ENVIRONMENTAL IMPACT STATEMENT

NON TECHNICAL SUMMARY

PROPOSED MIXED USE DEVELOPMENT AT PEARSE STREET, DUBLIN 2

AUGUST 2006

In Association with

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NON TECHNICAL SUMMARY

1.0 INTRODUCTION

1.1 This Environmental Impact Statement (EIS) has been submitted as part of a planning application for a mixed use scheme, incorporating academic, office and retail floorspace with a gross floor area of 33,700 sq.m. at Pearse St., Dublin 2.

1.2 The aim of this EIS is to identify and predict the likely environmental impacts; to describe the means and extent by which they can be reduced or ameliorated; to interpret and communicate information about the likely impacts; and to provide an input into the decision making and planning process.

1.3 It is the intention of the Applicant to ascertain the potential environmental impact that this proposal may have, and to explore mitigating circumstances, so as to protect and enhance the quality of the local environment.

2.0 DESCRIPTION OF THE PROPOSED DEVELOPMENT

2.1 The purpose of this section is to provide a detailed description of the proposed development. The proposed scheme comprises of a mixed use development incorporating academic facilities for Trinity College Dublin, commercial offices and retail units. The floor areas for the different elements of the scheme are provided below. This floorspace is accommodated in a single building, which is ten storeys high. The maximum height of the building is 37.4m to the top of the roof level with an additional 3m to the top of the flue stacks.

Academic Use	18,575 sq.m.
Commercial Offices	12,972 sq.m.
Retail	2,153 sq.m.
Total	33,700 sq.m.

2.2 The site is located at the junction of Sandwith St. Upper, Pearse St. and Cumberland St. South. The site has an area of 0.4505 hectares. It is currently being used for visitor parking to TCD and as a storage area for building materials.

2.4 The proposed development will provide significant additional academic floorspace for Trinity College Dublin (TCD). TCD is an institution of regional, national and international importance, traditionally confined within the historic university campus at College Green. This development site was purchased some years ago, in tandem with the acquisition of the IDA Enterprise Centre further east at Grand Canal Basin, as part of a growth strategy beyond these traditional confines.

2.5 As Ireland's leading research institution, and the only Irish University ranked in the European top 50, TCD's strategic aim is to become a world leader in its core research areas: - in the Biosciences: neuroscience, infection and immunity, cancer and genetics; in ICT: telecommunications, and nanotechnology; in Arts & Humanities : Irish studies and globalisation.

2.6 Infrastructure for ICT research such as telecommunications and nanotechnology is catered for on the main campus in the Lloyd Institute and by the new Crann Institute, currently under construction further along Pearse Street. Arts and Humanities research is accommodated primarily in the Arts Block and through the new Long Room Hum initiative. To deliver on the national Strategy for Science, Technology and Innovation (SSTI, launched by An Taoiseach on 18th June 2006) TCD now urgently needs accommodation for the biosciences disciplines, to facilitate a ramp-up of activities which will underpin graduate training, basic and applied research, and the delivery of human capital to underpin the Irish knowledge economy - this is the key driver in the proposal to develop the Biosciences complex.

2.7 The proposed development would deliver a National Centre for Discovery Research, supporting activities in the College's major strands of biomolecular and bioscientific research. The building will house wet and dry scientific applications in biochemistry, physiology, psychiatry, molecular medicine, medicinal and pharmaceutical chemistry, bioengineering, protein expression and characterisation. Researchers will be seeking to answer fundamental questions about ageing and disease, focusing on areas such as arthritis, cancer, neurodegeneration - including Alzheimer's and Parkinson's disease, inflammation, infection, seeking to identify markers and mechanisms of disease, to validate therapeutic intervention points, to deliver new molecules and potential medicines.

2.8 The development would therefore clearly identify Dublin and Ireland as a leader in international health and translational research. It would encourage foreign direct investment through multinational corporations

as partnerships are delivered in the pharmaceutical and biotechnological sectors. It would facilitate knowledge creation, intellectual property generation and spin out indigenous enterprise. Geographically, it will embed Trinity education, training and research activities within the Community, in a new and meaningful way, clearly linked to commerce and employment on Pearse Street.

