

5. POPULATION & HUMAN HEALTH

5.1 Introduction

This Population and Human Health chapter examines the potential social and economic and health impacts associated with the construction and operation of the proposed student housing scheme, at University College Dublin on those residing and working within the university and persons living or working in the vicinity of the proposed development.

The assessment examines the socio-economic impacts relating to the proposal, including impacts due to demographic change, impacts on community and on community facilities, and on economy. Actual and perceived impacts of the proposed development on population and human health may also arise from a number of elements of the proposal. These impacts are dealt with throughout the EiAR, and in particular, the following chapters:

- Landscape and Visual (EiAR Chapter 11);
- Material Assets: Traffic and Transport (EiAR Chapter 12);
- Air, Dust and Climatic Factors (EiAR Chapter 9);
- Noise and Vibration (EiAR Chapter 8);
- Water: Hydrogeology and Hydrology (EiAR Chapter 7); and,
- Water: Water Supply and Drainage (EiAR Chapter 13).

This Chapter initially sets out the appraisal methods used in the assessment process (Section 5.2). It then proceeds to describe the existing environment (Section 5.3); assesses the predicted impacts of the proposed subject development (Section 5.4); assesses the predicted impacts of the proposed subject development on human health (Section 5.5); outlines mitigation measures to be incorporated in the proposed development in order to reduce and/or eliminate any significant adverse impacts (Section 5.6); difficulties encountered in compiling the information are detailed (Section 5.7); details any residual impacts arising from the proposed subject development (Section 5.8). Lastly, cumulative impacts and impact interrelations that will arise as a result of the proposed scheme are detailed (Section 5.9).

A list of reference material utilised in the assessment process is provided in Section 5.10.

5.2 Appraisal Methods

5.2.1 Study Area

The study area upon which the socio-economic impacts of the proposed development are assessed has been selected based on the Electoral Divisions (EDs) that are immediately adjacent to the UCD campus. These EDs comprise the communities that will be most impacted as a result of the proposed development. The study area comprises the following EDs:

- Clonskeagh-Belfield (A);

- Blackrock-Glenomena (B);
- Clonskeagh-Milltown (C);
- Clonskeagh-Roebuck (D);
- Clonskeagh-Windy Arbour (E);
- Pembroke East D (F);
- Rathmines East B (G);
- Stillorgan-Deerpark (H); and
- Stillorgan-Mount Merrion (I).

The study area is presented below in Figure 5.1.

Figure 5.1 Study Area Electoral Divisions



The assessment also considers a wider study area. This takes into account the important strategic role that UCD has on a regional and national level as a centre of third level education, research, economic activity and employment.

5.2.2 Socio-Economic Characteristics

Assessments of key demographic and socio-economic characteristics of the resident population within the study area were undertaken. This was completed in order to build up profiles of the communities that would likely to be directly impacted upon by the proposed development. This desk-based assessment has been informed by the following principal data sources:

- Central Statistics Office (CSO) Census of Population, including Census 2016¹;
- Ordnance Survey Ireland (OSI) aerial photography;
- Higher Education Authority;
- Regional Planning Guidelines for the Greater Dublin Area 2010-2022;
- Dún Laoghaire Rathdown County Development Plan 2016-2022; and
- Delivering Impact: The Economic, Cultural and Social Impact of University College Dublin (2015).

A desk-based assessment of socio-economic aspects considered relevant to the proposed student housing development was carried out as part of the Environmental Impact Assessment Report (EiAR). Site visits to the location of the proposed development and the surrounding environs was also undertaken.

Communities

The key principal types of communities identified within the study area were:

- Resident Community (on-campus university residents)
- Resident Community (residents living in the surrounding vicinity of the university)
- Working Community
- Visitor Community (students in the university and other visitors to the area)

The level of community facilities and services was examined through desk-top survey work and on the ground reviews.

Assessment Criteria

The assessment of the impacts on population and human health relating to the proposed student housing development has been carried out in accordance with the guidance used for the other impacts, e.g. on environmental effects, economy, accessibility and integration. Guidance on these themes is provided in the following documents:

- 1) Guidelines on Information to be contained in Environmental Impact Statements, EPA (2002)
- 2) Advice Notes on Current Practice in the Preparation of Environmental Impact Statements, EPA (2003)

¹ Census of Population 2016 data is used where data is available. This data comprises preliminary results only and may change in subsequent reports as the details are refined.

- 3) Draft Guidelines on the Information to be contained in Environmental Impact Assessment Reports, EPA (2017)
- 4) Draft Advice Notes for Preparing Environmental Impact Statements, EPA (2015)

The assessment has also had regard to the Draft Guidelines on the Information to be contained in Environmental Impact Assessment Report (August 2017) and Advice Notes for Preparing Environmental Impact Statements (Draft September 2015).

Table 5.1 EPA Impact Criteria (Source: EPA, 2003)

EPA Impact Criteria	
Character of Impact	
Positive Impact	<i>A change which improves the quality of the environment.</i>
Neutral Impact	<i>A change which does not affect the quality of the environment.</i>
Negative Impact	<i>A change which reduces the quality of the environment.</i>
Magnitude of Impact	
Imperceptible Impact	<i>An impact capable of measurement but without noticeable consequences.</i>
Slight Impact	<i>A change which causes noticeable changes in the quality of the environment without affecting its sensitivities.</i>
Moderate Impact	<i>A change which changes the environment in a manner that is consistent with existing and emerging trends.</i>
Significant Impact	<i>An impact which, by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.</i>
Profound Impact	<i>An impact which obliterates sensitive characteristics.</i>
Duration of Impact	
<i>Short-term Impact</i>	<i>Impact lasting one to seven years.</i>
<i>Medium-term Impact</i>	<i>Impact lasting seven to fifteen years.</i>
<i>Long-term Impact</i>	<i>Impact lasting fifteen to sixty years.</i>
<i>Permanent Impact</i>	<i>Impact lasting over sixty years.</i>
<i>Temporary Impact</i>	<i>Impact lasting for one year or less.</i>

5.3 Description of the Existing Environment

5.3.1 Site Description

UCD's main campus at Belfield, which is situated on a 133ha site is located in south County Dublin, approximately 4 km south of Dublin City Centre and directly adjacent to the N11 Stillorgan Road. The N11/Stillorgan Road (R138) traverses to the east/northeast of the university grounds, Fosters Avenue (R112) and Roebuck Road traverse to the south / southwest and Clonskeagh Road to the west. The area in the vicinity of the university is generally residential in nature, characterised by two-storey, suburban-style residential development, comprising a mix of terrace, semi-detached, detached and apartment units.

