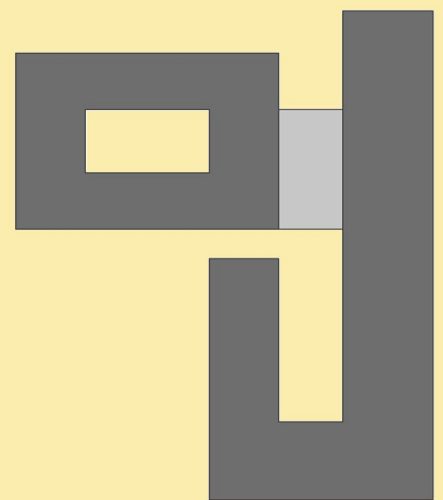


The National Maternity Hospital  
at St. Vincent's University Hospital



EIS Non-Technical  
Summary



## TABLE OF CONTENTS

### **1.0 Introduction**

- 1.1 Context of the EIS
- 1.2 The Assessment Process
- 1.3 Approach to the EIS
- 1.4 Consultation

### **2.0 Description of the Site and Surroundings**

- 2.1 St. Vincent's University Hospital Campus
- 2.2 The Site for the Development of the new National Maternity Hospital

### **3.0 Strategic Need for the New National Maternity Hospital**

### **4.0 Description of the Proposed Development**

### **5.0 Planning and Development Context**

- 5.1 National Level
- 5.2 Regional Level
- 5.3 Local Level

### **6.0 Outline of the Main Alternatives Considered**

- 6.1 Alternative Locations
- 6.2 Alternative Locations on the St. Vincent's University Hospital Campus
- 6.3 Alternative Designs
- 6.4 Alternative Processes /Mitigation

## **7.0 Summary of Predicted Environmental Impacts**

- 7.1 Human Beings
- 7.2 Traffic and Transportation
- 7.3 Soils, Geology and Hydrogeology
- 7.4 Hydrology
- 7.5 Flora and Fauna
- 7.6 Waste Management
- 7.7 Noise and Vibration
- 7.8 Air Quality & Climate
- 7.9 Microclimate
- 7.10 Visual Impact Assessment
- 7.11 Archaeology, Architectural and Cultural Heritage
- 7.12 Material Assets: Utilities
- 7.13 Interactions and Potential Cumulative Impacts
- 7.14 Difficulties in Compiling Specified Information

## 1.0 Introduction

This Document provides a summary of this Environmental Impact Statement (EIS) in non-technical language as is required by Directives 2011/92/EU and 2014/52/EU (“the EIA Directives”), the Planning and Development Act 2000, as amended, and the Planning and Development Regulations 2001, as amended.

This Non-Technical Summary is laid out in a similar, but condensed, format to the main EIS, describing the location, physical characteristics of the project, reasonable alternatives, current state of the environment, factors likely to be affected (such as population and human health, flora and fauna / biodiversity, soil, water, air, climate, material assets, cultural heritage, and landscape) and likely significant effects on those factors, principal mitigation measures proposed and residual impacts predicted (including interactions and potential cumulative impacts).

### 1.1 Context of the EIS

The EIS which accompanies the application for permission has been prepared to enable An Bord Pleanála to conduct an examination, analysis and evaluation of the direct and indirect effects of the proposed development of the new National Maternity Hospital at St. Vincent’s University Hospital Campus on the environment.

In its conclusion on the pre-application process, An Bord Pleanála stated that the application for permission in respect of the proposed development of the new National Maternity Hospital at St. Vincent’s University Hospital Campus should be made directly to the Board and, pursuant to the relevant statutory provisions, an Environmental Impact Statement [EIS] must be submitted with any such application

### 1.2 The Assessment Process

The EIA process requires the Board to carry out an assessment (which includes an examination, analysis and evaluation), in accordance with the relevant requirements of the EIA Directives, of the direct and indirect effects of a proposed development:

- a) human beings, flora and fauna,
- b) soil, water, air, climate and the landscape,
- c) material assets and the cultural heritage, and
- d) the interaction between the factors mentioned in paragraphs (a), (b) and (c).

This Non-Technical Summary sets out the environmental information collected with respect to the main EIS in a condensed form so as to enable the assessment by the Board of likely significant effects of the proposed development.

### 1.3 Approach to the EIS

The Non-Technical Summary contains a summary of the information set out in the main EIS in relation to the potential direct and indirect effects outlined above. The EIS addresses each of the subject headings in the following manner in each individual chapter:

- An introduction to the Chapter and the specific area of assessment.
- The methodology of assessment.
- The receiving environment – A description of the environment into which the proposal will fit.
- Characteristics of the proposed development - Outlines the specific aspects of the proposal paying attention to those that would be most relevant to the particular environmental feature in question.
- Potential impact of the proposed development – This includes a general description of the possible types of impacts which proposals of this kind would be likely to produce.
- Mitigation measures - A description of any specified remedial or reductive mitigation measures considered necessary resulting from the assessment of the potential impacts.
- Predicted impact of the proposed development - This section comprises an analysis of the impacts of the proposal on the environment, as identified by expert analysis having regard to the receiving environment, the potential impacts and the characteristics of the proposal. In addition, a “worst case” scenario and a “do-nothing” scenario is considered.
- Monitoring – This may be part of the mitigation measures and would include a description of any post development monitoring of environmental effects which might be necessary.
- Reinstatement – Where appropriate a description of reinstatement measures and the agencies responsible is provided.
- Interactions between environmental factors arising from the proposed development.
- Potential cumulative impacts – This provides an analysis of the potential cumulative impacts when the proposed development is assessed in the context of permitted developments in the surrounding area.

This EIS covers both the construction and operation periods of the proposed development.

## 1.4 Consultation

Consultation was undertaken with key stakeholders and the community which identified the environmental and community issues that needed to be taken into consideration in designing the proposed development and in assessing its potential affects. In relation to the process that informed this EIS, the consultation undertaken focused on the following:

- Early consultation to inform and help define the scope of the EIS in terms of what needed to be examined.
- Consultation during the process to identify any emerging issues, clarify any concerns and ensure that all relevant issues were considered.

The level of consultation undertaken is discussed in Chapter 1 of the EIS *"Introduction"* and in Appendix 1.2 of same.

## 2.0 Description of the Site and Surroundings

### 2.1 St. Vincent's University Hospital Campus

St. Vincent's University Hospital is located on a large site of 11.9 hectares that slopes from south to north with the ground levels falling from approximately +9.0m Ordnance Datum along the south falling to approximately +5.0m Ordnance Datum at the north close to the Merrion Road (the red line planning application area measures 10.55ha.). The Hospital Campus is set within the wider mixed land-use context of Elm Park in Dublin 4 and is bound by Merrion Road and Nutley Lane to the north, Elm Park Golf and Sports Club to the south and residential / commercial properties on Herbert Avenue to the east.

**Figure 1: Site Location Map**

The Campus has undergone significant development over the last 10 years which includes a new Clinical Services building, a new multi-storey car park facing onto Nutley Lane, a Breast Check Clinic to the east of the Campus off Merrion Road, a new ward block, the 'Nutley Wing', to the southwestern end of the Campus and the St. Vincent's Private Hospital at the easternmost part of the Campus. The Hospital is an ever evolving Campus, as evidenced in the Site Capacity Report submitted with this application, and elements are continually being upgraded and redeveloped.



**Figure 2: Aerial View of Existing St. Vincent's University Hospital Campus**



## **2.2 The Site for the Development of the new National Maternity Hospital**

The proposed site for the development of the new National Maternity Hospital on the St. Vincent's University Hospital Campus is to the east of the existing Clinical Services Building and the Main Ward Block. The site is bound to the north by the main internal access road, to the east by the road to the St. Vincent's Private Hospital and to the south by the Herbert Wing car park. The site is currently occupied by a series of single and two-storey structures which are connected to the Main Ward Block by an existing two-storey hospital street. The ground levels change over the site sloping from north to south and this has had a significant influence on setting out the optimum level strategy for the proposed development. The site is the only site on the Hospital Campus that offers the critical clinical linkages at theatre level that are fundamental to the operation of a co-located maternity Hospital.

Figure 3: Proposed National Maternity Hospital Site (outlined in green)



### 3.0 Strategic Need for the New National Maternity Hospital

Section 1.3 of Chapter 1 “Introduction” and Section 4.3 of Chapter 4 “Examination of Alternatives” of this EIS sets out the rationale for the development, having regard to the strategic need and the healthcare policy context. The main points are as follows:

- **Existing Infrastructure:** The existing National Maternity Hospital at Holles Street suffers from significant infrastructural constraints and the Hospital is unable to adequately delivery best quality healthcare to today’s modern standards.
- **Increasing demand in maternity services:** The three existing maternity hospitals in Dublin are under considerable pressure due to increasing growth in demand for maternity services. The capacity of the existing National Maternity Hospital at Holles Street is no longer sufficient to meet the service needs required by population growth.
- **Catchment Areas and Accessibility:** The existing service configuration of maternity hospitals in Dublin is sub-optimal in terms of the catchment areas which the hospitals serve and the accessibility of same.

- **The Current Model of Service Delivery:** The situation of having three stand-alone maternity hospitals in Dublin does not facilitate providing optimal care for high-risk mothers.
- **The Benefits of Co-Location:** The co-location of maternity services with adult acute services is a very significant step and necessary in providing the optimal setting in which the women of Ireland can deliver their babies with safety and with dignity.
- **Hospital Groups:** A key pillar of government policy on transforming the Irish health service is the establishment of six hospital groups in Ireland. The development of the new National Maternity Hospital at St. Vincent's University Hospital will lead the managed clinical maternity network for the Ireland East Group and it will support the smaller maternity units in the Group to provide a safe and high quality service.
- **Academic Synergies:** Academic linkages are essential to integrate teaching, training, research and innovation in the hospital system. These synergies maximise the economic potential for the wider community and optimise synergy between academic medical function, clinical leadership and service management.

#### 4.0 Description of the Proposed Development

This Strategic Infrastructure Development planning application is made by the Health Service Executive (HSE). The development as proposed is described as the development of the new National Maternity Hospital at St. Vincent's University Hospital Campus. A full description of the proposed development is provided in Chapter 2 of this EIS "*Description of the Development*" and is summarised in brief below.