2.9 A total of 18,575 sq.m. of floorspace is being provided for Trinity College Dublin. The floorspace principally comprises of laboratory space, lecture theatres, seminar rooms, administration offices, catering facilities and social facilities for staff and researchers. The floorspace is located across Levels -3 to -1 and 0 to 9.

2.10 Commercial office space, at 12,972 sq.m. forms a substantial component of the scheme. It is intended that this office space will be operated on a commercial basis for a period of 10 years. Thereafter, the space will revert to Trinity College Dublin for academic use. The floorspace is located across Levels -3 to -1 and 0 to 7.

2.11 The total retail floorspace, including plant areas is 2,153 sq.m. Five units are proposed, all at ground floor level. These range from 87 sq.m. to 1,315 sq.m.

2.12 Vehicular access to the site will be located at Cumberland St. South. This will provide access to the basement car park areas for both vehicles and pedestrians.

2.13 Pedestrian access to the scheme is located along Pearse St. Separate entrances are provided for the academic area of the scheme, the commercial offices and to the retail area. The latter forms a public concourse within the building and has been designed to facilitate a second entrance to Pearse Station.

2.14 Car parking would be entirely underground, with the provision of 160 spaces over basement levels -1, -2 and -3. The car parking has generally been provided in accordance with the guidelines set out in the Dublin City Development Plan, outlined in further detail in section five of the EIS. The entrance to the car park is provided from Cumberland St. South.

2.15 Bicycle parking will also be provided as part of the scheme. 331 spaces will be provided. These are located at basement level -1.

2.16 The proposed development will facilitate a new entrance to Pearse Station. It would be possible to connect to the station via the public

concourse within this scheme. CIE have indicated their support for this proposal. It should be noted that this entrance to the station would be the subject of a further planning application.

2.17 A key objective of the design of the building is to reflect the traditional standing and importance, civic design character and dignity of Trinity's existing campus buildings, but in a contemporary manner appropriate to the particular site context.

2.18 The challenges presented by the height, mass and scale required by the quantum of space required interfacing with the existing urban environment of the site are noted. The role the facility will play in under-pinning and sustaining TCD's role at a national and city level, and in enhancing the international status of the university into the future mean that this is a significant addition to the city, and needs a building that reflects this significance in an appropriate way, while respecting its immediate environment.

2.19 The site occupies a threshold position where historically low-scale development leading east from the City centre towards Irishtown interfaces with the larger scale of the railway station complex and the newer TCD academic and student housing buildings of Goldsmith Hall, and beyond the junction with Westland Row, the new Sports Centre and Crann developments.

2.20 The site presents the opportunity to extend the relatively large scale 'landmark' quality of the adjacent station building onto Pearse Street, thus signaling through the more intense activity generated the location of the new station entrance. The location of the site, at the interface between the station and the existing large scale developments further west along Pearse Street, and the lower buildings immediately to the east, means that any relatively large development here will take on a 'gateway' effect when viewed from further east along the street. The fact that Pearse Street forms a major traffic artery, particularly for in-bound traffic flowing west, means that the site can act as an important urban marker, marking a clear transition to the larger scale of the city centre.

2.21 An early decision was made to limit the height of the highest elements of the complex, to avoid any part of the building intruding visually on key views in the nearby Georgian core area, such as views looking north from the south side of Merrion Square over the roof lines on the opposite side of the square, or from Front Square and New Square within the TCD campus.

2.22 In relation of the buildings more immediate local context, it is proposed that the it should be treated as a City 'gateway block', which establishes a break in scale with the smaller nineteenth century structures immediately to the East between Pearse Street and the railway embankment. Nevertheless, it is considered vital that the build-up of massing from the Sandwith Street elevation recognises the need to mitigate the impact of the overall block massing when viewed from Sandwith Street, or when viewed travelling westward along Pearse Street and approaching the new building.