UCD has been located at this site since the 1960s and has a current student population of over 26,500 students with students from more than 120 countries worldwide. UCD offers undergraduate, masters, PhD,

post-doctoral training, research and innovation opportunities. UCD ranks highest for first-preference undergraduate applications annually; as well as being the university of first choice for many international students, accounting for more than 30% of international students and 28% of all doctoral admissions out of the country's seven universities. UCD is also an important centre of employment, currently employing approximately 4,000 staff, which makes it one of Ireland's largest employers, adding to its importance regionally as an economic, educational, and social institution.

There are currently approximately 3,179 bed spaces available for student residents at a number of on-campus university residence villages, at Roebuck Hall, Glenomena, Merville, Belgrove, and Ashfield and off-campus at Proby House and UCD Blackrock campus.

In addition to the main university buildings, lecture and research units, UCD has an array of amenities including over twenty sports pitches, one of the country's largest sports centres and an Olympic size swimming pool, amongst other sport and fitness facilities.

UCD draws students and staff from all across Dublin and Ireland. The surrounding environment is mostly suburban in nature with a number of mixed-use neighbourhood centres located nearby. These vary in size and importance but are primarily locally important for goods and services. There are a number of residential communities immediately adjacent to the campus which include Roebuck, Mount Merrion, Clonskeagh and Booterstown. The university campus is well served by public transport, with 22 separate bus routes serving the university.

5.3.2 Socio-Economic Role of UCD

UCD has an important role as a centre of education and enterprise in the national economy, through supplying education and training to a regional and national population, through research and employment of cutting-edge growth sectors in the economy, as well as directly through employment. UCD student's expenditure in the economy amounts to €240.9 million annually². International students are an important aspect of UCD income and account for €30.9 million of this figure. Overall, UCD attracted foreign earnings amounting up to €66.6 million from research grants and international student fees. UCD's direct expenditure is €421 million; €369.2 million of this accrues to Dublin itself. UCD has estimated that its annual economic output is €1.3 billion, this is made up of direct expenditure, secondary effects and expenditure by students³.

The Higher Education Authority (HEA) '*Report on Student Accommodation: Demand & Supply*' published in 2015 details the current situation for higher education and student housing in Ireland. The HEA projects third level student numbers nationally to rise significantly to 167,991 by 2019, and then again to 192,886 by 2024. It is estimated that there is an unmet demand for approximately 25,000 student bed spaces nationally. The provision of additional designated student resident housing is identified as a necessary part of improving the package of measures that will attract more overseas students and post-graduate researchers, while on-campus student resident housing facilitates in enhancing students experience, and providing a secure and supportive learning environment.

²Delivering Impact: The Economic, Cultural and Social Impact of University College Dublin (2015) UCD University Relations Available to download at <http://www.ucd.ie/innovation/newsevents/deliveringimpact/>

³ *Ibid.*

The current housing market in the county and region presents many challenges for students attempting to rent in the private market and it is useful to consider this in the background of on-campus student accommodation. Data from property website Daft.ie informs in its 2016 Q2 rental report that housing in the south County Dublin and south Dublin City areas are the most expensive areas nationally in which to rent⁴.

The university plays an important role in the knowledge economy and its facilities support the objective of making UCD a world class centre of education as per its 'Strategic Plan 2015-2020'⁵.

5.3.3 Population and Demography

An examination of the socio-economic and demographic characteristics of the study area was undertaken, which included an examination of age profile, employment and other key demographic and socio-economic characteristics. Recent demographic trends at State, county and local level were also examined. The assessment involved desk top research and analysis of existing documentation to develop a comprehensive understanding of the communities which would be impacted by the proposed student housing development. The Central Statistics Office (CSO) Census of Population were the main sources of information for this desk top review. Where available, Census of Population 2016 results have been used to provide the most up to date data available.

5.3.4 Population Trends

The Census Population Data 2016 identified that the population of Dún Laoghaire Rathdown increased by 5.3% to 217,274 persons between 2011 and 2016, above that of the State growth rate 3.7%. Data from the past decade (2006-2016) determines an overall increase in population in Dún Laoghaire Rathdown of over 13.3%. The population in County Dublin shows similar rates of increase at 5.7% (2011-2016) to an overall population of 1,345,402 persons, as shown in Table 5.2.

Table 5.2 Population Change from 2006-2016 Source: CSO (2016)

	2006	2011	2016	Percentage change 2011-2016	Percentage change 2006-2016
State	4,239,848	4,588,252	4,757,976	3.7%	12.2%
Dún Laoghaire Rathdown	191,792	206,261	217,274	5.3%	13.3%
County Dublin	1,187,176	1,273,069	1,345,402	5.7%	13.3%

The number of UCD staff and students on the Belfield campus has increased steadily to 28,354 for the 2016/2017 academic year. The resident population of UCD and the surrounding study area is 29,210 in 2016, which represents an increase of 8.1% on Census 2011 population figures. Table 5.3 presents the proportion of students in the population (by ED) based on the Census 2011 population figures (at the time of writing, this data was not yet available for Census 2016).