Permission is sought for a period of 10 no. years for the development of the new National Maternity Hospital, comprising: a 244 no. bed maternity hospital; developments for St Vincent's University Hospital (including 38 no. in-patient beds) to replace existing facilities on site; new campus wide shared non-clinical support services; a shared service yard, an extension to the existing multi-storey car park and all ancillary site development, site services, utilities and landscaping works ("the proposed development"), all at the St. Vincent's University Hospital Campus, Elm Park, Dublin 4, D04 T6F4.

The proposed development will consist of a series of developments on a 10.55 ha. site on the St. Vincent's University Hospital campus comprising the following:



- The construction of a new 50,776 sq.m. gross floor area building to be developed on a site at the eastern end of the St. Vincent's University Hospital Campus adjacent to and connected with the St. Vincent's Clinical Services building. The proposed building will rise to five and six storeys plus additional plant areas at roof level over the prevailing ground level and a proposed basement to an overall height to parapet level of 41.285 m ODM (to top of liftshaft plantroom; 47.335m ODM to top of boiler flues). The new structure provides for the new National Maternity Hospital (to be relocated from Holles Street, Dublin 2) including the following medical and surgical specialities - maternity, gynaecology, paediatrics, neonatology, pathology, genetics, anaesthesia, emergency medicine, endocrinology/diabetes, pain management, oncology, colposcopy, urodynamics, fetal medicine, haematology and 244 no. beds; replacement facilities for St. Vincent's University hospital including a new dermatology unit, 2 no. SVUH wards (38 no. beds), SVUH medical records department, finance department offices, and; shared facilities including a new waste marshalling yard, deliveries yard, purchasing & stores department, catering department & canteen, clinical engineering and hospital sterile services department. Bridge/corridor links are proposed to the existing Clinical Services building and existing ward block at levels 0, 2, 3 & 4 and will include modifications to the existing laboratories within the existing St. Vincent's Hospital.
- The construction of temporary buildings (903 sq.m. in total) including; a single storey catering staff changing facilities, a single storey household services store, a single storey carpenters' workshop and a single storey temporary canteen and access corridor.
- The expansion of the existing multi-storey car park facility (11,884 sq.m. gross floor area; two levels vertically and a five level extension at its western end adjacent to Nutley Lane to an overall height of 18.84m ODM to top of lift shaft) to accommodate the additional parking demand associated with the National Maternity Hospital and the re-provision of existing campus spaces that are displaced due to the works. The enhanced facility will provide a net increase of 277 no. space on the campus in addition to 149 no. displaced spaces to accommodate a total of 922 no. spaces over five levels.
- Two new entrances to the multi-storey car park including a new access to the lowest level (Level 0) through the existing St. Rita's surface car park and a new high level access (Level 5) adjacent to the current access. The new low level access will be under the existing pedestrian link through the campus from the Merrion Road. The provision of the new access arrangements will necessitate the displacement of a number of spaces in both the existing multi-storey car park and

the adjacent St. Rita's surface carpark. The existing vehicular access point will be closed and a new taxi holding area will be provided adjacent to the western end of the extended car park close to Nutley Lane.

- The demolition of existing buildings comprising 8,765 sq.m. of space including; the existing canteen, catering staff changing facilities, transitional care unit, neurology unit pharmacy, energy centre including existing chimney stack, carpenters' workshop, electrical switch room, kitchens, purchasing stores, dermatology unit, waste marshalling yard and the nissen hut adjacent to the existing car park.
- The construction of: a new single storey ESB substation, switch room (119 sq.m.) and oil tank enclosure (236 sq.m.) adjacent to the existing Breast Check building; two new single storey bicycle store enclosures (170 sq.m. and 158 sq.m.) located to the south of the existing Nurse Education Centre for 192 no. bicycle spaces which in conjunction with new covered and convenience cycle spaces dispersed across the Campus will provide a net increase of 235 no. bicycle spaces, providing a total of 485 no. bicycle spaces on the Campus; a new single storey VIE enclosure to the south of the campus adjacent to the existing campus service road (91 sq.m.); and, a new single storey storage building adjacent to the multi-storey car park (110 sq.m.). Modifications to existing Herbert Wing Car Park including access ramp and steps to the new building and an ambulance set down area to the southern elevation.
- Proposed modifications to the existing road network within the campus to accommodate the new hospital building and car parking facilities, hard & soft landscaping elements to the perimeter of the proposed building including modification of ground levels, modifications to existing road junctions at Nutley Lane and Merrion Road (subject to the approval of the roads authority), a temporary construction access from Nutley Lane and general landscaping modifications to campus access routes.
- The proposed development also includes all ancillary site clearance, construction, site development and landscaping works, which include but are not limited to: the relocation of medical and surgical gasses, the diversion of existing hospital campus site services, new and replacement cycle spaces, new services, water mains and communications networks and all required phasing, sequencing and site development works.

Figure 4: Proposed National Maternity Hospital – Aerial View



Figure 5: Proposed National Maternity Hospital – North Elevation



Figure 6: Proposed National Maternity Hospital – East Elevation



Figure 7: Proposed National Maternity Hospital – Critical Clinical Linkages



## 5.0 Planning and Development Context

The statutory planning framework relating to the development is examined at the national, regional and local levels in Chapter 3 of this EIS “*Planning and Development Context*”. In addition, relevant non-statutory plans were considered. A brief overview of the relevant documents is provided below.

### 5.1 National Level

The documents assessed as part of the national level planning framework are listed below with a brief summary of each provided.

#### 5.1.1 Statutory Planning Policy Framework

- **National Spatial Strategy, 2002 – 2020:** It states that “*economic infrastructure, such as social infrastructure, relates to particular locations and is needed to support balanced regional development*<sup>1</sup>”. This principle formed part of the development of the gateway and hub approach adopted by the Strategy.
- **National Planning Framework; Ireland 2040:** A new National Planning Framework is currently being developed to succeed the National Spatial Strategy, 2002-2020. The National Planning Framework will provide a long term strategy for the spatial development of Ireland and will form the top tier of Ireland’s planning policy hierarchy. It will influence Regional Economic and Spatial Strategies and County Development Plans and through this it will provide a clear vision to guide future development and investment decisions. The consultation process for the National Planning Framework has commenced.

<sup>1</sup> National Spatial Strategy, 2002 – 2020, pg. 56.

### 5.1.2 Supplementary Policy Framework

- **National Maternity Strategy:** The National Maternity Strategy, 2016-2026, is Ireland's first Maternity Strategy and is intended to provide the framework for a new and better maternity service for Ireland. It sets out a vision for maternity services where, *"women and babies have access to safe, high quality care in a setting that is most appropriate to their needs; women and families are placed at the centre of all services, and are treated with dignity, respect and compassion; parents are supported before, during and after pregnancy to allow them give their child the best possible start in life<sup>2</sup>"*. To realise this vision, the Strategy identifies four strategic priorities set out as follows:

1. A health and wellbeing approach is adopted to ensure that babies get the best start in life. Mothers and families are supported and empowered to improve their own health and wellbeing;
2. Women have access to safe, high quality, nationally consistent, woman-centred maternity care;
3. Pregnancy and birth is recognised as a normal physiological process and, insofar as it is safe to do so, a woman's choice is facilitated;
4. Maternity services are appropriately resourced, underpinned by strong and effective leadership, management and governance arrangements, and delivered by a skilled and competent workforce, in partnership with women.<sup>3</sup>

With regard to maternity service provision, and specifically the co-location of maternity hospitals with adult-acute hospitals, the Strategy recognises the plans to redevelop the National Maternity Hospital at the St. Vincent's University Hospital campus, stating that:

---

<sup>2</sup> National Maternity Strategy, 2016 - 2026, pg. 13.

<sup>3</sup> National Maternity Strategy, 2016 – 2026, pg.13.



*"Four of our maternity hospitals are standalone facilities - the National Maternity Hospital, the Rotunda Hospital, the Coombe Women & Infants University Hospital and University Maternity Hospital Limerick. However, plans to redevelop the National Maternity Hospital on the St Vincent's Hospital campus are well advanced and a planning application is imminent. In addition, the increased funding available to the Department of Health under the Government's six year capital investment framework, Building on Recovery 2016 -2021, will enable a wider maternity capital programme towards the later years of the plan, involving the relocation of the Rotunda Hospital to the Connolly Hospital campus in Blanchardstown, and Limerick Maternity Hospital to the University Hospital Limerick campus at Dooradoyle. The Plan also includes the redevelopment of the Coombe Women & Infants University Hospital on the St James's Hospital campus, the site for the proposed children's hospital, thus ensuring the development of a tri-located adult/paediatric/maternity facility. A plan is therefore in place to ensure that all maternity hospitals in the country will be co-located with an adult acute hospital in the medium term.<sup>4</sup>"*

(GVA

Emphasis Added)

- **Building a Recovery: Infrastructure and Capital Investment, 2016 – 2021:** This Plan presents the Government's framework for infrastructure investment in Ireland over the period 2016 to 2021. The Plan is supportive of a reorganisation of national maternity services, specifically stating that, *"The National Maternity Hospital will be relocated to the St. Vincent's Campus."*<sup>5</sup>
- **Smarter Travel – A Sustainable Transport Future: A New Transport Policy for Ireland, 2009-2020:** A fundamental objective of this Document is the provision of a high quality, integrated and sustainable travel and transport infrastructure that supports the movement of goods and people.
- **National Cycle Policy Framework, 2009:** This Document outlines national policy for cycling, to create a stronger cycling society and a friendlier environment for cycling.

<sup>4</sup> National Maternity Strategy, 2016 – 2026, pg.14-15.

<sup>5</sup> Building a Recovery: Infrastructure and Capital Investment, 2016 – 2021, pg. 31.

- **Our Sustainable Future, A Framework for Sustainable Development in Ireland, 2012:** This Document puts in place a medium to long-term framework for advancing sustainable development and the green economy in Ireland.

## 5.2 Regional Level

The documents assessed as part of the Regional Level Planning Framework are listed below with a brief summary of the relevant provisions of each provided.

### 5.2.1 Statutory Planning Policy Framework

- **Regional Planning Guidelines for the Greater Dublin Area, 2010-2022:** The Core Principles of the Strategy Vision for the Guidelines include *inter alia* that development within the existing urban footprint of the Metropolitan Area will be consolidated to achieve a more compact urban form.

