Inadequately disposed of or untreated waste may cause serious health problems for populations surrounding the area of disposal. Leaks from the waste may contaminate soils and water streams, and produce air pollution through contamination, creating health hazards. Waste generated during the construction phase of the proposed development will be segregated at source and disposed of appropriately. No potential effects on human health are therefore identified.

An assessment of the risk of the construction phase of the proposed development to give rise, or be vulnerable to, major accidents or disasters was undertaken. During the construction phase of the proposed development, the scenario with the highest risk score was identified as being 'quay wall/upper quay wall collapse.' In this occurrence, a potential human health effect is identified in that collapse of a structure could seriously injure those in its vicinity.

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<sup>25</sup> European Commission, 2015, *Noise Impacts on Health*

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

#### 18.4.2.3 Indirect Effects

As outlined in **Section 18.4.2**, there is the potential for indirect effects on the population during the construction phase of the proposed development, in that additional construction jobs will also lead to an increase in employment in local businesses providing services to construction workers.

No indirect effects with regards human health have been identified during the construction phase of the proposed development.

#### 18.4.2.4 Cumulative

There is the potential for a positive cumulative effect on the population during the construction phase of the proposed development. The proposed development, when considered alongside other developments in Dublin city, including the permitted development on the same site (ABP Ref 306569-20), will collectively contribute to the employment of a significant number of construction workers in Dublin City.

During construction, there is the potential for negative temporary cumulative effects on human health when the construction of the proposed development is considered alongside the construction of the permitted development on the site (ABP Ref 306569-20) as well as with other developments (Refer to appendix 21.1). Concurrent construction works of two or more developments could give rise to increased dust, noise and greenhouse gas emissions than those levels predicted for the proposed development in isolation.

### 18.4.3 Operational Phase

#### 18.4.3.1 Population

Potential effects on the population during operation relate to issues such as residential and commercial provision, and the assimilation capacity of the local area.

The proposed development will provide much needed residential opportunities in a prime city centre area, which will help cater for the considerable and consistent demand in housing in Dublin. Some 198 residential units will be provided as part of the proposed development, accommodating c. 380 No. residents, contributing to the delivery of a critical mass of population which will support a wide range of additional local businesses, services, transport infrastructure and employment opportunities. The provision of housing and increased number of residents is likely to result in a positive effect on the population of the local area.

*Part V of the Planning and Development Act as amended<sup>26</sup>*, provides for social and affordable housing obligations for developers, in order to ensure the proper planning and sustainable development of the area. The proposed development will include the provision of 52 No. units under Part V, including a mix of apartment sizes. This is likely to result in a likely, positive and permanent effect on the local population and will ensure that the community is accessible to a range of demographics. The proposed mix of housing will ensure that, taken with the existing homes in the Islandbridge, Arbour Hill and Smithfield area, the overall mix in the neighbourhood is conducive to maintaining a healthy balanced community.

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<sup>26</sup> Government of Ireland (2018) Planning and Development Act, as emended. Stationary Office, Dublin.

The operational phase of the proposed development will also provide significant commercial opportunities in the local area, through the provision of office space (permitted development, ABP Ref 306569-20) as well as cafe/restaurant space.

Further, a small number of operational employment will be provided for, through office management roles, facilities management etc. This is likely to result in a permanent, positive effect on the population, and is likely to have a multiplier effect on the wider area.

The proposed scheme provides a high quality, architecturally designed scheme within a landscaped setting, at a site that is extremely well connected to public transport and local facilities that supports this density residential development. In addition, the proposed development (in combination with the permitted development, ABP Ref 306569-20) will improve the vibrancy and vitality of the area and will help to support existing community and social infrastructure. The proposal seeks to create a new dynamic gateway in the city connecting to existing zones of retail, commercial, hospitality, cultural and residential activity. The creation of this high-quality quarter will provide a catalyst for the further regeneration of the area increasing footfall and a sense of local community with the introduction of cafes, food and beverage, commercial office and high quality residential uses along Parkgate Street.

In addition to the dwellings themselves, ancillary accommodation in the form of internal and external resident's amenity spaces and facilities amounting to a total of 957 sqm are also provided as part of the development. The proposed amenity space (c. 384 sq m internal in total and c. 255 sq m external in total) takes the form of resident's lounges at mezzanine and 9<sup>th</sup> floor, with consented and proposed roof gardens at 9<sup>th</sup> and 28<sup>th</sup> floors respectively. In addition, residents have exclusive access to numerous other outdoor and indoor private communal amenities within the consented scheme, such as the resident's ground level courtyard and residents' gym.

Further outdoor terraces are provided at roof level facing west, east and south to provide generous residential amenity space for residents to enjoy. Roof terraces have been designed to reduce exposure to wind and to enable comfortable use.