⁴ The Daft.ie Rental Report Quarter 2 2016 (2016)

⁵ UCD Strategic Plan 2015-2020

Table 5.3 Study area population by Electoral Division (Source: CSO)

Study Area Electoral Divisions	Total Population 2016 ⁶	Total Population 2011	3rd Level ⁷	Percentage 3rd Level Population
Rathmines East B	6,044	5,533	314	5.7%
Pembroke East D	5,302	4,680	292	6.2%
Stillorgan-Deerpark	2,864	2,793	76	2.7%
Clonskeagh-Belfield	3,111	2,740	1,742	63.6%
Clonskeagh-Roebuck	2,707	2,556	188	7.4%
Clonskeagh-Windy Arbour	2,731	2,521	284	11.3%
Stillorgan-Mount Merrion	2,354	2,407	99	4.1%
Clonskeagh-Milltown	2,050	1,975	137	6.9%
Blackrock-Glenomena	2,047	1,795	145	8.1%
Total	29,210	27,000	3,277	12.1%

5.3.5 Age Profile

CSO Census 2011 data⁸ identifies that the study area has a larger proportion of persons aged 65 and over individuals compared to the State and Dún Laoghaire Rathdown averages (refer to Table 5.4). As demonstrated, there is a significantly higher proportion of persons aged in the 15 to 24 years of age cohort within the study area (22%) compared to the State and Dún Laoghaire Rathdown averages.

Table 5.4 Percentage in each age category (Source: CSO 2011)

Age Cohort	0-14	15-24	25-44	45-64	65+
Study Area	14.7%	22.0%	27.5%	21.0%	14.8%
Dún Laoghaire-Rathdown	18.2%	14.0%	29.5%	23.8%	14.5%
State	21.3%	12.6%	31.6%	22.7%	11.6%

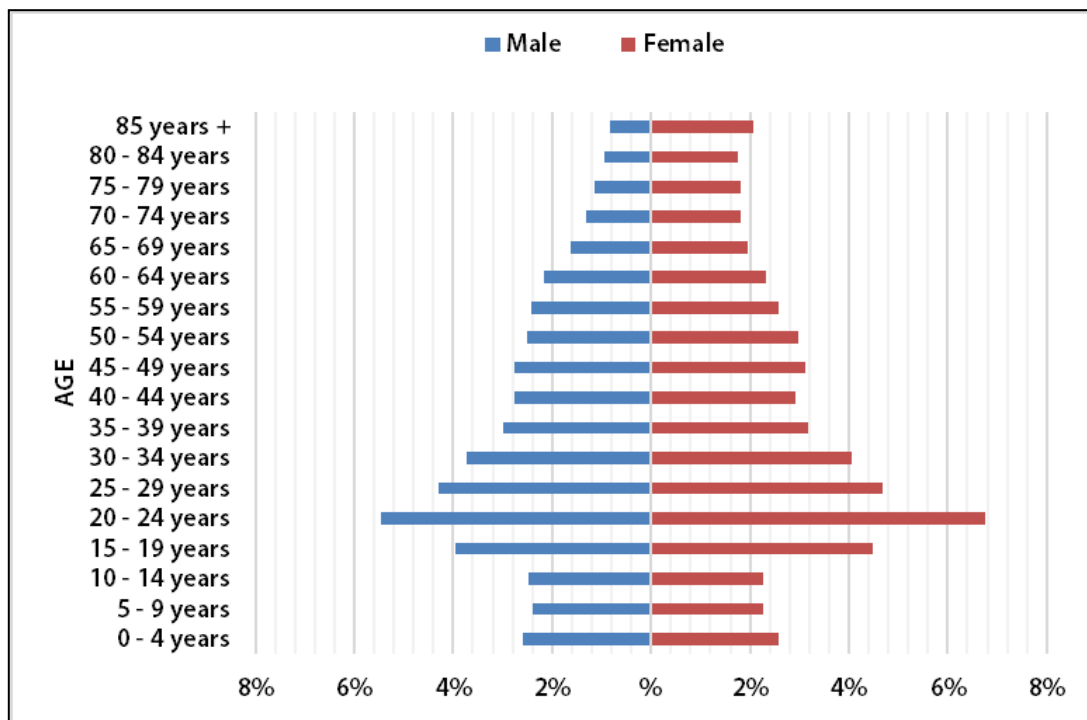
Figure 5.2 presents the age profile of the study area. The age group with the highest population within the study area is persons aged between 20 and 24 years, reflecting the typical age of university attendees. Overall, 12.1% of the population in the study area are students (refer to Table 5.3).

⁶ Census 2016 Preliminary data.

⁷ 3rd Level population estimated from 2011 census, as total number of students aged 15+, excluding those using Irish on a daily basis in the education system (to remove those students at second level).

⁸ *Ibid.*

Figure 5.2 Study Area population pyramid



5.3.6 Employment

The employment statistics provides an understanding of the economic profile of the subject area and its surrounding area. CSO data (2011) informs that a majority of persons of working age in the study area are in employment (46%) or currently students (25%). CSO data identifies that unemployment levels in the study area are very low at 3.9%, which is significantly below the national unemployment average of 7.8% (July 2016). Furthermore, CSO data identifies that 15% of the population within the study area are retired. This rate is also similar to the Dún Laoghaire Rathdown average, and both rates are above the State average.

Considering the study area without including the **Clonskeagh-Belfield ED** changes the picture slightly. Excluding the **Clonskeagh-Belfield ED**, 50.6% of individuals are at work, which is much closer to the State average.

5.3.7 Economic Activity

While the area in the immediate vicinity of UCD is residential in nature, there are a number commercial and industrial centres in close proximity of the university, notably Richview Office Park, Clonskeagh Square, Belfield Office Park and Beech Hill Office Campus to the north of the campus. The area is suburban in nature and comprises many SMEs in addition to local enterprise and retail units.

5.3.8 Housing

Land use in the vicinity of the proposed student housing development is predominantly residential in nature. The area immediately surrounding the university campus is characterised by two-storey, suburban style residential developments, in addition to a number of primarily 3 to 4 storey apartment schemes.

Roebuck Castle Housing Estate, located directly to the west of the proposed development, is the nearest housing development. Roebuck Castle comprises approximately 212 residential units, comprising terrace, semi-detached and detached units.

There are also residential units located at Owenstown Park and Fosters Avenue adjacent to the Owenstown Park entrance to the campus. These residential units comprise largely a mix of two-storey suburban style semi-detached and detached units, with apartments in Owenstown Lodge.

5.3.9 On Campus Accommodation

Table 5.5 presents the list of on-campus student residence accommodation in UCD, accompanied by the number of bed spaces.