### 5.2.2 Supplementary Policy Framework

- **Transport Strategy for the Greater Dublin Area, 2016 – 2035:** The Transport Strategy for the Greater Dublin Area provides a framework for the planning and delivery of transport infrastructure and services in the Greater Dublin Area over the next two decades.

## 5.3 Local Level

St. Vincent's University Hospital Campus is located in the administrative area of Dublin City Council and therefore, the Dublin City Development Plan, 2016-2022 is the relevant statutory plan. The Dublin City Development Plan provides the local statutory planning policy for the City and is the principal document for guiding the development of the subject lands. A brief overview of the planning framework is provided below.

### 5.3.1 Statutory Planning Policy Framework

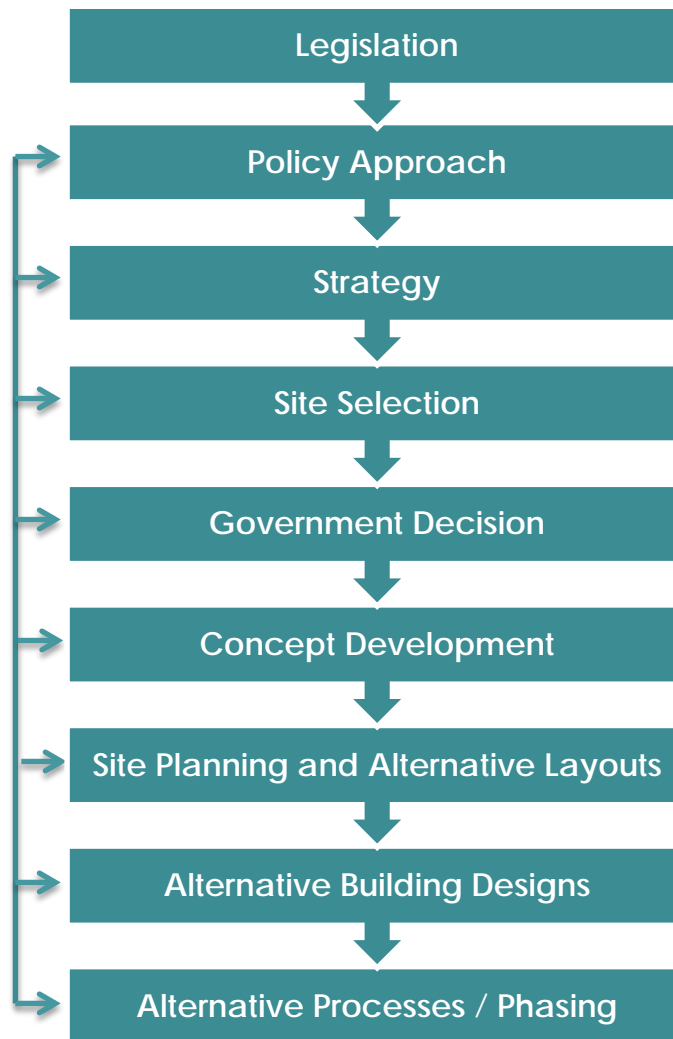
- **Dublin City Development Plan, 2016 – 2022:** Under the Dublin City Development Plan, St. Vincent's University Hospital Campus is zoned Z15, *"To protect and provide for institutional and community uses."* Under the Z15 zoning *"Buildings for the health, safety and welfare of the public"* and *"Residential Institution"* are permitted in principle and *"Car park ancillary to main use"* is open for consideration.

The Development Plan sets out a number of healthcare related policies that are of significance to the proposed development and include the following:

- Policy CEE21 makes specific reference to the proposed new National Maternity Hospital, recognising its strategic role in the City in terms of its national function, service provision, employment, economic benefit and contribution to the knowledge economy. In addition, Policy CEE21 provides specific support for the provision of the appropriate volume of floorspace and associated facilities to secure the delivery of the proposed new National Maternity Hospital.
- Policy CEE20 recognises the role of hospitals and the wider healthcare sector as major employers in the City and it is the policy of the Council to promote and facilitate their development and expansion.
- The Development Plan recognises the importance of developing academic medical centres that will provide excellence in research, care and teaching.
- Policies SN21 and SN22 support the enhancement of healthcare facilities in accordance with the requirements of the relevant healthcare authorities and acknowledge that the relevant healthcare authorities are best placed to determine the detailed requirements for individual facilities.

## 6.0 Outline of Main Alternatives Considered

The examination of alternatives provides an overview of alternative sites, designs and concepts that have been considered for the development of the new National Maternity Hospital. Chapter 4 of this EIS *"Examination of Alternatives"* examines alternatives at various levels as per the relevant EPA Guidelines. Integral to this process has been the consideration of a range of alternatives which have been subject to a sequential and iterative process in accordance with the stages highlighted in Figure 8 below.

**Figure 8: Examination of Alternatives Process**

## 6.1 Alternative Locations

The decision on where to locate the new National Maternity Hospital has been determined by the Government following extensive research, assessment and analysis. Reports produced included the KPMG Report *"Independent Review of Maternity and Gynaecology Services in the Greater Dublin Area"*, 2008, and the review of the KPMG Report *"Re-location of the Coombe and Rotunda Hospitals"*, 2012. Through this body of work a robust examination of alternative locations for the development of the new National Maternity Hospital has been undertaken. The policy requirement to deliver co-location of maternity hospitals with adult acute hospitals as well as the need to consider specific environmental factors have influenced the decision on potential locations for the development of the new National Maternity Hospital.

### 6.1.1 KPMG Report '*Independent Review of Maternity and Gynaecology Services in the Greater Dublin Area*', 2008

The HSE commissioned KPMG to prepare a report on maternity services in Dublin and the Eastern Region, and this was published in August 2008 under the title, "*Independent Review of Maternity and Gynaecology Services in the Greater Dublin Area*". The Report carried out an assessment of the current model of maternity service delivery, proposed a reconfiguration of service delivery, and recommended preferred sites based on clinical, access and demographic criteria.

The Report recommended that there should be three new facilities developed in the Greater Dublin Area to deliver maternity and gynaecology services. All three of the units were recommended to be co-located with an adult acute hospital while one would be tri-located on the site of the National Paediatric Hospital. The methodology adopted for identifying the preferred locations for the future service configuration included:

- **Ability to deliver co-location:** Whether the site had the clinical services required to deliver the benefits of co-location.
- **Accessibility:** The potential attraction of the sites within different configurations and the proportion of the population that would be able to access a maternity service.
- **Demographics:** Demographic analyses of where women aged 15-49 were living.
- **Catchment Areas:** Comparing the catchment areas of the potential sites with those of the existing service configuration.

The assessment found that, with the Mater Hospital site as a given tri-location site, the optimal location of the two co-location sites was the Adelaide and Meath Hospital (Tallaght) and St. Vincent's University Hospital. On the basis of the existing configuration of services, existing catchment areas and providing best access of services to users the Report recommended that the National Maternity Hospital services at Holles Street would move to St. Vincent's University Hospital.

### 6.1.2 Review of the KPMG Report '*Re-location of the Coombe and Rotunda Hospitals*', 2012

Following a Government decision in 2012 that the National Paediatric Hospital Project would be located at the St. James's Hospital Campus, it was thus necessary to locate one of the three new maternity hospitals on this Campus in order to deliver a tri-located service. This satisfied the key recommendation in the optimal service configuration as per the KPMG Report, 2008 for a tri-located site. However, as the recommendations for optimal

service locations in the KPMG Report were interdependent, a review of its findings was required. As the plans to relocate the National Maternity Hospital at Holles Street to St. Vincent's University Hospital were at an advanced stage, the review did not re-visit this decision but considered the following:

1. Whether the Coombe or Rotunda would move to St. James's Hospital; and,
2. Where the third maternity hospital would be located in order to optimise access for women while taking account of clinical and other relevant criteria.

In the context of the proposed development the Review of the KPMG Report, 2008 served two important purposes:

1. To endorse the proposed service configuration of two co-located maternity hospitals and one tri-located maternity hospital as per the key recommendation in the KPMG Report, 2008; and,
2. To review and update the locations of the services to ensure that the optimal configuration is achieved in order to achieve the delivery of an optimum, safe service for mothers and babies in Ireland

Environmental Topics Covered in the Examination of Alternative Locations	Human Beings (Social Patterns / Land-Use / Health and Safety / Settlement Patterns)
	Infrastructures - Accessibility
	Building and Structures

## 6.2 Alternative Locations on the St. Vincent's University Hospital Campus

A number of Feasibility Studies of the Hospital Campus were commissioned by St. Vincent's University Hospital prior to the appointment of the Design Team for this Planning Application. These Feasibility Studies originally looked at strategies for the potential future development of the site while more recently the capacity of the site was assessed in the context of accommodating the development of the new National Maternity Hospital. The Studies include:

- St Vincent's University Hospital Development Control Plan, 2005.
- Desktop Feasibility Study of Existing Buildings at Elm Park to accommodate the Co-Location of the new National Maternity Hospital with St. Vincent's University Hospital, 2012.
- St. Vincent's University Hospital Development Control Plan & Outline Feasibility Study for Co-Location of National Maternity Hospital on SVUH Campus, 2013.

The Feasibility Studies that assessed alternative locations for development on the St. Vincent's University Campus are set out in detail in Chapter 4 of this EIS "*Examination of Alternatives*" and considered a range of environmental topics.

Environmental Topics Covered in the Feasibility Studies	Human Beings (Land-Use / Health and Safety)
	Infrastructures – Accessibility / Traffic Management
	Building and Structures
	Waste Management
	Landscape (Landscape Context and Views)
	Site Services (Electricity / Water Supply / Drainage / Gas Supply)
	Water

### 6.3 Alternative Designs

The examination of alternative design options entailed a robust process which amalgamated design, spatial planning and clinical requirements. Upon appointment, the Design Team was required to carry out an in-depth review of the site having regard to all site constraints, brief requirements, environmental and planning issues and the operational requirements of St. Vincent's University Hospital. This was further informed by on-going consultation with Dublin City Council, Dun Laoghaire-Rathdown County Council, An Bord Pleanála and feedback from public consultation events. This multi-stage process fed into the design progression at every stage. Throughout the design process the Design Team developed and tested various options for the design of the building that considered the following:

- Building Form and Plan
- Building Footprint
- Building Height
- Building Massing Studies

The design development considered a wide range of issues throughout the process with the final design representing, in the view of the Design Team and Applicant, the most appropriate balance of the requirements of all stakeholders and adjoining properties. In particular, the options developed for the east elevation in terms of reduced height and setbacks have had a significant impact on the final design proposals and assist in mitigating the impacts on the residential amenity of the existing adjacent properties.

