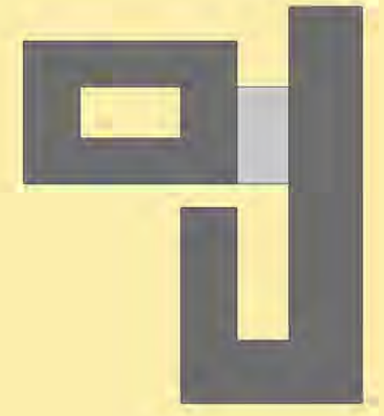
The National Maternity Hospital
at St. Vincent's University Hospital



Design Report

Contents:

1.0 INTRODUCTION AND BACKGROUND

This Design Report, prepared by O'Connell Mahon Architects and Isherwood and Ellis Architects, gives an overview of the proposed new National Maternity Hospital development at St. Vincent's University Hospital campus in Dublin 4, proposed by the Health Services Executive on behalf of the National Maternity Hospital and St. Vincent's University Hospital, and by agreement with the St. Vincent's Healthcare Group.

The new hospital will be a world class facility replacing existing facilities at Holles Street and will provide maternity services for women and new born children regionally and nationally. The hospital will also provide the highest possible standard of care to women, babies and their families who require access to maternity and gynaecological services alongside an acute adult hospital.

Co-location of maternity hospitals with adult acute services is the optimal solution for the provision of hospital-based maternity services, as it can provide access to medical and surgical specialties and clinical support services of a range, volume and complexity that support improved clinical outcomes. The new maternity hospital will also play a central role in an integrated network for neonatal transfer services in Ireland. This move will strengthen resources to support innovative and inter-professional working that will result in enhanced care provision for both mothers and babies.

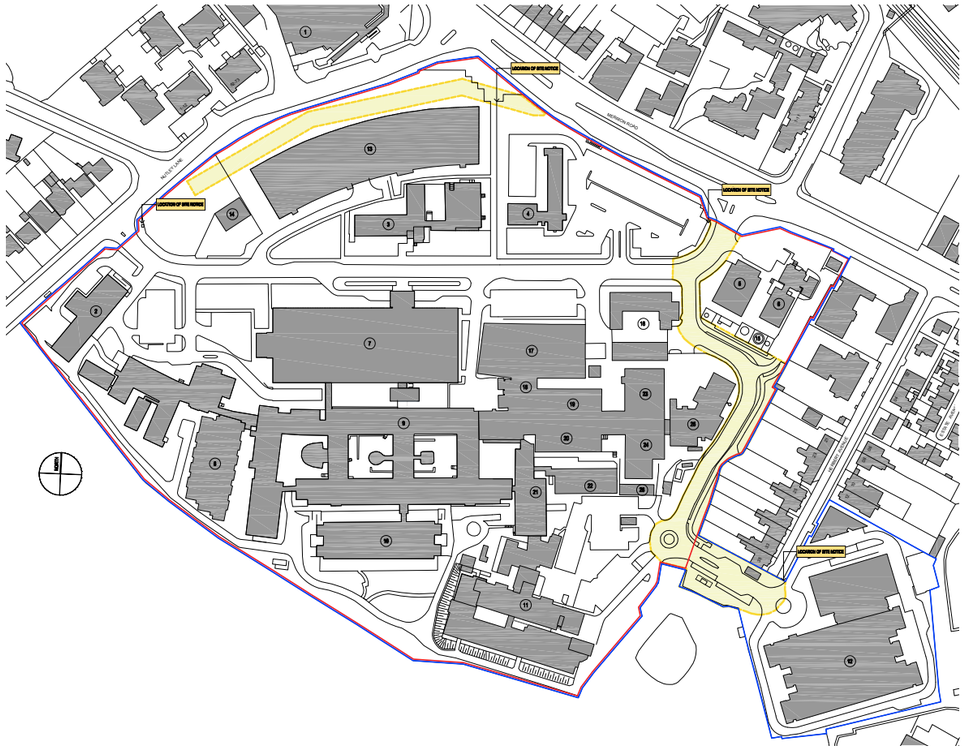
This report focuses on the design proposals for new developments on the St Vincent's University Hospital site, as set out in section 1.2 below. The new hospital will embody international best practice in the design and operation of a facility of this type, ensuring that clinical layouts and flows support effective working practices but also enhance women and family experience.

In keeping with this identity, the design of the building emphasises the new hospital's status as a national maternity hospital – a civic building which is expected to contribute to its urban and campus context at SVUH and reflect its status through an attractive and appropriately scaled public realm.

The Design Report should be read in conjunction with the other documents and drawings comprising the SID application, including the Environmental Impact Statement (EIS). The EIS chapters give a fuller picture of the planning and policy context for the maternity hospital as well as greater detail on a wide range of important project parameters, including engineering, infrastructure and heritage issues. . A number of these chapters will be cited in the course of this Report as the consideration of the EIS assessments have influenced the evolution of the design over the course of the project.

The main body of the Design Report is divided into a number of sections, covering site context and architectural proposals for the new Maternity Hospital, followed by sections covering our integrated proposals for Landscape, Fire, Universal Access and Sustainability. These sections give an overview of how the proposals have evolved in response to the characteristics of the building's site and design brief.

The design thinking has also been informed by a number of other considerations, as mentioned above in relation to the EIS chapters. Some of these are expanded upon in separate documents submitted along with this Report, in particular: St Vincent's University Hospital Site Capacity Study, which sets out an analysis of how this development could be successfully completed without compromising the future development needs of the remainder of the campus.



St. Vincent's Hospital Campus - Site Location Map

2.0 OUTLINE SCOPE OF PROPOSED DEVELOPMENT

The overall scope of the proposed development on the St. Vincent's University Hospital (SVUH) campus comprises:

• The new maternity hospital and adult hospital services building with a gross floor area of 50,766m², of which 45,091m² is above ground;

• An extension to the existing multi storey car park on the SVUH campus of 11,884m² , providing a total number of 426 carparking spaces of which 149 spaces are existing spaces displaced on the campus, and 277 are additional new carparking spaces for patients, visitors and staff. A total of 14 new spaces are disabled spaces;

• Public realm improvements to the existing SVUH campus spine road and pedestrian access route, including a new forecourt and drop off zone for the NMH, additional cycle paths and bicycle parking facilities, additional disabled drop off and taxi parking facilities, and improvements to the road junction at the existing campus entrances to Nutley Lane and Merrion Road;

• Infrastructure works, including the diversion of the existing services and provision of enhanced utility services across the campus.

These works are encompassed within the red line shown on the site plan included to the left.

National Maternity Hospital

The National Maternity Hospital will provide specialist services (nationally) and secondary services (greater Dublin area). These services will be provided on an out-patient, inpatient, short stay and community outreach basis. The primary medical and surgical specialties to be accommodated within the maternity hospital include the following:

• Maternity
• Gynaecology
• Paediatrics
• Neonatology
• Pathology
• Genetics
• Anaesthesia
• Emergency Medicine
• Endocrinology/Diabetes
• Pain Management
• Oncology
• Colposcopy
• Urodynamics
• Fetal Medicine
• Haematology
• Psychiatry
• Reproductive Medicine
• Laparascopic Surgery

Direct clinical services will be supported by a range of essential clinical and non-clinical support services including:

• Corporate Services
• Paramedical Services
• General Education and Meeting Facilities
• General Support Services
• Outreach and Home Based Service

St Vincent's University Hospital

The development provides a number of new adult hospital departments, generally to replace current temporary and permanent structures on the SVUH campus as follows:

• Dermatology Unit
• 2 no. Inpatient Wards
• Neurology services
• SVUH Medical Records
• SVUH Finance department

Shared Maternity and Adult Hospital Services

The development also includes the provision of a number of shared non-patient support facilities to provide an efficient service to both adult and maternity hospitals on the campus. These facilities include:

• Catering department
• Staff Canteen
• Hospital Sterile Services Department
• Central Stores and Purchasing
• Waste Marshalling Compound
• Energy Centre Facilities
• Medical Gas Compound
• NMH Corporate Services
• Facilities Management
• General Education and Meeting Facilities
• Service links between the Adult and Maternity Hospitals for FM distribution.

3.0 EXISTING SITE CONTEXT

St. Vincent's Hospital Campus - Aerial photograph showing proposed National Maternity Hospital site outlined in green.

3.1 Site Description

St. Vincent's University Hospital (SVUH) campus is located within Dublin City in postal district D04. The site comprises an area of 11.89 hectares and is bound by Merrion Road and Nutley Lane to the North, Elm Park Golf Club to the south and residential properties on Herbert Avenue to the east.

The hospital moved to the current Elm Park site in 1970 having been based in St Stephen's Green from its foundation in 1834. The campus has evolved considerably since then, but particularly so over the last 10 years in which the hospital has undergone significant development to upgrade services in a planned and orderly manner on the site.

These recent developments have included a new Clinical Services Building and main public entrance to SVUH at the centre of the campus; a new multi-storey car park facing onto Nutley Lane; a Breastcheck building to the east of the campus off Merrion Road; the new St. Vincent's Private Hospital at the easternmost part of the campus, and a new ward block, the 'Nutley Wing', to the southwestern end of the campus.

There are two primary entrances to the campus one off Merrion Road and the other from Nutley Lane. These are connected to each other by an east-west campus spine road which provides access to the main entrance to the Hospital at the front of the Clinical Services Building and the various car parks located around the campus.

A second access road leads off this spine road close to the Merrion Road entrance affording vehicular access to the Herbert Wing to the south and the St. Vincent's Private Hospital to the east. A fire road connects the Nutley Lane entrance to the roundabout between the Herbert Wing and the Private Hospital completing a full ring road around the clinical areas. A pedestrian route links Merrion Road to the campus spine road slightly east of the main entrance to the SVUH hospital.

The original 1970 SVUH hospital building comprised a main five storey hospital building together with a 13 storey Nurses Home building which was demolished in 2001. The current building heights on the campus range from single storey ancillary buildings, through two to five storey original hospital buildings, the six storey Clinical Services building (2005), the eight storey Nutley Wing (2012) and the nine storey Private Hospital building (2010). Consequently, while the development standards in the current City Development Plan limit building heights on the site to a maximum of six storeys, there is a history of taller structures on the site that goes well back beyond the SVPH and Nutley Wing buildings to the original SVUH hospital buildings on the site in 1970.

There are currently 1318 carparking spaces distributed throughout the entire campus, including the St. Vincent's Private Hospital. Of these, 1,012 spaces are associated with the St. Vincent's University Hospital (excluding 22 reserved spaces at the Mortuary and 6 reserved ambulance spaces at the Emergency department). Underground car parks are provided under the private hospital (260 spaces) and the clinical services block (122 spaces). A multi storey car park is located north of the spine road and accommodates 496 spaces. The remaining 394 spaces are scattered across the campus in a number of surface parking areas; to the north of the spine road; adjacent to the Herbert Wing entrance, adjacent to A&E entrance and Dermatology entrance, and all are generally accessed off the east-west the spine road.

There is a hub of low-lying non-clinical support buildings at the Eastern end of the campus adjacent to the clinical block, which provides energy, catering, delivery, facilities management and waste management support to the campus. This is the area that is proposed as the site location for the National Maternity Hospital (NMH).

There are no protected structures within the St Vincent's University Hospital site but the site is bounded to the east by Herbert Avenue which is zoned Z1 and Z2 (Residential Conservation Area) in the current Dublin City Development Plan 2016-2022. There are a number of protected structures on Estate Avenue further to the east, although these are screened from the campus by Herbert Avenue.

Boundary Conditions

Site boundary conditions vary considerably in nature around the site's edges. The site is bounded to the south by the green spaces of Elm Park Golf Club. The boundary to the west, Nutley Lane, is a predominantly residential area with a large scale retail development at its northern end. The boundary to the north, Merrion road, is a busy and established road link to the city centre and the boundary to the east comprises a mature, generally two storey, redbricked residential street, Herbert Avenue, and a private Nursing Home site to the east of the St Vincent's Private Hospital.

3.2 Urban Design Context

The SVUH campus is a strategic healthcare facility located in a busy district centre on Merrion Road, on a key economic corridor to the south east of the city. The immediate surrounding land uses include the designated district centre at Merrion Shopping Centre, large tracts of institutional and office uses such as RTE, Elm Park Business Campus, St. Michael's College, and the Caritas Convalescent Centre, smaller neighbourhood centres on Merrion Road and large areas of residential development at Nutley Lane to the west, Merrion Village and Ailesbury Park to the north and Herbert Avenue and Estate Avenue to the east. The lands are bound to the south by a significant area of green space which is in use as Elm Park Golf Club.

The wider context of the Merrion road corridor comprises a very broad range of developments and O'Connell Mahon Architects and Isherwood and Ellis Architects have prepared a photographic study of the character of developments along Merrion Road in order to review the nature and scale of existing developments in the area. The study demonstrates that Merrion Road is characterised by a series of large scale developments set along its significant length. The width and scale of the road mean that it is able to accommodate these types of development and that this important urban economic corridor is appropriately characterised by a range of buildings that is commensurate with its status and scale.

In the immediate vicinity of the subject lands, the Merrion Shopping Centre (5 storeys between 8 and 20 metres from the road edge) and the Elm Park office development (4 to 8 storeys between 7.4 and 50 metres from the road edge) are well-set in their immediate context and do not have any significantly negative visual impact. Further to the south, the Tara Towers Hotel, and to the north, buildings such as the Intercontinental Hotel (6/5 storeys at 17 metres from the road edge) all are of a scale commensurate with this transport corridor. Two of the more recent developments, the Elm Park campus and the St Vincent's Private Hospital, are each nine storeys in height. These significant buildings, in addition to the Nutley Wing development, can be seen from the road edge and on this basis the applicant is of the view that a development such as that currently proposed is not out of scale or character with the area in which it is located.

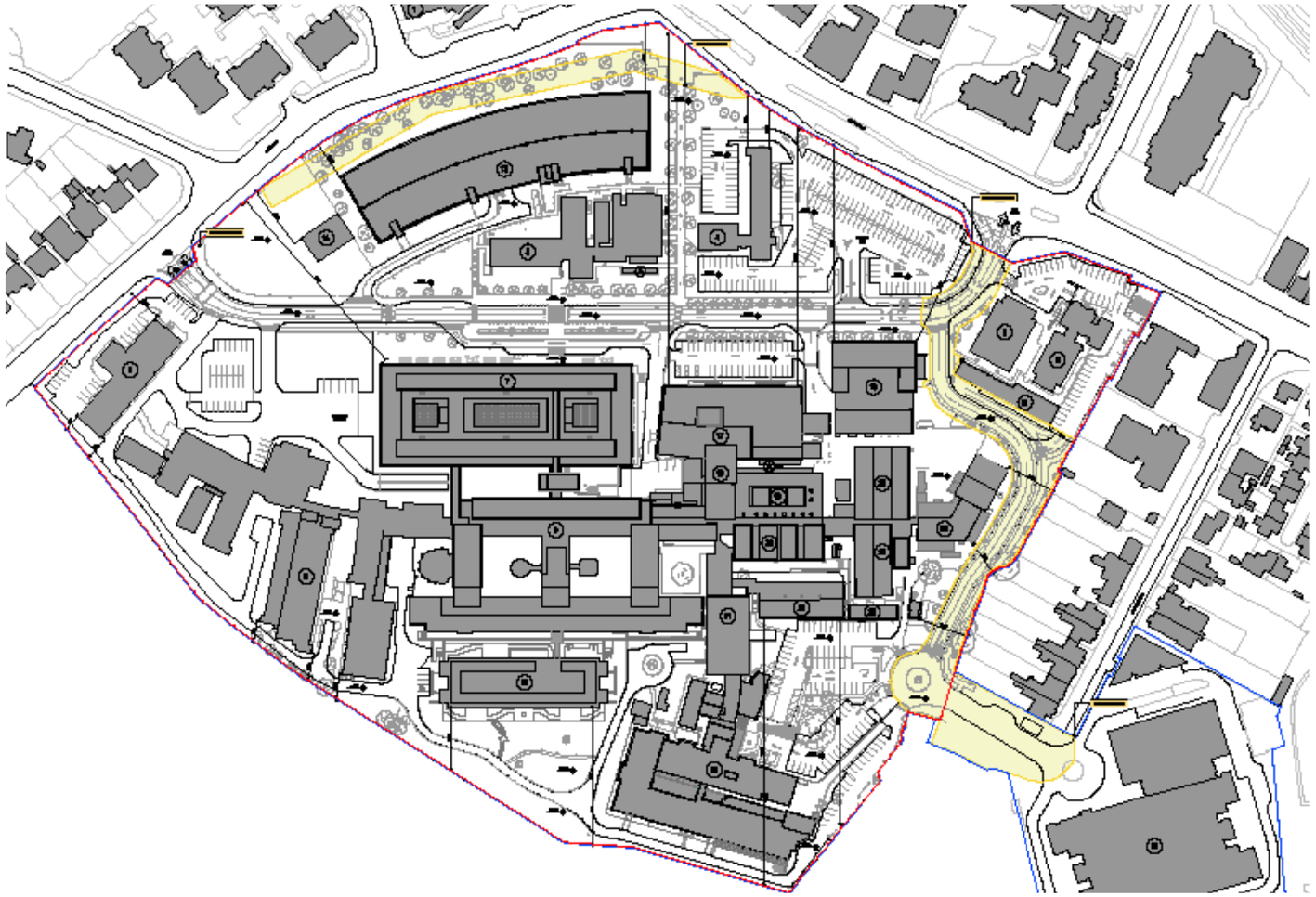
3.3 Site Location for NMH

Alternative Locations Considered on the Campus

An Outline Feasibility Study for the co-location of the National Maternity Hospital within the St. Vincent's University Hospital Campus was carried out by Scott Tallon Walker Architects in 2013. The study looked at 4 principal options and reviewed their suitability for accommodating the new National Maternity Hospital.

The location of the current proposal for the development of the new National Maternity Hospital at St. Vincent's University Hospital Campus broadly aligns with the recommendations of the Feasibility Study.

(Refer to Charter 4 of the EIS for details of the Outline Feasibility Study).



St. Vincent's Hospital Campus - Existing Site Plan

Map Key:

1- Nutley Shopping Centre
2- SVUH Mortuary
3- Nurse Education Centre
4- St. Rita's
5- Breastcheck
6- Carew House
7- Clinical Services Block
8- Nutley Wing
9- Main Ward Block
10- Elm Mount Unit
11- Herbert Wing
12- St. Vincent's Private Hospital
13- Multi-Storey Car Park
14- Nissen Hut (store)
15- VIE and Bulk Oil
16- Waste Marshalling Yard
17- Dermatology
18- Neurology
19- Central Kitchen
20- Canteen
21- Our Lady's Ward
22- Transitional Care Unit
23- Purchasing and Stores
24- Pharmacy
25- Energy Centre
26- Carpenters' Workshop

3.4 Site Analysis

At the commencement of the design, the site was analysed and surveyed in detail by the multi-disciplinary design team. Parameters considered included inter alia:

Site for National Maternity Hospital

The proposed site for the Maternity Hospital is located to the east of the Clinical Services building and is bound to the north by the spine road, to the west by the road to the St Vincent's Private Hospital (SVPH) 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 SVUH Ward Block by an existing two-storey hospital street.

In order to clear the site for the construction of the NMH, these facilities are to be decanted from their current locations and the majority is provided for as integrated elements within the overall new development now proposed. The full list of buildings to be demolished is provided in Chapter 2 of the EIS: 'Description of the Proposed Development'.

Topography / Levels

The SVUH site slopes down from south to north with the ground levels falling form approx. +10.00m OD along the south and falling to approx. +4.00m OD at the northern boundary, close to the Merrion Road.

The ground levels in the area proposed for the new Maternity Hospital development also change across the site and this has had a significant influence on setting out the optimum floor level strategy for the new buildings. The entrance into the SVUH Clinical Services building to the west is at level 8.265m OD. The road slopes down from this entrance to the East and is lower along the proposed frontage to the NMH site.

The existing service and delivery yard currently located on the NMH site is located at approximately +6.0m OD. This is almost one floor below the main public entrance into the Clinical Services Block and is referred to as Level B by SVUH. The existing delivery yard, stores building, kitchen, waste yard, linen deliveries, pharmacy and medical records departments are all accessed at this level. It is used as the principal FM distribution level in the campus linking all of the FM services to the rest of the hospital via a series of corridors which lead to lift cores which access the upper levels of the hospital buildings.

The sloping nature of the site from north to south has impacted on the setting of levels in the SVUH Clinical Services Block which has an entrance level 800mm lower than Level 0 in the rest of the SVUH hospital.

This change in level also exists at the basement level with the car park under the SVUH Clinical Services Block being lower than the basement in the rest of the hospital. These changes in level are accommodated through a series of ramps and steps at the link interface between the clinical block and the older campus buildings.