Table 5.5 Existing university student accommodation

Residence Name	Location	Bed spaces
Belgrove	UCD Main Campus	775
Glenomena	UCD Main Campus	750
Merville	UCD Main Campus	610
Roebuck Castle	UCD Main Campus	133
Roebuck Hall	UCD Main Campus	300
Ashfield	UCD Main Campus	354

5.3.10 UCD Off-Campus Accommodation

UCD also provides off-campus accommodation in Blackrock and Donnybrook. There is also a privately-operated student accommodation residence located approximately 210m from the main UCD Stillorgan Road entrance gate.

Table 5.6 Existing off-campus university student accommodation

Residence Name	Location	Bed spaces
Blackrock	Blackrock Satellite campus	142
Proby	Blackrock Satellite campus	114
Ziggurat*	N11 Montrose	192

*Indicates privately owned and operated student accommodation provider

5.3.11 UCD On-Campus Facilities and Amenities

Social and Community Facilities

On-campus, there is a range of retail, café and restaurant facilities to serve staff and student needs. Additionally, there are a number of other important amenities which students require such as; self-service laundrettes; banking services; a bicycle Shop; careers counselling and UCD Health Centre. The UCD Belfield

campus also has a purpose built crèche (Oakmount Crèche) situated near the Clonskeagh entrance. The not-for-profit operated crèche has provision for over one hundred children and offers childcare facilities for staff and students of the university, in addition to members of the wider community.

Sporting and Recreation Facilities

The university campus contains sporting and recreation amenities that are available to both students and members of the wider community. These amenities include GAA, soccer, rugby and hockey pitches, a sports centre, an Olympic size swimming pool, tennis courts, squash courts, and climbing walls amongst other sport and fitness facilities. The university campus also has a large area of grounds, including woodland areas that are popular amenity areas for students and members of the local community.

Public Transport

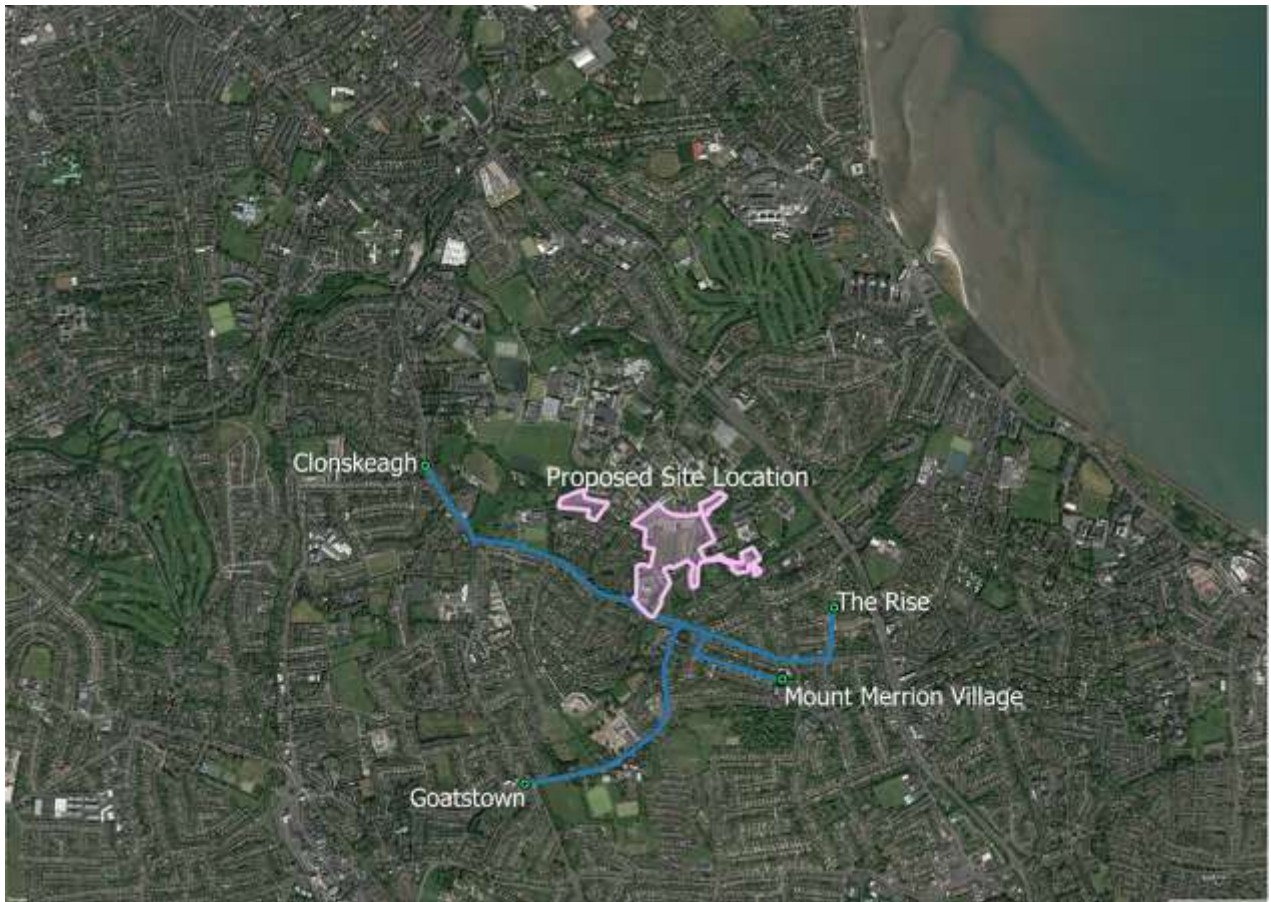
The university is well served by public transport and is served by 22 bus routes⁹ (excluding private coach services). It also has over 4,000 cycle stands throughout the campus to improve student movement within the campus grounds.

5.3.12 Neighbourhood Centres and Off-campus Facilities

The extent of facilities and community services in the vicinity of the proposed development has been examined. A mix of community and education facilities, healthcare facilities, neighbourhood centres, religious centres, and recreational facilities were identified, as detailed further in this section. These vary in size and significance. Figure 5.3 shows the location of the main commercial centres in proximity to the Owenstown Park site entrance.