In addition to the new National Maternity Hospital building a number of design alternatives for the provision of car parking were reviewed to determine the most appropriate design solution for the Campus. These included:

1. Expansion of the existing multi-storey car park (vertical and horizontal).
2. Expansion of the existing multi-storey car park (vertical and horizontal) with alternative access arrangement.
3. Expansion of the existing multi-storey car park (vertical only).
4. Expansion of the existing multi-storey car park and a new Multi-storey car park.
5. New Multi-storey car park facility on the existing St. Rita's car park.

Option 1 was ultimately chosen as it provides efficient use of the existing Campus infrastructure, and provides flexibility in design and construction to facilitate a phased approach to the implementation of the car parking to match the displacement of existing Campus spaces, thereby mitigating the impact on the Campus and surrounding environment. This design proposal also maintains the strong priority given to the public realm access for pedestrians from the Merrion Road. The design process considered a range of environmental topics as shown below.

Environmental Topics Covered as part of the Design Process	Human Beings (Land-Use / Health and Safety)
	Flora and Fauna
	Soils
	Water
	Air Quality
	Noise and Vibration
	Climatic Factors
	Landscape (Landscape Character and Context)
	Historical and Manmade Landscape
	Views and Prospects
	Architectural, Archaeological and Cultural Heritage
	Site Services

## 6.4 Alternative Processes / Mitigation

In relation to alternative process, this primarily relates to the sequencing of the development and building construction processes and/or alternative uses on the site. Details of the alternative processes are provided in Chapter 4 of this EIS *"Examination of Alternatives"*.



## **7.0 Summary of Predicted Environmental Impacts**

The following sections of this Non-Technical Summary describe the project with respect to the environmental topic headings utilised in this EIS, as outlined in the draft 2015 EPA Guidelines and European Commission guidelines (where appropriate). Each item is described in its existing condition, with the effect, or impact of the project then described, together with any means that have been included to improve or protect the environment. Where relevant, mitigation measures are identified provided. A complete appraisal of each potential environmental impact is provided in the relevant Chapters of the main EIS.

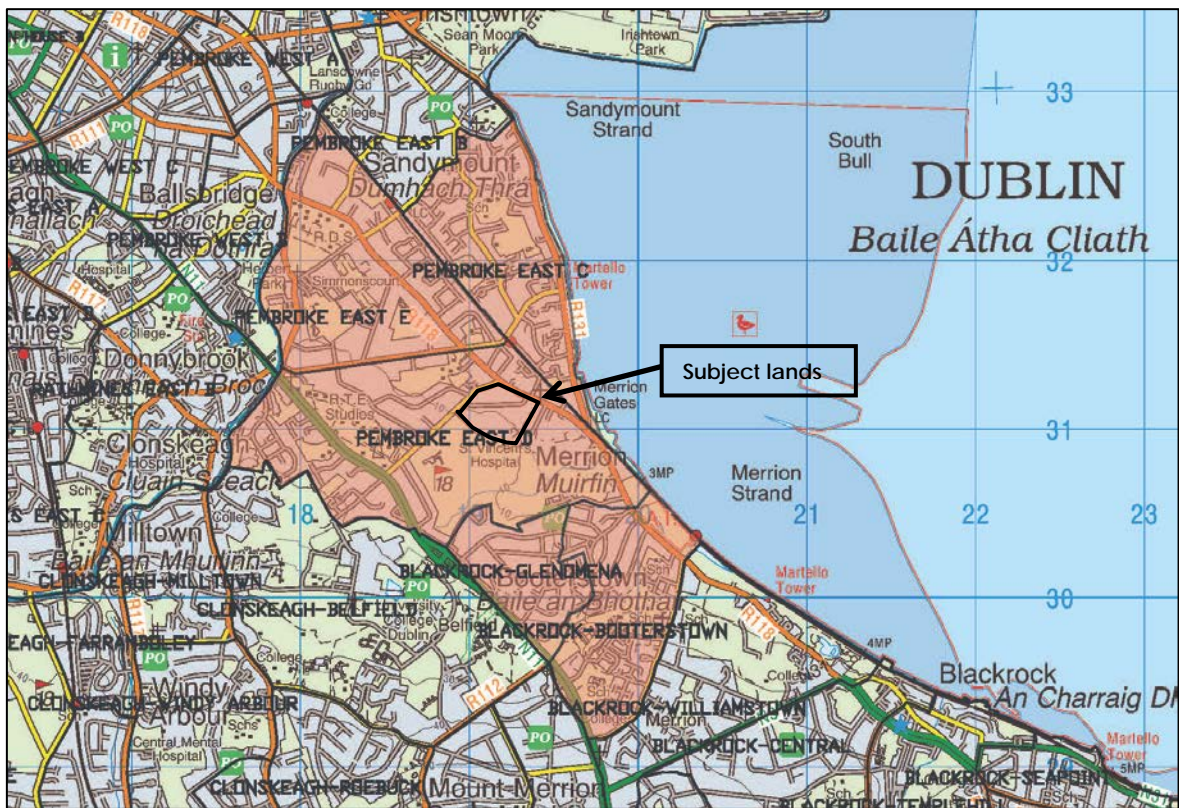
### **7.1 Human Beings**

The purpose of the Chapter on human beings is to assess the potential impacts that the development of the new National Maternity Hospital at the St. Vincent's University Hospital Campus may have on human health, social activity, economic activity and land usage in the receiving environment. The methodology for this Chapter involves the analysis, examination and compilation of baseline population and socio-economic data collected by the Central Statistics Office. In addition, planning and land-use documents for the area including the Dublin City Development Plan, 2016-2022, the Regional Planning Guidelines for the Greater Dublin Area, 2010-2022, and additional relevant documents have all been examined.

#### **7.1.1 Receiving Environment**

The receiving environment was examined at the national, regional and local levels. In relation to the local level impact, the development proposal lies within the 'Pembroke East D' Electoral Division of the Dublin City Area. A study area catchment of 5 no. Electoral Divisions was chosen and includes persons residing in lands between Booterstown Avenue to the south, the River Dodder to the west, Newgrove Avenue, Sandymount to the north and Strand Road to the east.

Figure 9: Population Study Area



### 7.1.2 Population

It is not envisaged that there will be any significant impact on the national and regional population during the construction phase. At a local level it is predicted that the proposal will not cause any significant increase or decrease in the population as it is anticipated that construction workers employed during this phase will travel from their existing residence rather than taking temporary accommodation in the local area. A short term, transient increase in the local working population on-site will be generated by construction employment.

In relation to the operational phase, the nature of the proposed development would not result in population redistribution at a national level. At the regional level, while the majority of employees would already be resident in the region, their relocation to St. Vincent's University Hospital Campus may result in a redistribution of a small portion of the population within the Region. It is expected that any such redistribution would be limited due to the accessibility of St. Vincent's University Hospital Campus by public transportation and also ties to existing places of residence. Therefore, the impact on population at a regional level is likely to be negligible. At the local level, an impact on the population is envisaged in terms of population growth as staff who are relocated to the St. Vincent's

University Hospital Campus choose to live in reasonable proximity and accessibility to their place of work. However, it is predicted that this will not be significant as it will occur over the medium to long term and will be positive in nature.

### 7.1.3 Employment

During the construction phase the delivery of the new National Maternity Hospital will be a substantial demand-side stimulus at a national level, which has the potential to provide significant benefits in terms of total economic output, employment and contribution to Gross Domestic Product. Given the existing levels of unemployment in the construction sector in the Region there are likely to be labour resources available, thus it is predicted that the jobs created would bring new employment to the Region as opposed to displacing existing employment. The benefits of the development of the new National Maternity Hospital in terms of economic output and employment apply most directly to the local area. Given the number of construction-related workers on the Live Register in the Dun Laoghaire local social welfare area and the overall Dublin area it is predicted that there is potential for employment during the construction phase at a local level.

At the national level, the impacts associated with the operational phase will relate primarily to the enhanced health care delivered by the new National Maternity Hospital and the associated economic and social benefits. As the development of the new National Maternity Hospital at St. Vincent's University Hospital Campus comprises the relocation of the existing National Maternity Hospital from Holles Street it is anticipated that staff will primarily be existing employees that are relocated to the Campus. Thus, it is predicted that the operation of the new National Maternity Hospital will not have a significant impact on employment regionally or nationally. The natural processes of resignations and retirements will mean that there will be a continual generation of employment in the medium and long term. Thus, it is predicted that the operational phase offers potential for longer-term positive economic impacts in the local area through the employment offered directly by the Hospital. In addition, the relocation of predominantly high-value staff to the Campus offers potential for the existing community including small and medium enterprises. It is predicted that the proposed development will have a positive economic impact on local businesses whose services may be availed of by staff, patients and visitors.

#### 7.1.4 Community

The lands surrounding St. Vincent's University Hospital Campus are urban in nature and comprise of a mixture of land uses typical of such a location. The receiving environment from a community perspective, therefore, comprises of three principal elements i.e. the resident community which includes the patients residing temporarily on Campus and the surrounding residential communities, the working community and the visiting community.

During the construction phase the **resident community** is likely to experience moderate impacts arising from loss of amenity associated with construction activity. Predicted impacts include *inter alia* an increase in the daytime noise levels in the locality, albeit not excessively intrusive, dirt and dust emissions arising from demolition and excavation works, impact on the local road network and visual impact attributable to a change to landscape and visual amenities. However, through the implementation of the mitigation measures as contained in this EIS proposed during the construction period, such impacts from the proposed development on the resident communities in the area will not be significant and any impact will only be temporary in nature.