Landscape

The original St Vincent's hospital was designed as a series of buildings set within green or landscaped areas of Elm Park. As the campus has developed it has become increasingly dominated by buildings roads and hard surfaces. Nevertheless the campus has retained a strong sense of landscaped elements being integrated into new developments and this has informed our approach to the design of landscape spaces and a high quality public realm across the current NMH development.

Access and Circulation

The site is relatively open along its northern boundary to the Merrion Road which creates an open and accessible public feel to the campus. A dedicated pedestrian access from the Merrion road provides good connections to the nearby DART station and bus services along Merrion

road, and a good network of public footpaths is provided within the campus.

Road access is provided off both Merrion road and Nutley Lane to a spine road which runs east west between the two campus entrance points and from which the public car parks and main drop off points are easily accessible.

Infrastructure

As is to be expected with any major national hospital facility, the existing site contains an extensive below ground infrastructure network, including energy and services distribution, as well as local foul and storm water. All the services have been surveyed and strategies developed in consultation with St Vincent's and relevant statutory or other bodies to divert, re-provide or safeguard as appropriate.

Proposed Links at St Vincent's

The proposed National Maternity Hospital is also designed to provide efficient links to the existing SVUH buildings and services in order to achieve the clinical co-location objectives and enhance the sharing of non-clinical support services across the campus, both of which are key project brief objectives.

There are two critical levels at which links must be established between the proposed Maternity Hospital and the existing services at SVUH in order to meet these requirements:

1. At Level +23.690 OD Level 4 of the SVUH Clinical Services building in order to provide immediate and direct links from the Maternity Operating Theatres to the SVUH Theatres and Critical Care department.

2. At Level +6.00OD ground level to link the new FM and Stores departments to the exiting SVUH FM and services distribution route which runs east-west at this level across the entire campus.

Planning parameters

The planning parameters set out in the Dublin City Development Plan 2016-2022 were analysed closely by the architects in close collaboration with GVA, the appointed planning consultants. They are described in detail later in this report together with the ways in which the design proposals have responded to the standards set out in the City Development Plan.

3.5 Proposed Demolitions

In order to clear the site for the construction of the NMH, certain facilities are to be decanted from their current locations and the majority replacement facilities are provided for as integrated elements within the overall new development now proposed. The full list of buildings to be demolished is provided in Chapter 2 of the EIS: 'Description of the Proposed Development'.

The Design Report includes a decanting and enabling works strategy (Section 7), which allows for existing services and facilities to be decanted and to continue to operate satisfactorily throughout the proposed new development works on site, thereby ensuring no loss of public service for the duration of the site-works.

3.6 Draft Site Capacity Study

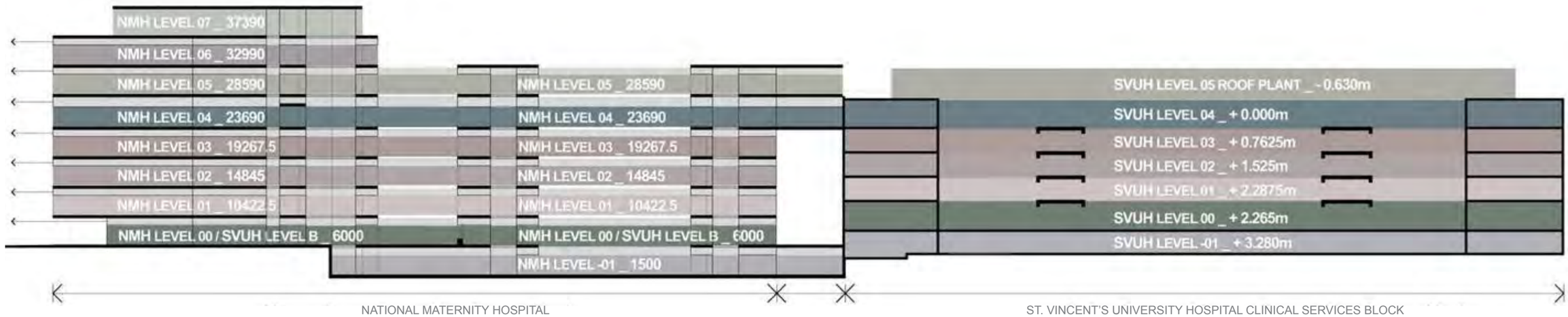
An Outline Development Control Plan (ODCP) for the campus was prepared by Scott Tallon Walker Architects in 1997 and this was further updated 2006. The 2006 plan was prepared in parallel with the development of new campus buildings at the time and guided the development of a significant number of further projects which have since been developed including the St Vincent's Private Hospital and the Nutley Wing.

The current proposal for the National Maternity Hospital generally aligns with the development envisaged in the 2006 ODCP. It involves the intensification of use of an underdeveloped site, an extension into the an area designated as a high tech zone by the addition of operating theatres and ICU beds at a matching floor level with SVUH Clinical Services Building. It also aligns with the car parking strategies set out in the ODCP, with an extension to the existing multi-storey car-park proposed in line with the ODCP.

The new maternity hospital will be a major addition to the SVUH campus, fulfilling part of a long term healthcare strategy to co-locate adult and maternity services on the site. The development, including the expanded car park, will add in the order of 62,660m^2 of new development area to the campus, bringing the total area of development on site to 189,308m^2.

In recognition of the importance of achieving a successful integration of existing and proposed services, and in order to demonstrate that future services within the SVUH campus (including provision for 20% expansion of adult and maternity services), can be accommodated within the urban planning parameters set for the campus by Dublin City Council, the HSE commissioned a Draft Site Capacity Study (produced by O'Connell Mahon Architects and Isherwood and Ellis Architects) – included as part of this application.

The study sets out the overarching aims for the SVUH campus both from a clinical perspective (the functional needs) and a spatial one, and describes how this translates into a potential future area requirement. It demonstrates that the campus has the capacity to accommodate the anticipated growth and that this can be achieved in ways that produce a higher quality and more sustainable environment with better integration of services, and an improved public realm with sustainable links to the local community.



4.0 PROPOSED DESIGN FOR THE NATIONAL MATERNITY HOSPITAL AT ST. VINCENT'S UNIVERSITY HOSPITAL

The HSE has set the challenge of creating a fully integrated, state-of-the-art, women and newborn-baby focused hospital that will facilitate excellence in the delivery of clinical services and associated research and education, in an environment that is fully supportive of women, babies, their families and healthcare staff.

First and foremost, this means that the new hospital must represent state-of-the-art clinical functionality, providing the highest quality spaces for women, babies, families and staff and optimising the adjacencies and flows between departments to create an efficient, safe and therapeutic environment.

At the same time, it must also relate to its context, integrating with the existing adult hospital campus and surrounding neighborhoods to create an appropriate sense of place

The architectural design concept for the new maternity hospital is a comprehensive response to the following objectives:

- Compatibility with site and urban planning objectives;
- Fulfillment of the clinical design brief;
- Creation of supportive environment for women, babies, families and staff.
- Design of a high quality building that befits a national public project

The design process has not prioritised one objective over the other but treated all four as equal parts of the same design challenge. The proposals have evolved through an iterative series of client and design team engagements together with extensive stakeholder consultations, in which the design approach was progressively developed both from the outside (analysing and responding to the campus and urban context) and from the inside (analysing and responding to the brief's clinical objectives).

This section of the report sets out an overview of the design process and describes in some detail the external and internal influences which have shaped the design proposals.

The report goes on to describe the proposals in some detail, focusing on the overall experience, the underlying approach to clinical functionality, access and circulation, form and external identity.

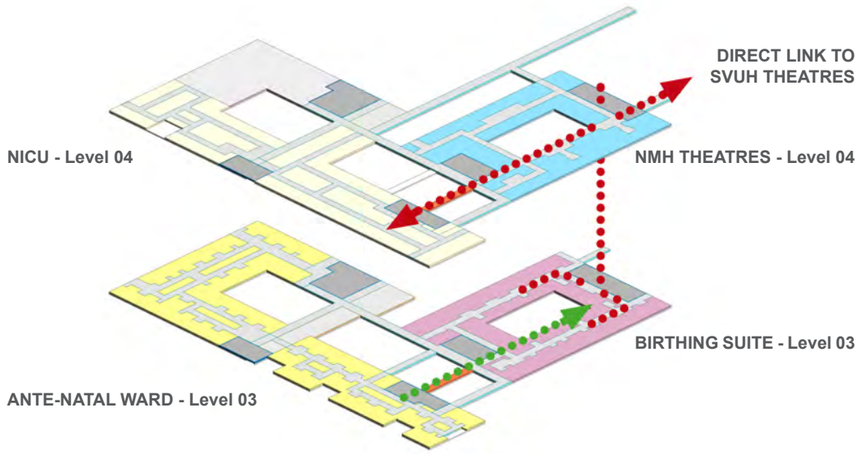
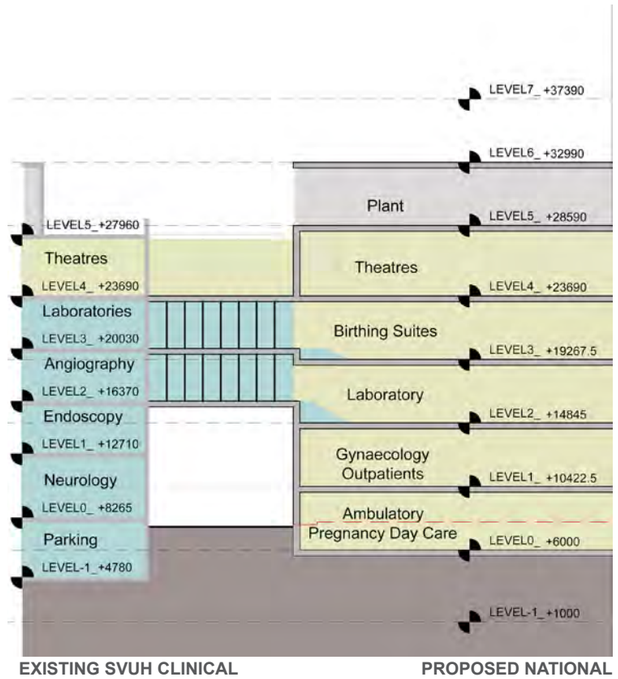


Diagram illustrating the key clinical adjacencies within the proposed National Maternity Hospital buildings, as well as the direct clinical link to the SVUH Theatres.



Cross section diagram illustrating the proposed links between the National Maternity Hospital and the SVUH Clinical Services Building.

4.1 Design Concept Overview

The architectural approach to the new National Maternity Hospital at the SVUH site addresses the key clinical adjacencies required within the NMH, fully integrates the project into the SVUH campus layout and has the potential to achieve an identifiable and contemporary architectural design for the Maternity hospital set within an enhanced and developed SVUH campus public realm.

Principle Design Drivers

The key drivers which have shaped the overall design of the project are as follows:

Response to Clinical Brief

In the first instance, the design responds to the unique clinical brief for a Maternity Hospital in which the vast majority of mothers and babies are healthy and enjoy a positive life affirming experience.

The design of building has been carefully laid out through a series of shallow plan building forms which maximise the possibility of natural light and ventilation to the majority of areas and particularly the inpatient wards / rooms within the building and which allow direct visual connection to the external environment as well as to a series of internal courtyards and gardens.

There are also a number of key clinical adjacencies which are fundamental to the clinical brief, the principal of which is the integration of close and direct connections between the Birthing Suite; the Neonatal Intensive Care Unit (NICU), and the Operating Theatres, and the link between the Maternity Theatres and the adult hospital Theatres and Critical Care Unit at Level 4. This has very much shaped the design of these areas at levels 3 and 4, and design location in close proximity to the adjacent SVUH Clinical Services Block.

Building Form and Massing

The massing of the building was subject to a significant range of design studies. The result of these studies indicates that reducing the mass in one location would have a negative impact on the more sensitive boundary at Herbert Avenue and also in terms of integrating with existing campus developments.

The Merrion Road elevation is located some 58m back from the road, which is itself a wide urban thoroughfare characterised by large buildings and is capable of accommodating a building of the scale proposed. Furthermore, the proposed development is located behind a future development site at St. Rita's, which will eventually partially screen it from Merrion Road.

The new National Maternity Hospital building as now proposed is lower in height than two of the most recently constructed additions to the campus: St Vincent's Private Hospital; and the Nutley Wing. The roof plant parapet level is over two metres lower than the highest point of the Nutley Wing, and over seven metres lower than the highest point of the Private Hospital. The main parapet height of the proposed new National Maternity Hospital building, situated immediately adjacent to the existing SVUH Clinical Services Building, matches that of the existing SVUH building.

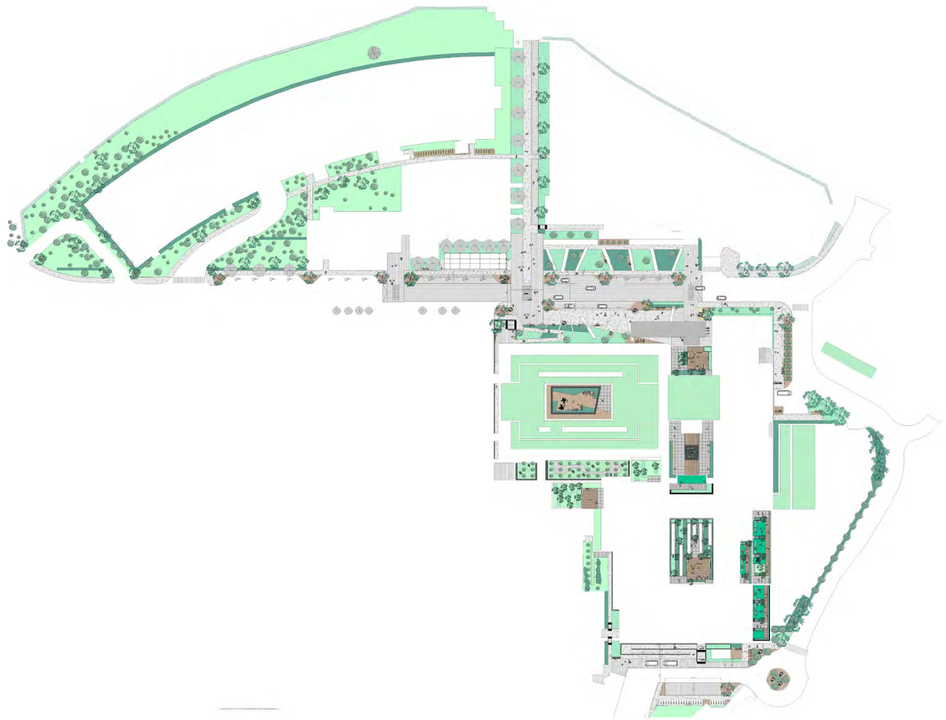
Identity of Maternity Hospital at SVUH

The overall form and shape of the Maternity Hospital building is clearly identified with a major public entrance and forecourt off the spine road. This is a considered design response to the requirement to maintain the identity of the National Maternity Hospital at the SVUH campus.

Early sketch view from the Merrion Road expressing the intention to create a distinct identiy for the National Maternity Hospital on the SVUH Campus.

This identity is further strengthened through the design of the corner block to the north east which clearly anchors the building on the site close to the Merrion road entrance and frames the main entrance to the hospital.

The L shaped form of the overall building supports this public identity without compromising the integration of the hospital with the SVUH Clinical Services Building and the shared FM and support services and facilities to the south.



Plan Illustrating the areas of courtyards and gardens within the proposed NMH building, as well as additional enhancements to the existing public realm of the SVUH campus.

Drawing describing the entrance plaza and landscaped pedestrian boulevard which is proposed as part of the NMH development on SVUH campus.

Positive therapeutic Environment for Women and Staff

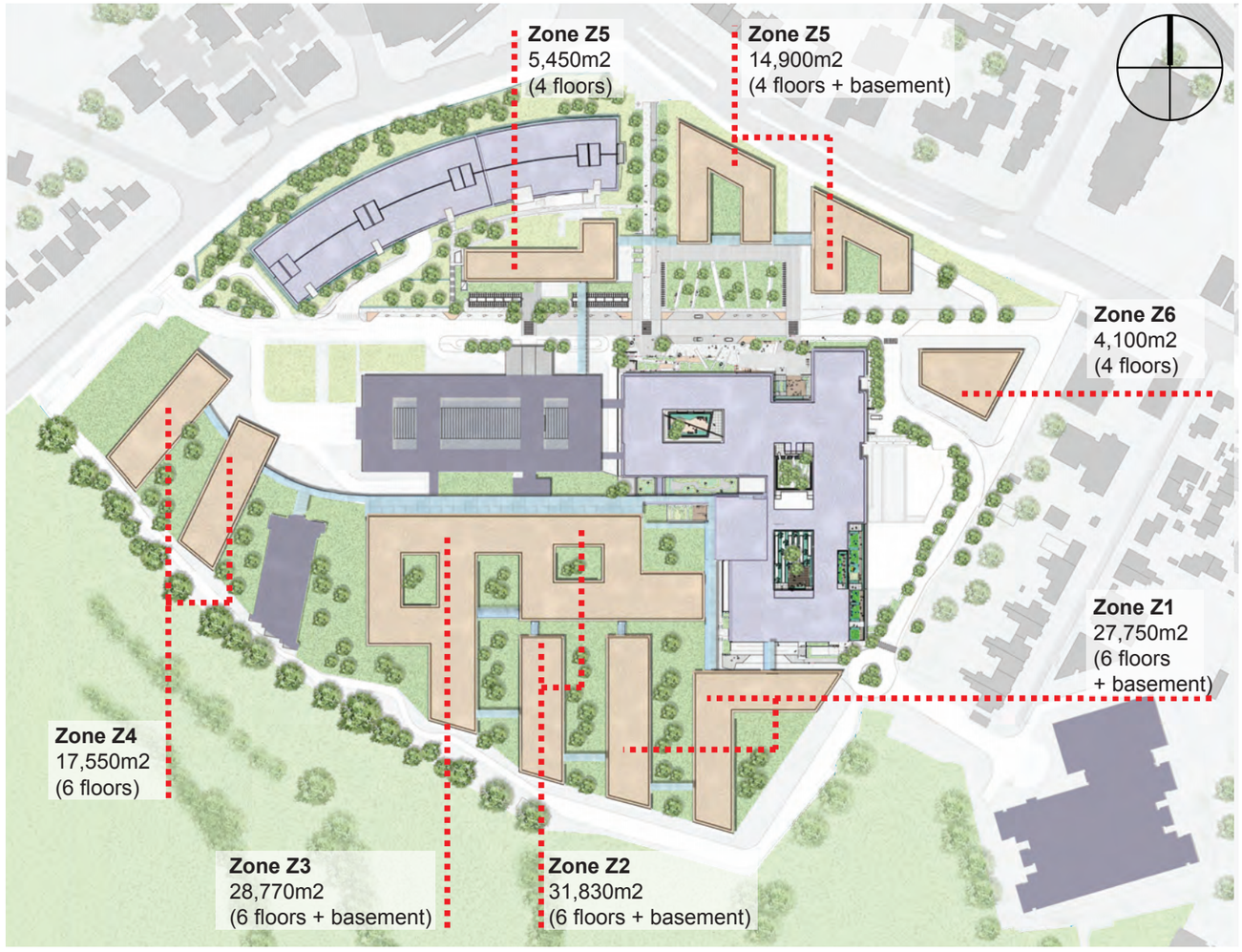
The incorporation of a large number of gardens; courtyards and accessible high level terraces within the layout is intended to enrich the experience of patients and staff within the hospital and provide the appropriate therapeutic environment in which access to nature and light is prioritised in the design of the architectural form of the building.

The design also responds to the wonderful views of Dublin Bay and the Dublin Mountains which are available at upper floor levels on the campus. The main inpatient rooms are located at upper levels along the eastern edge of the building where they have the potential to enjoy such views, enhancing the patient experience within the building.

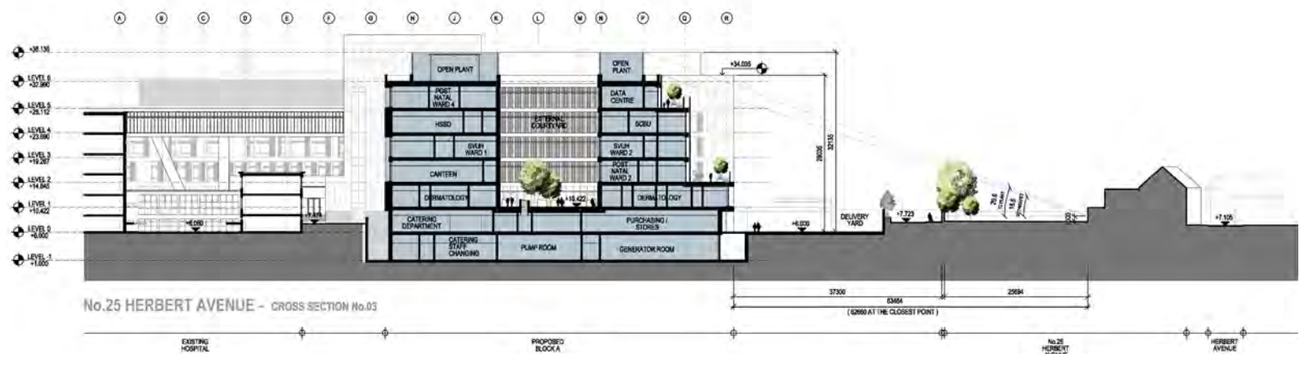
High quality public realm associated with National public project

The public spaces, set down areas, and emergency department set down areas have been carefully designed having regard to the expected levels of activity that will take place therein. They compare favourably with other urban spaces in Dublin and the proposed development will result in significant improvements to the overall campus public realm. The main north-south public pedestrian route into the hospital from Merrion is enhanced with the additional of a cycle path. The pedestrian realm is further extended through an east-west pedestrian forecourt which runs from the current route along the south side of the spine road and leads directly into the new Maternity Hospital.

