

6.0 POPULATION AND HUMAN HEALTH

6.1 Introduction

This chapter of the *Environmental Impact Assessment Report* has been prepared by Tom Phillips + Associates and examines the likely impacts of the proposed development on population and human health. The scope of the work includes an evaluation of the likely direct and indirect effects on human beings and addresses any likely impacts on amenity and the local economy.

6.2 Project Description

The proposed development is a mixed-use development on a site located at the junction of Blackthorn Drive and Carmanhall Road, Sandyford Business Estate, Dublin 18.

The development will consist of 2 no. residential blocks ranging in height from 5-14 storeys comprising a total of 428 no. apartments (including all balconies, terraces and roof gardens) arranged around two courtyards; communal and public open spaces including boulevards; 4 no. ground floor retail units; resident community uses and crèche with outdoor play area. The development will also include revisions to the existing basement levels including car and bicycle parking provision with new vehicular access from Carmanhall Road; apartment storage areas; waste storage areas; ESB substations and switch room and plant/service areas. The development will also include all piped infrastructure and ducting; green roofs; changes in level; internal roads and pathways; pedestrian access points; services provision; landscaping and boundary treatments and all associated site development and excavation works above and below ground.

6.3 Methodology

The following guidelines have informed the preparation of this chapter:

- *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* (EPA, Draft August 2017)
- *Guidelines on the Information to be Contained in Environmental Impact Assessment Reports* (EPA, 2002)
- *Environmental Impact Assessment of Projects – Guidance on the preparation of the Environmental Impact Assessment* (European Union, 2017)

The preparation of this chapter was also informed by site visits and desktop studies of relevant policy documents and data sources including:

- Central Statistics Office (2016) – *Census 2016*
- Central Statistics Office (2018) – *CSO Statbank*
- Tusla Early Years Inspection Reports (2016-2018)
- Dublin Economic Monitor (November 2018)
- ESRI Quarterly Economic Commentary (September 2018)
- *DoHPLG (2017) - Rebuilding Ireland – Action Plan for Housing and Homelessness*

In order to assess the likely significant impacts of the proposed development on population and human health, an analysis of recent Census data was undertaken. Data relating to the economic, demographic and social characteristics of the Electoral District within which the subject site is located - Dundrum-Balally, were examined.

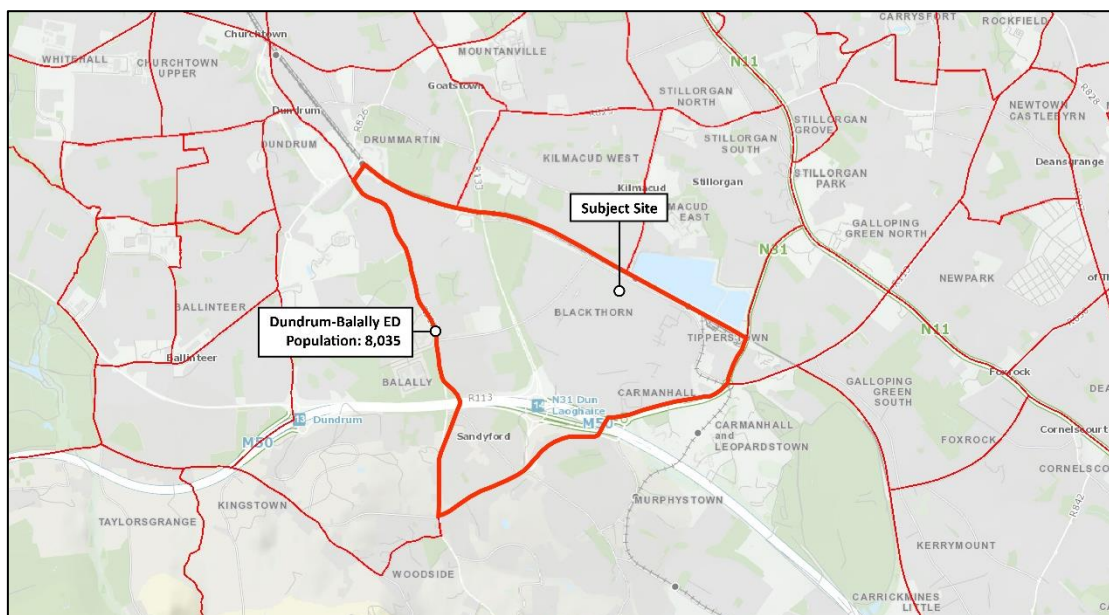


Figure 6.1- Boundary of Dundrum-Balally ED and indicative location of subject site. (Source: 2016 CSO - SAPMAP, annotated by TPA 2018.)

6.4 Key Factors

6.4.1 Population Trends

The subject site is located within the Electoral Division of Dundrum-Balally (ED No. 05037), had a population of 8,035 no. persons at the time of the 2016 Census. This represents a population increase of 13.9% (986 no. persons) from the 2011 Census figure.

The population growth rate of this electoral division is significantly higher than that recorded in the county of Dún Laoghaire-Rathdown for the same period, which grew by 5.7% and considerably higher than the national increase of 3.8% during this time.

Area	2011	2016	% Change
Ireland	4,588,252	4,757,976	+ 3.8%
Dún Laoghaire-Rathdown County (DLRC)	206,261	218,018	+ 5.7%
Dundrum-Balally Electoral Division	7,049	8,035	+ 13.9%

Table 6.1- Population Trends at local, county and national levels. (Source: 2011 and 2016 CSO).

6.4.2 Population Profile

Approximately 68% of the population of the Dundrum-Balally Electoral Division was of working age (19-64 years) at the time of the 2016 Census, which is slightly higher than the c. 60% recorded for the county and state. With respect to this, the Dependency Ratio for the area (i.e. those not in the workforce – aged 0-18 or over 65) is lower than the county and national figures at 32% of the population.