2.23 The development consists of a 10 storey building above street level, plus 3 basement levels. Cognisant of the cityscape, the complex presents a 7 storey parapet height to Pearse Street, aligned to the parapet of the Crann building. The top three levels are treated as set-back penthouse levels. The plan arrangement fronting Pearse Street is organised into 4 main projecting 'finger' blocks of accommodation, separated by two glazed atria and a central public concourse. The two glazed atria form the main building entrances for Trinity College - west atrium - and the Commercial Offices - east atrium, with the central public concourse providing a major new entrance to Pearse Street Railway Station, as well as a retail shopping arcade.

Comment [DGL1]: Eight + 3 = eleven – so is it 7 to parapet and 3 recessed as penthouses or is it 2 recessed or is it 11 storeys? David

2.24 Recognising the sensitivity and small scale of residential buildings immediately east of the site across Sandwith Street, the complex steps down to achieve a frontage onto Sandwith Street which is equivalent in height to existing buildings further north along the same street, and introduces a significant planted roof garden element between this lower section and the full height sections of the complex further west.

2.25 The palette of materials chosen for the external finishes is intended to make reference to the manner in which historically significant buildings in the city have distinguished themselves from the surrounding urban grain through the use of high quality, more expensive materials such as stone and copper.

2.26 The materials therefore specified are white granite cladding, grey sythapulvin finished aluminum framed glazing elements, and pre-patinated copper cladding as accents to the east and west elevations, with copper cladding also highlighting the station entrance canopy and the Level 9 penthouse. Within the atria, timber effect cladding, to produce a warm, bright contrast to the street facades is specified. Although the palette of materials is traditional, the design is clean and contemporary, producing a fresh interpretation of these materials, distinct from their traditional associations with major historical buildings in Dublin.

3.0 PLANNING AND DEVELOPMENT CONTEXT

3.1 This section of the EIS provides an overview of the relevant planning policy at national, regional and local level as it applies to the development site.

3.2 It is an aim of the National Spatial Strategy (NSS) to achieve a more efficient Greater Dublin Area. One of the means through which this can occur is the consolidation of the urban form of the city. The redevelopment of a brownfield city centre site for a suitable mix of urban uses is consistent with this aim. The sectoral policy of the NSS in relation to education and research notes that the capacity for research and development should be strengthened. A key element of the proposed development is the provision of new facilities for Trinity College Dublin which be predominantly used to expand the research programme of the university.

3.3 The theme of urban consolidation is also found in the Regional Planning Guidelines for the Greater Dublin Area which also advocates the provision of high quality urban environments, priority for public transport and mixed use settlement. The subject site is currently used for surface car parking and storage. These uses are inconsistent with its city centre location. The redevelopment of the site will contribute to enhancing the urban realm in this area, generating increased pedestrian activity along Pearse St. The scheme will also facilitate a new entrance to Pearse St. station, which will be beneficial to the users of the station.

3.4 The Dublin Transportation Office (DTO) strategy, 'A Platform for Change,' and the government proposals of 'Transport 21' provide the basis for the future transportation network in Dublin. According to these plans, there is to be significant investment in the rail network in the city. Both plans incorporate an Interconnector Tunnel which would link Heuston Station in the west with East Wall. The Interconnector will pass through Pearse station and a new Docklands station. The latest date given in these plans for the completion of the Tunnel is 2015. The Interconnector will facilitate a significant increase in rail services, given that services are currently constrained by severe bottlenecks in the city centre. The proposed development facilitates a second entrance to Pearse station, which will be particularly beneficial to the future users of the station. It should also be noted that the DTO Strategy advocates locating developments that could generate high levels of trips along public transport corridors. The development of the subject site is consistent with this objective.