The design also includes proposals to remove through-traffic from the east–west spine road through the provision of a new entrance into the multi-storey car park close to the Merrion road entrance. This will reduce traffic and enhance the pedestrian and public areas in front of the entrances and to both SVUH and NMH.



The Site Capacity Study outlines future development potential on SVUH Campus - The plan opposite describes one possible version of how this development may be organised.



Height studies were undertaken to assess the impact of the proposed development on adjacent properties at Herbert Avenue.

Integration with SVUH

The overall form of the building is consistent with the intent of the SVUH 2006 Outline Development Control Plan (ODCP). The form and massing are integrated with the form and massing of the adjacent Clinical Services Building and these two buildings will form the core of the hospital from which the future expansion and development of services at the campus can be planned in an orderly manner as set out in the Site Capacity Study.

Internally a series of links and connections are provided between the proposed development and the existing SVUH buildings. The link between the Operating Theatres at Level 4 is the most critical clinical link, but other links are provided at Levels 0; 1; 2, and 3 in order to support the co-location needs of both hospitals and to provide the infrastructure for further links in the future.

Compliance with Urban Planning parameters

The design has developed having close regard to the key urban planning parameters principally in the area of height, and impact on the adjoining building and properties.

Height studies at an early stage helped shape the form of the building and the east elevation in particular has undergone considerable refinement in order to reduce its impact on the properties at Herbert Avenue to the east.

Carparking and traffic matters have also been carefully reviewed including provisions to assist in traffic flow and these are set out in more detail in the Engineers Report and EIS enclosed with this submission.

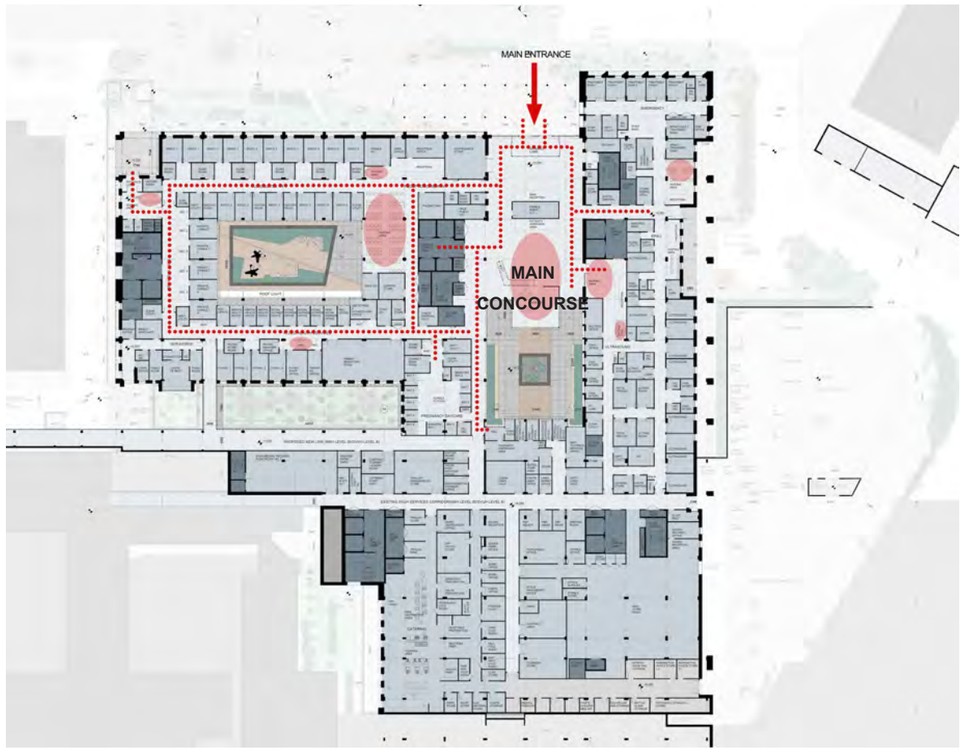
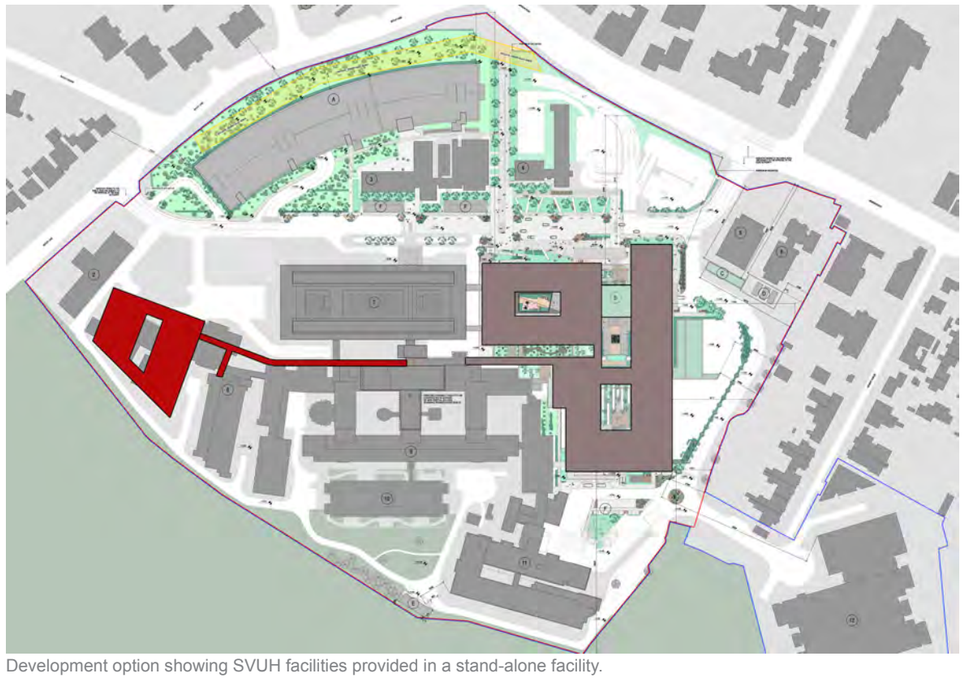


Diagram illustrating circulation and wayfinding strategy - public access to key departments from main concourse.



Development option showing SVUH facilities provided in a stand-alone facility.

Efficient and Effective Building Design

The overall organisation of the hospital departments and services has been studied in detail through an examination of the circulation flows that support the delivery of an efficient and effective service.

The design has also incorporated a clear public circulation and wayfinding strategy from the main entrance concourse which aims to provide direct access to all public areas and departments from the central concourse space at each level in the building.

Flexible and Adaptable Model

The design has incorporated a flexible 7.5m structural grid throughout together with a 4.42m floor to floor height which will allow the hospitals the necessary flexibility to adapt and change internally over time. The grid and floor to floor dimensions are sufficiently robust to provide for new clinical services in any area within the building in the future.

The design has also incorporated various soft spaces for such expansion within the overall layout as set out in more detail in Section 9.

4.2 Brief and Area Schedule Analysis

The site for the proposed new National Maternity Hospital project comprises a number of single storey and part two strorey structures providing clinical and non-clinical support services at SVUH. The brief area schedule for the new National Maternity Hospital project as proposed (excluding the carpark) comprises three different elements in a total floor area of 50,766m^2. The three elements are:

1. The National Maternity Hospital only: this element of the project accounts for approximately 35,600m^2 of the overall development.

2. Shared National Maternity Hospital / SVUH facilities: this element of the project which includes links between the buildings, accounts for approximately 9,800m^2 of the overall development .

3. Replacement of existing, displaced, SVUH facilities which accounts for approximately 5,350m^{2}of the overall development.

NMH Stand Alone Services

The proposed location for the NMH-only services, broadly aligns with the recommendations of the Outline Feasibility Study carried out by Scott Tallon Walker Architects in 2013. The site provides the essential linkages that are critical to achieving the benefits of co-location, a determining factor in the selection of the recommended site for the Maternity Hospital. The site also involves the intensification of use of an under-utilised site within the campus and incorporates an extension into the high tech zone first referred to in the St. Vincent's University Hospital Development Control Plan 2005.

NMH / SVUH Shared Services

The shared service facilities provided within the overall development, generally replace existing facilities, many of which are outdated and currently housed in single storey and temporary buildings, which will be displaced by the new development. These include:

- Facilities Management
- Catering & Canteen
- Hospital Sterile Services Department
- Purchasing & Stores
- Waste Marshalling
- Plant (relocated from Energy Centre)
- Medical Records (SVUH & National Maternity Hospital Medical Records are provided in separate, but adjacent, accommodation allowing future integration and sharing of resources).

Facilities improvements and efficiencies generated by sharing such non-clinical support services is one of the fundamental reasons for co-location and is one of the briefing drivers for the project.

The design team has reviewed this issue in some detail with the client and representatives from both hospitals during the design process to ensure that such non-clinical support services are integrated into the design and deliver efficient services to both hospitals. The logical location for such services is incorporated within the proposed development for the following reasons:

1. The location is similar to the current location and will benefit from ready integration into the exiting services distribution systems currently in place in SVUH.

2. The location is directly adjacent to both SVUH and NMH facilities and will facilitate ease of access to and from both hospitals which in turn encourages and facilitates a more sustainable pattern of service sharing and use of land on the campus as a whole.

3. The location benefits from ease of access for services and deliveries via the existing roadway to the east of the campus.

SVUH Stand Alone Services

While the majority of the proposed services are maternity related or shared facilities, those elements that relate solely to SVUH account for approximately 9% of the total area. These include:

- SVUH Dermatology department
- SVUH Inpatient Wards x 2

The above facilities replace existing SVUH facilities currently located on the proposed development site. The Design Team did review options for locating these elements in other areas of the campus but any such developments, which would result in a two-storey structure being developed elsewhere on the site, were not considered consistent with the overall development strategy for the campus and would be wasteful in terms of best use of campus land. The drawing to the left sets out how an alternative location for these facilities could be achieved and how it might affect the overall development strategy in terms of

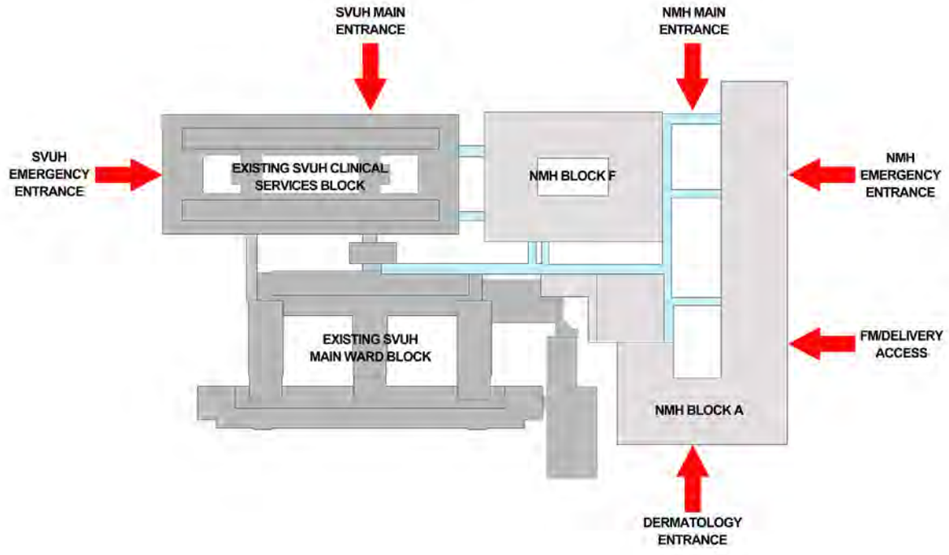


Diagram which summarises the layout concept for the National Maternity Hospital

westward expansion of ward accommodation.

The site set out in the diagram on the previous page represents the only logical location for the existing facilities to be relocated to (other than within the National Maternity Hospital building) as it is located on the existing hospital street and linked to theatres and critical care.

They could not be developed on the lands to the north of the site shown on the diagram on the previous page, as it would interfere with the operation of the St. Vincent's emergency department.

The St. Rita's site would not be capable of providing an indoor link to the Clinical Services building and, furthermore, this site is being reserved for education, research and administration or ambulatory services in the overall campus development strategy.

A further benefit of the integration of the above facilities into the current proposed development, is that it would allow for the future expansion of maternity in-patient accommodation and support services within the National Maternity Hospital block.

This is a possible future scenario where SVUH in patient accommodation is developed to the south, as set out in the proposed Site Capacity Study and ODCP for the campus, allowing the SVUH wards to relocate here, releasing space in the current proposed building for NMH expansion.

This strategy for future expansion delivers a very robust model for current and future maternity services on the site, while protecting current expansion areas for SVUH which would otherwise be poorly served by piecemeal developments to meet short-term current displacement needs.

4.3 General Design Layout

Site Layout

The overall approach to the site layout plan has been to develop an efficient plan form, which is split into 2 blocks; a five/ six storey block runs east to west and follows the massing and building lines of the adjacent SVUH Clinical Services Building; and a six/seven storey block runs perpendicular to this on a north to south axis. The main entrance is located between these two blocks.

The space between the two blocks also accommodates the central atrium and landscaped courtyards. These courtyards provide a space for relaxation, family / children's play and a pleasant outlook for the surrounding habitable rooms.
The site plan is also designed to provide efficient links to the existing SVUH buildings and services and this is achieved in the current layout where direct link connections are provided at levels 2/3/4 between the new building and existing SVUH Clinical Services Building and at levels 0/4 via a new hospital street link connection to the SVUH buildings.

The design layout concept is consistent with the site strategy. It addresses the key clinical adjacencies required within the NMH and SVUH hospitals; is fully integrated with the SVUH campus layout and satisfies our understanding of our Client's requirements for the project. The opportunity to create an identifiable and contemporary architectural design that is particular to this Hospital is a fundamental aspect of our approach.

Entrance and Access Points

A new shared-surface, traffic-calmed zone has been designed along the existing campus spine road. This enhances the campus public realm generally, and supports the new public entrance to the NMH with set-down and drop-off zones located immediately outside.

A separate blue light entrance will be provided on the east elevation accessed off the existing campus road to the east. The buildings are supported by a new FM and waste marshalling yard at level 0 located to the east of the new development.

A discrete Mortuary entrance is provided via a new access road to be located between the existing SVUH Clinical Services Building and new hospital building.

4.4 Building Form and Massing

The Design Team carried out a number of studies on the functional stacking of the proposed new hospital to fully establish and test the key critical adjacencies for both hospitals. Key adjacencies include:

• Direct link between Delivery/Theatres and the existing Adult Theatre and Intensive Care Unit at level 4 within the adjacent SVUH Clinical Services building.

• Direct links between proposed Delivery/Theatres and NICU/SCBU departments.

• Direct links between FM/Deliveries and Waste to both Hospitals.

• Direct links between existing Laboratories and the proposed NMH Laboratory accommodation.

The original design intention was that the new NMH building would align with the existing SVUH Clinical Services Building and match its height of five storeys plus enclosed recessed service plant on the sixth floor. However, the entire brief requirement for the current development could not be satisfactorily accommodated within this height.

A number of options were considered, two of which were explored in detail as follows:

Both of the two options maintained the five storeys plus enclosed recessed service plant on the sixth floor for the block adjacent to the existing SVUH Clinical Services building, however, in the first option a 7-8 storey building was proposed to the north-east which stepped back in scale towards the rear adjacent to the houses on Herbert Avenue.

6-7 storey design option

7-8 storey design option

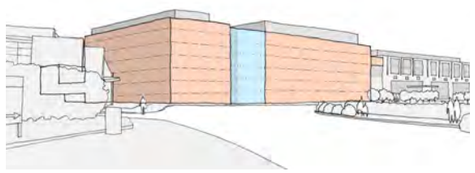
In the second a 6-7 storey building was proposed to the north-east but this building returned at this height along the entire east elevation.

The design team, at an early stage, reviewed the visual impacts that were likely to arise with each of these two options and it was the opinion of the team that the 6-7 storey option had significantly reduced visual impact, and was also more closely aligned with the height of other recent developments on the campus and with the current Dublin City Development Plan height standards.

The design team also consulted with Dublin City Council planning department on the matter, prior to reaching a final decision, following which it was decided to proceed with the 6-7 storey option.

Alternative massing arrangements were also examined; either pulling the building line back to align in full with the Clinical Services Block or reducing the height of the element facing onto Merrion Road. However, this would mean that more mass would be required elsewhere to accommodate the space requirements set out in the brief (for example, an additional floor over the theatres or extending the massing proximate to Herbert Avenue).

From Merrion Road - Option 1



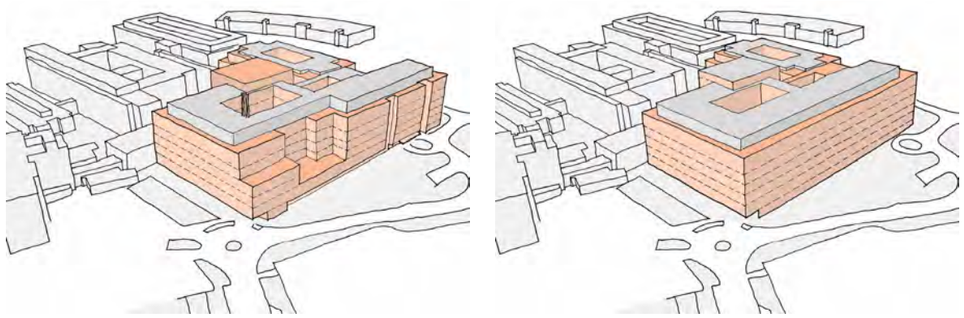
From Merrion Road - Option 2

From the Campus Spine Road - Option 1

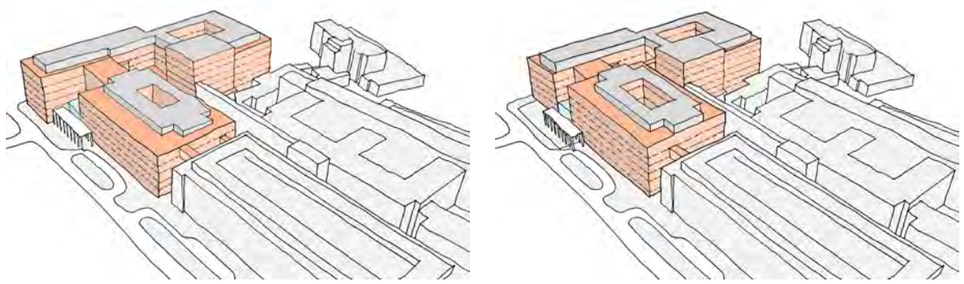
From the Campus Spine Road - Option 2

View from the Private Hospital - Option 1

View from the Private Hospital - Option 2



Sketch design studies of building set back to Herbert Avenue

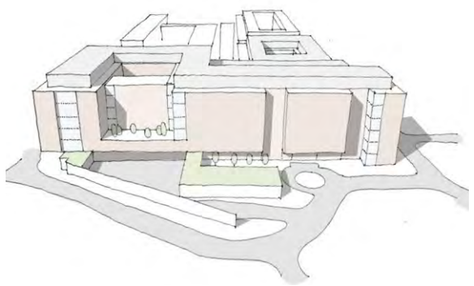


Sketch design studies of building set back to Merrion Road

What is clear from these further studies (included to the left and on the previous page) is that, while the set-back would achieve a stepping back of the building at the Merrion Road entrance, this would be at the expense of an additional floor at the Clinical Services block interface and would result in the loss of a sense of enclosure at the entrance to the National Maternity Hospital building. This building would, in fact, lose the sense of identity that is achieved through the proposed design.

Another potential impact is the filling out of the block when viewed from Herbert Avenue. The Merrion Road aspect is, on the other hand, capable of accommodating a building of scale projecting forward of the building line set by the Clinical Services block (because of the set back from the road side). The massing strategy, therefore, focuses on centralising the mass of the building where possible and allowing mass at the edges where it is most appropriate.

On the basis of these studies the preferred design solution in terms of building form and massing was for a five to six storey block adjacent to the SVUH clinical Services block, aligning with the SVUH block in terms of form and massing, complimented with a six to seven storey block at the eastern side, with facility for step back if necessary along its eastern side.