Age Cohort (Total Persons)	% Population in each Age Cohort by Area					
	Ireland <i>4,761,865 Persons</i>		DLRC <i>218,018 Persons</i>		Dundrum-Balally <i>8,035 Persons</i>	
0-4 years	331,515	7.0 %	13,810	6.3 %	560	7.0 %
5-12 years	548,693	11.5 %	21,302	9.8 %	642	8.0 %
13-18 years	371,588	7.8 %	15,651	7.2 %	399	5.0 %
19-24 years	276,856	7.0 %	19,088	8.8 %	679	8.5 %
25-44 years	1,406,291	29.5 %	61,495	28.2 %	3,389	42.2 %
45-64 years	1,135,003	23.8 %	52,003	23.9 %	1,388	17.3 %
65-69 years	211,236	4.4 %	9,765	4.5 %	308	3.8 %
70+ years	426,331	9.0 %	24,904	11.4 %	670	8.3 %
Dependency Ratio	-	39.7%	-	39.2%	-	32.1%

Table 6.2- Breakdown of population by age group (Source: 2016 CSO)

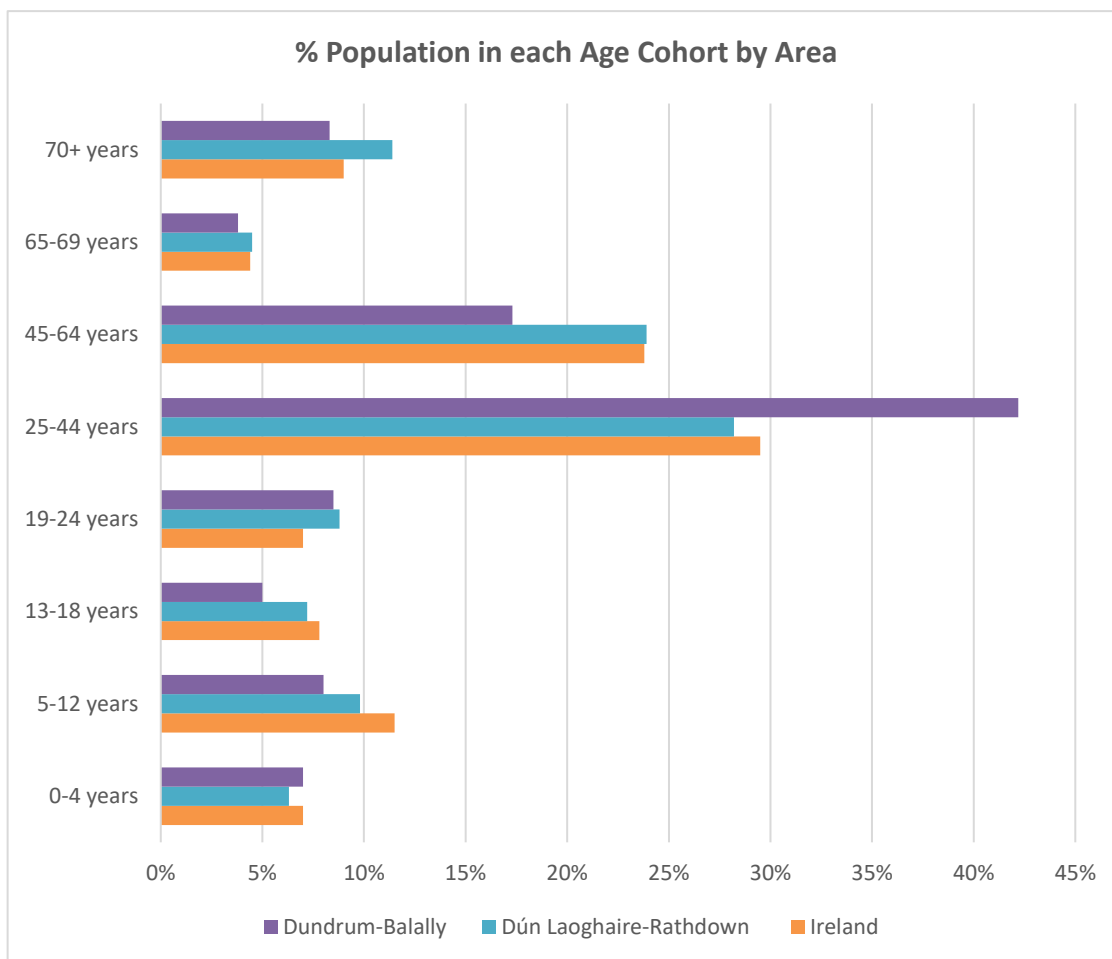


Figure 6.2- Visualization of percentage of population in each age group at national, county and local levels. (Source: 2016 CSO).

6.4.3 Housing

Housing completions across the State plummeted after the economic crash of 2008 with completions declining from almost 90,000 no. per year in 2007 to approximately 11,000 in 2014 (See Figure 6.3). As a result, a central objective of the Government’s *“Rebuilding Ireland – An Action Plan for Housing and Homelessness”* policy document, published in 2016, is to:

“...double the completion level of additional homes in the next four years to deliver the 25,000 homes or more required annually”¹.