The impacts of the proposed development during the construction phase will also be experienced by the **working community** and will result in a general loss of amenity. In this regard loss of amenity and accessibility issues described in this EIS in relation to "*Traffic and Transportation*" (Chapter 6), "*Noise and Vibration*" (Chapter 11) and "*Air Quality and Climate*" (Chapter 12) are likely to negatively impact both existing staff and temporary construction staff. However, through the implementation of the remedial and reductive measures as contained in this EIS during the construction period, such impacts from the proposed development on the working community will not be significant. The wider working community in the area will be more detached to the changes to the physical environment in comparison to those working on St. Vincent's Hospital Campus.

Impacts from the construction phase of the development on the **visiting community** will be temporary in nature and will primarily affect out-patients and other visitors to the Hospital insofar as it will generate general loss of amenity impacts. With the implementation of the mitigation measures contained in this EIS during the construction period, the impact of the proposed development on the visiting community will not be significant and any impact will only be temporary.

The completion of the new National Maternity Hospital and the commencement of its operation is predicted to be experienced as a significant positive impact by in-patients, as the quality of maternity care improves and the care environment is significantly enhanced. Potential impacts on the **resident community** during the operational phase relating to an increase in traffic and the impact upon the local road network are subject to mitigation proposals included as part of the Transport Strategy included in Chapter 6 "*Traffic and Transportation*". In relation to noise, it is predicted that subject to the implementation of appropriate noise and vibration control measures, the existing noise climate will not increase sufficiently or with such frequency so as to be likely to cause disturbance. Taking into consideration the significant improvement in healthcare services that the proposed development provides, the overall impact on the resident community during the operational phase of development is considered to be positive.

It is predicted that the **working community** of the new National Maternity Hospital, many of which will have transferred from the existing National Maternity Hospital at Holles Street, will experience a significant positive impact in relation to working conditions and the quality of facilities provided. In addition, there may be positive economic spin off for local businesses during the operational phase, where staff, patients and visitors avail of local services. Potential amenity impacts on the wider working community relating to impacts upon the local road network and noise are subject to mitigation measures as set out in the EIS. Taking into consideration the significant improvement in the working environment of the new National Maternity Hospital it is predicted that the overall impact on the working community during the operational phase of development will be positive.

It is predicted that the **visiting community** will experience a significant positive impact in relation to the quality of the facilities and the range of clinical specialities provided. Given that the wider visiting community will experience the proposed development in a more detached manner, and taking into consideration the mitigation measures set out in this EIS, potential amenity impacts are not predicted to be of a level as to cause significant disturbance. Thus, given the significant improvement in healthcare services at the Hospital it is predicted that the overall impact on the visiting community during the operational phase will be positive.

Overall the proposed development is specifically designed to have a significant positive permanent effect on human health. It is proposed to meet specific needs in maternity services at a national, regional and local level. It will reduce the risks currently experienced by mothers in difficulty that presently must transfer to St. Vincent's University Hospital by road by providing a direct clinical link from Maternity to Adult theatres. It will realise a key

objective of the National Maternity Strategy and other national level healthcare objectives.

## 7.2 Traffic and Transportation

A comprehensive traffic and transport assessment has been undertaken for the proposed development of the new National Maternity Hospital at St. Vincent's University Hospital Campus. This assessment coupled with national and regional planning and transportation policy forms the basis of the National Maternity Hospital at the St. Vincent's University Hospital campus transport strategy.

The Planning and Transport policy, both nationally and locally, places a particular emphasis on the importance of travel demand and mobility management. In this regard, St. Vincent's University Hospital Campus has a number of sustainable transport measures in place (e.g. paid staff car parking, cycle facilities etc.) These current effective mobility management measures have been in place for over ten years and the transport strategy set out in this EIS builds on these measures. The strategy also reflects the transportation requirements of the proposed development, the requirements of Dublin City Council, Dun Laoghaire Rathdown County Council, the National Transportation Authority and Government policy.

The existing St. Vincent's University Hospital campus is very well served by public transport. It has an excellent connection to Sydney Parade DART station, which is approximately four minutes' walk from the campus. Bus services along Merrion Road and Nutley Lane directly serve the campus while the high frequency services along the R138 Stillorgan Road corridor are within a ten minute walk of the campus. The capacity of the existing public transport system in this particular area far exceeds the current or proposed transport requirements, the addition of the National Maternity Hospital to the campus requires less than 1% of the capacity of the existing system. The '*Transport Strategy for the Greater Dublin Area, 2016-2035*' outlines proposed further investment to the wider public transport network providing even greater accessibility of the Hospital Campus, (e.g. DART expansion programme, Blanchardstown to UCD Bus Rapid Transit and improvements to the cycle network, especially along the Merrion Road-Rock Road corridor). These measures reflect ongoing commitment to the enhancement of public transport which will continue to support the hospital beyond the duration of this project for the period up to 2035. This transport investment aligns with the medium to long term development aspirations of the campus as set out in "Campus Capacity Study".

The sustainable transport strategy which forms part of this application contains a number of key objectives, these are:

1. Reduction in the modal share for car users from circa 50% (SVUH is 51% and NMH is 47%) to a combined 34% as agreed with DCC and the NTA.
2. Enhancement of the existing high quality sustainable transport measures currently being implemented by SVUH. For example, in 2015 SVUH was awarded the NTA's Cycling Workplace of the Year. This demonstrates existing active demand management, which provides a robust platform for proactive mobility management going forward.
3. Provision of a new stop for the existing UCD to DART shuttle at SVUH, this has been agreed by NTA and UCD and can now provide a link between the DART, SHVUH and the UCD bus terminus.
4. Provision of 235 no. net additional cycle spaces and improved general cycle facilities and 277 no. net additional car parking spaces.

Pedestrian and cyclists are well catered for with dedicated facilities in the vicinity of the Campus. Good quality footpaths along all of the routes and a number of controlled pedestrian crossing points are provided, while cycle facilities consist of a mix of shared use of bus lane and advisory lanes. Nutley Lane is a traffic calmed street which is suitable for cycling. The Campus itself is traffic-calmed and pedestrian and cycle friendly, with cycle parking as well as shower and locker facilities for staff provided.

Analysis of traffic surveys undertaken in October 2014 indicate that the peak hour periods along the road network were between 07:45 and 08:45 during the morning and between 17:45 and 18:45 during the evening. The peak traffic movements to and from the Campus only slightly overlap with the road network peak periods, with a morning peak of between 07:00 and 08:00 and an evening peak of between 16:00 and 17:00. As such, the Hospital peak traffic movements generally do not coincide with the road network peak times.

A similar set of traffic counts was carried on 18<sup>th</sup> January 2017 to ascertain whether the dataset utilised in this traffic analysis was still valid. While the results showed some decreases in the volumes on the wider road network on both AM and PM peak periods, the changes were generally small in magnitude. As such, the October 2014 survey data was deemed valid for a robust traffic assessment.



The existing car parking available in the area is made up of external on-street spaces, external private car parks and car parking spaces within the Campus. There are around 1,000 car parking spaces on Campus associated with patients, visitors and staff to St. Vincent's University Hospital, with staff charged for parking. There is limited car parking capacity on Campus during the day, with additional car parking spaces required to cater for the needs of staff and patients associated with the new National Maternity Hospital.

Staff travel surveys were carried out at both the existing National Maternity Hospital, Holles Street and St. Vincent's University Hospital, with the results showing a car driver mode share of 47% and 51% respectively. There would appear to be a bias towards car drivers in the surveys considering the limited availability of staff car parking at both locations.

Following the relocation of the existing National Maternity Hospital to St. Vincent's University Hospital over 4,000 no. staff will be employed between the two hospitals, with about 2,550 no. staff working during the core weekday hours. The main transport related proposals include an extension to the existing multi-storey car park along with new access arrangements (net increase of 277 no. spaces on Campus), approximately 485 cycle parking spaces (net increase of 235 no. spaces), motorcycle parking, set-down areas, Campus junctions improvements, a shared waste-collection/delivery area and showers, lockers and changing facilities within the new building.

Improvements for pedestrians include new crossing points on the main internal road as well as a direct crossing as part of the modifications to the Merrion Road Campus entrance. Cycling facilities will also be improved, with secure cycle parking provided and the route from the junction of Merrion Road and Nutley Lane widened to cater for cyclists.

The proposed improvements to the Nutley Lane and Merrion Road entrances will address issues which are currently being experienced during peak periods externally and internally, allowing the junctions to operate in a more efficient manner.

With regard to car parking, the multi-storey car park will be extended to accommodate displaced spaces (approximately 149 no. spaces) as well as the additional 277 no. car parking spaces required to cater for the needs of the new Hospital.

A Mobility Management Strategy is proposed to reduce the reliance of staff commuting trips by private car to the Campus. St. Vincent's University Hospital Campus already has a sustainable transport strategy in place (e.g. paid staff car parking, cycle facilities etc.) and the Strategy will build upon and enhance these measures. The implementation of the



Strategy, along with external improvements to the public transport and cycle network will contribute to achieving the staff modal split targets.

In terms of traffic generation and impact on the surrounding road network, the critical period will be the operational phase, as traffic flows generated by the construction works will be less than those when the new National Maternity Hospital is open.

It is anticipated that there will be a peak of 24 two-way Heavy Goods Vehicle movements, in any one hour period, to and from the Campus during the most intensive part of the main construction works (representing a maximum increase of 3% in traffic volumes along Nutley Lane). The impact of construction traffic will be mitigated through measures contained in the Construction Management Plan. This will include the provision of limited parking on the Campus for construction staff, which will be agreed in advance with Dublin City Council.

During the operational phase, it is estimated that the new National Maternity Hospital will generate a total of 152 no. two-way trips during the AM road network peak and 96 no. two-way trips during PM road network peak. There is a higher level of two-way trips associated with the new Hospital during the Campus AM and PM peak periods; however, these trips occur when the volume of traffic on the surrounding road network is lower.

The additional traffic generated will not have a significant impact on the neighbouring streets during the Campus or road network peak hour periods, with a projected increase in traffic volumes is less than 2.5% on most links. The main junctions impacted by the new development are the entrances to the Campus, with the morning peak having the most impact. Traffic at the Merrion Road entrance junction is expected to increase by 3.4%, while at the Nutley Lane entrance junction it is expected to increase by 6.8%. There is no significant increase at any of the other junctions in the vicinity of the Campus.