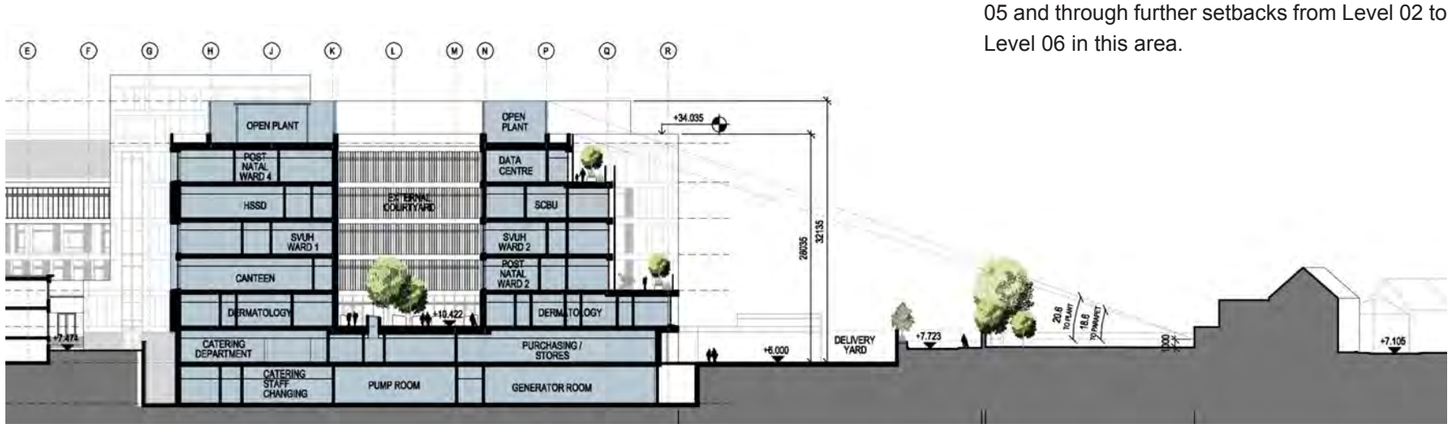
Sketch design studies of building set back to Herbert Avenue

East Elevation Facing Herbert Avenue

Early on in the design process, it was also considered appropriate to focus on developing options for breaking down the scale of the resulting long eastern elevation particularly having regard to the proximity to local residences along Herbert Avenue. This was done in consultation with Dublin City Council and a series of meetings were held outlining the progress in this regard.

The design team considered two principal issues in developing such design options. The first issue was the development of proposals for breaking down the scale of the east elevation and the architects looked at options to achieve this through the introduction of vertical recesses at intervals and the provision of recessed areas for landscaped roof terraces along the length of the facade. The sketch below illustrates and example of such a study.

A second issue examined was the cross section of the building and how this related exactly to each of the residences on Herbert Avenue. As Herbert Avenue is at an angle to the proposed NMH building it is immediately clear from detailed section studies prepared by the architects that the stepping back of the southern part of the east elevation would be of greater benefit to the residences. As a consequence the architects developed further section options for the massing of the building in this corner through the introduction of additional roof terraces at Levels 04 and 05 and through further setbacks from Level 02 to Level 06 in this area.



View of proposed development from the Merrion Road

Possible long term view from the Merrion Road with further development at St. Rita's carpark.

North Elevation Facing Merrion Road

The front (north) elevation was also refined from the original forms outlined above and the massing of the building was broken down through the introduction of an open space at first floor level over the entrance and the resultant "thinning out" of the mass of this portion of the building, as can be seen in image to the left.

This adds further refinement to this elevation which, in our view, would become somewhat relentless if the entire building was in line with the existing Clinical Services block (as is evident in the massing studies shown above).

Notwithstanding the above, it is important to note that the building is, at its closest point, set back 58 metres from the Merrion road boundary / footpath. In fact the setback of the entire front façade from Merrion road ranges from 58 metres to 85 metres at the main entrance and over 140 metres at the western end of the front façade. At its closest corner, the building is over twice as far away from the street edge as it is tall and, as such, will not appear to be imposing in its context.

In the aerial view on the next page, the scale of the surface car park between the National Maternity Hospital building and the roadway can be seen and the significant setback of the building from the public roadway is clear. It is also important to note, as demonstrated by the image to the left, that the Breast Check building will be set in the foreground when viewed from the north, with additional proposed planting in the middle ground creating a visual break between the entrance and the new National Maternity Hospital building.

When viewed from the north, St. Rita's car park, St. Rita's building, and the existing multi-storey car park (to be extended) all occupy the foreground, thus mitigating the impact on what is a very wide road.

The Site Capacity Study and previous iterations of the Outline Development Control Plan for the site envisage further development on the current surface car park between the proposed National Maternity Hospital building and the Merrion Road. We have set out a sketch visualisation (below left) indicating how a new building might provide a transition between the National Maternity Hospital and the Merrion Road.

The setback of the entire front façade from Merrion Road is considerable and, even without the proposed future building, it is submitted that the proposed National Maternity Hospital building is appropriately scaled and located to respond to its campus setting when viewed from the very significant public roadway. It also compares favourably with those buildings highlighted on the Merrion Road Study submitted with this response submission. An additional series of studies along Merrion Road have been prepared to illustrate this point and are submitted as part of Appendix C to this report.

Aerial view of the proposed development showing the set back from the Merrion Road.

Diagram showing the existing heights on SVUH Campus in the context of the surrounding area.

Building Height and Floor Levels

The new building will range in height from five to six storeys with roof-top plant. The floor levels of the new building will align with the levels within SVUH at level 0 (+6.00OD) and at level 4 (+23.69OD) . Floor to floor heights will be evenly distributed between these levels, at 4.4225m, in order to accommodate the necessary service zones required at each level.

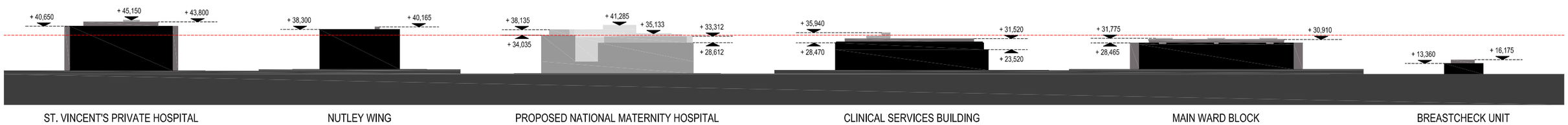
Direct links are provided at levels 0, 2, 3 and 4. Level 0 and 4 links will be at grade, whereas there will be a change in level at the level 2 and 3 connection. Pass through lifts located within the new building will accommodate this level change.

The overall floor height ranges from 5 storeys plus plant floor, adjacent to the SVUH Clinical Services block, to 6 storeys plus plant floor on the eastern and southern block.

The building as proposed is however lower in height than two of the most recently constructed additions to the campus; St Vincent's Private Hospital and the Nutley Wing.

The roof plant parapet level is over two metres lower than the highest point of the Nutley Wing, and over seven metres lower than the highest point of the Private Hospital. The main parapet height of the proposed new National Maternity Hospital building, situated immediately adjacent to the existing SVUH Clinical Services Building, matches that of the existing SVUH building.

The figure below illustrates the proposed National Maternity Hospital building within existing buildings on the SVUH campus.



Proposed entrance plaza indicating the 'book-ending' of the campus space.

4.5 Urban and Civic Design

The design of the building emphasises the new hospital's status as a civic building which contributes to its urban and campus context at SVUH and this is reflected through the provision of an attractive and appropriately scaled public realm.

The design is sensitive to the building's scale and civic importance and its relationship to the wider urban context, including its potential to provide a regenerative focus. Its design increases the campus' permeability and establishes a new high quality public realm, knitting together new and existing buildings.

The identity of the Maternity hospital is further strengthened through the design of the projecting block to the north east, which clearly anchors the building on the campus and completes the public face of the new clinical core of the hospital campus. This is consistent with the previous Outline Development Control Plan (ODCP) and the Draft Site Capacity Study.

The L-shaped form of the overall building provides a bookend to the long linear block, frames the main entrance to the National Maternity Hospital, and creates a sheltered micro-climate at its entrance. The revised massing studies set out above demonstrate that this design approach is preferable to the provision of a continuous block along the line of the existing Clinical Services block.

It also provides an opportunity for an enhanced public realm adjacent to the existing clinical services block, and a less hostile environment in terms of wind for visitors arriving at the main clinical services entrance (as noted in the wind study prepared as part of the EIS).

Proposed new public entrance plaza.

Proposed New Public Entrance Plaza

While the project is very much integrated into the SVUH campus, the design includes proposals for the enhancement of the public realm on the campus as a key driver.

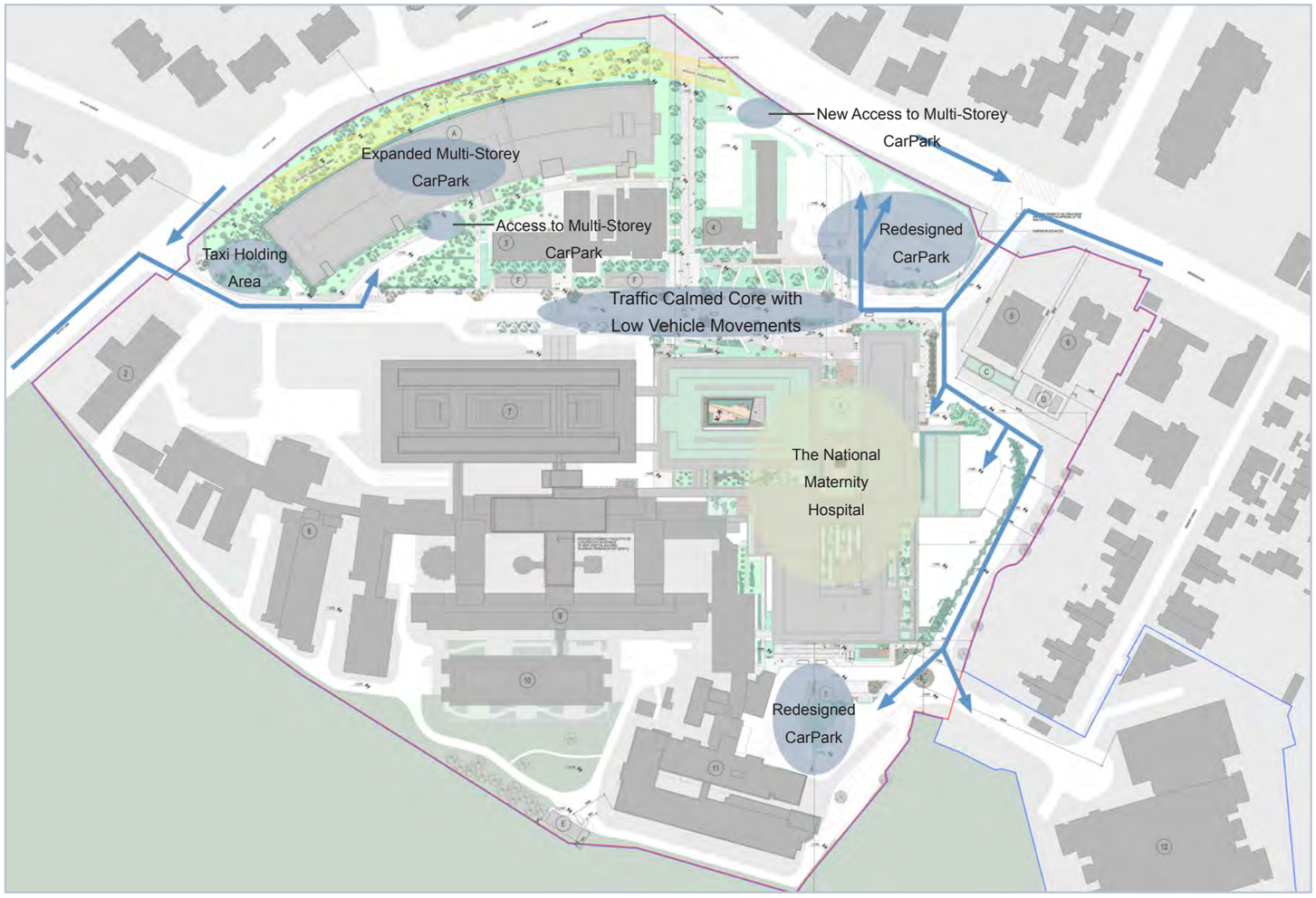
In order to achieve this, the design team has explored ways in which the public plaza to the front of the National Maternity Hospital can be improved upon in a way that will not only serve the proposed development, but also the campus as a whole.

The Site Capacity Study lodged with the application indicates that the area at the top of the pedestrian "boulevard" access, at the intersection with the main campus road, could be re-imagined as the public "heart" of the campus. The proposals for the current development include a significant element of new public green space which significantly enhances the scale of the proposed forecourt space, delivering a major element of this public realm objective as part of the current proposed development. The nett additional landscaped forecourt area now proposed is in the order of 2,700m^2.

The scale of this forecourt space is considerable having regard in particular to the anticipated numbers of patients and visitors to the hospital. It compares very favourably with similar forecourt spaces to other public buildings within the city - please refer to Appendix D to this report for a series of Dublin plaza studies.

Plazas studies include:

- National Conference Centre
- Criminal Courts
- Temple Bar Square
- Dublin City Council (Wood Quay Entrance)
- Bank of Ireland College Green



Proposed Campus Vehicle Circulation Routes

Pedestrian Entrance Walkway

The existing 'boulevard' north-south public pedestrian route into the SVUH hospital from Merrion Road has been strengthened through the addition of a cycle path, a new pedestrian access from the public car park, and new bicycle parking areas are provided nearby. The pedestrian realm is then further extended through an east-west pedestrian forecourt which runs from the current pedestrian route along the south side of the spine road and leads directly into the new Maternity Hospital. All of these areas have been supported with new hard and soft landscape elements as set out on the drawings.

A further benefit of this proposal is that the traffic environment at this location will be completely altered through the introduction of the revised vehicular circulation routes (set out to the left). This represents a step-change in the pedestrian environment and amenity space on the campus that transforms it into a place that is welcoming to all. In particular, as a direct consequence the internal roadway in the area between the existing SVUH main entrance and the proposed National Maternity Hospital main entrance will now become a shared surface with significantly enhance public realm; pedestrian routes; cycle-ways and landscaped spaces to be delivered as part of the current proposed development.

Pedestrian and cyclist circulation has been catered for through a number of dedicated routes within the campus, as well as, enhanced advisory lanes adjacent the vehicular access junctions and through a traffic-calmed campus core. There are five pedestrian crossings across the main internal vehicular route which is an improvement when compared to the present situation. The main internal vehicular circulation routes are presented in the diagram to the left.

Having regard to the scale of expected activity it is considered that the provision of a landscaped plaza as proposed is more than appropriate and successfully serves the new Maternity Hospital while providing a much-improved pedestrian realm for the campus.

General Vehicular Set Down at Main Entrance

The applicant and the design team have carefully considered the need for a patient drop-off facility directly adjacent the main entrance to the hospital. As noted above, the average number babies delivered at the National Maternity Hospital is in the order of 25 per day or just over one every hour throughout the year, and a drop-off facility close to the main entrance is required for patients arriving in varying stages of labour.

Dedicated areas for set-down activity, emergency vehicles, and servicing and deliveries have been provided, with routeing to these areas guided through signage. The proposed layout provides for 6 patient drop-off spaces outside the main entrance with set-down areas provided on both sides of the road to facilitate movements from Nutley Lane and Merrion Road alike. Adequate pedestrian crossing facilities are proposed to connect this drop-off with the main entrance.

In addition, the proposed shared surface will also enhance the pedestrian flow and permeability in this area for both hospitals' needs. Furthermore, the alterations to the main Campus road provide for 15 disabled parking spaces along the spine road which can be used by disabled patients and visitors to both the adult and maternity hospitals. The above mentioned drop-off facilities have also been designed to suitably accommodate the needs of disabled users.

NMH Emergency Department Access

Emergency Department

The emergency department proposed with the National Maternity Hospital is entirely different in nature to one in an acute adult hospital such as SVUH.

It is not an emergency department that services the entire population of any area, rather it that caters for pregnant women only and, consequently is a much smaller and more discreet facility than the existing SVUH emergency department.

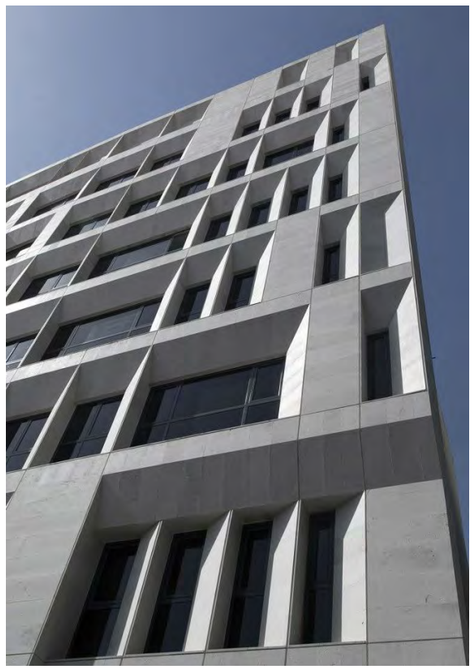
The new National Maternity Hospital emergency department will operate as an out-of-hours facility for the hospital on a 24-hour basis. As noted above, the average number of deliveries at the National Maternity Hospital is in the order of 25 per day throughout the year. Of these, a small percentage present through the emergency department and an even smaller number of these will arrive by ambulance.

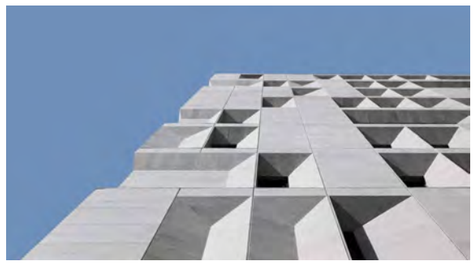
A significant number of patient arrivals to the emergency department are walk-ins and the building is designed to allow such patient walk-ins to arrive both through the main hospital entrance door and to the emergency department directly off the main entrance concourse.

The remaining type of arrivals to the emergency department will be neonatal transfers to the Neonatal Intensive Care Unit. Such transfers are generally planned transfers / retrievals from other regional hospitals, and the transfers / retrievals are operated through the National Neonatal Transfer Service. The National Maternity Hospital estimate this number of Neonatal transfers / retrievals will be in the order of 1-2 per day based on current numbers and projected figures once the new National Maternity Hospital facility is in operation.

The traffic numbers to the National Maternity Hospital emergency department will be limited and will represent only a small proportion of the traffic volumes experienced at the adult SVUH emergency department located at the other end of the campus.

Permanent discrete drop-off / parking spaces for 2 ambulances and 1 patient car area are proposed directly outside the National Maternity Hospital emergency department. On the basis of the above numbers, and the projected numbers into the future, we consider this to be more than sufficient to cater for the needs of the new National Maternity Hospital facility.





Reference images for granite façades and vertical stone fin treatment.

North Elevation

4.6 Elevational Treatment; Materials and Construction Methods

The design has a scale reflective of its context and the building has been split into two volumes to soften its impact on the immediate surroundings. Two types of facade treatment are use to add variety and texture to the building's external envelope.

The more solid areas are finished in granite in dialogue with the granite walls of the neighbouring SVUH Clinical Services Building and St Vincent's Private Hospital. However, the same stone material has been articulated in a different manner, complimenting the existing buildings while expressing the new hospital's unique identity.

The circulation areas that separate the two main volumes of the NMH, adjacent to the central courtyards, as well as the high-level bridge-links are treated as an aluminium and glass curtain wall system.

Granite stone cladding

The project adopts an innovative approach to stone, using this traditional, natural material in a contemporary way. The stone cladding is profiled and layered in response to orientation, sun and activity behind.

Openings on the facade have been designed using a recurring rectangular module and have been positioned to support the needs of the spaces within the building. Three window sizes which work with the 7.5m structural grid have been arranged based on the daylight and ventilation requirements of the rooms behind.

Deep recesses have been adopted throughout the facades. On the north, south and east facades of the eastern Block these are faceted to one side to maximise the spectacular views looking towards the coastline. The outer skin of stone is sandblasted and where set back has a vertical ribbed texture.

Select locations within the 'set back' areas of the facades are surmounted by a skin of natural stone vertical fins. The fins sit in front of high performance curtain walling / window system and stone cladding to provide solar shading as well as giving privacy and controlling views over the neighbouring residential area.

The stone fins are also used within the 2 storey deep recesses located on the north elevation to follow a similar line and pattern to the neighbouring SVUH Clinical Services facade.