⁹ UCD Commuting Survey 2015-16 (2015) ARUP

Figure 5.3 Neighbourhood centres in the vicinity of the proposed development



Mount Merrion Village: The largest local commercial centre within walking distance of the proposed development is Mount Merrion village and The Rise. Mount Merrion Village is a 10-minute walk south of the proposed development. The amenities located here include; a pub; restaurants, dentist, medical centre, beauty salon, butchers, off-licence and takeaway. Additionally, there are a number of community, education and religious centres nearby including Mount Merrion Community Centre, Mount Anville College and the Church of St Thérèse. There is a supermarket, post office, pharmacy, medical centre and florist located at The Rise. The closest off-campus shop to the proposed development is Spar on Foster's Avenue (less than 200m from the Owenstown entrance).

Clonskeagh: A number of shops, community facilities and amenities are located on the western side of the campus in Clonskeagh. These include a Spar; pharmacy; takeaway; and an off-Licence. Nearby there are also a number of schools and religious centres such as the Islamic Cultural Centre of Ireland and national school, Our Lady of Mercy Convent School, and Saint Killian's Deutsch School.

Goatstown: Goatstown is approximately a 20-minute walk from the university campus. The amenities located here include a petrol station, pub, formal wear shop, hairdresser, bookmaker, cartridge shop and garden store.

5.4 Predicted Impacts of the Proposed Student Housing Development

This section assesses the impacts of the proposed development on the surrounding environment from a *population and human health* perspective and determines the predicted and potential impacts of the proposed development and whether the impacts will have an adverse impact on the local community. Where adverse impacts are identified, this EiAR proposes mitigation measures that will minimise and/or eliminate the impact of the development on the surrounding local community and local residents, both on and off campus.

Impacts can be expected during both the construction and operational phases of the proposed development and these impacts may also be temporary, permanent, direct, indirect and cumulative.

Actual and perceived impacts of the proposed development on population and human health may arise from a number of elements of the proposal. These impacts from Landscape and Visual, Material Assets: Traffic and Transport, Air Quality and Climate, and Noise and Vibration are addressed in the appropriate chapters. The impacts identified below are in addition to those other impacts.

Impact Interactions and Cumulative Impacts

Cumulative impacts are identified in the European Commission guidance as impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions, together with the proposed development. Section 5.8 considers the cumulative environmental impacts of the proposed student housing development with other relevant development proposals.

5.4.1 Population

Construction

Due to the construction works, there will be an increase in the number of persons working in the study area on a daily basis. Some construction workers may move in to the area to be closer to their place of work. There will be no adverse impact on population arising from the construction phase of the development.

Operation

The construction of 3,006 new student bed spaces will provide critical housing infrastructure to UCD and the student population in the Dublin Region by freeing up off-campus accommodation. The increase in population will be most significant on the university campus where these persons will be resident. The university campus is capable of absorbing the additional population due to the extent of land within the university campus. The additional population will contribute positively to the university campus community and non-resident community, contributing to campus community interaction and engagement. The proposed development will have a **Significant Positive Long Term Impact**.

5.4.2 Communities and Facilities

Construction

The construction process has the potential to impact on communities' amenity and accessibility to the university and the services that it offers. A **Temporary Slight Negative Impact** are likely from short-term closure or restrictions to Owenstown Road entrance to the college for private cars.

The proposed development will be constructed so that pedestrian and cycle access is maintained throughout the construction phase. The construction impacts will, however, reduce the amenity of the trip to the university and its grounds. Therefore, there will be a **Temporary Slight Negative Impact** on journeys for cyclists and pedestrians.

Operation

The proposed scheme will contribute a significant additional population to the on-campus community in UCD. This will contribute to a more active, vibrant and inhabited campus, particularly during the evenings, weekends and out-of-term. This will be a **Long Term Moderate Positive Impact** for the university.

The availability of on-campus accommodation is important in terms of attracting and retaining domestic and international students. It is also intended to enhance the student experience and facilitate a more secure and supportive learning and social environment. Students accommodated in on-campus housing will benefit from closer proximity to university facilities, including lecture theatres, libraries, sporting facilities and student welfare services etc. The availability of an increased supply of dedicated on-campus student accommodation is therefore important in increasing accessibility for students. The growing demand for student accommodation is putting increasing pressure on the private rental market, particularly in the Dublin Region. As demand is significantly exceeding supply for rental properties in region, there is an increasing shortage of housing emerging, along with an increasingly widening affordability gap. New on campus student accommodation such this scheme, will potentially make available a portion of the private rental housing market in the vicinity of the university campus. This will have a **Long Term Moderate Positive Impact** for students.

The additional population resulting from the proposed development will also interact with the wider residential community outside the university grounds. Given the nature of the development, however, it is likely that the new student residents will be more connected to the rest of the college. There is potential for negative impacts on the surrounding community. There is a perception that a level of increased anti-social behaviour is associated with large numbers of young people. However, all students who are resident in the new development will be subject to student conduct codes as part of their license to reside (i.e. 'UCD Student Code 2016/2017', 'UCD Student Residence: A Guide to Living on Campus, Residents Information ver010911', UCD Residences: A Guide to Managing Breaches of Residential Rules'). The university has a number of student policy codes which pertain to student conduct, in particularly students living on campus. These will continue to be communicated to students when they take up their license to reside to ensure all students are aware of their resident and community obligations. The potential effect is considered to be a **Long Term Neutral Impact**.

Car parking by students and staff in residential areas surrounding the university is considered to be an issue locally. Due to the number of new students introduced in the new scheme, there is potential for greater pressure to be placed on existing residential areas. The nature of the development, providing student accommodation directly on campus, significantly reduces the potential for private car need and use for those students. The high level of public transport provision and Smarter Travel initiatives in the university, including the implementation of UCD Student Residences Masterplan will further reduce the demand for cars. There is likely to be a **Medium Term Positive Impact** on surrounding residential areas, as identified in Section 11.7 below.