The junction capacity analysis carried out shows that while critical movements at key junction are currently at or over-capacity during peak periods, the additional traffic generated by the new Hospital will not have a significant impact in terms of capacity of queuing. The proposed improvements at the Merrion Road and Nutley Lane entrances will also have a positive impact, with queuing along Nutley Lane during the morning peak reducing.

In summary, the proposals include a number of measures which will encourage and promote travel by walk, cycle and public transport to the Campus, while also including infrastructure upgrades to manage traffic in a more efficient manner into and out of the Campus. A sufficient number of car parking spaces will be provided to cater for the needs of patients and visitors as well as staff associated with the new Hospital.

As demonstrated by the present assessment, the development of the new National Maternity Hospital at St. Vincent's University Hospital will not have any significant traffic impact on the road network during the construction and operational stages.

### 7.3 Soils, Geology and Hydrogeology

The Soils, Geology and Hydrogeology assessment has been prepared in accordance with guidelines from the Environmental Protection Agency (EPA) and Institute of Geologists of Ireland. The study area consists of a 2km radius around the proposed development.

The existing environment of the proposed development in terms of soils, geology and hydrogeology has been determined from publically available data, desk studies and site specific investigations. The proposed development is located within a Type A environment, defined by the Institute of Geologists of Ireland Guidelines as: "Passive geological / hydrogeological environments e.g. areas of thick low permeability subsoil, areas underlain by poor aquifers, recharge areas, historically stable geological environments".

The soils and subsoils under the proposed development are predominantly near surface deposits of made ground and cohesive boulder clays with localised deposits of glacial sands and gravels. The underlying bedrock is Calp limestone. Both the soils and geology have been assigned an importance ranking of 'Low' as they are not regionally unique.

Geological and hydrogeological features, such as historic pits, aggregate deposits, a geological heritage area, wells, rivers, SAC, SPA and pNHA were identified within 2km of the proposed development. Due to the characteristics of the proposed development, these features could not be impacted by the development and are therefore not considered further as part of the assessment.

The regional groundwater body resides within the bedrock and is a Regionally Important aquifer which is classified as having an importance ranking of 'High'. However, there is a thick layer of low permeability boulder clay between it and the proposed development. This will serve to isolate and protect the aquifer from the activities on site.

Localised perched groundwater is present in the made ground and granular sand and gravel lenses. These are not considered to be a groundwater resource and are not hydraulically connected to any of the features identified. Low levels of contamination in the made ground have been detected from previous site investigation data and historic land use indicates the potential for localised pollution hotspots throughout portions of the soils across the proposed development. These will be tested and disposed of to an appropriately licenced facility if encountered during the excavations.

The proposed development consists of a deep excavation below the water table. A secant pile cut off wall has been identified in the design as a suitable method of controlling groundwater during construction of the basement. The building structure will be predominantly supported on pad foundations. Any of the potential impacts during construction and operational phase are negligible to small adverse in magnitude and have an imperceptible significance on the soils, geology and hydrogeology.

A number of mitigation measures are outlined to control accidental pollution and damage to the soils, geology and hydrogeology during construction including monitoring and testing of excavated soils for contamination.

With the implementation of appropriate mitigation measures, the overall predicted impact to the soils, geology and groundwater is considered to be imperceptible during the construction and operation of the development. The soils, geology and hydrogeology activities interact with the traffic and transportation, hydrology, noise and vibration, air quality and waste management activities.

## 7.4 Hydrology

An assessment of the potential impacts associated with both the construction and operational phases of the project on the hydrological and drainage environment was undertaken. The potential flood risk has also been assessed.

Surface water bodies that are considered to be relevant to the proposed development, include the Elm Park Stream (also known as Brewery Stream), Nutley Stream and Trimleston Stream. South Dublin Bay is also located <1km east of the site.

Potential impacts to surface water quality and character of receiving waters are associated with increased sediment runoff and accidental spillage of polluting substances entering surface watercourses. These potential impacts are of concern for both the construction and operational phases and a broad suite of mitigation measures has been detailed to address these impacts, consisting of sustainable urban drainage systems, management plans, appropriate construction methods and pollution control measures.

Surface water run-off from the developed site will be restricted to greenfield run-off rates of 2 litres/second/hectare in conjunction with storm attenuation for storms up to and including the 1 in 100 year event. The new restricted peak flow discharge from the developed site is a 95% reduction of the existing peak flow rate discharging into the receiving systems.

Partial infiltration and greenroofs along with permeable paving and increased landscaped areas of the development site will reduce the volume of run-off discharging to the receiving surface water sewerage system on Merrion Road which outfalls into Dublin Bay at the Merrion Gates.

The site has no history of flooding and it is not anticipated that the proposed development will increase the risk of flooding.

Consultations with Dublin City Council Drainage Division has confirmed that there is capacity in the existing sewerage network to meet the daily increased hydraulic foul loading from the proposed new development and peak flow discharges.

Consultations with Dublin City Council Water Division has confirmed that there are no known constraints on the watermains network that would suggest a difficulty in providing a connection to the proposed development.

## 7.5 Flora and Fauna

An assessment of the likely impacts on flora and fauna associated with the development of the new National Maternity Hospital at the St. Vincent's University Hospital was undertaken. The assessment considered the potential direct, indirect and cumulative ecological impacts on terrestrial and aquatic ecology within the ecological study area (zone of influence) of the proposed development. The assessment was undertaken in line with a number of guidance documents, which included the *Guidelines for assessment of Ecological Impacts of National Road Schemes* (National Roads Authority, 2009) and is consistent with *Guidelines for Ecological Impact Assessment* (CIEEM, 2016).

The footprint of the proposed development consisted of the following habitat types, which follow the Guide to Habitats in Ireland (Fossitt, 2000):

- Amenity Grassland (GA2);
- Scattered Trees and Parkland (WD5);
- Buildings and Artificial Surfaces (BL3); and,
- Ornamental/Non-native Shrub (WS3).

A number of specialist surveys were carried out to establish the baseline ecology of the proposed site including:

- Habitat Surveys; and,
- Bat surveys.

There are 18 European designated sites located within 15km of the proposed development. The nearest European designated sites are South Dublin Bay Special Area of Conservation (000210) and South Dublin Bay and River Tolka Estuary Special Protection Area (004024), which are both located c. 380m east of the proposed development site.

During the assessment process, it was not possible to rule out potential linkages between the proposed development site and the European sites in Dublin bay in the form of the surface water drainage network. Adherence to the site-specific mitigation measures included in the Draft Construction Management Plan will ensure no risk of adverse effects on these sites in Dublin Bay, either alone or in-combination with other plans or projects, for the relevant European sites. A Natura Impact Statement was prepared to provide the relevant authority with information to carry out the Appropriate Assessment which focuses specifically on potential impacts on these European sites.

There were no records of rare or protected species within the site or environs. Invasive plant species Wall Cotoneaster was recorded within the proposed development site. Bat activity was only recorded along the treeline located south of the proposed development site.

Key sources of potential significant impact arising from the proposed development have been identified as a result of: surface water run-off during construction, and temporary lighting during construction; and, permanent lighting during operation. Prior to implementation of mitigation, the proposed development could result in a range of significant impacts, which include: impacts on European sites as a consequence of contaminated surface water runoff entering the local drainage network and ultimately discharging to Dublin Bay; and, impacts on bats as a consequence of lighting.

Mitigation measures for potential impacts include:

- Adherence to the site specific mitigation measures included in the Outline Construction Management Plan to ensure no contamination of surface water;
- Adherence to advice provided in '*Bats and lighting – Guidance for Planners, engineers, architects and developers*' (Bat Conservation Ireland 2010); and,
- Lighting plan to be reviewed by a suitably qualified bat ecologist in order to avoid any impacts on bats.

Following implementation of mitigation measures, no significant residual impacts are anticipated either during the construction phase or the operational phase of the proposed development.

## 7.6 Waste Management

An assessment of the likely impacts associated with waste management during the construction and operational phases of the development of the new National Maternity Hospital at St. Vincent's University Hospital Campus was undertaken.

In terms of waste management, the receiving environment is largely defined by Dublin City Council as the Local Authority responsible for setting and administering waste management activities in the area. This is largely governed by the requirements set out in the Eastern-Midlands Waste Management Plan, 2015 – 2021.

A significant quantity of waste will be generated during the demolition, excavation and construction phases of the proposed development. The estimated waste arising are circa 5,706 tonnes of demolition waste (circa 81% of which would be suitable for reuse/recovery/recycling), 254 tonnes of construction waste (circa 70% of which would be suitable for reuse/recovery/recycling) and 84,137m<sup>3</sup> of excavated material (i.e. made ground and overburden). Based on the environmental sampling of the made ground undertaken on the site, the classification of the made ground for disposal purposes ranges from inert to non-hazardous. None of the material sampled was classified as hazardous for disposal. However, there is a risk that localised ground contamination has occurred on the site.

The proposed development will give rise to a wide variety of waste streams during the operational phase. These waste materials will comprise healthcare non-risk non-hazardous wastes (i.e. organic waste, dry mixed recyclables, mixed non-recyclables, confidential paper, glass, polystyrene, furniture) as well as non-clinical hazardous wastes (i.e. batteries, waste electrical and electronic equipment, printer cartridges, fluorescent tubes, waste cooking oil, waste sludge from grease traps, cleaning chemicals etc.). In addition, there will be healthcare risk wastes generated, chemical waste (i.e. spent and expired chemicals from laboratories) and radioactive wastes. These waste streams are already generated at the existing St. Vincent's University Hospital. The proposed development will increase the quantity of waste generated by circa 42%. The predicted waste generation for the new National Maternity Hospital combined with the waste generation rates for St. Vincent's University Hospital is circa 42.66 tonnes per week, 2,218 tonnes per annum.

Site specific Construction and Demolition and Operational Waste Management Plans have been prepared and included as Appendices 10.1 and 10.2 to Chapter 10 of this EIS, to detail the anticipated waste types, weights/volumes and procedures for effectively managing the waste.

If waste generated during the construction and operational phases is not managed and stored correctly, it is likely to lead to litter or pollution issues at the sites and/or on adjacent developments. The knock-on effect of litter issues is the presence of vermin within the development and surrounding areas. If potentially contaminated excavated materials are not correctly identified, segregated and appropriately classified, there may be incorrect handling of the material which could impact negatively on construction workers as well as water and soil environments, both onsite and offsite. The use of non-permitted waste hauliers and non-registered/permitted/licenced receiving facilities could give rise to the inappropriate management of waste and result in negative environmental impacts and

pollution causing harm to a range of environmental receptors. Where the procedures outlined in the site specific waste management plans are not implemented, it is unlikely that targets for reuse, recovery and recycling as set out in the new Regional Waste Management Plan and Waste Framework Directive will be achieved.