There are three principal elevations to the North, East and South, and while the design language and material palette is consistent across the building each of the principal elevations is designed in response to its particular location and setting on the campus as follows:

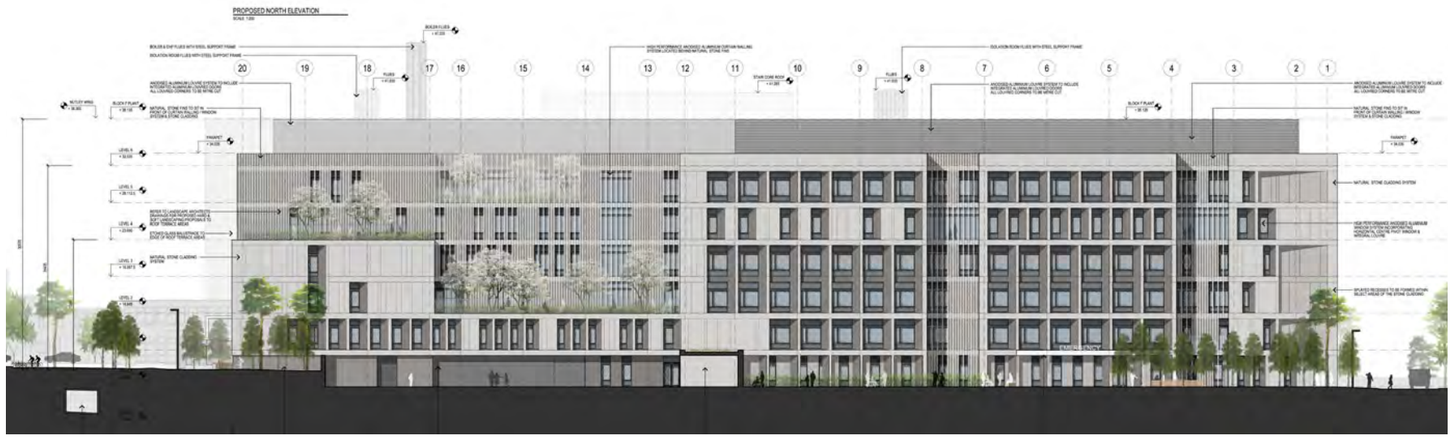
North Elevation

The north elevation is the principal elevation and the location of the main entrance to the hospital fronting the spine road. The elevational design concept is that the height and massing of the five-storey Delivery and Theatre block follows through from the SVUH Clinical Services Building.

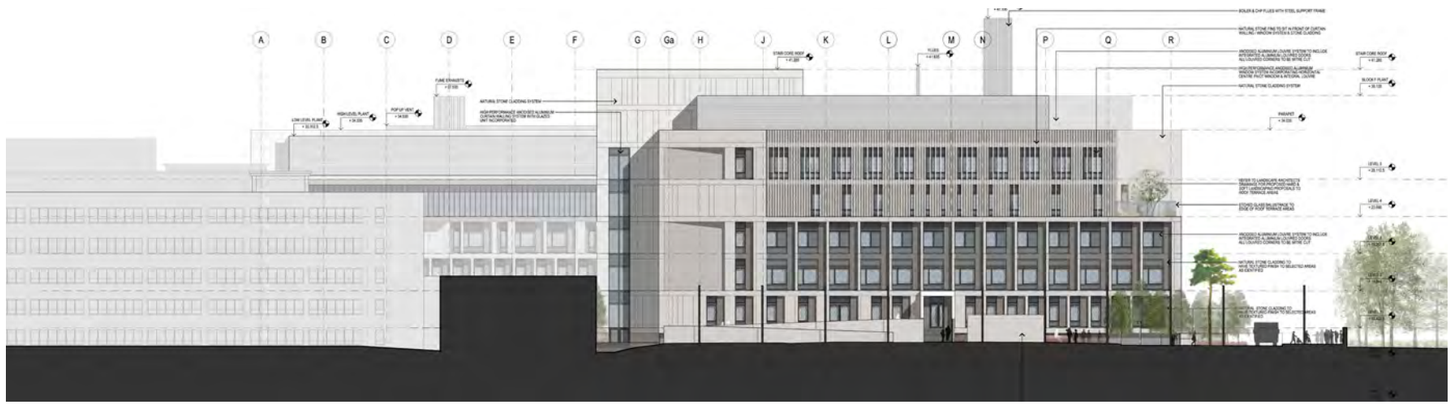
The parapet level of the block to the west is at +28.61OD similar to the SVUH building and the façade treatment is a sandblasted granite cladding with recessed windows. The lower two storeys containing the outpatients areas are recessed and screened by vertical stone fins which add texture to the elevation.

The six storey ward block to the east forms a book end to the campus buildings and frames the main entrance to the NMH in between. The end block has deep, angled window reveals which open views out to the Dublin Bay area to the north-east.

A two storey free-standing stone colonnade marks the entrance to the hospital and leads visitors into the building from the public forecourt



East Elevation



South Elevation

area, the drop off area and the further public car-park area to the west.

East Elevation

The east elevation which runs on a north south axis, steps down at the south east corner to mitigate the impact on the nearby residential properties on Herbert Avenue. Landscaped roof terraces have been integrated within these setbacks as a means to soften the overall impact of the façade and provide a visual focus for the building's occupants.

The parapet level of the block to the north-east is at +34.03OD one floor higher than the SVUH building and roof plant area which is recessed by 5.0m from the parapet which rises to +38.13OD.

The primary material and elevational treatment is similar to the North elevation. The façade treatment combines sandblasted granite cladding, recessed windows and vertical stone fins. The main facade steps back by 7.5 metres at Level 2 and Level 4 in the area directly facing Herbert Avenue. Further setback areas are also included at Levels 5 and 6. The setback areas are clad in stone fins which are designed to shield views to the gardens on Herbert Avenue, while allowing sufficient natural light into the areas behind.

The overall design concept is to achieve a high quality and integrated façade design which incorporates natural stone finishes with landscaped features reflecting the design intent of the overall building but which is also broken down in scale along its length and respectful of its impact on adjoining properties

South Elevation

The south elevation facing the Herbert Wing and the St Vincent's Private Hospital, steps down at the south east corner adjacent to Herbert Avenue as described above. The primary material and elevational treatment is similar to the North and East elevations.

From ground floor to Level 2, the sandblasted granite cladding is allowed to wrap around the building from the east elevation. At Levels 4 and 5 the recessed areas on the north east corner are clad in the stone fins described above, which return along the length of the façade to the west.

The ground level at the south elevation is almost one floor higher than at the north elevation and consequently the building appears to be only 5 storeys in height with a further recessed plant floor at +38.13OD.

The south elevation also incorporates a public entrance to the SVUH Dermatology department which is accessed off the parking are in front of the Herbert Wing. A small stone canopy of similar material to the main canopy in front of the NMH entrance marks the entrance to the building at this point.

3d View of courtyard off the Main Atrium with access from the public café.

3d View of Level 01 courtyard which is overlooked by inpatient accommodation.

Interior Design Approach

The strong architectural language has also been consistently applied to building's interior. The careful selection of materials and colour seeks to provide a welcoming, re-assuring and uplifting environment for staff, patients and visitors. The design aims to provide the National Maternity Hospital with a strong sense of identity and character within the SVUH campus, as well as to mimimise the impacts of the institutional environment on patients, while supporting the clinical needs of a national hospital.

Internal Courtyards

The internal courtyards spaces have been created to enhance the patient and staff experience through the ability to step into or to see into the courtyards which bring daylight deep into the building, offer cognitive respite from the internal hospital environment and act as 'landmarks' within the building to aid orientation and wayfinding.

The internal facades of the courtyards reflect the exterior stone fins by using composite timber fins as an exterior screen in front of the high performance glazed system. These composite fins are essentially the stone fins turned inside-out to soften the internal environment and give a human scale and feel to the spaces within.

Link Walkways

Etched glass is used to the facades of the high level linkages across to the existing hospital buildings providing transparency, illumination, light filtration and privacy.

Key Internal Spaces

Careful consideration has been given to the creation of an attractive and comfortable environment in the principal focal areas such as the central atrium, the staff bases and bedroom areas. Architectural form, lighting effects, colour schemes and the selection of finishes, fittings and furnishing will ensure that these spaces will have a unique feel and atmosphere.

The extent of glazing was analysed and fine-tuned to maximise natural light and ensure that the required natural ventilation and the necessary summer and winter cooling is achieved, particularly in the in-patient rooms areas throughout the building.

Visualisation of NICU Nurse Base.

Left: Visualisation of main entrance atrium. Above: Visualisation of typical patient bedroom

View of carpark with the proposed additional deck from Merrion Road, outside Nutley Shopping Centre.

View of carpark from the SVUH Mortuary showing stainless steel wire trellis planting screen.

View of carpark with proposed additional decks from Nutley Lane.

4.7 Car Park Design

The proposed development includes an expansion of the existing multi-storey car park facility to accommodate the additional parking demand associated with the National Maternity Hospital along with re-provision of any existing campus spaces that are displaced due to the works. The enhanced facility will provide a net increase of 277 spaces on the campus along with approximately 136 displaced spaces to accommodate a total of 922 spaces over five levels. The structure of the proposed extension will be similar to the existing car parking facility.

It will be served by two distinct access points, namely, a new access to the lowest level (Level 1) through the existing St. Rita's surface car park and a new high level access (Level 3) adjacent to the current access. The existing access point will become redundant. The new low level access will be under the existing pedestrian link through the campus from the Merrion Road, thereby preserving this important public realm space within the campus.

The provision of new access arrangements will necessitate the displacement of a number of spaces in both the existing multi-storey car park and in the adjacent St. Rita's surface carpark.

Improved pedestrian links from the enhanced car parking facility will be provided at both the eastern end of the carpark, adjacent to the proposed National Maternity Hospital, and adjacent to the upgraded circulation core with pedestrian links directly towards the Clinical Services Building and the internal campus road.

The new car park access points will benefit the campus and facilitate a greater distribution of campus traffic accessing the site between the Merrion Road and Nutley Lane entrances. The vertical separation of the access points will facilitate the efficient operation of the enhanced facility with each access servicing approximately 450 spaces each.

The provision of access from both the east and west sides of the campus provides an opportunity to enhance the public realm by creating a traffic calmed area along the central portion of the campus road. Improved internal road junctions will supplement the new car park accesses to facilitate efficient vehicle movements both into and out of the campus.

As the current car park was designed to accommodate the proposed expansion the design now proposed extends the language and detail of the existing building complete with 900mm high natural stone cladding to horizontal floor and low level walls within the car park as set out on the drawings.

Landscaping proposals have been extended around the car park to include trees concentrated along the northern and western elevations to screen views of the car park from Nutley Lane and adjacent housing.

At the southern face of the extended carpark we have also proposed a stainless steel wire trellis system to the full height of the car park to screen this elevation from views at the hospital entrance along Nutley Lane.

4.8 Boundary Conditions

While the proposed project is very much integrated into the existing grain and scale of development at SVUH, the design team has surveyed and reviewed each of the existing site boundary conditions and has in certain areas tailored the design response having regard to the more salient boundary issues that have emerged from this review. We summarise the approach adopted for each of the site's principal boundaries below. Further detail on some of these matters is set out in the Landscape section of this Report.

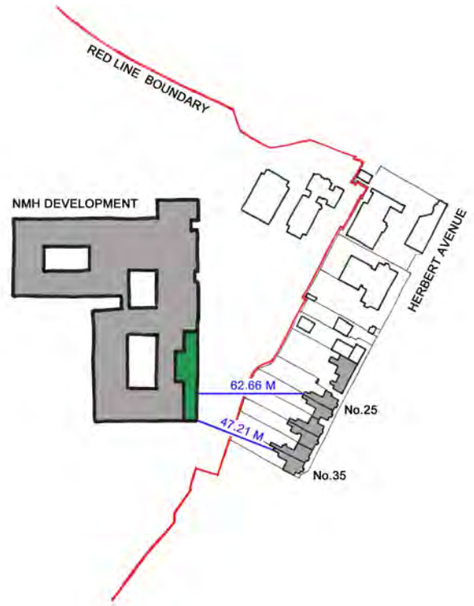
Herbert Avenue

Herbert Avenue is a residential street located to the east of the SVUH campus and the rear gardens of the properties face the east elevation of the proposed NMH development. Herbert Avenue is at a slight angle to the geometry of the SVUH site so that the properties to the south of the street are closer to the proposed development than the properties to the north. By way of example there are six existing houses on southern end of Herbert Avenue facing the proposed development and the distances of the back of the houses from the east elevation of the proposed NMH development varies from 47.21m (No. 25) to 62.66m (No. 35). Each of the properties has a west facing garden with a stone garden wall facing the SVUH internal access roadway to the St. Vincent's Private Hospital

Following reviews at the earlier stages in the project it was identified that while the six properties No. 25 to No. 35 Herbert Avenue were a reasonable distance from the development, that the impact could be mitigated if the upper levels of the proposed development were set back and fenestration designed so that direct views to the properties back gardens were reduced.

The design team also reviewed the daylight and sunlight issues that might arise and was satisfied that the proposed development as set-back had no material impact in term of sunlight or daylight. Refer to the EIS chapter on Material Impacts.

The design team has developed detailed sections through each of the six properties enclosed with this application to set out the actual sectional impact and indicate the relief provided by the proposed setbacks to the upper levels in each case.



Sketch showing building set-back to reduce impact on Herbert Avenue

Merrion Road

Merrion road to the north is a busy traffic corridor with a mixed number of uses such as the Merrion Shopping Centre St. Michael's College, the Caritas Convalescent Centre, and smaller neighbourhood centres.

The main National Maternity Hospital building is 58m form the Merrion road pavement at its closest point and consequently is significantly set back form the street edge. The existing SVUH Multi-Storey Car Park (MSCP) is 16.5m from the Merrion footpath at its closest point (North West Corner), and the expansion of the carpark has a more immediate impact on the Merrion road.

The design team reviewed the options for car-park expansion vertically and horizontally against the visual impacts on Merrion road, and Nutley Lane. The team concluded that the greater visual impacts would be on Merrion road due to the natural ground levels being lower to this side. As a consequence, the design proposal for the MSCP extension is for one additional floor only to the Merrion road (northern) end of the car park and two floors expansion to the Nutley Lane (southern) end.

The north south main pedestrian public route form Merrion road into the campus was identified as a major element of the public realm on the campus and it is proposed to enhance this route through the addition of a new cycle path alongside the pedestrian pathway leading into the hospital with an additional new bicycle shelter provided at the end of this north south footpath and cycleway.

The design proposals also include improvements in the traffic junctions at the Merrion road entrance into the hospital as set out on the Engineers drawings and reports.

Nutley Lane

Nutley Lane to the west of the campus is a largely residential area although it is contained by the RTE developments at the Donnybrook end and by the Merrion Shopping Centre and St Michael's College to the Merrion road end.

The existing SVUH Multi-Storey Car Park (MSCP) is setback 16.5m from the Merrion footpath at its closest point and the expanded MSCP is set back 14.8m. As the ground rises form Merrion road to Nutley lane a greater element of the MSCP is below ground at this point. The lowest existing and expanded carpark level is at +3.50m OD whereas the adjacent ground level along Nutley Lane varies from +6.00m OD to +7.80m OD. The parapet of the lower section of the proposed expanded MSCP car-park along Nutley Lane is +13.69OD and the parapet of the expanded upper section (which is set back a further 16mfrom Nutley Lane) is at +16.50 OD.

The design proposal for the car park include for landscape proposals in the area between the MSCP and Nutley Lane. Ref. Landscape Design Report at Section 6 below.

The design proposals also include improvements in the traffic junctions at the Nutley Lane entrance into the hospital as set out on the Engineers drawings and reports.

Elm Park Golf Club

The lands are bound to the south by a significant area of green space which is in use as Elm Park Golf Club. This open space provides a unique setting for the hospital campus and its open nature and mature boundary planting means that it is less sensitive than other areas; for example the area to the east at Herbert Avenue.

St. Vincent's University Hospital

The principal consideration of impacts on St Vincent's University Hospital and interfaces with existing buildings and services has been in the planning of the proposed development to ensure that the development when complete is fully integrated into the SVUH campus in a manner that is consistent with the long term development strategy for the hospital and consistent with the co-location objectives both of which are addressed elsewhere in this submission.

Another immediate impact reviewed and considered has been the decanting of existing buildings currently on the site and the re-provision of such services in a planned and orderly manner that maintains existing facilities and services on site at all stages. This is described in more detail at Section 8 below.

5.0 FUNCTIONAL PRINCIPLES AND CLINICAL ORGANISATION

The design has incorporated the clinical design requirements as set out in the project brief having regard to the models of care; operational policies and priority adjacencies noted in the Preliminary Design Brief and identified during the consultation process.

The design has particular regard to the provision of key links to be incorporated in order to optimise the clinical advantages of co-location and the efficient provision of campus wide support services to both hospitals.

We are also mindful of the need to maintain seamless provision of existing clinical services within SVUH throughout all stages of the works and the design proposals have been prepared accordingly.

This issue is addressed in more detail in the Enabling and Decanting Works strategy at Section 7 below.

5.1 Adult and Maternity Co-location

The co-location of the National Maternity hospital on the SVUH campus presents a number of opportunities for clinical links between the adult and maternity hospitals which are fundamental to the reasons for co-location. These are incorporated into the current design proposals as follows:

Theatre and Critical Care

The overriding clinical adjacency that is set out in the brief is that new operating theatres in the Maternity Hospital are located on the same floor (Level 4) as the existing operating theatres in SVUH to facilitate ease of access to adult critical care. This is set out as a cornerstone of the design and the Theatre suite in the new NMH is planned directly adjacent to the SVUH Theatre and Critical Care department at exactly the same level (+23.69M OD) on Level 4.

CSSD

The synergies available through co-location are further enhanced at Level 4 through the development of a new shared campus Central Sterile Service Department (CSSD) which will replace the current SVUH CSSD located within the SVUH Theatre departments at SVUH.

The new CSSD will have direct access to and from both hospitals theatres and a new Level 4 street / link provides direct access from CSSD to the clinical core serving all levels of the SVUH clinical block; thereby facilitating access to CSSD from all levels of the SVUH clinical services building.

Laboratory

The Laboratory is also developed as a shared service between SVUH and NMH. The existing Laboratory is located at Level 3 of the SVUH Clinical Services block.

The existing departments within the Laboratory have been reviewed with both hospitals and proposals have been agreed on the scope of the adjustments required to each area to facilitate sharing of services.

This is supplemented with the development of a new Laboratory area on Level 2 of the new NMH block comprising the Anatomical Laboratory, the Molecular Laboratory and shared administrative Laboratory space.

A new bridge link, with stairs and lift transfer, is provided both between Level 2 and Level 3 of the SVUH Clinical Service building and the NMH block, to facilitate movement between the two areas for Laboratory staff.

Radiology CT and IR

The Radiology department within the new NMH building is located at Level 1 of the NMH block and this will provided MRI services, General Radiology services and Ultrasound services for patients attending the NMH. However NMH patients will require access to the CT and IR (Interventional Radiology) areas at Level 2 within the SVUH Clinical Services block, and this access is facilitated through the proposed bridge link and transfer lift between Level 2 of the NMH and SVUH buildings.

Shared Clinical Support Services

In addition the design proposals include back to back adjacencies for non-clinical support services in the following areas that will facilitate greater synergies to be developed between the respective support services in each hospital. These include the following departments:

• The SVUH and NMH Medical Records departments (Level 2)

• The SVUH and NMH Finance departments (Level 1)

5.2 Whole Hospital Policies

The National Maternity Hospital prides itself on the range of choices it offers to women with regard to their care paths, and also the many related and contrasting services provided by the hospital which carry with them some of the greatest highs and lows of life's experiences. This leads to many different flows throughout the hospital, all of which have been carefully considered in order to cause least upset to those grieving, struggling with fertility problems or caring for very ill babies in an environment that is dominated by the contrasting positive affirmation of birth.

Patient access routes through the NMH building all flow from the central atrium space located at the main NMH entrance to the north from where ambulatory OPD services EPAU and Ultrasound services are directly accessible. A bank of public lifts within the atrium transport all patients and pubic directly to all accessible areas within the NMH building.

Emergency access to the NMH building is provided to the eastern side of the building with direct access to Emergency department and EPAU at ground level, and via hot-lift link to Operating and Delivery area and for neonatal transfer directly to the NICU at Level 3 and 4. Ambulance bays are provided outside to enable loading and drop-off to the dedicated National Maternity Hospital emergency/triage department.

Patient access routes to the SVUH departments within Block A all flow from the existing SVUH link walkway off the main atrium entrance space on Level 0 of the SVUH Clinical Services block. A bank of public lifts within the atrium transport all patients, public and staff directly to all accessible areas within the SVUH and shared departments in Block A.

A new campus FM / Logistics service area which includes Environmental Waste Management; Central Production Kitchen and Utility services has been planned at Level 0, to link directly into the existing SVUH Level B dedicated services street and ensure direct service access to all areas within the SVUH campus. The area is supported with a bank of new service lifts directly off the existing Level B service street which will facilitate direct segregated and efficient service and logistics access to all upper floor areas within the new building.