¹ DHPCLG (2016) *Rebuilding Ireland – Action Plan for Housing and Homelessness*, p.6

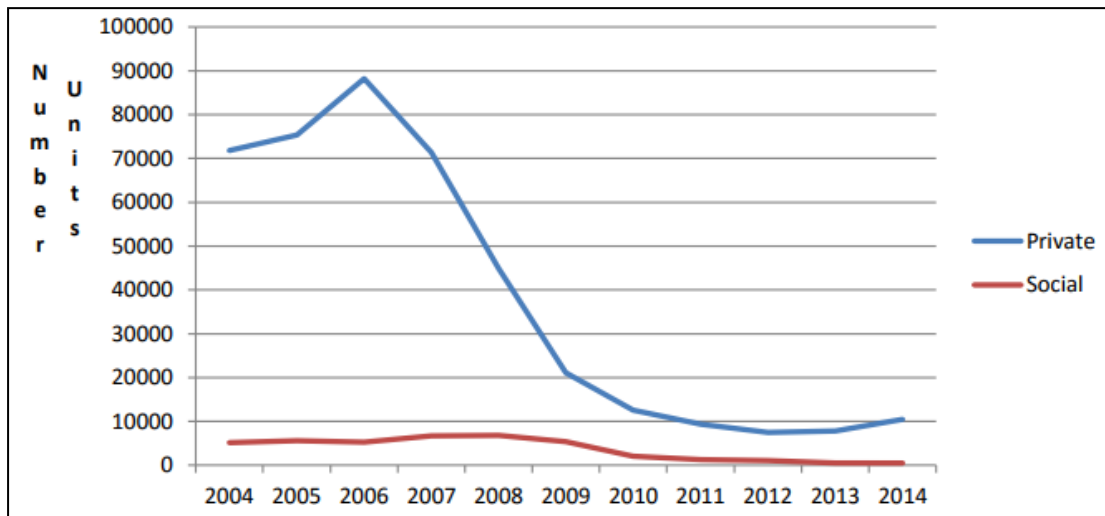


Figure 6.3- House Completions by Sector, 2004-2014 (Source: Report of the Committee on Housing and Homelessness, June 2016).

The Economic and Social Research Institute (ESRI) (2016) also forecasts that these sustained levels of growth will lead to an increase in demand for housing from the current level of 23,000 units per annum to just over 30,000 per annum in 2024². The number of households in the Dundrum-Balally ED grew nearly 15% from 2011 to 2017, a rate significantly higher than the county and national rates for the same period (see Table 6.3).

Area	2011	2016	% Change 2011-2016
Ireland	1,654,208	1,702,289	2.9%
DLRC	75,819	78,601	3.7%
Dundrum-Balally ED	2,716	3,119	14.8%

Table 6.3- Number of Households and Household Growth Rates (Source: CSO 2016).

Housing completions in Dublin 18, where the subject site is located, were also significantly higher than average for the Greater Dublin Area, with more than 1,200 dwellings completed from Q1 2012 to Q1 2018 (see Figure 6.4).

² ESRI (2016) *Ireland's Economic Outlook: Perspectives and Policy Challenges*

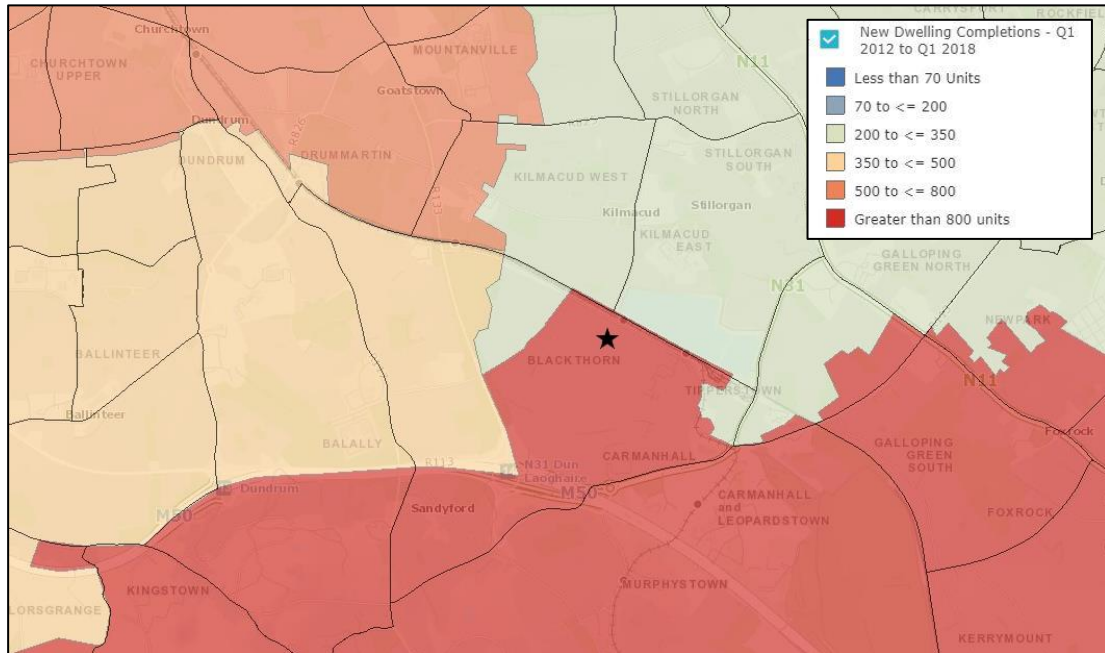


Figure 6.4- House Completions, 2012 to Q1 2018, indicative location of subject site shown with black star. (Source: Dublin Housing Observatory, accessed and annotated by TPA - September 2018).

6.4.4 Employment

The subject site is located in Sandycove Business Park, within the Sandycove Business District. The Business District contains offices for numerous companies, including large international firms such as Microsoft, Google, Sage, Vodafone, Mastercard, Salesforce, Bank of America Merrill Lynch, SSE Airtricity and the Ardagh Group.

The Dublin Economic Monitor August 2018 quarterly report described the District as follows:

“Located in the east of the Dublin region, Sandycove Business District is a vibrant mix of established communities, young families and business, with a total workforce of approx. 25,000 in 1,000 companies. It is well serviced by a modern light rail system (LUAS) to the City and by the M50 road network to the rest of the country. This accessibility and strategic positioning has been a key factor in attracting a large number of high profile businesses including; Microsoft, Google, Sage, Vodafone, Mastercard, Salesforce, Bank of America Merrill Lynch, SSE Airtricity, and Ardagh Group.”