The proposed development provides significant additional recreational facilities including the Student hub, student facilities, active recreational areas and internal courtyards. This will contribute to a broadening of

amenity and facilities available to the university community. This is a **Long Term Moderate Positive Impact** for the university community.

The loss of the recreational space for the construction of the student housing will affect the amenity for campus users, both the university community and the surrounding communities. The open nature of the campus makes it popular for recreational users, including walkers and runners. This is likely to be a **Long Term Moderate Negative Impact** on the recreational amenity of the university and the adjoining residential areas. The proposed scheme will enhance the woodland walk through the campus improving the amenity of the walkway. Two sports pitches will be removed to facilitate the proposed development. The Strategic Campus Development Plan has been consolidating its sports fields to the north of the site and enhancing their quality.

While the subject development is set back from Fosters Avenue, the development will be within close proximity to dwellings in the Roebuck Castle housing estate. Appropriate and sensitive landscaping measures have been incorporated at this location to minimise the impact of new development on this established residential community.

5.4.3 Employment and Economic Activity

Construction

The project will result in the provision of direct employment (full and part-time employment) within the construction and related sectors over the course of the construction phase. This is likely to bring benefits to the local economy in the form of increases in consumption in the locality and through the additional supply of goods and services required over the lifetime of the development scheme. This may also result in creation of secondary employment opportunities. This will be a direct **Short Term Moderate Positive** impact on the local economy.

Operation

Using data from the Eurostudent¹⁰ survey on social and economic conditions encountered by third level students in Ireland, it is possible to estimate a monthly student expenditure figure. Individual student expenditure per month is estimated to be €510 on goods and services. When the proposed development is realised, the occupants of the development will contribute an estimated additional €200,000 per month or €2.4 million per annum to the local economy, based on 3,000 student places. **This will vary between Irish and International students due to the level of university fees.** This will have a **Long Term, Moderate Positive Impact** on the local enterprise community in the study area.

Local retail and businesses are likely to see a positive impact in the long term. The addition of housing will likely lead to increased expenditure by new university residents in the local community. This will have a **Long Term Moderate Positive Impact**. The provision of retail facilities as part of the proposed development is not likely to affect the trading patterns of existing retail operators, through diverting trade to the university.

¹⁰ Eurostudent.eu (2014) Eurostudent V Report on the Social and Living Conditions of Higher Education Students in Ireland 2013.

5.5 Human Health

In the development of the EiAR, the human health section considers specifically human health related factors, such as noise, vibration, water, air quality and odour. The objective of the human health section in the context of the Population and Human Health Chapter is to ensure that the EiAR has appropriately addressed the potential for risk or vulnerabilities of the proposed development and has considered the need for key mitigation measures.

Potential impacts of the proposed development which may be relevant to human health are addressed in a number of other chapters of this EiAR i.e. Chapter 7 – Water, Chapter 8 – Noise and Vibration, and Chapter 9 – Air, Dust and Climatic Factors.

5.5.1 Air Quality

An Air Quality Impact Assessment was undertaken by TMS Environment Ltd. for this EiAR. The full Air Quality Impact Assessment is included in Chapter 9 - Air, Dust and Climatic Factors.

Construction

The Air Quality Impact Assessment determines that the most significant potential impacts are those associated with construction activity and construction traffic. There is predicted to be a *temporary slight adverse impact* on the closest receptors during the Construction Programme with potential short-term impacts from traffic on the surrounding roads within about 50m of the site. There will be no lasting adverse impact and the short-term impact can be managed by implementation of the Construction Management Plan incorporating the mitigation measures, as outlined in Section 9.4 of the EiAR. There is no significant adverse impact arising from other air borne matter, fine particles such as PM₁₀ and PM_{2.5} during excavations and demolition works and PM₁₀ and PM_{2.5}, NO₂ and NO_x and CO and benzene that may arise from construction-related transport emissions.

Operation

The Air Quality Impact Assessment determines that the only predicted air quality impacts associated with the operation of the proposed development are emissions to atmosphere from heating sources (natural gas) and traffic associated with the development. The assessment determines that the change in traffic movements will have no quantifiable impact on air quality. There are no adverse impacts on ambient air quality predicted as a result of the Operation Phase of the proposed development. Overall, operational impacts will be imperceptible as presented in Chapter 9 Air Dust and Climatic Factors.

Chapter 9 Air Dust and Climatic Factors outlines the mitigation measures that will reduce or eliminate adverse impacts arising from the proposed development. Principally, a *Dust Management Plan* will be formulated for the construction phase of the project, and the principal objective of the Plan is to ensure that dust emissions do not cause significant nuisance at receptors in the vicinity of the site.

Unplanned Events

There is no meaningful potential for unplanned events to cause a significant adverse impact on the air climate in the area.

5.5.2 Noise and Vibration

A Noise Impact Assessment was undertaken by TMS Environment Ltd. for this EiAR. The full Noise Impact Assessment is included in Chapter 8 - Noise and Vibration.

Construction

The proposed construction works is expected to span a number of years, with the hours of construction typically from 08.00 to 19.00 Monday to Friday and 08.00 to 12.00 Saturdays. Although there may occasionally be the need to work outside the normal hours of construction, heavy or noisy construction activities will be minimised during these periods in accordance with best practice.

The Noise Impact Assessment determines that the noise contribution from site traffic during the construction phase of the proposed development will not be observable. As the change in noise level attributable to construction traffic will not be noticeable, the impact assessment determines the noise impact as imperceptible.

Predicted noise levels have been calculated for each of the four noise sensitive receptor (NSR) locations that have been identified during the baseline noise survey completed for the subject site as part of the EiAR. The baseline noise survey results indicate that the predicted construction noise level associated with site works (construction and demolition) will not exceed the National Roads Authority (NRA) assessment criteria for construction works of 70dB(A) at any of the named receptor locations. The nearest residential receiver to the proposed development will not experience vibration impact during construction. The only construction activity with the potential to generate noticeable vibration levels will be construction vehicles but the level will not be detectable at the closest residential receptors.