Private amenity space is also provided on each level via a series of 53no. winter gardens (c. 318 sq m total) which are interspersed between Level 01 and Level 27.

Significant new public open space (c. 1,402 sq m/c. 22% of the site area) is delivered within the site area as part to the consented scheme (not typical of city centre site regeneration scheme) which includes a new public plaza, connecting Parkgate Street (physically and visually) to the new river side walkway. A landscaped public plaza between Block A and Block B provides a public connection from Parkgate Street to the proposed public plaza and new river walk along the southern edge of the subject site. These spaces generally enhance the connectivity of the site to Parkgate Street (and Phoenix Park) and the River Liffey, and visual connections to other cultural institutions such as Heuston Station. The spaces can be used in a casual, social and incidental way, but also have potential to facilitate programmed cultural activities/uses such as markets, cinema screening etc, subject to separate consent or licensing as necessary.

The public open space provision contributes to unique identity, legibility and placemaking at this strategic regeneration gateway, in the interest of the common good. Refer to **Chapter 3**, Description of the Proposed Development for further details on the proposed amenities.

As outlined in **Section 18.3.2**, at least 52 no. existing childcare spaces are available in existing operational facilities in proximity to the proposed development at the time of the assessment and 121 No. spaces currently predicted to be available for September 2021, and a further 180 no. spaces with planning permission in the area. The findings of the childcare needs assessment is that a further childcare facility to accommodate the proposed residential development at the application site is not required. There is sufficient capacity in the existing registered and permitted childcare facilities in the identified catchment to absorb this demand.

According to the findings of the school's assessment, the demand created for school places by the proposed development will be comfortably absorbed by the existing educational facilities in proximity to the application site.

The most recent Department of Education and Skills enrolment data on post-primary schools indicates that there has been a general decline in enrolment in the area over the past number of years, and therefore the expected minimal demand for spaces arising from the proposed development should be comfortably met by the available capacity of existing schools. While primary school enrolment in the area has increased over the same period, it is expected to decline steadily from 2019 year on year until 2036. In addition, the development of future schools under the DES Schools Building Programme in the Dublin 8 and Dublin 7 area will ensure that Primary and Post Primary school needs are effectively met. Furthermore, given the likely timeframe for permission, construction and occupation of the proposed development in its entirety, the DES would have an opportunity to consider local demand for school places and any requirement to expand existing or provide new facilities in this area in the next tranche of its Capital Investment for Schools Infrastructure, should the need arise. It is therefore concluded that the existing provision of schools in the area is sufficient to cater for the proposed development.

The proposed development is located within walking distance of a number of key transport options, including rail, LUAS, a Dublin Bikes station and numerous Dublin Bus routes, which is a key component of promoting sustainable development and compact urban form. Proximity to public transport networks will likely result in a positive effect on those living and working in the proposed development, once operational.

#### 18.4.3.2 Human Health

Potential effects on human health arising during the operational phase of the proposed development relate generally to quality of life including; air quality, climate, noise, water and hydrology, resource and waste management, potential disruption of services and the risk of major accidents/disasters. While the assessment of effects relating to each of these environmental factors are dealt with separately elsewhere in this EIAR (Refer to **Chapters 6- 20**), this Section provides a summary as to how these effects have the potential to give rise to human health effects.

The development is designed to be inclusive for all users and will provide level access and a range of household sizes to cater for all users and ages and will present a positive aspect for all passers-by and not present barriers for access. The proposed development will provide for an addition 16 no. bicycle parking spaces (over and above that permitted - 551 no. - under ABP Ref 306569-20). No additional car parking provision is included. As a result, the proposed development is expected to have a negligible impact on the local road network.

As outlined in Section 18.4.2, poor air quality has the potential to affect human health. No likely significant effects on air quality are predicted during the operational phase of the proposed development. As permitted under ABP-306569-20, the indicative sizing of the proposed gas boilers for use is 600kW. Four such boilers are proposed to be located in the basement of Block B which will also serve Block A. These boilers are not subject to registration under the Medium Combustion Plant Directive (for emission sources between 1MW and 50MW) and are therefore not considered significant. In addition, an emergency generator, of indicative sizing of 450kVA, will be located onsite. As this generator will only be used during periods of power failure, no significant effect on air quality is expected to occur. No human health effects resulting from air quality during operation are therefore identified.

The proposed boilers (as permitted under ABP Ref 306569-20) do not, due to their size, fall under Greenhouse Gas Permitting scheme. Three different options have been proposed for the operational phase of the proposed development. All three options comply with the requirement to achieve a Nearly Zero Energy Building (NZEB).

The sunlight and daylight assessment identified that the tower redesign achieves an excellent level of daylight for all spaces within the development, with all spaces compliant with the best practice guidelines recommendations. As the tower is located to the north east of the overall site, there is no impact to the permitted sunlight availability on amenity areas which are located to the south. Nor is there any significant effect on neighbouring buildings. The assessment also determined that the tower redesign has a negligible impact on the permitted scheme (ABP Ref 306569-20).