The multitude of major employers within close proximity to the subject site is reflected in the relatively low unemployment rates recorded in the 2016 Census for the Electoral Division. The 2016 census recorded an unemployment rate of just 8.6% in the Electoral Division. This compared with a national rate of 12.9%.

The most recent ESRI Quarterly Economic Commentary, (Autumn 2018) shows that the national unemployment rate as a percentage of the total labour force will reduce further to an expected 5.7 % by the end of 2017, reducing further to 5.0 % by the end of 2018.

6.4.3.1 Live Register

The Live Register measures, monthly, the numbers of people (with some exceptions) registering for Jobseekers Benefit (JB) or Jobseekers Allowance (JA) or for various other statutory entitlements at local offices of the Department of Social Protection. As a result, this data source, whilst not providing an unemployment figure, can provide a good indication of up to date employment trends and economic activity in the subject site area.

Live Register figures for the subject site are provided by the Dún Laoghaire Social Welfare Office, which includes within its catchment Dublin 18 and South County Dublin. Although, figures for this office are, as a result of geographic variation, not comparable with employment census figures based on electoral divisions, they do provide a general indicator of the economic performance of the wider area.

The most recent monthly Live Register figures for the Dún Laoghaire Social Welfare Office echo the downward trajectory, evidenced in census unemployment figures, showing a c.13% decrease in Live Register figures from October, 2017 to October, 2018 (See Table 6.4).

Live Register Figures (Oct. 2016 – Oct. 2017)			
	DÚN LAOGHAIRE	CO. DUBLIN	STATE
October 2017	3,942	58,609	236,492
October 2018	3,438	48,993	199,247
Annual % Decrease	-12.8%	-16.4%	-15.7%

Table 6.4- Live Register Figures for Dún Laoghaire Welfare Office (Oct. 2017 – Oct.2018) – (Source: CSO, 2018)

6.4.5 Commuter Patterns

In 2016 there were 2,679 commuters who lived in the Electoral Division of Dundrum-Balally but worked elsewhere (from a total resident population of 8,035). There were 11,480 commuters who travelled daily into this electoral division to work – a daily net flow of 8,801 commuters. This reflects the location of the Sandyford Business District, easily accessed from the both the adjacent M50 Motorway and therefore the national road network, and the LUAS green line.

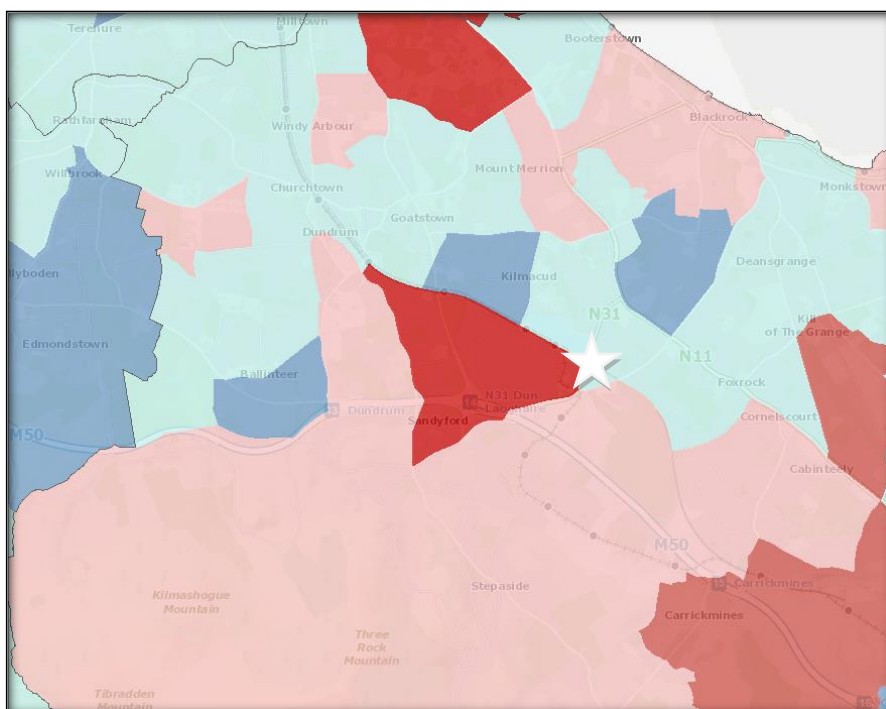


Figure 6.4- Extract of Map 4.1, Census 2016 Profile 6 – Commuting in Ireland, showing Dundrum-Balally Electoral Division shown as a Net Recipient of Daily Commuters (Source CSO: Census 2016).

In terms of the mode of transport utilised by work commuters in the Dundrum – Balally Electoral Division is very diverse; 40.6% of residents commute to work or education by car, with 30.7% recorded as driving a car to work or education. Rail and walking are also major components of the modal split, with 26.4% commuting by rail (these expected to be by LUAS given its proximity) and 20.1% commuting on-foot. The remainder is divided among bus (5.7%), bicycle (4.7%), vans and lorries (2.0%) and motorcycles (0.5%). The modal split is compared to the national figures in the table below.

Commuter Modal Split (Census 2016)		
Mode of Commute	Dundrum – Balally	National
On Foot	20.1%	15.1%
Bicycle	4.7%	2.9%
Bus, Minibus or Coach	5.7%	11.1%
Train, DART or LUAS	26.4%	2.9%
Motorcycle or Scooter	0.5%	0.3%
Car (Driver)	30.7%	42.6%
Car (Passenger)	9.9%	20.2%
Van	1.8%	4.5%
Other (Incl. Lorry)	0.4%	0.2%

Table 6.5: Commuter Modal Split in ED and Nationally (Source: CSO: Census 2016).