As previously noted, Construction and Demolition and Operational Waste Management Plans have been prepared for the proposed development with detailed procedures for management of waste arising during the construction and operational phases in accordance with national and local legislation as well as the Regional Waste Management Plan for the Eastern-Midlands Region. Key mitigation measures outlined in the Waste Chapter (and further detailed in the Waste Management Plans) include:

- Adherence to the waste hierarchy for management of waste materials (i.e. reduce waste, where possible, or reuse/recover/recycle waste material that cannot be avoided). Disposal of waste to landfill shall be the last resort where no alternatives are available;
- Segregation of wastes at source into appropriate categories;
- Identification of designated waste storage areas with appropriate signage;
- Colour coding of waste receptacles to avoid cross contamination and location of receptacles in easy to access areas;
- Using permitted waste hauliers and authorised waste facilities;
- Recording and keeping documentation related to waste on site/at the facility; and,
- Engagement with the relevant Local Authority regarding the proposed end destinations for waste materials prior to the commencement of the construction phase.

These mitigation measures (and others as presented in the Waste Chapter and site specific Waste Management Plans) will ensure that waste arising from the development are dealt with in compliance with the provisions of the Waste Management Act 1996 as amended and sub-ordinate and associated regulations, the Litter Act of 1997 as amended and the Eastern-Midlands Region Waste Management Plan, 2015 - 2021. It will also ensure optimum levels of waste reduction, reuse, recycling and recovery are achieved.

A carefully planned approach to waste management and adherence to the Construction and Demolition Waste Management Plan during the construction phase will ensure that the impact on the environment will be neutral, short-term and imperceptible. During the operational phase, a structured approach to waste management will promote resource



efficiency and waste minimisation. Provided the Operational Waste Management Plan is implemented and a high rate of reuse, recycling and recovery is achieved, the predicted impact of the operational phase on the environment will be neutral, long-term and imperceptible.

## 7.7 Noise and Vibration

An assessment into the likely noise and vibration impact associated with development of the new National Maternity Hospital at St. Vincent's University Hospital Campus was undertaken.

The existing noise climate has been surveyed during both daytime and night-time periods in the vicinity of the proposed development. The existing noise environment and has been found to be typical of a suburban area. Prevailing noise levels are primarily due to local and distant road traffic movements with some contributions from plant noise in other nearby developments.

When considering developments of this nature, the potential noise and vibration impact on the surroundings must be considered for each of two distinct stages: the short term impact of the construction phase and the longer term impact of the operational phase.

During the construction phase it is expected that there will be some temporary impact on the nearest noise sensitive locations due to noise emissions from the site. However, given that the construction phase of the development is temporary in nature, it is expected that the various noise sources will not be excessively intrusive. Furthermore, the application of binding hours of operation, along with implementation of appropriate noise and vibration control measures, will ensure that the noise and vibration impact is controlled to be within acceptable standards.

During the operational phase, potential causes of disturbance vary depending on the development as follows:

- Building services noise;
- Additional vehicular traffic on public roads;
- Car parking on site, and;
- Waste and service yard areas.

During the operational phase, mitigation measures are not deemed to be required for additional vehicular traffic, car parking or waste/service yard activities. Mitigation has been proposed for building services noise and, generally, shall include the following measures:

- Housing the majority of noisy plant internally;
- Acoustic screening around external rooftop plant;
- All AHU's will be provided with intake and exhaust attenuation;
- Roof top chillers will be installed with anti-vibration mounts, operate low speed fans and include additional attenuation at compressors;
- Burners to boiler plant in the basement will be provided with acoustic shrouds;
- Suitable attenuation will be provided to the generator air intake and exhaust locations;
- Suitable attenuation measures will be provided to local exhaust systems such as toilet areas, and;
- Suitable attenuation will be provided to air intake to basement medical and surgical air plant rooms and medical vacuum plant rooms.

It has been predicted that, subject to the implementation of appropriate noise and vibration control measures, that activities during both construction and operational phase of the development will not increase the existing noise climate sufficiently or with such frequency so as to be likely to cause disturbance.

## **7.8 Air Quality and Climate**

An assessment into the likely air quality and climate impact associated with the development of the new National Maternity Hospital on the St. Vincent's University Hospital Campus has been undertaken. The assessment has been conducted in the context of current relevant standards and guidance, and identifies any requirements or possibilities for mitigation.

In terms of the existing air quality environment, baseline data and data available from similar environments indicates that levels of nitrogen dioxide, carbon monoxide, particulate matter less than 10 microns and less than 2.5 microns and benzene are generally well below the National and European Union (EU) ambient air quality standards.

The operational impact of the development was assessed for the pollutants nitrogen dioxide, particulate matter less than 10 microns, particulate matter less than 2.5 microns, carbon monoxide and benzene using the UK Design Manual for Roads and Bridges screening model which is a recommended screening model for assessing the impact of traffic on air quality. The inputs to the air dispersion model consisted of information on road layouts, receptor locations, annual average daily traffic movement's, annual average traffic speeds and background concentrations.

Modelling a scenario whereby the development does not progress for both the opening and design years indicates that concentrations are within the EU ambient air quality standards under all scenarios and all five pollutants assessed. In addition, the impact of the traffic from the development of the new National Maternity Hospital compared to the respective EU limit values for the pollutants was assessed. Based on the UK Design Manual for Roads and Bridges modelling results, the impact of the development in terms of ambient levels of nitrogen dioxide, particulate matter less than 10 microns, particulate matter less than 2.5 microns, carbon monoxide and benzene is considered imperceptible. Mitigation measures in relation to traffic-derived pollutants have focused on improvements in both engine technology and fuel quality with vehicles over recent years significantly cleaner than those prior to this period.

With regard to regional climate impacts, the impacts of the development was assessed against limits set out in the *"Proposal for a Directive on the reduction of national emissions of certain atmospheric pollutants and amending Directive 2003/35/EC"* which establishes new national emission reduction commitments which will be applicable from 2020 and 2030 for oxides of nitrogen and volatile organic compounds. With respect to carbon dioxide emissions, the EU has published the *"20-20-20 Climate and Energy Package"* which calls for a 20% reduction in greenhouse gas emissions, a 20% share of renewable energy and 20% energy efficiency improvements by 2020. The regional impact of the development of the new National Maternity Hospital was assessed using the UK Design Manual for Roads and Bridges for regional emissions. With respect to the EU *"20-20-20 Climate and Energy Package"* and *"Proposal for a Directive on the reduction of national emissions of certain atmospheric pollutants and amending Directive 2003/35/EC"* the assessment has found negligible impacts due to the development of the new National Maternity Hospital.

There is the potential for air emissions as a result of the energy requirements of the proposed development. Boilers, generators and CHP engines are likely to emit Nitrogen Oxides (NOx) when in operation. The heat and energy requirements on site are proposed

to be provided by the installation of a 500kW gas fired combined heat and power plant. A conservative model results show that predicted ambient concentrations of NO<sub>2</sub> are below the short term and long term limit values at a stack height of 47.3 m.

The greatest potential impact on air quality during the construction phase is from construction dust emissions, particulate matter less than 10 microns emissions, particulate matter less than 2.5 microns emissions and the potential for nuisance dust, asbestos and aspergillus. An Asbestos Report published in 2013 by About Safety Ltd. on behalf of St. Vincent's University Hospital found significant amounts of asbestos containing materials across the Hospital including in the blocks which will be demolished as part of the enabling works for the development. Prior to commencement of the demolition works, all asbestos containing materials identified will be removed by a suitably trained and competent person. In order to minimise dust emissions during construction, a series of mitigation measures have been prepared in the form of a Dust Minimisation Plan. When the dust minimisation set out in the Plan is implemented, fugitive emissions of dust from the site will be insignificant and pose no nuisance at nearby receptors.

## 7.9 Microclimate

### 7.9.1 Daylight, Sunlight and Overshadowing

The potential impact to daylight and sunlight to dwellings (and their gardens) surrounding the site of the development of the new National Maternity Hospital at St. Vincent's University Hospital Campus, has been assessed. The potential for reflected solar glare from the proposed development has also been considered. The assessment has been made using the guidance in the BRE Report '*Site layout planning for daylight and sunlight: a guide to good practice*', cited by Dublin City Council in its Development Plan.

The nearest dwellings are on Herbert Avenue, Merrion Road and Nutley Lane. Following construction of the new development, loss of daylight to these dwellings would be small, within the BRE Guidelines. The impact is classed as negligible. Loss of sunlight to dwellings on Merrion Road and Nutley Lane would also be small and within the BRE Guidelines, and classed as negligible. Loss of sunlight to the windows facing the new development at the rear of dwellings on Herbert Avenue is not an issue because they face north west.

Loss of sunlight to gardens would be classed as a negligible impact. The proposed building's shadow would not encroach onto the gardens at Herbert Avenue until the late afternoon, and these gardens would receive ample sunlight at other times. Rear gardens of dwellings on Nutley Lane and Merrion Road would be unaffected by the proposed

development. Sunlight to the Elm Park golf course would not be affected because the proposed development would lie to the north of it.

The risk of solar glare reflected from windows or cladding in the proposed development is assessed as negligible. The proposed development would not have large areas of glazing. Window areas would be similar to those within the existing Hospital and no areas of reflective cladding or mirror glass have been proposed. Drivers travelling south east on Merrion Road would not experience reflected sunlight from the proposed development, and those travelling in other directions would only view it at an oblique angle, which would not result in significant glare.

### 7.9.2 Light Effluence

The potential impact of night-time light effluence to areas surrounding the development of the new National Maternity Hospital at St. Vincent's University Hospital Campus in Dublin has been assessed. Guidance is given in various documents including the Institution of Lighting Professionals Guidance Notes for the Reduction of Obtrusive Light GN01:2011<sup>6</sup>, and IS EN 12464-2:2014<sup>7</sup>. They give recommended limits on the amount of spill light to windows of neighbouring dwellings, on the brightness of light sources when viewed from a house or garden, on the brightness of floodlit buildings, and on how much upward light there is. Upward light causes sky glow, making it difficult to see the stars.