5.3 Internal Clinical Adjacencies

The design as developed provides the key clinical adjacencies that are required to optimise the service delivery within the new Maternity Hospital. The layout now submitted reflects these priority adjacencies. Those co-located adjacencies are noted in section 6.2 above and the key internal Maternity adjacencies achieved are as follows:

Level 0 - Ground Floor

The ground floor accommodates the main entrance, café, and reception and is directly adjacent antenatal day services. These include Obstetrics OPD; Pregnancy Day Care; Physiotherapy and Parent Health, all planned with direct access of the entrance atrium and with close adjacencies for ease of patient flow and movement within and between general antenatal day services at the hospital.

The Emergency / EPAU / Ultrasound / Fetal Medicine departments are all located adjacent to each other to the east side of the Atrium, social spaces and courtyards. The Emergency Department, with separate drop-off has access to Theatres, and Birthing Suites and NICU via adjacent hot lifts.

Level 1

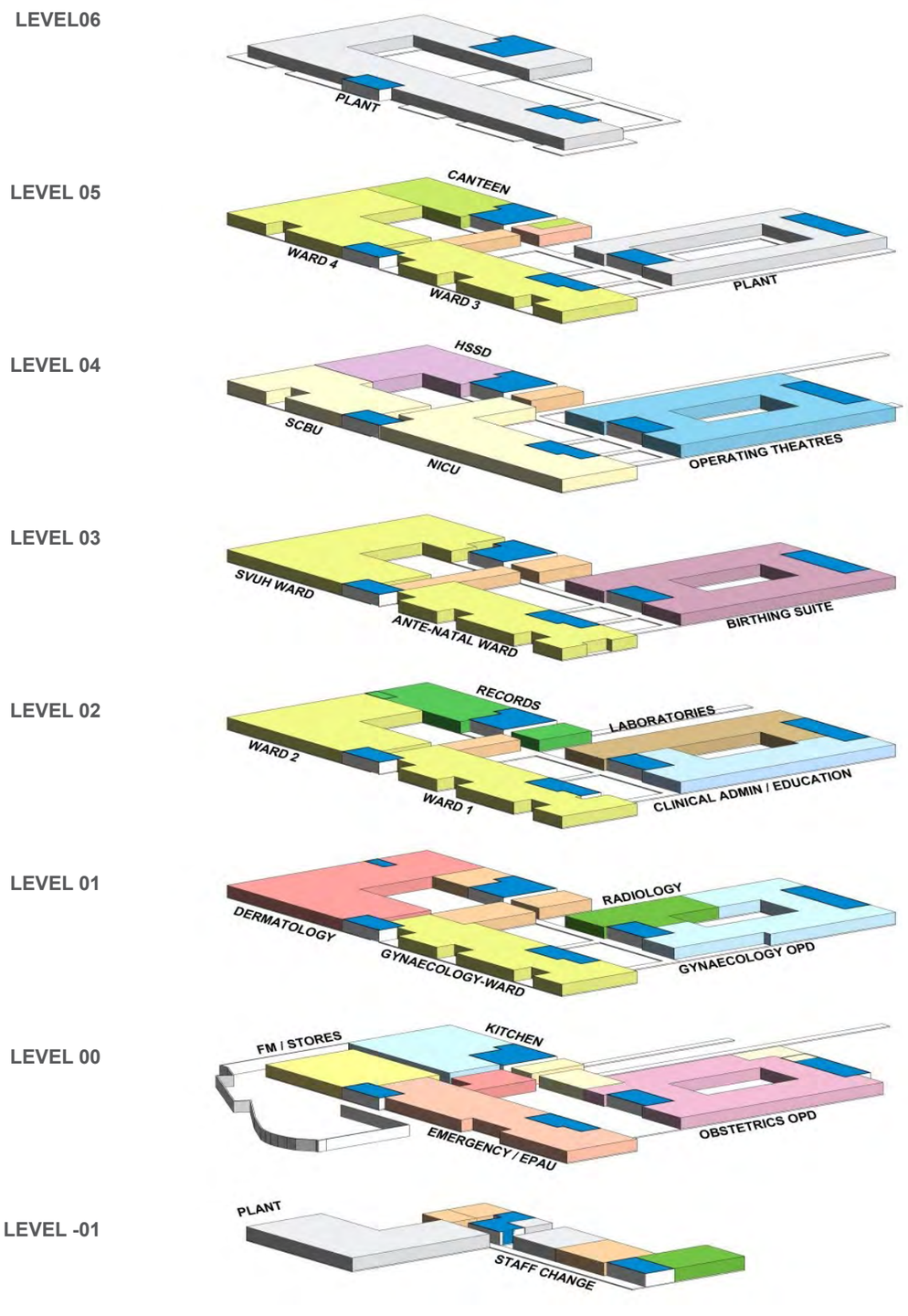
Our proposed layout for Level 1 includes all gynaecology services, outpatient, day and inpatient. Fertility Medicine Services and Colposcopy services are also accommodated within the general Gynaecology OPD. This level is easily accessible from the main entrance but is more discrete than the ground floor respecting the need to separate obstetric patients from gynaecology patients and fertility services. There is no obstetric activity on this floor.

The Gynaecology day patient and inpatient ward is located directly across the hospital street from the Gynaecology OPD.

Level 2

Level 2 comprises two post natal wards departments with separate access off the hospital street. Each ward contains 31 bed units. Ward areas are predominantly located on the external perimeter and, at this level, will benefit from the outstanding views towards the coastline and to the Wicklow mountains. Support spaces are located along an ancillary spine within each department for even distribution.

The shared campus staff canteen is also located at this level in Block A, with direct access to a protected external courtyard space which will benefit from the outstanding views towards the Wicklow mountains. The vertical lift core is locat-



ed directly adjacent to this to facilitate immediate access from below.

Level 3

Antenatal Wards and Birthing Suites are proposed on this floor allowing ease of access to the birthing suites from the antenatal wards. The floor is also linked via hot lifts to theatres on the floor above. Birthing suites are arranged around a central courtyard. Each room will have a view to the outside. The U shaped plan allows certain suites to be allocated to low risk, with high risk rooms potentially located nearer to centrally located lifts to the theatres above. The Antenatal Ward is located directly across the hospital street from the Birthing Unit with direct and discrete access away from the general public circulation routes.

Level 4

This is the principal Clinical Floor accommodating Theatres and NICU & SCBU. Direct links to adult theatres and adult ICU is accommodated for rapid transfer of mothers when required. Direct adjacency to NICU and SCBU also affords ease of access for neonates from theatre to the NICU. The Theatres are be planned to allow for an Emergency Theatre to be centrally located and thereby easily accessible from two separate 'hot-lifts' within the Birthing Suite below.

Level 5

Level 5 comprises two post natal ward departments with separate access off the hospital street. The wards are planned similarly to those located on level 2. As noted above, the ward areas are predominantly located on the external perimeter and, at this level, will benefit from the outstanding views towards the coastline and towards the Wicklow Mountains.

Other support spaces including education areas and lecture theatre and are located along an ancillary spine within direct access off the hospital street and vertical core to the south.

5.4 Departmental Design

The location and footprint of every department within the proposed building has been carefully thought through and is set out in drawings attached. Access to each department, movements of people, supplies and logistics distribution have been planned to optimise efficiency.

We have outlined below, for information, some of the key features of the plan layouts as they apply to the critical Maternity departments of Birthing Suite Theatres, and NICU at Level 3 and 4.

Level 3 Birthing Suite

The Birthing Suite at Level 3 is located directly below the Operating Theatres and directly adjacent the inpatient Ante Natal Ward. The layout incorporates the following key design features:

• Provision for public and service access directly off the hospital street, with public lifts outside the department in close proximity to the department entrance.

• The Birthing Suite is located adjacent to the Ante Natal ward. A direct patient bridge link is provided to facilitate transfer between these departments, separate to the public circulation routes at this level.

• The Birthing Suite is located directly below Theatres. Two dedicated hot lifts are located at both ends the department to facilitate rapid vertical transfer to Theatres when required. This lift can also facilitate a discrete link to the infant mortuary at level 0 (directly below).

• A bridge link connection is also provided on this level to the adjacent SVUH Clinical Services building Laboratories, whilst this link will not be at grade a pass through lift is shown to facilitate the discrepancy in floor levels. This will facilitate direct transfer of samples to Blood Transfusion.

• The layout allows all 24 birthing rooms to be positioned around the perimeter, optimising views, natural ventilation and natural light for patients.

• All birthing rooms are appropriately proportioned and close to square.

• The design includes for 8 twin or higher risk birthing rooms, to be grouped directly adjacent to the emergency hot lift transfer.

• Shared support spaces are grouped around the courtyard in areas that are visible and accessible from each room.

Level 4 Neonatal Intensive Care Unit (NICU) and Special Care Baby Unit (SCBU)

The NICU at Level 4 is located directly adjacent the Operating Theatres at the same level. The layout incorporates the following key design features:

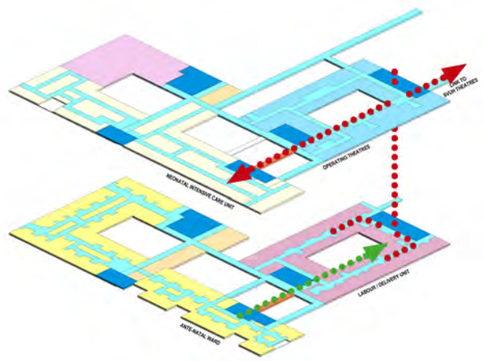
• The design provides for separate public and service access directly off the hospital street.

• The Birthing suite is located on the floor below but a dedicated hot link can facilitate emergency patient transfer from birthing and from Emergency and from the Neonatal transfer on the ground floor.

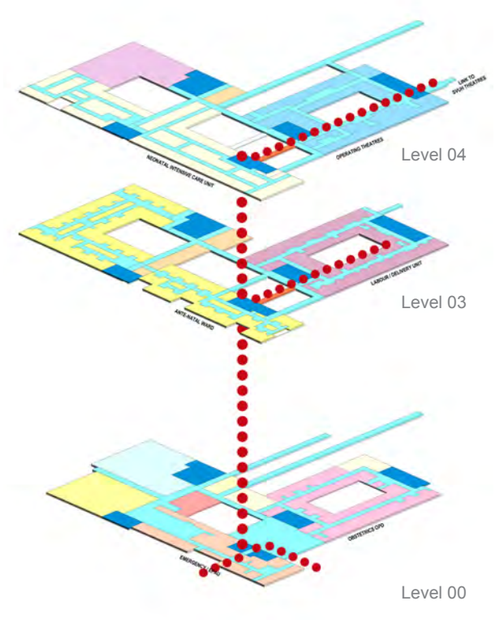
• The design layout creates distinct areas for NICU and SCBU. The layout has the flexibility to be sub-compartmented further to group single cot areas in terms of their criticality so that babies can be grouped and nursed in accordance with needs at all time.

• A single access point is shown into the NICU / SCBU areas for parents and visitors in order to control access and ensure a secure environment for neonates is provided.

• All single cot rooms are located around the perimeter and into the courtyard areas, optimising views and ensuring natural light into all clinical areas.



Stacked flow diagram showing the patient journey from the Ante-Natal Ward to the Birthing Suite on Level 03, followed by emergency transfer to the Theatres on Level 04. Onward journey to SVUH Theatres and/or to the NICU are also indicated.



Stacked flow diagram showing the patient journey from the Main Entrance or Emergency Department, either directly to Birthing Suite on Level 03, or directly to the the Theatres on Level 04.

• Ancillary accommodation is located along a central spine within the department that facilitates an even distribution of support space throughout the facility.

• Clinical support accommodation such as waiting areas, offices and interview rooms are located on the periphery of the NICU / SCBU department for ease of accessibility by staff and parents and to avoid the need for through traffic deep into the department.

• The design supports the location of the family area adjacent but not central to the NICU department.

• The layout will support the location of staff communication bases at the key entrance points as well as at carefully chosen locations within the department.

Level 4 Operating Theatres

The new NMH Operating Theatres at Level 4 are located directly adjacent the existing SVUH Operating Theatres at the same level and also adjacent to the Neonatal Intensive Care Unit (NICU). The layout incorporates the following key design features:

• Provision for separate public and service access directly off the hospital street.

• The department is located directly beside NICU / SCBU and above the Birthing Suite. A dedicated bridge link is provided with NICU / SCBU for ease of transfer of ill / premature new born babies. Transfer from the emergency (triage) department can also be facilitated along this link. Two dedicated hot lifts are located at both ends of the department to facilitate rapid transfer from the Birthing Suite from the floor below.

• A dedicated link connection is provided to the adjacent Adult Theatres and Adult ICU within SVUH Clinical Services building to facilitate rapid transfer of mothers, if required.

• The layout includes a bridge connection to the new campus wide Hospital Sterile Services Department (HSSD) to facilitate a single flow of 'clean and dirty' equipment transfer in and out of department to reduce any risk of cross contamination.

• All 5 theatres are located on the perimeter, allowing views and providing respite from the clinical environment.

• The design includes for an appropriately scaled viewing courtyard which will enhance the quality of environment for patient rooms and circulation areas looking into this space. This will assist in creating an ambient atmosphere to assist with patient anxiety.

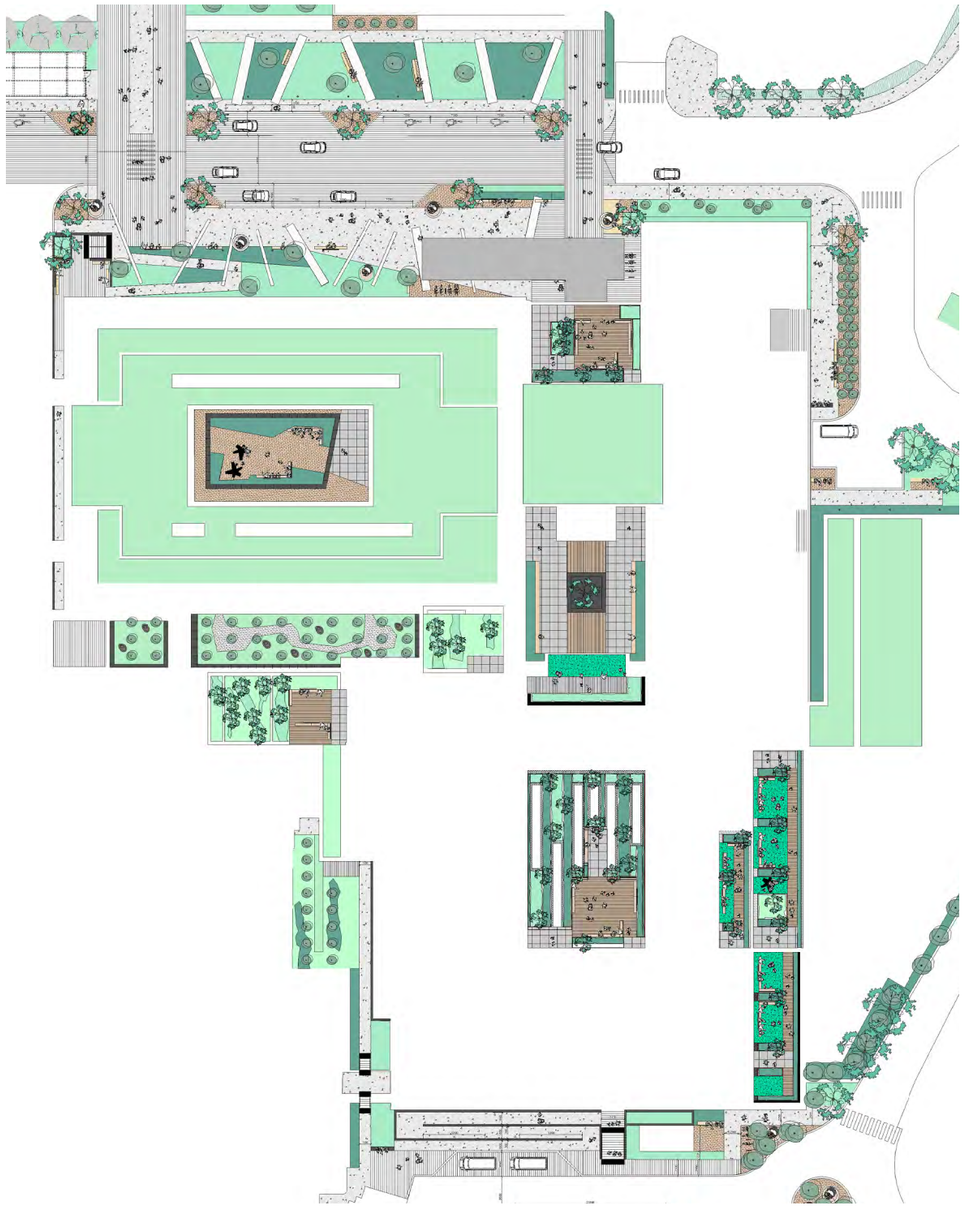
• The design includes for a reception and check-in area directly off the hospital street where patients would then be handed over to the Theatre staff. Access by visitors can be carefully monitored and restricted from entering beyond this point.

• Staff changing is located within the department and facilitates pass through changing.

• The Post Anaesthetic Recovery Area (PARU) and High Dependency (HDU) areas are also located on the perimeter and courtyard areas.

• The HDU area is located close to the Adult Hospital to facilitate quick and direct access for SVUH adult hospital critical care staff to NMH HDU when required.

6.0 LANDSCAPE DESIGN



The architects' concept drawing above illustrates the design intent for landscape courtyards and gardens to be embedded within the overall design concept for the project.

High quality landscape interventions have been woven into the design of the NMH at SVUH, both within the new building's multiple courtyards and terraces, and surrounding it with improvements to the campus public realm as a whole. These additions to the campus have been outlined in previous sections on urban and civic design, as well as in relation to the new pedestrian entrance plaza and traffic calming measures.

As well as improvements to the new buildings surroundings, landscape design proposals have also been developed on a number of levels to support the architecture of the proposed new building and its integration with existing buildings, and existing site context. The spatial arrangement of the landscape plan relates directly to and is informed by the architectural design concept for the building in which landscaped courtyards, terraces and gardens are intrinsic to the design.

The detail of the landscaping at the entrance to the building creates a connection, through the atrium space to the central landscaped courtyard by means of shared geometry and materials. The entrance landscape responds to the approach routes to the building from existing and new car parking areas; bicycle parking areas; the main pedestrian access point to the campus, vehicle set-down bays; and the existing Clinical Services Building and creates a sheltered plaza immediately in front of the main entrance.

In addition to the courtyards and perimeter green space a number of roof terraces and gardens are proposed throughout the building. They provide a visual connection to exterior landscape at key points in the building and access for staff, patients and visitors at appropriate locations. The intensive and extensive green roofs proposed will also contribute towards surface water attenuation.

Integration of Landscaped Environments

The overall plan form and the shallow depth of each of the building blocks is designed to incorporate a series of courtyard areas and spaces throughout the building, allowing the opportunity to bring landscaping into the building to avoid deep plan forms and maximise natural light and natural ventilation into all patient areas.

The incorporation of a large number of gardens; courtyards and accessible high level terraces within the layout is fundamental to the design approach to enrich the experience of patients and staff within the hospital and provide the appropriate therapeutic environment in which access to nature and light is prioritised in the development of the architectural form of the building.

As highlighted above this is one if the key design drivers behind the design concept and the design has realised this through the following areas which are fully integrated into the layouts at all levels.

Level -1

• A sunken garden to the south of the office accommodation. The garden will be viewed from the main public link corridor on Level 0 above which links the adult and the maternity hospitals.

Level 0

• The Entrance Level Landscaped Forecourt which a major public space outside the main entrance to the hospital

• The Concourse Courtyard which is publically accessible from the main entrance concourse at Level 0 and opens directly off the café and waiting areas to the south of the concourse.

• The OPD Courtyard which is publically accessible form the main OPD waiting area at Level 0

• The Bereavement Garden which is a small contained viewing garden to the south of the Bereavement Suite at Level 0 an only accessible from this area.

Level 1

• The Dermatology Courtyard to the rear (south) Block which is publicly accessible form the main Dermatology OPD waiting areas and the Hospital street to the north

• An external landscaped viewing garden – not accessible, to the south of the Radiology department and the north south hospital street .

Level 2

• The East facing patient landscaped garden opening off the NMH inpatient ward accommodation on Level 2.

The courtyard is screened on its eastern edge to avoid overlooking of gardens to the rear of residences on Herbert Avenue to the east.

• The Café Courtyard garden – accessible directly off the public Dining Area on Level 2.

• A hard landscaped garden area over the main entrance which is accessible from the boardroom and management and the patient link corridor off ward accommodation on the same level.

Level 4

• The East facing patient and staff landscaped garden opening off the Special Care Baby Unit (SCBU) an area that mothers and families may spend some time visiting new born babies in long term care within the Unit.

The courtyard is screened on its eastern edge to avoid overlooking of gardens to the rear of residences on Herbert Avenue to the east.