6.4.6 Economy

The Economic and Social Research Institute’s (ESRI) Quarterly Economic Commentary Autumn 2018 notes that whilst 2017 saw a number of challenges emerge, which may have implications for the Irish economy; the domestic growth outlook continues to be positive over the coming 18 months (ESRI, 2018³). The Commentary forecasts that Gross Domestic Product will grow by 8.9% in 2018, and 4.5% in 2019 (on the assumption that an economic agreement will exist between the European Union and the United Kingdom. However, the report notes that the “dichotomy between the headline growth rate and underlying trends highlights the difficulties in discerning what is actually going on in the real Irish economy.”

The Report lists the United Kingdom’s exit from the European Union as the most serious challenge for the Irish economy in 2019.

6.4.7 Social Services Provision

The subject site is located within an established business district, and is served by a multitude of social services facilities within c. 1km, as shown in Figure 6.5. Local services identified during the social infrastructure audit conducted by TPA in September 2018 include numerous public and private health facilities (i.e. Beacon Hospital, Centric Medical and Dental, Beacon Clinic, Medixclinic, Neo Fertility and multiple pharmacies), educational facilities (i.e. Queen of Angels Primary School, St Olaf’s National School, St Raphaela’s National School, St Benildus College and St. Michael’s School) and other local services (i.e. garda stations, sports centres, religious centres, cultural facilities, banks, etc.)

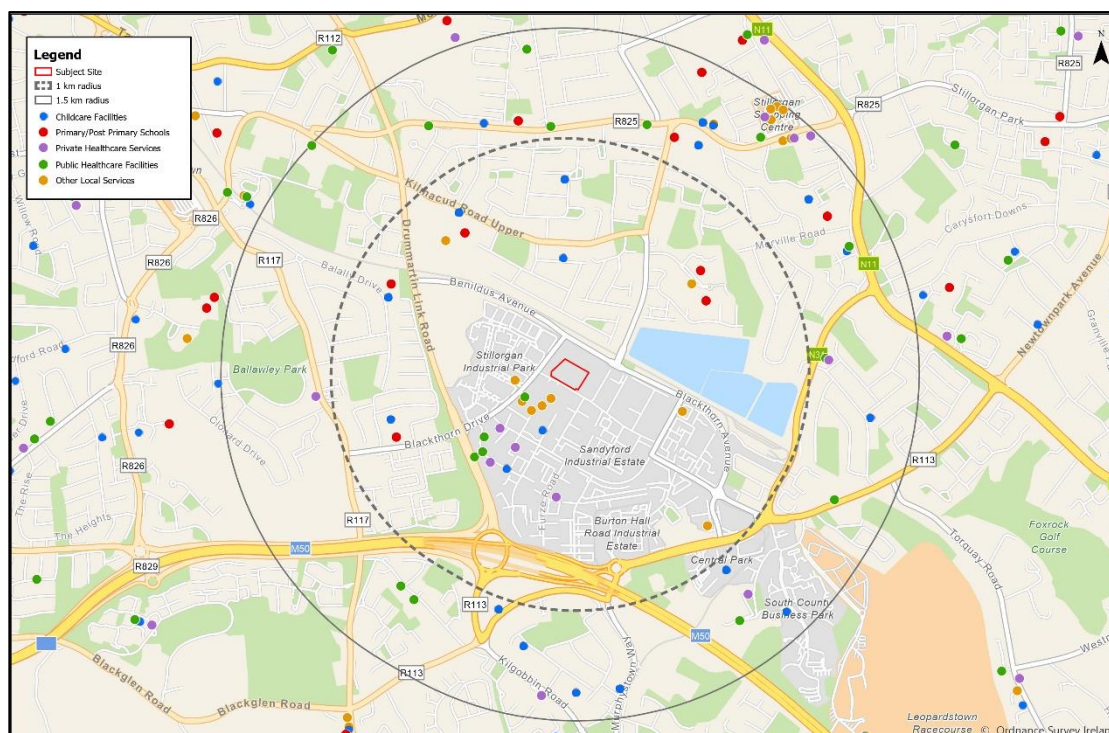


Figure 6.5- Local Services Audit, September 2018. (Source: HSE, DoES, Tusla, and OSM 2018).

6.4.7.1 Childcare Facilities Audit

A separate childcare facilities audit was conducted by TPA in September 2018 to determine the capacity of existing childcare operators in the area. The location of existing facilities within a c. 500m and c. 1km radius of the subject site are indicated in Figure 6.6 below. We note that 9 no. existing facilities were identified within c. 500m and an additional 13 no. facilities were identified within c. 1km of the site.