3.5 This site is situated in the functional area of Dublin City Council. The Dublin City Development Plan 2005 – 2011 is the relevant statutory planning document for the site. According to this plan, the site is zoned Z5, with the objective, "*To consolidate and facilitate the development of the central area, and to identify, reinforce, strengthen and protect its civic design character and dignity.*" This zoning promotes city centre, mixed use development which includes educational, office and retail uses. All uses proposed in the scheme are permitted uses under this zoning category. The development is compliant with the development control objectives of the plan. In addition, the development is in accordance with the objectives of the Development Plan in relation to education and economic development.

3.6 'Managing Intensification and Change – A Strategy for Dublin Building Height' provides guidance on the appropriate location of high buildings in Dublin. As a transport node, Pearse station is considered suitable for both individual high buildings and clusters of high buildings.

3.7 The subject site is within the study area of the City Quay and Westland Row Area Action Plan, which was prepared by the Dublin Docklands Development Authority. This plan identified the site as a vacant/ underutilised site located within a mixed use zone. It is considered appropriate for redevelopment for a mixed use scheme with active uses along street level. The plan identifies a number of factors which will have an influence on the height of buildings for this site. These have been taken into account in the design process for the present scheme.

4.0 HUMAN BEINGS

4.1 The Socio Economic chapter provides analysis of the population characteristics of the site and its context, to ascertain the impact of the development on this population. The relevant characteristics of the area were assessed using data from the 2002 Census. Preliminary results from the 2006 Census were also examined.

4.2 The subject site is located within the Mansion House A ward. This ward has experienced significant population growth (36%) in the intercensal period from 1996 to 2002, which is reflective of the ongoing rejuvenation of the Docklands area. As a result, the population of this ward is relatively youthful in comparison with Dublin City and the State as a whole. The population is noticeably skewed towards the 15 to 44 age bracket. Household size in the Mansion House A ward is below the average for the City as a whole, but is consistent with that of the neighbouring wards. The preliminary results from 2006 illustrate that

this rate of growth has slowed in more recent years to 4.5% during the period 2002 to 2006.

4.3 There is a substantial proportion of the population of this ward categorised as student, which is substantially above the adjoining wards and Dublin City. The percentage of the population of the area classified in the professional, technical and non manual social classes at 32% is substantially below the city percentage of 45%. By comparison, 45% of the population of the Mansion House A is categorised as all others gainfully occupied and unknown, which is significantly greater than the corresponding figure for Dublin City (25%).

4.4 The population of the ward was also examined in relation to socio economic groups. It was found that the largest social economic group (43%) was Category Z which is 'all others gainfully occupied and unknown.' The comparative figure for Dublin City is 26%. However, other wards in the vicinity of the site had similar patterns for socio economic groupings.

4.5 The principle socio economic impacts of the development are considered to be employment impacts and community impacts. The development will provide employment opportunities in the area both during the construction phase and thereafter. It is noted that the academic and office components of the building have a potential occupancy of between 1,400 to 1,700 persons. It is acknowledged that there may be some negative impacts for residents during the construction stage. However, it is expected that these impacts will be short lived. It is considered that the development will be generally positive as it will reinforce the position on Trinity College Dublin in this area, which is considered beneficial to residents.

5.0 LANDSCAPE AND VISUAL IMPACT

5.1 This section of the report looks at from where, in its surroundings, the proposed development would be visible. It assesses how significant the visual change is for those that would see the development compared with what they can see at the moment. It also looks at the quality of the landscape of the site itself and its surroundings and how this is affected by the proposed development.

5.2 The conclusions of this assessment are that:

1. Due primarily to the relatively dense urban grain and varied building heights of the surroundings to the site, the great majority

of those people with a view of the proposed building are within 750m of the site. In most instances those more distant from the site have only partial views of the building looking along streets on axes radiating from the site or over open areas (such as the Liffey) or areas of low-rise development.

2. Despite the large size of the building, the density and variable height and texture of its surroundings are such that for many of those with a view of the site only a part of the building would be visible across or through a fore- and middle-ground of other development, the significance of the impact generally being low and neutral as a consequence.