The nearest residential dwellings are located to the East along Herbert Avenue. Spill light to other dwellings, on Merrion Road to the North East and on Nutley Lane to the North West, would be very small, and much less than the existing spill from street lighting on Merrion Road and Nutley Lane.

Existing external lighting will be removed in the areas where the new building is constructed. Some of the old lighting to the south of the proposed new National Maternity Hospital building will also be replaced. The existing lighting on the top of the multi-storey car park at the north of the campus will be removed, and the new top floor of the car park will be lit by new LED lighting. Existing lighting will be retained in other areas. Additional external lighting is proposed for a number of roads, pathways and car parks (including the extension to the multi-storey car park), as well as building façades and entrances, and landscaping.

---

<sup>6</sup> Institution of Lighting Professionals, 'Guidance notes for the reduction of obtrusive light', GN01:2011, ILP, Rugby, 2011.

<sup>7</sup> National Standards Authority of Ireland. 'Lighting of workplaces – Part 2 Outdoor work places', IS EN 12464-2:2014, NSAI, Dublin, 2014.

New lighting is planned to incorporate the following good practice measures:

- Correct aiming of fittings to ensure that light is directed only to where it is required;
- Avoiding excessive direct light on building façades;
- Aiming fittings inwards to avoid or reduce light spill out of the hospital site;
- Using full cut-off fittings for perimeter and road lighting to reduce upward light output;
- Where possible, dimming external lighting to lower levels at late evening hours, subject to maintaining a safe and secure level of lighting;
- Construction site lighting, if provided, is not too bright and is controlled to ensure that lighting is kept on only when needed during the hours of darkness.

Thus the likely impact from external lighting at the constructed proposed development in operation is expected to be negligible; spill light may be reduced.

### 7.9.3 Wind

The meteorological data for the site indicate prevailing winds from the south-west throughout the year and a secondary wind from the south-east which is most prevalent in the spring. This assessment was conducted on a model devoid of trees or landscape detail in order to obtain conservative, or 'worst case', results (i.e. generate a relatively windy microclimate). As such, the inclusion of added landscaping will likely provide beneficial shelter to the Proposed Development and, in turn, create calmer wind conditions around the Site.

The background exposure of the site, due to the surrounding terrain roughness, is similar for all directions, and reflects the general urban terrain around the site. For the existing site the wind microclimate at ground level is expected to be generally acceptable for standing during the windiest season. The ground level wind microclimate for the Proposed Development is expected to be comfortable for the intended pedestrian use of the site, classified as acceptable for strolling, standing or sitting use during the windiest season.

Conditions within the Proposed Development are, at worst, classified as acceptable for walking, which is windier than desired for some of the thoroughfare locations around the site. Localised mitigation, such as recessing the entrance, some form of planting or physical screens is recommended. It is acknowledged that the proposed scheme includes

mitigation measures in line with the suggested recommendations. Conditions in the courtyard amenity spaces ground level and the high level terrace within the Proposed Development are classified as acceptable for standing and sitting use during the summer season. Where standing conditions have been identified, planting in addition to vertical screens is expected to improve conditions in these areas.

## 7.10 Visual Impact Assessment

An assessment of the likely visual impacts associated with the proposed development of the new National Maternity Hospital on the St. Vincent's University Hospital Campus has been undertaken.

The change in the visual character of the area resulting from the existence of the development of the new National Maternity Hospital is likely to be much less than changes in visual character that have taken place on the Elm Park site in the past, and much less than past changes in the visual character of the surrounding area, particularly those brought about by development that has taken place in recent years.

Elm Park is located in the townland of Merrion, a place of considerable historic importance. Merrion Castle stood on lands a little to the south of Elm Park and was the seat of the Fitzwilliam family, the Earls of Pembroke from the time of the Norman invasion until the 18th century. In the 18th century and into the 19th, Merrion and adjacent townlands became the location for a number of large private houses, each with their own extensive grounds.

On the 5th of July 1934 the congregation of the Irish Sisters of Charity purchased the lands at Elm Park for £24,000 plus fees. Design of a new Hospital on the site began in 1947, foundation works were carried out in 1956-58 and construction of the main Hospital began in 1964. St Vincent's Hospital, Elm Park opened in 1970.

What the new Hospital presented to the road was the blank end and lift tower of the now demolished 14 storey nurses' home, and the back end of other smaller buildings, including the 5 storey St Rita's. For 1970 suburban Merrion Road and Nutley Lane, the stark presence of these buildings, with the somewhat austere elevations of the main Hospital behind, must have represented a very major change in the visual character of the area. St Rita's remains the most visually intrusive element on the St Vincent's University Hospital Campus, when viewed from the Merrion Road.

The St. Vincent's University Hospital Campus has been the subject of continuing and emerging development since construction on the site began in the late 1950s. The potential visibility of the proposed development and its consequent visual impact is dependent on a number of factors including: the distance of the viewpoint from the proposed development, the relative openness of the surroundings of any viewpoint, the nature of intervening landform and landscape features, and the nature and extent of any intervening buildings and structures.

The greatest potential visibility of the proposed development will be from within the St. Vincent's University Hospital Campus, including from within buildings on the Campus. From outside the St. Vincent's University Hospital Campus, the most open views of the proposed development will be from the Merrion Road and from Nutley Lane, where these roads run along the boundary of the Campus. From locations in the surrounding area not immediately adjacent to the St. Vincent's University Hospital Campus, visibility of the proposed development will be limited, and from many locations on these roads the proposed development will not be visible.

The extent of likely visibility and the nature of the likely visual impact of the proposed development on the surrounding area was analysed with reference to 21 chosen view locations and photomontages were prepared from each location. The views chosen for analysis are those from where the proposed development was most likely to be visible and so the analysis of impacts represents a worst case scenario. The visibility of the proposed development from these locations ranged from none to open visibility and the assessed visual impact ranged from none to 'Moderate' as defined under the Glossary of Impacts contained in the *"Guidelines on the Information to be contained in Environmental Impact Statements"* prepared by the EPA. The visual impact of the subject development is, on balance, likely to be regarded as positive.

## **7.11 Archaeology, Architectural and Cultural Heritage**

An assessment of the likely impacts on the archaeological and built heritage resource of the proposed development of the new National Maternity Hospital on the St. Vincent's University Hospital Campus was undertaken.

There are no recorded archaeological sites located within the proposed development area or its immediate environs. The closest site consists of the site of Merrion Castle, located c. 360m to the southeast. No areas of features of archaeological potential were



noted during the course of the assessment. The site has been thoroughly disturbed and it is likely that if any archaeological remains did survive within the area that they have been removed by subsequent development. No predicted or potential negative impacts have been identified during the construction and operational phases of the proposed development, upon the archaeological resource. As such, no further mitigation measures are deemed to be necessary.

There are no recorded architectural heritage sites located within the proposed development area or its immediate environs. The closest buildings are located c. 100m to the southeast, where 18 semi-detached cottages are located fronting onto Estate Avenue. No potential or predicted adverse negative impacts on the architectural resource are anticipated as a result of the proposed development going ahead. This is due to the nature and scale of the existing large scale hospital buildings adjacent to the proposed development area, including the Medical Services Building and the St. Vincent's Private Hospital. The nature of the receiving environment will not be subject to significant change. As such, no further mitigation measures are deemed to be necessary.

## **7.12 Material Assets: Utilities**

This Chapter describes material assets that are potentially impacted upon by the proposed development of the new National Maternity Hospital on the St. Vincent's University Hospital Campus. The utilities elements of the proposals include upgrades to natural gas, oil, medical gases, electricity and telecommunications.

Existing services have been surveyed to establish the location of same for planning and safety reasons. Further slit trench investigation will take place by agreement with St Vincent's University Hospital Campus to identify any non-traceable services.

The receiving environment includes a network of natural gas, electricity and telecommunications onto to Campus from utility providers with Campus infrastructure also including oil, oxygen and nitrogen storage.

The proposed development involves the upgrade of all of these services in terms of capacity which will impact on the consumption required from the respective networks. Relocation of oxygen, nitrogen and the main electrical substation on the Campus is required to facilitate the construction process.

The potential impacts of the proposed development during construction include additional draw on existing capacity and impacts from construction operations on Campus. There are no potential impacts during operation.

Mitigation measures include phasing of the works to reduce the quantum of concurrent construction activities, a low energy design strategy to reduce the impact on consumption of gas, electricity and oil, and agreement on capacity with the relevant utilities to prevent impact to network capacity on and off Campus.

The predicted impact of the proposed development given the above mitigation therefore is that there will be no residual impacts during construction or operation. In terms of the “worst case” scenario, should the aforementioned mitigation measures fail the potential impact would be the predicted impact.

Monitoring of all of the upgraded systems during and after installation will be undertaken in line with relevant standards. Reinstatement of roads and footpaths will be a requirement of all parties undertaking the works.

### 7.13 Interactions and Potential Cumulative Impacts

A range of interactions have been identified in Chapter 17 of the EIS “*Interactions and Potential Cumulative Impacts*”. The interactions identified comprise interactions between the various environmental topics, as set out in this EIS. With respect to cumulative impacts these have been assessed and potential impacts have been identified. Whilst these interactions have been noted, the appropriate mitigation measures have been identified in order to ensure that any impacts associated with them are ameliorated.

In terms of the potential for cumulative impacts, the EIS has had regard to permitted developments both on the St. Vincent’s University Hospital Campus and the surrounding area. The potential for cumulative effects arising from construction and operational traffic have been identified but are not considered to be outside of emerging trends and, with respect to construction, will be temporary in nature. Impacts with respect to microclimate are considered to be imperceptible and, similarly, no cumulative effects will arise with respect hydrology. The potential for cumulative effects arising from concurrent construction periods with respect to air quality is something that can be mitigated appropriately and, again, will be temporary in nature.

### 7.14 Difficulties in Compiling Specified Information

No significant difficulties were experienced in compiling the necessary information for the proposed development that would limit the findings of the assessment (seasonal limitations restricted breeding bird surveys; please refer to Chapter 9 – Flora and Fauna). Where appropriate; surveys and references are provided.