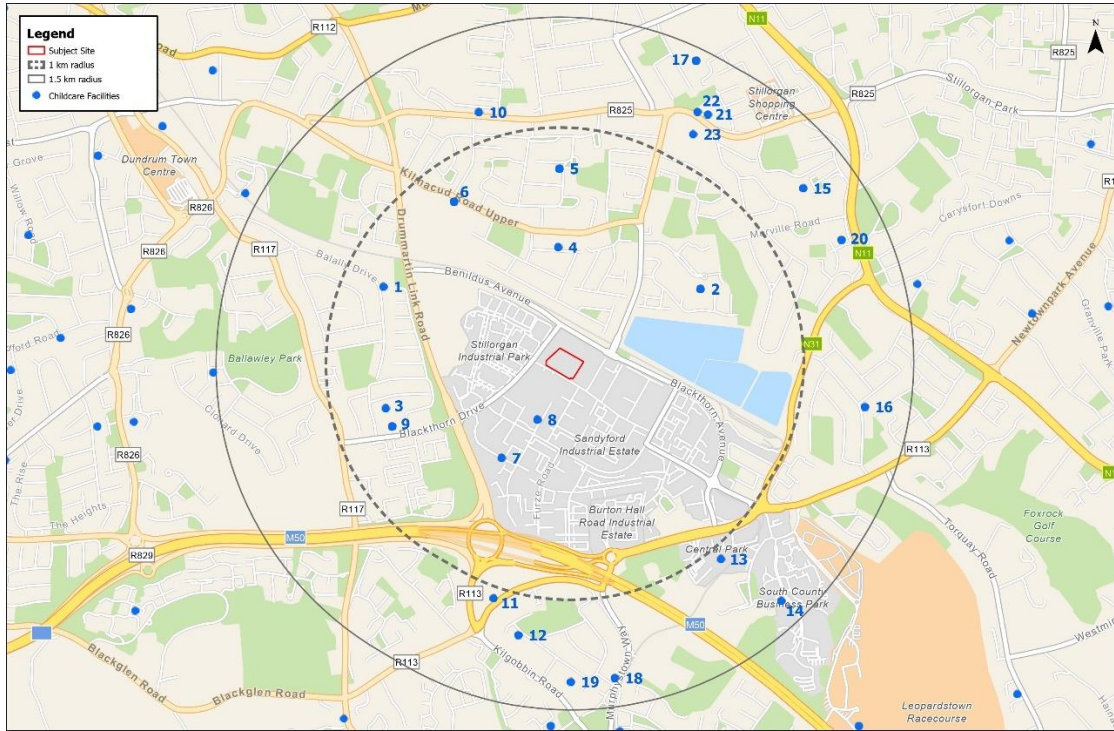


Figure 6.6- Map of Childcare Facilities within c.1.5km of the Subject Site (Source: Tusla 2018)

During the childcare audit, capacity figures for each facility were drawn from the latest Tusla Inspection Report³ available for location. Where the inspection reports on record were more than 2 years old (i.e. published pre-2016), an e-mail/ telephone survey was undertaken by TPA in an effort to determine current enrolment figures. The final survey figures are detailed in Table 6.5 below.

³ The Tusla Early Years Inspectorate carries out inspections of Early Years Services under Section 58(J) of the Child Care Act 1991 (as inserted by Section 92 of the Child and Family Agency Act 2013).

Facilities within c. 1km radius of subject site				
No.	Name of Childcare Facility	Capacity	Enrolment	Avail. Places
1	Clever Clogs Creche and Montessori	65	49	15
2	Greenfields Montessori	22	19	3
3	Handprints Montessori Preschool	54	44	10
4	Lakelands Childcare	45	31	14
5	Little Dale Academy	83	76	7
6	Narnia Nursery School	50	40	10
7	Park Academy Childcare Beacon Court	144	144	0
8	Park Academy Childcare Beacon South Quarter	95	66	29
9	Rathdown Community Playgroup	11	10	1
Total		569	479	89
Facilities within c. 1.5km radius of subject site				
No.	Name of Childcare Facility	Capacity	Enrolment	Avail. Places
10	Busy Bees Childcare Ltd.	NA (assumed 71)	71	0
11	Cedar Montessori	NA (assumed 21)	21	0
12	Giants Steps	17	11	6
13	Giraffe Childcare Central Park	68	55	13
14	Giraffe Childcare Leopardstown	112	60	52
15	Glenalbyn Montessori	22	18	4
16	Leopardstown Montessori School	33	29	4
17	Oatlands Before and After School and Montessori	36	28	8
18	Park Montessori School	18	18	0
19	Roola Boola	21	20	1
20	St Brigid's Parish Playschool	NA (assumed 25)	25	0
21	Star Tots	91	89	2
22	The Children's House Montessori School Thornhill	44	40	4
23	Wise Little Owls Montessori School	16	16	0
Total		117	501	94

Table 6.6- List of Childcare Operators in Sandyford Area and Current Capacity Situation.

The childcare audit demonstrates that there is a good provision of childcare facilities in the vicinity of the subject site, with a number of these having capacity for additional enrolments. It was estimated that some 89 no. places were available within c. 500m of the proposed development site at the time of the survey.

6.5 Likely Impacts and Proposed Mitigation Measures

Consideration is given to the likely impacts of the development on the factors outlined above in Section 6.4. This consideration focuses on the overall impact if the development were not to proceed; and the impact of the development on each of the above factors at the construction, and operational phases of the development, respectively.

Due to the size of the development, the overall construction phase of the development will last approximately 2.5-3 years from the date of commencement.

6.5.1 Impacts on Population Profile and Trends

Do Nothing Scenario

Were the development to not proceed, the present state of the subject site would remain. The subject site has been zoned to fulfil a specific housing need by 2023 (which has been informed by Regional Planning Guidelines). As such, a do-nothing scenario would mean that this objective of the Development Plan would not be met, and some 428 no. households would remain uncatered for.

As such, the impact of the development not proceeding on population profile and trends in the area would be negative.

Furthermore, the positive nature of the development in terms of its location in a centre of employment, and therefore the associated increase in sustainable commuter trips in the area, would be lost.

Construction Phase

At the construction phase of the development there will be a neutral impact on the population trends and profile for the area as no additional persons will be housed on site.

Operational Phase

The proposed development will consist of 428 no. residential units/households. Using the local average household size indicators from Census 2016 for this electoral division (2.53), this may result in a projected population of approximately 1,083 no. persons residing at the site. Using the average household size figures for the state (2.75), this results in a projected population of approximately 1,177 no. persons residing at the site. The proposed development will provide housing for a potential number of approximately 1,379 no. persons, when using the metrics provided in the Housing Quality Assessment. In terms of analysis for EIAR purposes, the larger population figure is used to assess impact. This will result in a sizeable addition to the emerging redeveloped Sandyford Business District. This is considered significant and positive, particularly in the context of current housing demand, and also taking account of the location's access to places of employment.