3. Only in close views from within c.150m of the site would some local residents, pedestrians, road and rail users and people in their place of work experience a high visual impact. For some, most probably local residents immediately to the south and east of the site and some workers immediately opposite, the impact is likely to be adverse, although for most of the remainder the impact would be neutral and for passing pedestrians and road users the building would have a beneficial impact in comparison with the current view of the site.

4. In terms of urban landscape character, the current appearance of the site detracts from the quality of the area generally. The provision of a new building would therefore be beneficial with regard to the site itself. In some views the impact of the new building would make a beneficial contribution to the townscape of the area, whilst in others the contrast of its large size with its surroundings would result in a neutral rather than a beneficial impact.

6.0 DAYLIGHT AND SUNLIGHT

6.1 The proposal is for a large building rising to about 37m above street level. It will feature as a landmark from all the approach roads and particularly from Sandwith Street Lower.

6.2 Its impact is greatly mitigated by the fact that it is north of what would be considered the most sensitive residential users in the surroundings, and that the subject-site has for many years been embedded in substantial railway buildings, bridges and embankments.

6.3 The buildings of which it is immediately south would not appear to be particularly sensitive users. Other buildings of which it is south are not close enough to be seriously affected.

7.0 CULTURAL HERITAGE – ARCHAEOLOGY

7.1 This report outlines the potential archaeological significance of a site under consideration for a proposed development at Trinity College, Pearse Street, Dublin 2. The purpose of the study is to assess the impact of the development on the receiving archaeological environment and to propose measures to safeguard any monuments, features or finds of antiquity.

7.2 The eastern side of the proposed development site is located within the Zone of Archaeological Potential of the historic town of Dublin (DU018:020). There are no recorded archaeological monuments are located within the boundary of the proposed development. Two recorded archaeological monuments are located within approximately 100m radius of the site – DU018-020325 a glass house site and DU018-020439 a brickfield site.

7.3 A triple basement of approximately 10m below present ground level is proposed for the entire site, the eastern third of which is situated inside the zone of archaeological potential of the historic city of Dublin (DU018-020). It is possible that archaeological features associated with Sandwith Street's former situation as the high-tide shoreline exist below the surface. Excavations in the vicinity of the south quays include a site at the corner of Townsend Street and Luke Street that has revealed evidence for a post-medieval river frontage and dock. Recent archaeological assessments in the northeast corner of Trinity College have revealed the presence of a 18th, 19th and 20th century houses.

7.3 Given the sensitive archaeological zone within which part of the development footprint lies and the triple basement proposed at the site, it is recommended that an archaeological impact assessment in the form of test excavation be carried out across the site and well in advance of construction. Such an assessment must be carried out by an archaeologist under licence to the Department of the Environment, Heritage and Local Government. The assessment will seek to ascertain the nature and in particular the uppermost level of the underlying archaeological deposits.

8.0 ARCHITECTURAL HERITAGE

8.1 Based on a study of the character of the site and its context, the historical development of the area in which it is set, and the nature of the proposed development, its physical form and proposed uses, the following impacts were identified as part of an architectural heritage impact assessment:

- The proposed uses and develoment strategy will be positive for the historic urban environment in which it is situated. The building will house a significant new educational institution, a new entrance to Pearse Station from Pearse St., as well as new live, retail, uses along the new streetfront on a derelict and underused site.

- The development will effectively complete the early 19th C Wide Street Commissioners' scheme for Great Brunswick St. (now Pearse St.) by infilling a site principally used as a surface carpark and creating a new building along a newly-set back frontage in line with the street width on adjacent blocks to east and west.

- The height of the proposed development is significantly greater than recent development to the west and is very much greater than the predominantly two-storey over basement mid-19th C houses to the east. There is a clear mitigation strategy evident in the way that the building is arranged vertically so that the top two floors are treated as a separate architectural element designed to be read from a distance. From the street, the building is designed to be read as a granite-clad five-storey element over a recessed two-storey street-level colonnade. Upper floors above the granite-clad element are set back to lessen the impact of the overall height when viewed from street-level.