No likely significant climate effects are therefore predicted as a result and no consequent human health effects are identified.

As outlined in Section 18.4.2, excessive noise generation has the potential to affect human health. During the operational phase, the predicted change in noise levels associated with additional traffic in the surrounding area required to facilitate the development is predicted to give rise to imperceptible effects along the existing road network. Further, noise levels associated with mechanical plant are expected to be within the adopted day and night-time noise limits set out above, at the nearest noise sensitive properties taking into account the site layout, the nature and type of units proposed and distances to nearest residences. No human health effects resulting from noise generation during operation are therefore identified.

An inward noise assessment was also undertaken to establish the potential effects on building occupiers from noise. With the incorporation of the proposed building design measures in relation to façade, glazing and ventilation, the minimum sound insulation performance will be met and no significant effect is predicted.

As outlined in Section 18.4.2, water contamination has the potential to affect human health. Surface water run-off during the operational phase of the proposed development will utilise a proposed new Sustainable Urban Drainage System (SuDS). The new drainage network for the proposed development will connect to the consented surface water drainage network adjacent to Block A, prior to discharging to the River Liffey.

Wastewater from the proposed development will drain by gravity and discharge to the consented wastewater network adjacent to the proposed Block A development, prior to discharging to the existing 450mm dia. combined sewer on Parkgate Street.

The proposed development will result in an additional effluent volume discharging to the public sewer. To address this, a section of the existing sewer network on Parkgate Street will be upgraded as part of the consented scheme (ABP Ref 306569-20). This will create capacity for the wastewater discharge from the consented and proposed development in the combined sewer. No water related human health effects are therefore identified.

As outlined in Section 18.4.2, poorly managed waste has the potential to affect human health. During the operational phase, waste will be generated from the residents as well as the commercial tenants. A dedicated shared Waste Storage Area (WSA) has been allocated within the development design for the residential units. The shared residential WSA is located on the ground level under Block A. The residential waste storage area has been appropriately sized to accommodate the estimated waste arisings in both apartments and shared residential areas. The Café tenant will have a shared WSA allocated to them under block B1 (consented application ABP Ref. 306569-20). The waste storage areas have been allocated to ensure a convenient and efficient management strategy with source segregation a priority. Waste will be collected from the designated waste collection areas by permitted waste contractors and removed off-site for re-use, recycling, recovery and/or disposal. Thus, no waste related human health effects are identified.

The operational phase of the proposed development is unlikely to give rise to any significant effects in terms of health and safety. The design of the proposed development has been formulated to provide for a safe environment for future residents and employees. The proposed development has been designed in accordance with all relevant safety and building standards and regulations.

An assessment was carried out of the risk of the operational phase of the proposed development giving rise to, or resulting in, major accidents or disasters. The scenario with the highest risk score in terms of a major accident and/or disaster during the operational phase of the proposed development was identified as being an 'incident at nearby Heuston Station.' This risk was identified as being 'very unlikely' to occur, but with 'very serious' consequences should it do so, indicating a 'medium risk scenario.' In this occurrence, a potential significant negative effect on human health could occur.

### 18.4.3.3 Indirect Effects

No significant indirect effects on population or human health are predicted during the operational phase of the proposed development.

### 18.4.3.4 Cumulative Effects

The proposed development, when considered alongside other residential developments in Dublin city, including the permitted development on the same site (ABP Ref 306569-20) will collectively help cater for the considerable and consistent demand in housing in Dublin, and will contribute to the delivery of a critical mass of population which will support a wide range of additional local businesses, services, transport infrastructure and employment opportunities.

The commercial component of the proposed development, when considered alongside other commercial ventures in the city centre, will result in a positive cumulative effect on economic growth in the city.

## 18.5 Mitigation and Monitoring

### 18.5.1 Mitigation

It should be noted that mitigation measures relating to those factors under which population and human health effects might occur have been addressed elsewhere in this EIAR, under the relevant environmental factors. Other than the mitigation measures outlined in **Chapters 6-20**, no further mitigation measures have been proposed with respect to population and human health. However, those relevant to this assessment are restated in Section 18.5.1.1 and 18.5.1.2 for completeness.

#### 18.5.1.1 Construction Phase

In order to mitigate potential temporary community disturbance during construction, a Construction Environmental Management Plan (CEMP) has been prepared and is included in **Appendix 4.1**. Further, a Site Manager will be appointed to ensure the proper running of the site, and the minimisation of community disturbance and the implementation of “good housekeeping” policy at all times. Potential effects on air quality, and consequently human health, will be offset during the construction phase through the implementation of standard mitigation as stated in the Transport Infrastructure Ireland (TII) guidance and employee awareness. In addition, the following measures will be implemented for the proposed development:

- A c. 1.8m hoarding will be provided around the site works to minimise the dispersion of dust from the working areas and to reduce construction noise;
- Any generators will be located away from sensitive receptors in so far as practicable;
- Stockpiles will be located as far as possible from sensitive receptors and covered and/or dampened during dry weather.