Level 5

• The East facing patient landscaped garden opening off the NMH inpatient ward accommo-

The range of reference images above represent the intention that each landscaped area would have its own character and identity, appropriate to its location within the building, and its relationship with adjacent accommodation.

dation on Level 5. The courtyard is screened on its eastern edge to avoid overlooking of gardens to the rear of residences on Herbert Avenue to the east.

• The rooftop landscaped viewing garden area off the Education / Training area and visible directly off the public hospital street in this area

All of the above garden and courtyard spaces have been carefully considered and integrated into the designs following reviews at each stage with the hospital stakeholders. They are an integral element of the design concept for the project and in each case are designed to improve and enhance the patient staff and visitor experience at the hospital.

The overall proposals for landscape design within the project have been carefully considered from the outset and, as noted above, are intrinsic to the design of the new National Maternity Hospital at SVUH and embedded into the developed design.

The design team has worked with the Landscape Architect through the design stages to realise this vision and the Landscape Architects Report at Appendix No. 1 sets out details of the landscape design proposals throughout the development.

7.0 SUSTAINABLE AND ENVIRONMENTAL DESIGN

All aspects of the energy requirements of the new National Maternity Hospital have been considered, looking at the site from a holistic viewpoint in order to propose an energy solution that will consider the following key elements:

• BREEAM Bespoke application to achieve an 'excellent' target for the new build

• Energy and carbon targets

• Building Energy Rating A3 target

The end result of reviewing the various sustainable and energy efficient technologies is to identify the technologies and techniques, which will be incorporated into the final scheme design. The successful implementation and integration of these into the building, will arrive at a hospital, which is not only fit for purpose and operate to optimum energy efficiency but will have increased productivity, increase patient comfort by being a positive and pleasant space and improve staff retention. The integration of these technologies will largely be seamless to the end-users but are energy efficient and more cost efficient in comparison with a conventionally serviced building.

Through the scheme design, the key technologies identified for further detailed investigation fall under three main categories:

Passive design

Consideration of orientation, form, geometry, fabric performance, solar gain reduction, daylight optimisation, air tightness, maximise natural ventilation, green roofs for water attenuation.

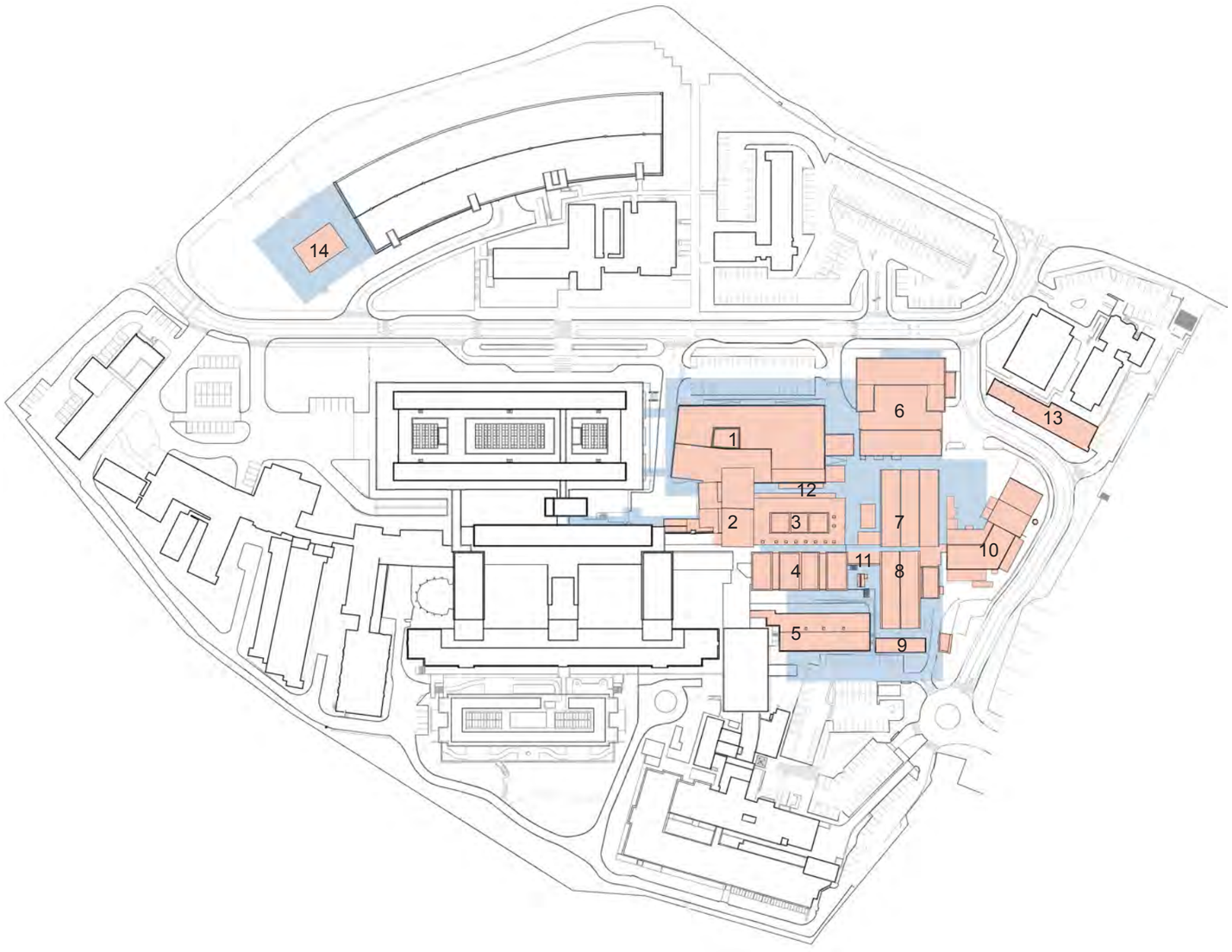
Supply energy efficiently

Use of LED lighting controls, location and sizing of plant and equipment, ventilation velocities, heat recovery, high efficiency plant, appropriate zoning of systems, metering and user guidance and training

Use of renewable technologies

Combined heat and power forms an integral part of the scheme, optimised to match a base thermal load. Photovoltaics are also likely to be required to achieve the BER target.

An amalgamation of the approaches and technologies listed above has been developed in line with the client requirements and operational procedures taking into account future maintainability and flexibility in the operation of the building.



8.0 DECANTING AND ENABLING WORKS

The site for the National Maternity Hospital development at SVUH was selected from a range of options studied at feasibility stage. It was identified as the preferred site due to its opportunities for clinical adjacencies and direct connectivity with SVUH ICU and Theatres, which are located in the adjacent SVUH Clinical Services block. The site had been previously identified in SVUH's development control plan as a low density, underutilised site and zoned for future development.

The site currently hosts a series of single and two storey structures which are connected to the main SVUH Ward Block by an existing two storey hospital street. In order to clear the site for the construction of the NMH and associated shared services building (identified as Block A in the diagrams on the following page), these facilities are to be decanted from their current locations and provided for elsewhere on campus or within the new development.

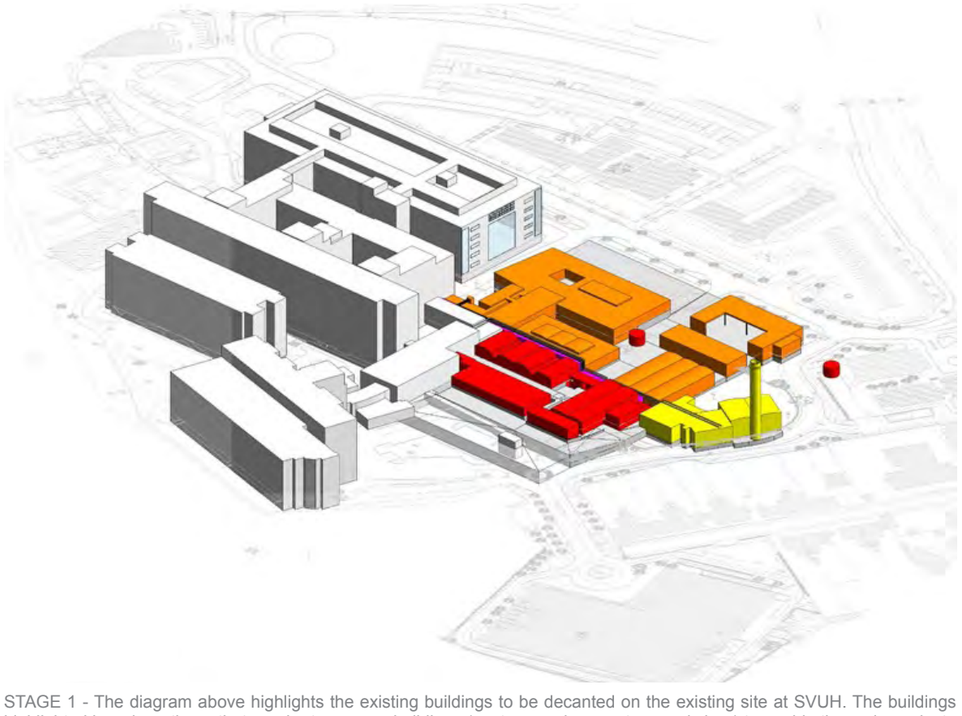
Facilities to be decanted include live hospital departments, hospital catering and major FM facilities as well as significant infrastructure and services. The Design Team have proposed a strategy by which these facilities can be relocated with minimum disruption to the surrounding live hospital campus and its FM flows.

The Buildings to be demolished to facilitate the project (numbered in the diagram to the left) are as follows:

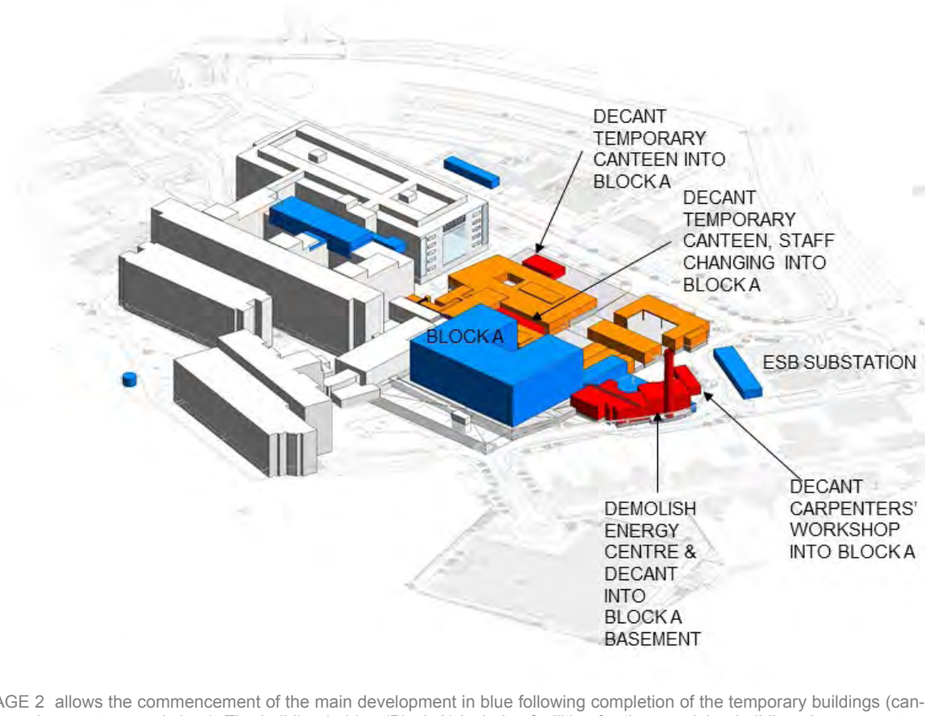
1. Dermatology Department
2. Neurology Ward & Medical Records Below
3. Central Kitchen
4. Canteen & Plant Room Below
5. Transitional Care Unit
6. Waste Marshalling Yard (including medical gases compound and cryostore)
7. Stores and Purchasing
8. Pharmacy
9. Carpenters' Workshop
10. Energy Centre (including linen providers office and laundry)
11. Kitchen & Canteen Staff Changing Facilities
12. Bicycle Parking
13. VIE and Bulk Oil Store
14. Nissen Hut (storage)

Note: Further facilities to be decanted are located at the Lower SVUH Level B (SVUH basement area) and include the following.

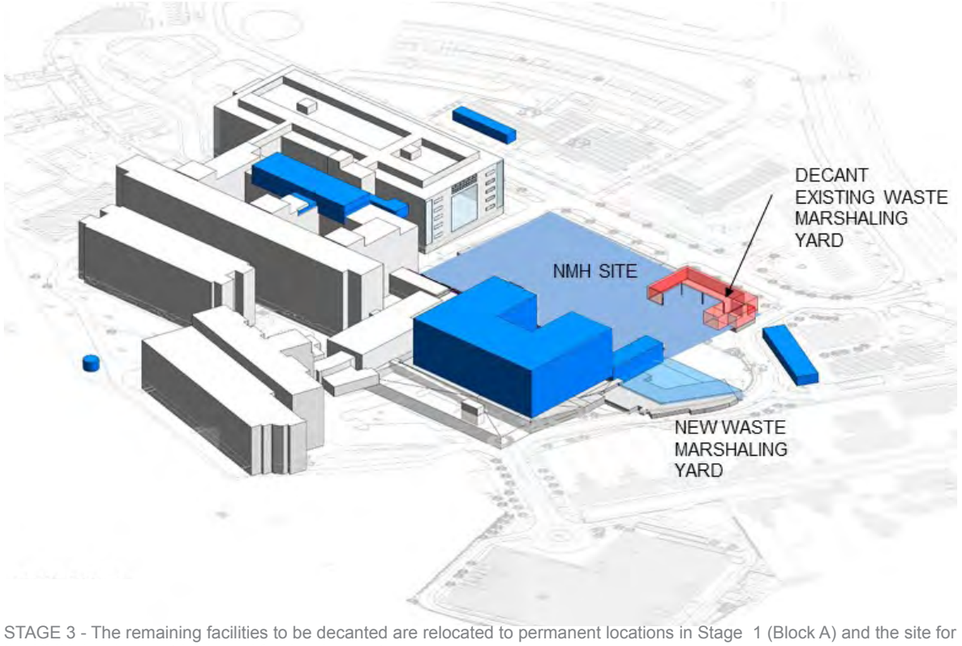
13. Plant Room (under Canteen)
14. Medical Records



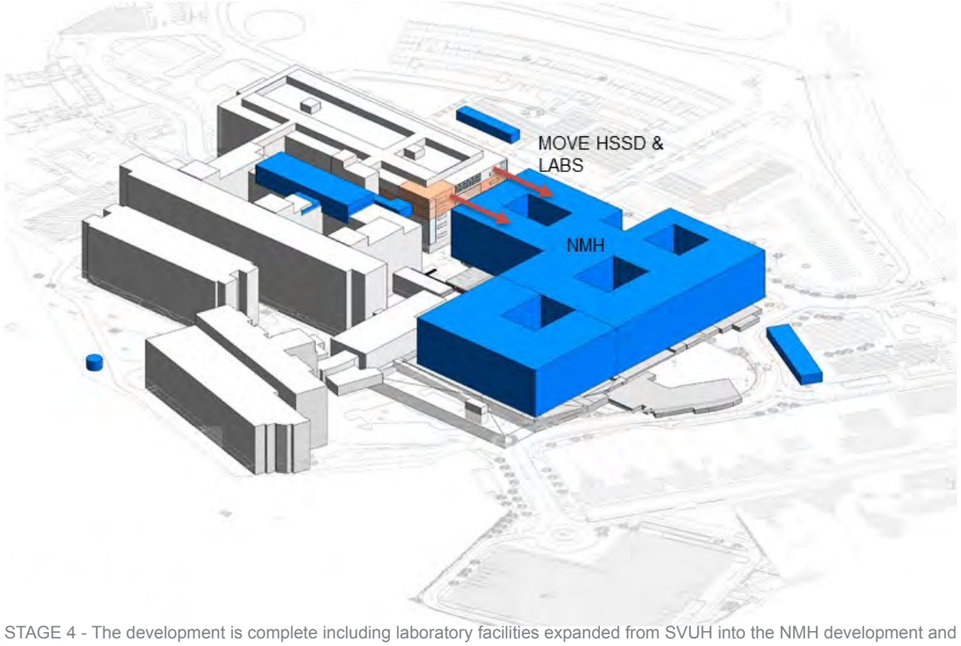
STAGE 1 - The diagram above highlights the existing buildings to be decanted on the existing site at SVUH. The buildings highlighted in red are those that require temporary buildings (canteen and carpenters workshop) to enable the main works to commence on site.



STAGE 2 allows the commencement of the main development in blue following completion of the temporary buildings (canteen and carpenters workshop). The building in blue (Block A) includes facilities for the remaining buildings in orange to e decanted



STAGE 3 - The remaining facilities to be decanted are relocated to permanent locations in Stage 1 (Block A) and the site for the NMH development is cleared for development.



STAGE 4 - The development is complete including laboratory facilities expanded from SVUH into the NMH development and the NMH move to the new hospital on the SVUH campus

Enabling and Decanting within the Context of the Site Strategy

As St. Vincent's University Hospital will remain a live and functioning campus for the duration of the construction of the NMH, initial design studies prepared by O'Connell Mahon Architects (OCMA) and Isherwood and Ellis Architects proposed a two stage decanting strategy which allowed for one side of the site to be cleared first as the location for the Block A shared services building.

On completion of Stage 1 (Block A) the remaining facilities on the other side of the site would be decanted into it and the site cleared for the NMH building.

This strategy allows SVUH to continue using its main FM artery, the existing hospital street which runs east-west from the campus energy centre to the mortuary, and demarcates the physical boundary between the two stages of the proposed development.

This strategy allows all existing facilities on the proposed site to be decanted without any double moves or need for temporary accommodation, with the exception of the SVUH canteen and carpenters workshop for which details of temporary buildings are set out in the application documentation.

This strategy is summarised on the series of sequential diagrams set out to the left.

9.0 FIRE STRATEGY DESIGN

Introduction

The preliminary fire engineering design for the project has now been developed to achieve the following key aims, and is incorporated in the current design proposals:

• Adequate vertical circulation via stairs and lifts for means of escape in case of fire and means of access for the Fire Service
• Adequate Fire Service access to the external perimeter of the building
• Adequate compartmentation and sub-compartmentation to support progressive horizontal evacuation
• Appropriate separation between high risk compartments and high dependency occupants
• Adequate fire protection systems including facilities for manual fire-fighting by the Fire Service
• Incorporation of the atrium design into the fire strategy
• Retention of existing fire safety provisions for St Vincent's University Hospital (SVUH) estate

Approach to Fire Strategy Design

The new NMH will comply with Part B Fire Safety of the Second Schedule of the Building Regulations 1997-2006. The following design guidance has been used in the development of the fire strategy to date:

• Health Technical Memorandum 05-02 Firecode, Guidance in Support of Functional Provisions (Fire Safety in the Design of Healthcare Premises (2015))

• Firecode – Fire Safety in the NHS: Health Technical Memorandum 05-03 Operational Provisions, Part J Guidance on fire engineering in healthcare premises (2008)

• Firecode – Fire Safety in the NHS: Health Technical Memorandum 05-03 Operational Provisions, Part M Guidance on the fire safety of atria in healthcare buildings (2010)

• Technical Guidance Document B Fire Safety 2006 (TGDB).

The guidance in both TGDB and the HTMs acknowledges that prescriptive recommendations are not always the optimum means of complying with Statutory obligations; a fire engineered approach can in some instances be the only reasonable means of compliance. In most areas the design proposals are fully compliant with standard fire safety guidance. As can be expected for a project of this scale and complexity, fire engineered solutions have been developed to demonstrate Building Regulations compliance on some design aspects to achieve the optimum design for the end user.

Dublin Fire Brigade Consultations

Given the scale of the NMH development and adjacency with live SVUH buildings, consultation is ongoing with Dublin Fire Brigade (DFB) on the design of the new building on a pre-submission consultation basis. Further meetings will be held prior to the lodgement of the Fire Safety Certificate to provide an update on design development.

Enabling Works

The proposed National Maternity Hospital (NMH) development will occur on a live hospital site and requires significant enabling works through which the retention of essential life safety systems and provisions on the existing SVUH estate will be required.

In some cases temporary decanting building are required as set out in the application and these developments will be subject to separate applications for Fire Safety Certificates. In other cases the displaced accommodation will move into the new permanent building (Block A) prior to the completion of the overall building. Fire Safety compliance matters associated with this early occupation have been fully covered in the fire safety design proposals for the main development.

MAIN ELEMENTS OF FIRE STRATEGY

Escape Stair Cores, Evacuation Lifts and Fire Fighting Lifts

Sufficient escape stairs have been incorporated into the design to satisfy the recommendations of HTM guidance. All escape stairs have been sized to accommodate mattress evacuation. Evacuation lifts and fire-fighting lifts are provided across the vertical circulation cores in compliance with HTM guidance.