- The disparity in height between the shoulder height of the proposed structure and other recent developments to the west (25.6m versus the 18.6m of Goldsmith House) will, however, result in some disruption to the spatial and visual continuity of the street.

- The impact on Sandwith St. and Erne St. to the east will be greatly mitigated by the lower shoulder heiight of this elevation, and by the considerable set-back proposed for the upper floors above shoulder height.

- The impact on the historic 1884 T. N. Deane designed railway station shed will be positive, but careful structural detailed design will be necessary when constructing the basement floors of the proposed development to ensure the stability of the directly adjacent north wall of the shed. The impact of the proposed new entrance to the station would be more positive if the architectural expression were less understated, especially when seen in three-quarter view from up and down Pearse St.

- From a study of the photomontages, it is apparent the proposed development will not be visible from street level in the Georgian area of Merrion and Fitzwilliam Squares, Merrion St., Fitzwilliam St. and Mount St.

9.0 TRAFFIC AND TRANSPORTATION

9.1 The purpose of this report is to support the planning application for the proposed mixed-use development (TCD BioSciences development) at the existing TCD Visitors' Car Park, on Cumberland Street South, off Pearse Street, Dublin.

9.2 The development would consist of 12,972 sq m of office development, 2,153 sq m of retail and 18,575 sq m of educational use (Trinity Biosciences Building), with 160 car and 331 cycle parking spaces provided within an underground car park. The development is anticipated to be fully occupied by 2008. The proposed development will replace an existing temporary car park for Trinity College with permission for 160 car parking spaces.

9.3 This report has been prepared following consultations with officers of the Dublin City Council (DCC). An initial scoping meeting was conducted prior to the preparation of this report to discuss basic traffic assumptions and study area coverage.

9.4 The report describes the existing conditions on the local road network and quantifies current traffic levels. The volume of traffic anticipated to be generated by the development has been quantified using available data from similar developments. Due to its low car parking provision, the proposed development is estimated to generate 78 and 66 car trips in the AM and PM peak periods, respectively.

9.5 A traffic impact assessment has been carried out for existing and proposed access junctions in the vicinity of the development including:

- Development Access/Cumberland Street South

- Pearse Street/Sandwith Street Upper/Sandwith Street
- Pearse Street/Cumberland Street South
- Pearse Street/Westland Row/Lombard Street Watling Street Development Access

9.6 The traffic analysis of the above junctions assessed the existing 2006 and 2008 "without" and "with development" traffic conditions and demonstrated that the impact of AM and PM peak development trips on the network will be slight. On the basis of this assessment, it is concluded that the traffic impact associated with the proposed development on the surrounding road network would be acceptable.

9.7 In order to further minimise and manage transport impacts, a Mobility Management Framework (MMF) is incorporated in this document. The MMF recommends a number of measures (public transport, car sharing, cycling and others) and also provides guidance on management and implementation.

10.0 AIR QUALITY

10.1 An assessment was undertaken of the impact on air quality and climate of the proposed TCD Biosciences Building. Both the construction phase and operational period were assessed.

10.2 Based on the data published by the EPA, air quality is currently within applicable air quality standards. Air quality is also likely to be within stricter limits applicable in 2010, apart from fine particulate matter, PM10, where further reductions will be required to ensure a comfortable degree of compliance in 2010.

10.3 Prior to commencement of works on site, surveys for hazardous substances and soil contamination should be carried out. Any such materials should be dealt with in accordance with legal requirements. This will ensure that there is no potential for hazardous materials becoming airborne during the construction phase.

10.4 During the excavation and construction phase, there may be potential for slight dust nuisance in the immediate vicinity of the site. The dust may be generated within the site, or due to truck movements on the haul routes. Adequate dust control measures, such as wheel washes, road cleaning, covering of fine material, and effective management, will be required to ensure the impact is minimised.

10.5 Construction traffic may result in a slight short-term increase in concentration of vehicle combustion pollutants in the vicinity of the site. The impact on air quality is negligible.