Where asbestos is uncovered on site during construction, the ACM will be double-bagged and removed from the site by a competent contractor and disposed of in accordance with the relevant procedures and legislation.

The use of best practice noise control measures, hours of operation, scheduling of works within appropriate time periods, strict construction noise limits and noise monitoring during the construction phase will ensure any potential human health effects from noise are controlled to within the adopted criteria.

In order to offset any potential effects on water, and consequently human health, earthworks operations shall be carried out such that surfaces shall be designed with adequate falls, profiling and drainage to promote safe run-off and prevent ponding and flooding.

Good housekeeping (site clean-ups, use of disposal bins, etc.) will be enforced by the contractor on the site to mitigate against the risk of spillages.

The potential risk of river wall collapse during construction will be mitigated by standard best practice construction measures, and lateral steel restraints will be provided to the existing stonework along the river, throughout construction.

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

#### 18.5.1.2 Operational Phase

The external plant items will be designed so that emissions will be within the noise criteria set for day and night-time periods at any noise sensitive locations. Notwithstanding this, noise control techniques will also be employed during operation in order to reduce the level of operational noise generation, and subsequent human health effects (Refer to **Chapter 9** Noise and Vibration).

The proposed development will incorporate SuDS features in order to improve water quality and reduce the quantity of surface water discharging into the receiving system. The water supply network will include low flow devices with the aim of minimising water usage.

A project specific Operational Waste Management Plan (OWMP) has been prepared and is included as **Appendix 17.2**. Implementation of this OWMP will ensure a high level of recycling, reuse and recovery at the development. All recyclable materials will be segregated at source to reduce waste contractor costs and ensure maximum diversion of materials from landfill, thus achieving the targets set out in the Eastern and Midlands Region (EMR) Waste Management Plan 2015 – 2021 and abiding by the Dublin City Council waste bye-laws. In addition, a number of waste mitigation measures will be employed (refer to **Chapter 17**, Material Assets – Waste Management).

#### 18.5.2 Monitoring

It should be noted that monitoring measures relating to those factors under which population and human health effects might occur have been addressed elsewhere in this EIAR, under the relevant environmental factors. Other than the monitoring measures outlined in **Chapters 6-20**, no further monitoring measures have been proposed with respect to population and human health. However, those relevant to this assessment are restated in Section 18.5.2.1 and 18.5.2.2 for completeness.

##### 18.5.2.1 Construction Phase

Dust monitoring will be undertaken at a range of nearest sensitive receptors during the demolition and construction phases. The TA Luft dust deposition limit values of 350 mg/m<sup>2</sup>/day (averaged over one year) will be applied as a 30-day average.

Where required, construction noise monitoring will be undertaken at periodic sample periods at the nearest noise sensitive locations to the development works to check compliance with the construction noise criteria. Noise monitoring will be conducted in accordance with the International Standard ISO 1996: 2017: Acoustics – Description, measurement and assessment of environmental noise.

Visual monitoring will be undertaken as part of the regular site audits during the construction of the proposed development to ensure existing surface water runoff is draining from the site and is not exposed to any contaminants. The contractor will be required to ensure that the sanitary facilities for the site personnel are maintained and effluent storage is regularly emptied and disposed of. The

contractor will be required to ensure that the water supply to the site is maintained and free of contaminants. The contractor is required to monitor the weather forecasts to inform the programming of earthworks and stockpiling of materials.

The management of waste during the construction phase will be monitored by the site manager to ensure compliance with relevant local authority requirements and effective implementation of the Construction & Demolition Waste Management Plan including maintenance of waste documentation.

#### 18.5.2.2 Operational Phase

The management of waste during the operational phase will be monitored by the site manager to ensure effective implementation of the OWMP by the building management company and the nominated waste contractor(s).

Waste generation volumes will be monitored against the predicted waste volumes outlined in the OWMP. There may be opportunities to reduce the number of bins and equipment required in the Waste Storage Areas (WSAs) where estimates have been too conservative. Reductions in bin and equipment requirements will improve efficiency and reduce waste contractor costs.

### 18.6 Residual Effects

The proposed development is likely to give rise to a permanent, positive effect on the population, through the provision of residential, commercial and amenity opportunities in a prime city centre location.

Following the implementation of the mitigation measures outlined in Section 18.5.1, and elsewhere in this EIAR, no significant negative effects on human health are identified in respect of the proposed development.

### 18.7 Difficulties Encountered

No difficulties were encountered during the compilation of this chapter.