Proposed Mitigation Measures

A diverse range of housing types are provided to satisfy different elements of housing demand and to ensure that the development is attractive to a varied cross section of the population. As a result, the development includes studios and 1, 2, and 3 bed units. In addition, the development also complies with its Part V obligations and thus ensures a strong socioeconomic mix.

6.5.2 Housing Impacts

Do Nothing Scenario

There are currently no persons residing on the subject site, which currently accommodates part of a shared basement car park with surrounding sites. The site was previously the subject of a development proposal that has not been completed. In its current situation, the subject site is an eyesore and detracts from the aesthetic and amenity of the area. Where the development not to proceed, this scenario would continue and the site would remain in its current state. As a result, this residentially zoned land would not contribute to the housing unit targets set out in the *Dún Laoghaire – Rathdown County Development Plan 2016-2022*. It would also continue to significantly detract from the amenity of the area. The impact of a do-nothing scenario would therefore be negative in terms of local residential amenity and in terms of meeting targets for household growth.

Construction Phase

The construction phase of the development is not anticipated to provide any impact on the quantum of or access to housing in the area. The residential amenity of the area will be unavoidably affected during the construction phase due to the works taking place. This impact is not considered to be significant however.

Operational Phase

The proposed development will result in the addition of 428 no. units to the supply of housing in the Sandyford area. These will be a mixture of studios, 1, 2, and 3-bedroom residential units.

The addition of these proposed units will contribute to the housing unit target outlined in the *Dún Laoghaire-Rathdown County Development Plan 2016 - 2022*, which states that a net requirement of approximately 30,800 no. new units are required over the lifetime of the plan. This equates to an average requirement of approximately 3,080 no. new residential units per annum 2022.

The subject site is located in the area of 'serviced lands', 410 hectares of lands earmarked under the Development Plan for approximately 18,000 new infill units in 2016 – 2022, which also specifies the following in Policy ST2:

"It is Council policy to actively support sustainable modes of transport and ensure that land use and zoning are fully integrated with the provision and development of high public quality transportation systems."

Proposed Mitigation Measures

No negative impacts have been identified in relation to the increased provision of housing units in this location. Therefore, no further mitigation measures are required.

6.5.3 Employment Impacts

Do Nothing Scenario

As the subject site currently contains a partially built basement car park, were the current use to continue, the current levels of employment required to maintain the site (security personnel and occasional maintenance) would remain steady and the subsequent impact on employment would be neutral.

Construction Phase

It is anticipated that at the peak of construction there will be a workforce varying in a range of approximately 30 - 200 no. people employed depending on phasing and stage of construction. These construction workers will likely be recruited from Dublin and the wider metropolitan area. 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. As a result, the project will have a positive impact on employment numbers in the Sandyford area during the construction phase.

Operational Phase

The proposed development will provide housing for a potential number of approximately 1,379 no. persons, when using the metrics provided in the Housing Quality Assessment. Given the multitude of large employment centres within close proximity to the site, the existence of significant transport infrastructure providing access to other it is likely that future residents of the scheme would work within close proximity to nearby employment centres. The multiplier effect arising from these additional residents using local services and purchasing goods at local businesses will also lead to an increase in employment in those businesses, which meet this demand.

The proposed crèche at the subject site would accommodate approximately 73 no. children, upon completion. Given the ratio requirements set out in Schedule 6 (Part 1) of the *Childcare Act*⁴, the proposed crèche could potentially employ approximately 19 no. persons. In addition, it is envisaged that 4 no. of maintenance and security personnel will be employed in the development. Depending on the nature of the tenants that will occupy the 4 no. retail units, it is expected that 8 – 20 no. retail staff will be employed, further expanding employment opportunities in the local area.

Proposed Mitigation Measures

Given the positive employment characteristics of the subject site area and surrounding areas, no negative impacts are envisioned from the provision of residential units for the local labour market population. As a result, there are no mitigation measures necessary.

6.5.4 Traffic

Do Nothing Scenario

If the development did not proceed, there would be a neutral impact on commuting patterns in the area as the proposed development does not provide any additional transport infrastructure services. There may be a slight negative impact on some pedestrian commuters in the “*Do Nothing Scenario*,” as the site will provide additional permeability and access for pedestrian commuters to the Luas stop to the north of the site who will otherwise have to walk around the block.

Construction Phase

During the construction phase the site will be accessed via Carmanhall Road. An additional access at the eastern end of the site will also be used. This will reduce the impact of the works on the surrounding previously constructed development and the surrounding road network. Additionally, the fact that the works for the basement construction will be utilising the same footprint as for the previously granted permission will reduce the need for excavation and disposal.

An Outline Construction Management Plan is required in accordance with *County Development Plan 2016-2022*, a preliminary version of which is set out as part of the planning pack. The Plan includes a section which covers the Preliminary Traffic Management Plan. Further information on this is outlined in Chapter 14 of this EIAR - *Roads, Traffic and Transportation*.

⁴ *Schedule 6 (Part 1) of the Childcare Act 1991 (Early Years Services) Regulations 2016*

Operational Phase

The development of a planned new residential community of some 428 no. households will inevitably affect local commuting patterns to a certain extent. Owing to the large number of employment centres in the Dublin area, and the site's location at the edge of the Sandyford Business District, it is likely that internal commuter flows within Sandyford arising from the subject proposal is likely to increase. However, the site is within a short walking distance of both Luas and bus services and the provision of pedestrian and cyclist links directly to these would likely foster a trend towards more sustainable commuting patterns locally.

Proposed Mitigation Measures

At the construction phase of the development, a Construction Management Plan will be implemented in order to minimise the impact of an increase in commuter numbers. At the operational stage of the development, the design approach to access and layout ensures a high degree of connectivity; particularly in terms of sustainable transport modes via the proposed link to the nearby Luas stop.