10.6 The completed development will generate additional emissions to atmosphere due to traffic associated with the development, due to boilers within the development and due to emissions from laboratory hoods. The resultant impact on air quality is however assessed to be negligible, and will not compromise efforts by the local authorities and the EPA to achieve the required air quality limits by 2010.

10.7 The proposed development has been assessed in the context of the national strategy on climate change. There is no inherent conflict with the national strategy. The developer should however take account of the general principles of the EU Directive on the Energy Performance of Buildings 2002/91/EC, and should liaise with the Sustainable Energy Ireland, the national energy authority, to keep abreast of evolving energy efficiency guidelines for commercial buildings.

11.0 NOISE

11.1 A noise impact assessment was undertaken for the proposed TCD Biosciences Building on Pearse Street, Dublin.

11.2 The existing daytime and nighttime noise environment is relatively high, and is determined primarily by traffic noise from Pearse Street.

11.3 The existing ambient noise levels at houses in the vicinity of the site range from 67 to 69 dB(A) L_{Aeq} during daytime, and around 57 dB(A) L_{Aeq} at nighttime. At nighttime, the mean underlying background noise was 42 dB(A) L_{A90}.

11.4 During construction, the one hour average noise level will vary depending on the activities underway and the distance from the main construction activities to the receiving properties. A construction noise limit of 70 dB(A) $L_{Aeq,10hrs}$ is proposed for this project, and is considered to be reasonably achievable using standard mitigation measures.

11.5 Construction vibration is expected to be comfortably within applicable standards, and is unlikely to be perceptible at the nearest residences.

11.6 Because of the high existing ambient noise level of 69 dB(A) on Pearse Street, noise from construction traffic going to and from the site will not be perceptible.

11.7 During operation, the potential impacts considered were those associated with increased traffic and building services noise. Noise from traffic to and from the underground car park will not be perceptible against the existing background level of 69dB(A) at the corner of Pearse Street and Cumberland Street. Building services noise impact at nighttime can be controlled to ensure negligible impact through appropriate specification of equipment noise emissions.

11.8 The principal mitigation measures recommended for this development are summarised as follows:

- Management of the construction phase in accordance with BS 5228 to ensure noise levels at nearby houses and sensitive locations are less than 70 dB(A) L_{Aeq}.

- Timber site hoardings, where required, to provide noise screening for adjacent sensitive properties during the construction phase.

- Specification, and design of external plant and building services to ensure that the resulting additional noise level at the nearest residences within the development, and at nearest houses outside the development is less than 35 dB(A) at nighttime.

12.0 SOIL AND WATER

12.1 The site is situated at the corner of Pearse Street and Sandwith Street, and bounded by South Cumberland Street on the west. The southern boundary of the site is defined by the Irish Rail viaduct running into Pearse Street Train Station.

12.2 The development consists of up to 10 storeys including University accommodation plus additional Commercial/Retail space over a 3 level basement on the old “An Post” site on Pearse Street. The basement is currently schemed as car parking plus academic facilities. Construction of the basements will require the reduction of ground levels across the site by up to approximately 11m. This will involve excavation of the soil and rock, and loading the excavated material into trucks for removal. The soil will then be transferred by road to an appropriately permitted or licensed site for re-use or disposal. Rock shall be transferred to an appropriately permitted site for re-use or disposal.

12.3 The topography of the surrounding area generally slopes from East to West towards St. Stephen’s Green, which is located approximately 1

kilometre from the centre of the site. There is a gentle gradient across the site, with ground levels decreasing from 2.7 metres above Ordnance Datum at the south-eastern boundary (Sandwith Street) to 3.4 metres above Ordnance Datum at the south-western boundary (Cumberland Street).

12.4 Based on a site investigation carried out by IGSL in 1999, the site is underlain by fill which is about 1.5 – 7.5m thick, which in turn is underlain by clay, silt, sand and gravels of a thickness of up to 7.0m. Beneath these deposits, a thick layer of cobbles and boulders (9.0m thickness) may be found overlying the 'Calp' limestone bedrock.