It is predicted that the mitigation measures proposed will ensure that noise and vibration impacts are kept to a minimum. The predicted noise and vibration impacts on the receiving environment during the construction phase are considered to be not significant and temporary.

Operation

The proposed development will have very low noise outputs associated with the completed structures. The development will provide residential accommodation and the only noise sources associated with the proposed development will be building services noise and traffic on the internal road network. There will be no source of vibration associated with the operational phase of the proposed development.

As outlined in Chapter 8 Noise and Vibration, the predicted operational noise (or specific sound source) will have a very low impact and the noise contribution from the proposed development subject site will be imperceptible at the nearest receptors. The predicted noise and vibration impacts on the receiving environment during the operational phase are considered to be imperceptible and long-term.

Chapter 8 - Noise and Vibration outlines the mitigation measures that will manage to reduce or eliminate adverse impacts arising from the proposed development, both during construction and operation stage of the scheme.

Unplanned Events

There is no potential for unplanned events to cause significant adverse impacts on the noise and vibration climate in the area.

5.5.3 Water

Flood Risk

Chapter 7 – Hydrogeology and Hydrology and Chapter 13 – Water Supply and Drainage both assess the subject site and proposed development scheme in terms of flood risk assessment.

Chapter 7 determines that the subject site is not located within lands that are subject to flooding and not at risk of fluvial or pluvial flooding. OPW Floodmaps informs that the nearest recorded flood event to the subject site is 1.4 km to the northeast at Merrion and refers to a flood event in 1963 only, when high stream flows coincided with extreme high tides. No further flooding at this Merrion location has been recorded since 1963. The Irish Coastal Protection Strategy Study (OPW, 2013) shows the site to be unaffected by coastal flooding. In summary, the risk of flooding on the site of the proposed development is determined to be negligible.

Mitigation measures have been implemented to prevent the risk of potential site flooding and flooding of receiving watercourses arising from the development of the proposed scheme. The development will be designed in accordance with the principles of Sustainable Urban Drainage Systems (SUDS) as per the recommendations of the Greater Dublin Strategic Drainage Study (GSDSDS). A management train of SUDS devices has been proposed to provide source control and site control and to incrementally reduce pollution, flow rates and discharge volumes (refer to Chapter 13 for further detailed information). Suitable attenuation will be incorporated into the surface water runoff system during both the construction and operational phases of the development to mitigate against flood flows. Flow control devices have been installed to restrict runoff to pre-development greenfield runoff rates so there should be no cumulative increase in flood risk to the Elm Park Stream.

Groundwater

There will be no abstraction of groundwater as part of the proposed development. There will be no direct or indirect discharge of treated stormwater to ground via unlined attenuation areas.

5.5.4 Unplanned Events

Spillages of Hydrocarbons and Cementitious Materials

Chapter 7 outlines a number of temporary mitigation measures that will be implemented during the construction phase to prevent any negative impact to surface water quality. Permanent mitigation measures, primarily silt interception by the existing lake and hydrocarbon interceptors for the basement car park will protect water quality during the lifetime of the proposed development. A stormwater attenuation device will control stormwater flows from the site at pre-development greenfield runoff rates, and this will protect against any potential increase in flood risk due to the introduction of hardstanding.

All stormwater leaving the application site during the construction phase and operational phase will pass through silt interceptors. Hydrocarbon interceptors will treat runoff where there is a potential source of hydrocarbons. Therefore, there should be no adverse cumulative impact to receiving surface water or groundwater quality.

Potentially water contaminating substances will be stored in designated areas that are isolated from gullies or open channels. Hazardous wastes such as waste oil, chemicals and preservatives will be stored in sealed containers. Fuelling, lubrication and storage areas will be in a designated area, that are in excess of a 30 metre distance of surface waters.

All waste containers will be stored within a secondary containment system (e.g. a bund for static tanks or a drip tray for mobile stores and drums). An adequate supply of spill kits and hydrocarbon absorbent packs shall be stored in this area.

All ready-mixed concrete shall be delivered to site by truck. A suitable risk assessment for wet concreting shall be completed prior to works being carried out. Washdown and washout of concrete trucks, with the exception of the chute, will take place at an appropriate facility off-site. There will be no hosing into surface drains or gullies of spills of concrete, cement, grout or similar materials. Such spills shall be contained immediately and runoff prevented from entering the drainage network.

A project-specific Construction and Environmental Management Plan (CEMP) is to be implemented and maintained by the contractors during the construction and operational phases of the proposed development. The Plan will cover all potentially polluting activities and include an emergency response procedure.

5.5.5 Human Health Impact Determination

There will not be significant impacts on human health as a result of the construction or operation of the proposed development.

5.6 Mitigation Measures

The mitigation measures outlined in this section will minimise and/or eliminate the potential for adverse impacts on the local community and amenities.

5.6.1 Construction Phase Measures

In order to minimise impacts during the construction phase, the following mitigation measures will be implemented:

- Advance notice will be given to the occupiers of the adjacent student accommodation developments and adjacent residential development at Roebuck Castle Housing Estate and Owenstown Park before construction starts and in advance of any major planned disruptions.
- A construction management plan will be prepared to minimise impacts on adjacent residents and the operation of the college.

- A construction traffic management plan will be developed to mitigate against potential traffic delays and to facilitate the existing pattern of vehicular movement. A temporary construction access and dedicated contractor parking will be provided from Foster's Avenue.
- Pedestrian and cycle access to the college will be unaffected from both the Owenstown Park entrance or the Roebuck Castle entrance for the duration of the construction phase to prevent significant changes to travel patterns for those accessing the campus.
- Prior notification will be given to campus users and bus operators of any changes to the route during the period of closure of Owenstown Park.
- The mitigation measures in relation to construction, traffic, noise, vibration, water, air and dust quality and landscaping as set out in this EIAR will be carried out in full to minimise impacts on adjacent residents, the university, and human health.