With respect to traffic safety, the development has been designed in accordance with the principles and standards of the *Design Manual for Urban Roads and Streets (2009)*, which 'designs in' road safety. Evidence of DMURS informed design within the proposed scheme include the provision of traffic calming and control measures.

Further details of the implications of increased commuter flows in the area and proposed mitigation measures to minimise their impact are discussed in Chapter 14 – Traffic and Transportation.

6.5.5 Economy

Do Nothing Scenario

In this scenario, the economic investment arising from a large-scale construction project would not be availed of, and this strategically located, zoned site with a partially constructed basement carpark would remain in use. This would represent a lost opportunity in economic terms.

Construction Phase

Increased flows of money into the area arising from an increase in employment and an increase in the consumption of local building goods and service providers will lead to a significant positive impact on the Sandyford area economy during the construction phase. This would be short-term and positive.

Operational Phase

Once complete, the development could accommodate in the region of 1,329 no. persons. This would represent a significant positive economic impact and would be a long- term and positive.

Proposed Mitigation Measures

No negative impacts have been identified in relation to the increased provision of housing units in this location. Therefore, no further mitigation measures are required.

6.5.6 Social Services and Amenities Provision

Do Nothing Scenario

There are no social services currently located on the subject site, therefore there would be a neutral impact in this respect.

Construction Phase

During the construction phase, as there are no social services on site, there would be a neutral impact in this respect. Use of adjacent services and amenities would likely increase during the construction phase, but it is not likely that this impact would be significant.

Operational Phase

The proposed development is located on residentially zoned land and is as such located within close proximity to a multitude of social services within the Sandyford area, including educational, community and health facilities. The impact of the new community generated by the development would be significant and would likely lead to increased funding and patronage of existing services and facilities. This would be a positive impact. In addition, the critical mass generated by the proposal would likely create demand for new facilities and services, which would indirectly benefit the wider area.

The inclusion of landscaped public open space, community facilities, 4 no. retail units and a crèche will significantly impact the social amenities of the town in a positive manner. This will be a significant positive impact of both existing residents in the area and future residents.

Proposed Mitigation Measures

Arising from the likely increase in demand for social services and amenities, mitigation measures are proposed. In terms of social services, it is proposed to provide a crèche on site with capacity for some 73 no. children. In addition, it is also proposed to enhance the provision of quality public open space for the area as a whole.

6.5.7 Health and Safety

Do Nothing Scenario

Were the proposed development not to proceed, health and safety issues at the site would relate to the existing security and maintenance of a partially constructed basement car park, which would remain unchanged. Accordingly, there would be a neutral impact on health and safety in a do-nothing scenario.

Construction Phase

As with all construction, there will be inherent health and safety risks at this stage of the development. In order to manage these, a Construction Management Plan (CMP) will be prepared for the project. Resulting from this CMP, it is considered that the construction impacts of the proposed development on health and safety will be neutral.

Operational Phase

During the operational phase, the principal health and safety concerns will be related to traffic safety. This is considered to be low risk and therefore the potential negative impact in terms of health and safety is slight.

Proposed Mitigation Measures

During the construction phase, the legal duties under the Construction Regulations (*Safety, Health and Welfare at Work (Construction) Regulations 2013*⁵) will be adhered to.

In accordance with these duties, a Project Supervisor Design Process (PSDP) will be appointed by the relevant contractor to co-ordinate the design effort and minimise the construction risks during the design period. In addition, a Project Supervisor - Construction Stage (PSCS) will be appointed to coordinate and supervise all safety aspects of the project.

Strict security measures will also be implemented to deal with all access to the site. These measures will require all vehicles and personnel visiting the site to be logged in and out.

At operational phase, proposed mitigation measures at the design stage are envisioned to reduce the risks associated with traffic safety. With respect to traffic safety, the development has been designed in accordance with the principles and standards of the *Design Manual for Urban Roads and Streets (2009)*, which 'designs in' road safety. Evidence of DMURS informed design within the proposed scheme include the provision of traffic calming and control measures.

⁵ Health and Safety Authority (2017): http://www.hsa.ie/eng/Your_Industry/Construction/Construction_Duty_Holders/

6.6 Human Health – Potential Environmental Impacts on Human Beings & Amenity

6.6.1 Air & Climate

The impact of the proposed development on air quality is outlined in Chapter 12 of this EIA. In summary, during the construction stage a dust management plan will be adhered to. As a result, dust from the site will be insignificant in terms of impacts on air quality. During the operational phase, the impacts of the proposed development on air quality will be imperceptible.

6.6.2 Noise & Vibration

The impact of the proposed development in terms of noise and vibration is assessed in Chapter 15 of this EIA.

A comprehensive assessment of the potential noise and vibration impacts associated with the proposed development has been completed. There are no adverse noise or vibration impacts predicted at noise sensitive receptors in the vicinity of the site as a result of the proposed development.

6.6.3 Landscape and Visual

Chapter 9 of this EIA assesses the landscape and visual impacts of the proposed development. The assessment suggests that following construction, the main landscape effects of the proposed development are associated with completion of the site. The completed landscape character of the site is fitting with the character of the Sandyford Business District. The effect of the completed site will be moderately positive, due to the conversion from the current closed abandoned construction site to the present of open permeable building and space in character with the area. This effect can be considered positive.

The proposed planting and landscaping proposals will go a significant way towards reducing any adverse effects as they mature and assist in the visual integration and screening of the development. In the longer term, this will result in positive effects on landscape character and visual amenity. The creation of a linear river-side amenity will positively impact on the landscape and people's perception of it.

6.6.4 Water

The impact of the proposed development on the hydrology of the area is assessed in Chapter 11 of this EIA. Monitoring of the water environment at construction stage and detailed surveys and assessments of the water infrastructure system at operational stage referenced within Chapter 11 demonstrates that there will be a neutral impact on human beings arising from the proposed development in relation to the water environment.