12.5 Typical groundwater levels for the site would be between -1.0 and 0.5mOD Malin. There are two potential aquifers present at the site, the bedrock and the fluvio-glacial gravels. The bedrock is classified provisionally by the GSI as a locally important aquifer, moderately productive in local zones. The fluvio-glacial gravels form the other potential aquifer in the region. This is not considered a major aquifer due to its limited thickness and extent. Groundwater flow in the gravels is believed to be from South to North, towards the River Liffey.

12.6 The fill on site exhibited minor levels of contamination in the soils with low concentrations of heavy metals, specifically cadmium, copper, lead and zinc. All these contaminants are below levels expected to impact human receptors and are suitable for disposal to an inert landfill. Gas was not recorded at elevated levels on the site.

12.7 Further site investigation is currently ongoing and this shall provide further data to fully characterise the site and supply comprehensive design parameters for the construction of the basement.

12.8 This section also reports on the water, foul/waste water and surface water drainage describes the existing environment and covers the likely impacts that maybe generated during the construction and operation of the new development in relation to these areas. An assessment is made of the mitigating measures as a result of this development.

13.0 FLORA AND FAUNA

13.1 An assessment of the likely ecological impacts of the proposed Trinity Biosciences development at Pearse Street, Dublin 2, was carried out by field survey and desk review.

13.2 The proposed development site has long been built ground, with no natural or semi-natural habitats present. The entire site can be accommodated in the general habitat class **Built land BL**. It is divided into two distinct units, the western two thirds, which is a car-park, and the eastern one third, which is used as a building site yard and storage area. The surface of the car-park is mostly tarmacadam, which can be accommodated in the habitat category **Buildings and artificial surfaces BL3**. Also in this habitat class is the high brick wall of the Pearse Street railway station. The wall supports few plants other than a few clumps of butterfly bush and some dandelions. At the base of the wall are a series of arches where rubble has been deposited. The rubble and associated debris provides a substrate for a few ruderal plant species. The eastern sector of the site comprises **Disturbed ground ED** that has been used as a yard for the storage of building materials. Parts are classed as **Bare ground ED2,** though patches have a covering of weedy plants and can be classed as **Recolonising bare ground ED3**. An old wall bounds the site along Sandwith Street.

13.3 No mammal species would be expected within the site, other than ubiquitous species such as brown rat and house mouse. While bats can occur in urban areas, at this site the only possible habitat is the wall of the train station. However, this has a smooth brick surface and there is no enclosed roof space. Therefore, it is considered that the potential of the site for bats is negligible. The only bird species recorded were feral pigeons, house sparrows and pied wagtails. The site has no suitable habitat for amphibians or reptiles.

13.4 Overall, this site has Negligible ecological interests. It is also totally surrounded by further developed land. The nearest designated site for conservation is the Grand Canal proposed Natural Heritage Area (code 02104) – situated just over 1 km to the east.

13.5 The principal impact during the construction phase of the project is loss of existing habitats. From a habitat, vegetation and flora perspective, such loss is not of significance as these are commonly occurring habitats and not of conservation importance. There are no known fauna species of conservation significance that would be affected by the scheme. The development of the site could not have any adverse impacts on the sites designated for conservation in the locality. Once constructed, the development would not be expected to have any adverse impacts on the flora and fauna of the area.

13.6 As there will be no impacts of significance on the habitats and the flora and fauna associated with the site, no mitigation measures are required in this instance.

13.7 Overall, it is considered that there will be no significant impacts on ecology by the proposed development.

14.0 MATERIAL ASSETS

14.1 The material assets section outlines the services which will be put in place to cater for the development. The development will be adequately served in terms of electrical supplies, telecommunications services, gas, water and drainage and heating.

15.0 INTERACTIONS

15.1 It is noted that a number of impacts associated with the development are interrelated, notably air quality and noise and air quality, noise, traffic and human beings. This EIS has sought to identify these impacts and where possible introduce appropriate mitigation measures.