5.6.2 Operational Phase Measures

- Residents of the proposed student accommodation will be required to comply with UCD Residence Rules and Responsibilities as part of their license to reside, including behaviour and respect for neighbouring residents and communities. The student accommodation will be overseen and actively managed to reduce the incidence of noise or other anti-social behaviour by campus residents.
- Occupants of the proposed student accommodation development will be provided with information on Smart Travel options as part of their welcome pack, to further reduce the demand for the use of private car while resident on campus.
- The University will establish a point of contact to address any potential complaints in relation to the operation of the student accommodation scheme. Full contact details for the management office will be circulated to nearby non-student residents prior to the opening of the facility.
- The woodland walkway will be enhanced as part of the scheme to contribute to an improved recreational amenity for university and external users.
- The mitigation measures relating to the operation phase of the development concerning traffic, transport, noise, vibration, water, air and dust quality and landscaping as set out in this EIAR will be carried out in full to minimise impacts on adjacent residents, the university, and human health.

5.7 Difficulties Encountered Compiling Information

No significant difficulties were encountered in compiling the information contained in this Population and Human Health chapter.

5.8 Residual Impacts

5.8.1 Construction Phase

If the proposed mitigation measures are implemented, no significant residual impacts would be expected.

5.8.2 Operation Phase

The delivery of an additional 3,006 students resident bed spaces will significantly contribute to fulfilling a range of objectives relating to education and housing, at regional and national level. These include complying with the requirements of the Department of Education and Science Guidelines on Residential Development for Third Level Students (1999), the subsequent supplementary document (2005) and the Dún Laoghaire Rathdown County Development Plan 2016-2022. These documents support the provision of dedicated on-campus student accommodation having regard to the planned expansion of UCD's educational facilities and acknowledging the growth in demand for third level student accommodation.

The provision of additional dedicated student housing accommodation will maintain the university's attraction as a choice of university and thus, maintain competitiveness of the university on a national and international setting. This will also enhance prospects for economic development and will improve accessibility of students to learning, recreational and social facilities within the university campus. The additional provision of student housing will benefit the local community due to increased expenditure in the local community and will likely lead to new employment and enterprise opportunities in the locality.

The mitigation measures relating to conduct, transport and community point of contact will minimise the effect of the increase in the number of students to this part of the city.

5.8.3 Do Nothing Scenario

The existing provision of on-campus student accommodation at the university does not meet current demand. The high rate in third level enrolment will see continued high demand in the future by students for rental accommodation in the Dublin region, which already has severe housing rental pressures, causing increased inflation in rental prices in the region.

The availability of affordable student accommodation is a significant consideration to prospective students when selecting a place of study. On-campus student accommodation plays an important role in attracting prospective students (particularly international students) to study at the university. While the university will continue to attract students, housing insecurities in the region and failure by the university to provide sufficient student accommodation is likely to impact adversely upon the university's competitiveness in the future, both at a national and international level. This in turn, may affect the university's teaching, research, innovation and development capacities, and is likely to lead to a requirement for increased government investment to fund higher education. These factors will adversely impact upon the regional and national economy. These would be considered a **Long Term Significant Negative Impact**.

5.9 Impact Interaction and Cumulative Impacts

The impact of the proposed development on population and human health is addressed throughout the EiAR, in a number of chapters. In addition to those impacts set out in this chapter, other aspects that affect population and human health include the following:

5.9.1 Population and Human Health / Traffic and Transport:

Mitigation measures to reduce the impact of the construction and operation of the development on the surrounding roads are addressed in Chapter 12. In particular, measures to minimise the impacts of construction related HGV movements (e.g. removal and importation of materials), on-campus road realignments and new car parking bays are detailed. No further mitigation measures are proposed.

5.9.2 Population and Human Health / Noise and Vibration:

Mitigation measures to reduce the impact of noise and vibration on nearby residents during the construction of the proposed development are discussed in Chapter 8 of this EiAR. Of note are the adjoining residents and businesses can be subjected to noise nuisances due to construction activities and the presence of works vehicles. No further mitigation measures are proposed.

5.9.3 Population and Human Health / Air, Dust and Climatic Factors:

Exposure to particulates and other emissions from construction traffic and the construction works (e.g. ground excavations and movement of soils) are potential impacts on population and human health which are addressed in Chapter 9. In particular, dust emissions during construction are identified as a potential impact on communities in close proximity to the proposed development. No further mitigation measures are proposed.

5.9.4 Population and Human Health / Landscape and Visual:

During the construction phase, the community is likely to experience visual impact due to the new buildings in the landscape. In the long term, the development will alter the perception of the site for both the local and visiting communities. The impact of the proposed development on landscape and visual aspects is addressed in Chapter 11. Measures to screen/reduce the visual impact of the scheme on neighbouring residents are detailed. No further mitigation measures are proposed.

5.9.5 Population and Human Health / Water: Water Supply and Drainage:

The impact of the additional on-campus residential housing units on drainage (surface and foul sewers) are considered in Chapter 13. No further mitigation measures are proposed.

5.10 References

- 1) Dún Laoghaire-Rathdown County Council County Development Plan 2016-2022
- 2) Environmental Protection Agency (2002) Guidelines on Information to be contained in Environmental Impact Statements

- 3) Environmental Protection Agency (2003) Advice Notes on Current Practice in the Preparation of Environmental Impact Statements
- 4) Environmental Protection Agency (2017) Draft Guidelines on the Information to be contained in Environmental Impact Assessment Reports
- 5) Environmental Protection Agency (2015) Draft Advice Notes for Preparing Environmental Impact Statements
- 6) Harmon, D., Foubert, O. (2014) Eurostudent V Report on the Social and Living Conditions of Higher Education Students in Ireland 2013
- 7) Higher Education Authority (HEA) (2015) Report on Student Accommodation: Demand & Supply
- 8) Lyons, R. (2016) The Daft.ie Rental Report Quarter 2 2016
- 9) UCD Strategic Plan 2015-2020
- 10) UCD Development Plan 2005-2010-2015
- 11) Delivering Impact: The Economic, Cultural and Social Impact of University College Dublin (2015) UCD University Relations
- 12) UCD Student Code 2016/2017
- 13) UCD Student Residence: A Guide to Living on Campus, Residents Information (version 010911)
- 14) UCD Residences: A Guide to Managing Breaches of Residential Rules