Building Elevations

An assessment of the proposed elevations has been carried out to ensure that adequate fire protection is provided to prevent external fire spread between buildings or across the site boundary.

Perimeter Fire Service Access

In compliance with HTM guidance, fire tender access to primary entrance points to the hospital street and stair cores has been incorporated into the design.

Fire Alarm System

A fire alarm system is being provided throughout the development in compliance with HTM recommendations and will be fully integrated with the existing systems on campus to permit a coordinated management response to fire safety emergencies.

Fire Suppression Systems

Manual fire-fighting equipment is being provided throughout the new building to facilitate first aid fire-fighting by appropriately trained staff.

A building-wide automatic fire suppression system is not necessary for compliance with any of the appropriate fire safety guidance documents used to design to the life safety requirements of the Building Regulations. On this basis the design proposals do not include for an automatic fire suppression system. In compliance with HTM recommendations localised fire suppression will be provided where high hazard departments are located adjacent to departments containing high dependency patients.

A dry riser system for Fire Service use is to be provided in each stair core and along the hospital street to department entrances.

Fire Compartmentation

Compartmentation is being provided to separate the new building from existing areas and to divide the new building into reasonable compartment areas to prevent large conflagration. Further sub-division of these compartments is being provided in patient access areas to facilitate a progressive horizontal evacuation regime.

Atrium Design

The design of the atrium is being based on the recommendations of HTM05-03 Part M with the following provisions:

• Fire compartmentation between atrium and adjoining accommodation
• Limitation on use of the atrium base
• Smoke ventilation strategy

Fire Fighting Water Supply

An adequate supply of water for fire-fighting is being provided for the NMH development. Static water storage will be provided where the pressure and flow in the water main is insufficient. Fire Brigade requirements will be discussed further during the Fire Safety Certificate application process.

CONCLUSION

Based on its compliance with relevant design guidance, it is considered that the design proposed for lodgement for Planning Approval has sufficient provision for compliance with Part B Fire Safety of the Building Regulations.

It is therefore considered likely that, subject to ongoing consultation with DFB, a Fire Safety Certificate can be obtained in due course without significant changes to the site layout or the building layouts and height.

10.0 FUTURE EXPANSION AND FLEXIBILITY

Proposals and options for the future expansion and development of adult and maternity services across the entire campus are set out in the Draft Site Capacity Study included within this Report

Clinical Design Flexibility

The design of the current proposed development also allows for a measure of flexibility in the internal planning, layout and expansion of some of the core clinical services as follows:

The floor to floor heights of approximately 4.4m within the entire building, (set by the fixing of Level 0 and Level 4 to match existing SVUH levels as noted in Section 4 above) will allow flexibility in the type of clinical floor space that can be accommodated at any level across the entire development either now or in the future, for example future diagnostic or treatment facilities could be provided within administrative or support areas anywhere within the building.

The structural grid will accommodate most hospital area and space requirements and is therefore flexible with regard to future change and remodelling.

The horizontal and vertical communications infrastructure is carefully positioned to facilitate public staff and service access to all areas and is likely to support future reconfiguration and expansion of services within the building.

Soft Spaces for Expansion

In addition to the above and in accordance with good practice, the design has incorporated, what are sometimes called 'soft spaces' adjacent to core clinical areas in a hospital building. Such 'soft spaces' comprise non-clinical support services that can be decanted to other areas in the future, thereby releasing additional space for expansion of key clinical services.

The following soft spaces or open spaces have been further developed and incorporated into design for future such expansion:

• A 10m zone is retained in the space between the NMH Theatres and the SVUH Theatres, accessible off the link between the two theatre blocks and could provide expansion space in the future for either Theatre block. (The structural design of the new development will accommodate this expansion).

• Operating Theatres within the SVUH Clinical Services block can be expanded into the area vacated by the current HSSD departments within the Theatre zone.

• The NICU could expand at Level 4 in two areas, firstly across the atrium space in the area between the proposed NICU and Operating Theatres and secondly into one of the Level 4 garden spaces to the east of SCBU.

• A space has been reserved for expansion of the Radiology / Imaging department in the area between the NMH and existing SVUH street.

• The design includes 1,152m2 of Clinical Support and Administration at Level 2 between the ambulatory service areas at Levels 0 and 1 and the delivery and operating theatre areas on Levels 3 and 4. This provision of 'soft space' in this central area within the design will allow for expansion of clinical services or space for provision of future unknown services in a central area within the building.

• The area allocated for NMH and SVUH Medical Records on Level 0 and Level 1 could become available in the future if there is a switch to digital records.

11.0 UNIVERSAL ACCESS

The concept of universal access is at the core of all design decisions. It is not only relevant due to the particular nature of the patients and the service provided by the hospital, but also to ensure the hospital and its associated buildings become a leading example of how universal access can be achieved and integrated in all aspects of the building design.

The concept has been developed with universal access principles firmly in mind. An application for a Disability Access Certificate to demonstrate compliance with Part M of the Building Regulations will be made to the Local Authority at the same time as the Fire Safety Certificate application is lodged. However, our intention is to exceed the base requirements and make the National Maternity Hospital development an exemplar of inclusive design and accessibility, as set out in the Universal Access section below.

Accessibility Philosophy and Approach

The design philosophy and approach used in developing the building design is focused on ensuring that the building and its services are fully accessible by all approved users and is defined by the Disability Act as:

The design and composition of an environment so that it may be accessed, understood and used:

• To the greatest possible extent,

• In the most independent and natural manner possible,

• In the widest possible range of situations, and

• Without the need for adaptation, modification, assistive devices or specialised solutions, by any persons of any age or size or having any particular physical, sensory, mental health or intellectual ability or disability.

Design Standards

The design standards scheduled below are referenced in the design development of the building to ensure that the principles of Universal Access are achieved through adherence to accepted accessibility requirements:

The Technical Guidance Document Part M – Access and Use (2010) published by the Department of the Environment, Community & Local Government will form the basis of the compliance however this guidance alone will likely fall short of the technical requirements for the building. With this in mind, the design of the building will refer also to the following guidance documents and standards as appropriate:

-HBN 00-04 Circulation Spaces 2013

-HBN 09-02 Maternity Care Facilities 2008

-HSE National Guidelines on Accessible Health and Social Care Services

-Building for Everyone – A Universal Design Approach 2012

-BS 8300:2009 + A1:2010

Design Approach

The design approach to Universal Access is evident in the design of the integration of the building into the existing site; the resolution of entrances and access points and public realm, the development of the car park layout and below ground access to the hospital, consideration of wayfinding and accessibility within the building itself.

Many aspects of the internal design for Universal Access will be developed throughout the next stage of the project when the interior design strategy is developed. What is critical at this stage of the project is that:

• The approach to the building and the setting out of slab levels supports the delivery of level access throughout at all entrances and gardens

• The building has been sized to provide adequate accessible sanitary facilities to support the requirements of all building users. This requirement needs to go beyond the standards of Part M and recognise the very particular requirements of some of the building users, e.g. older children with special needs who required larger changing areas etc.

• Corridor widths throughout the building support the level of activity of wheelchairs and buggys passing as well as the standard requirements of the hospital bed and trolley traffic.

Arrival and Access

The detailed survey of the site completed has informed the proposed ground levels at each entry point to the building. The design of the access points including set down areas and external landscaping has been co-ordinated with the Civil & Structural engineer and Landscape Architect to ensure level access wherever possible and ramped access where necessary.

In particular it is noted that the Dermatology Unit is at a floor level of +10.4225m ODM and the adjacent ground level is at approximately +8.50m ODM. The user consultation process identified that separate external access to the Dermatology Unit would be required from the south and that this would need to facilitate access of patient trolleys from an ambulance set down area. The design includes proposals for a ramped solution at this entrance.

Modifications have been proposed to existing ground levels at the main entrance, and to the road between the new building and the existing Clinical Services Building, to facilitate level access to the building at all entry points. This includes access to the Bereavement Suite and the Private Consulting Clinic to the west of Block F, and has necessitated the introduction of some retaining walls at the north-west corner of the building which are incorporated into the external landscaping plan in this area.

The detail design of these areas has been co-ordinated with the Landscape Architect and Civil Engineer with particular attention paid to the risk of flooding to the building where level access is provided. This risk has been mitigated by directing potential water run-off into soft landscaping and by ensuring sufficient surface water drainage is provided in hard landscaping areas.

Entry points to the building are clearly delineated with canopies, overhangs and changes in external materials to reduce the dependence on external wayfinding signage.

Internal Design

Internal circulation is organised around a central atrium and internal courtyards with a clearly defined hierarchy of vertical circulation cores, hospital streets and departmental corridors. The objective is to ensure that the building organisation is clearly legible and can be easily navigated by people with restricted mobility and/or vision.

12.0 OUTLINE SPECIFICATION

12.1 General

The following outline specification indicates the design intent. Where proprietary names are mentioned these are on the basis that the specification will be in accordance with this or similar in accordance with public procurement guidelines.

12.2 External

External Envelope:

The following external envelope finishes are proposed for different parts of the building. Refer to the architectural general arrangement elevation and section drawings:

Walls:

External walls are of insulated traditional cavity construction comprised of a natural stone clad external leaf with clear cavity behind. Rigid Thermoset Phenolic Insulation on 215mm in-situ concrete internal leaf with plasterboard internal lining board. (Overall U-Value 0.11W/m²K).

Finishes to the natural stone cladding will vary dependant on location and will include sandblasting, hammered and ribbed textures as identified on elevations.

Curtain walling:

Structural glazing curtain walling Schuco (or equivalent) system. High performance, thermally broken fitted frames, anodized aluminium curtain wall system incorporating double glazed units to achieve a minimum combined U-Value 1.8W/m²K.

Curtain walling to be steel supported where required, incorporating glass spandrel panels and etched glass panes to select areas as indicated on elevations. Glazing to provide solar control, using argon filled double glazed glass units. Bottom panels where opaque to be provided with an extra layer of insulation.

Windows:

High performance, anodised aluminium window system incorporating double glazed units. Schuco (or equivalent) horizontal centre pivot window to achieve a minimum combined U-Value 1.2W/m²K. Glazing to provide solar control, using argon filled double glazed glass units. Bottom panels where opaque to be provided with an extra layer of insulation.

Integral louvres to be provided within window system where indicated on architectural elevations as a means to contribute towards the required natural ventilation requirement.

Brise Soleil:

Vertical natural stone planks or fins sit in front of the high performance curtain walling, window systems and stone cladding as indicated on architectural elevations and sections to provide privacy and sun screening around the external shell of the building.

The fins / planks will be comprised of natural stone to match the wall cladding.

Within the courtyard areas vertical composite timber planks or fins will sit in front of the curtain walling system as indicated on the architectural elevations and sections to provide privacy and sun screening.

Plant Room Cladding:

Full height anodised aluminium louvre system fixed to a structural frame behind to include integrated louvred doors. All external and internal louvred corners are to be mitre cut to achieve seamless aesthetic.

Drainage:

Generally UPVC or cast iron or polyethylene heat resistant vented system. Specialist materials in laboratories to provide acid resistance as required. Provide acoustic pipe wrap insulation where required to internal pipe drops.

Floors:

In-situ reinforced concrete as per structural engineer's specification.

Roof:

All roof types to achieve a minimum overall U-Value 0.11W/m²K. Roof types will be comprised of:-

Type 1: Bauder (or equivalent) built-up reinforced membrane roofing system on a concrete or metal deck substrate (dependant on location).

Type 2: Bauder (or equivalent) intensive or extensive green roofing systems on a concrete deck (dependant on location).

Type 3: Secret-fix, shallowed-profiled roof insulated panel to be concealed where used behind screening louvres.

Courtyards:

Combination of timber decking, planting, gravel and patent paviors laid on a concrete base. See landscape architect's specification for further detail.

12.3 Internal

Internal Partitions:

Proprietary internal metal stud walling systems to meet all necessary performance criteria such as fire resistance, sound insulation and robustness ratings.

Internal Ceilings:

Combination of proprietary suspended ceiling tile and drylining systems to meet all necessary performance criteria. Fire compartmentation to be achieved by structural elements and wall partitions closed to structural soffits as required. Adequate access provision to be provided through suspended ceilings to facilitate service access requirements. Humidity resistant materials to be used in wet areas. Acoustic backing and perforations to ceilings as required.

Internal Floor Finishes:

Main Entrance Area and Atrium:

Natural stone flooring to select areas within main entrance area and concourse area.

Departments:

Forbo (or equivalent) sheet vinyl – to satisfy the performance and functional requirements for each area including, acoustic rating, slip resistance, anti-static rating, stain resistance and bacterial resistance.

Skirtings:

Patent coved to match flooring, or flush 100 x 20 stone skirtings to match flooring, or 150mm polished mild steel, or 150 twice splayed hardwood skirtings as appropriate.

Internal Doors/Screens:

Internal doors composite prefabricated solid core doorsets, laminate finish, lipped in hardwood and grooved with vision panel. Metal frames and architraves and linings to match.

Heavy duty stainless steel ironmongery and edge protection; matching identity plates.

Aluminium framed glazed or double glazed with screens to detail to match.

Wall Protection:

To corridor walls, external angles generally and bed stations - patent systems from the "CS Acrovyn" range (or equivalent).

Wall Decorations:

Patent aseptic finishes to clean areas, durable paint finishes otherwise generally with hard glaze to high traffic areas.

Sanitary Fittings:

Proprietary ranges recommended for hospital use and in most cases suitable for disabled use generally ceramic. Stainless steel to disposal units and sinks - all accessories to be fit for clinical use as required all to HTM approved standards.

Stairs:

Steel/Concrete stairs with metal/glass balustrades to H.T.M. 81/85, precast/prefabricated and early installation for safety reasons.

Signage:

Clearly defined 'departmental signage' using colour materials and graphics to aid navigation and create a comfortable and easy-to-read interior.

SUMMARY

1. SITE

a. Site Suitability and Location

The development of the campus at SVUH has benefited from continuous strategic planning over the past 20 years. An Outline Development Control Plan (ODCP) for the campus was prepared by Scott Tallon Walker Architects in 1997 and this was further updated 2006.

The 1997 plan set out the basis of the new SVUH clinical service block and other associated development including the Mortuary, the Waste Management area and the Breastcheck building.

The 2006 plan guided the development of a significant number of further projects including the St Vincent's Private Hospital and the Nutley Wing. The current proposal for the National Maternity Hospital generally aligns with the development envisaged in the 2006 ODCP.

The proposed site for the NMH development on the campus was the subject a further Outline Feasibility Study in 2013 which examined 4 principal options for the NMH development on the campus and reviewed their suitability for accommodating the project. The location of the current proposal broadly aligns with the recommendations of this Feasibility Study.

b. Studies to Support Site Capacity

A Draft Site Capacity Study (produced by O'Connell Mahon Architects and Isherwood and Ellis Architects) has been prepared to order to test the capacity of the SVUH site to accommodate future services within the SVUH campus, including provision for 20% expansion of adult and maternity services.

The study described demonstrates that the campus has the capacity to accommodate the anticipated further growth beyond the current proposed development and identifies how that might be achieved in ways that produce a higher quality and more sustainable environment with better integration of services, an improved public realm with sustainable links to the local community.

2. DESIGN CONCEPT

a. Urban and Civic

The design of the building emphasises the new hospital's status as a civic building which contributes to its urban and campus context at SVUH and this is reflected through the provision of an attractive and appropriately scaled public realm.

The design is sensitive to the building's scale and civic importance, its relationship to the wider urban context, including its potential to provide a regenerative focus, increasing the campus' permeability and knitting together new and existing buildings.

While the project is very much integrated into the SVUH campus the design has embedded proposals for the enhancement of the public realm on the campus as a key design driver and includes new proposals to further develop the public realm within the campus.

The development includes a new public green space, the public "heart" of the campus, located at the top of the pedestrian "spine" access, at the intersection with the main campus road, which significantly enhances the public realm in the area directly outside the main entrance to both the Maternity Hospital and the exiting SVUH entrance

b. Building Form and Massing

The massing of the building was subject to a significant range of design studies. The studies reviewed the impact of the different options and developed a preferred option having regard in particular to the impact on Merrion road, alignment and integration with the form and height of with the existing SVUH buildings, and the impact on the adjoining properties to the east on Herbert Avenue.

The overall floor height ranges from 5 storeys plus plant floor adjacent to the SVUH Clinical Services block, to 6 storeys plus plant floor on the eastern and southern block.

The building as proposed is however lower in height than two of the most recently constructed additions to the campus; St Vincent's Private Hospital and the Nutley Wing.

The overall form and shape of the building is also a considered design response to the requirement to maintain the identity of the National Maternity Hospital at the SVUH campus. The L shaped form of the building supports this front of house identity, anchoring the building on the site close to the Merrion road entrance and framing the main entrance to the hospital.

c. Positive High Quality Environment - Landscape design

The incorporation of a large number of gardens; courtyards and accessible high level terraces within the layout is designed to enrich the experience of patients and staff within the hospital and provide the appropriate therapeutic environment in which access to nature and light is prioritised in the development of the architectural form of the building.

The design concept for the integration of landscape design within the project also includes new proposals to further develop significant landscaped public areas delivering a major element of the public realm objective for the campus as part of the NMH development.

This proposal also includes the removal of general through traffic from the east – west spine campus road at SVUH through the provision of a new entrance into the multi-storey car park close to the Merrion road entrance, and this reduction in traffic will improve the quality of the of pedestrian and public areas along the spine road in front of the entrances and to both SVUH and NMH hospitals.

3. CLINICAL DESIGN

The design of the new National Maternity Hospital building represents state-of-the-art clinical functionality, providing the highest quality spaces for women, babies, families and staff, while optimising the adjacencies and flows between departments to create an efficient, safe and therapeutic environment.

a. Adult and Maternity Co-location

The design has incorporated the clinical design requirements for co-location of services set out in the project with particular regard to the model of care; operational policies and priority adjacencies noted in the project brief and in consultation process through the design stage.

The design has particular regard to the provision of key links such as the operating theatre links to be incorporated to optimise the clinical advantages of co-location, and multiple other links provided throughout to facilitate the efficient provision of campus wide support services to both hospitals.

b. Clinical Adjacencies

The proposed design provides the key clinical adjacencies which are fundamental to the clinical brief, the principal of which is the integration of close and direct connections between the birthing suite; the neonatal intensive care unit (NICU), and the operating theatres, and the link between the maternity theatres and the adult hospital theatres and critical care unit at Level 4. This study of optimum clinical adjacencies has shaped the design of and location of all departments at every level throughout the building.

c. Flows; Efficiencies and Wayfinding

The overall organisation of the hospital departments and services has been studied in detail through an examination of the circulation flows that support the delivery of an efficient and effective service.

The design has also incorporated a clear public circulation and wayfinding strategy from the main entrance concourse which aim is to provide direct access to the all public areas and departments from the central concourse space at each level in the building.

d. Departmental Design

The layout of every department within the proposed building has been refined through continuous consultation with users throughout. Access to each department, movements of people, supplies and logistics distribution have all been planned to provide a high quality healthcare environment for patients and to optimise efficiency in the delivery of hospital services.

e. Design Flexibility and Expansion

The design of the overall building structure has been carefully considered to include for the necessary flexibility in planning that will cater for future change in clinical needs and requirements that are particular to acute healthcare buildings.

The floor to floor heights of 4.4225m within the entire building will allow the hospitals necessary flexibility to adapt and change internally over time. The structural grid will accommodate most hospital area and space requirements and is therefore flexible with regard to future change and remodeling. The horizontal and vertical communications infrastructure is carefully positioned to facilitate public staff and service access to all areas and is likely to support future reconfiguration and expansion of services within the building.

In summary the proposed development has been carefully designed to meet the precise brief requirements for the new National Maternity Hospital at St Vincent's University Hospital, in terms of its proposed location at SVUH campus, it's the architectural response to key urban design and planning parameters, and to the clinical needs and requirements of the National Maternity Hospital and St Vincent's University Hospital.

The design and layout of the proposed development as described and assessed by the Environmental Impact Statement would have no significant environmental impacts and, where necessary, appropriate mitigation measures will be put in place to limit any impacts.

Having regard to all of the above we consider the proposed design is the correct, logical and optimal design response for the proposed National Maternity Hospital development at SVUH, and is consistent with the proper planning and sustainable development of the area and the city.

Appendices:

Appendix A Landscape Architect's Report

Appendix A - LANDSCAPE ARCHITECT'S REPORT

Maggie's Centre, Gartnavel Hospital, Glasgow, by OMA and Lily Jencks. An example of a salutogenic, restorative landscape designed with a healthcare building. Views to the outside and easy engagement with the outside relieves stress and creates a less institutional and more welcoming atmosphere.

Landscape Design Rationale

The National Maternity Hospital at St. Vincent's University Hospital – A Therapeutic Landscape

Our physical and mental health is positively impacted by contact with nature, and engaging in even light physical activity makes us feel better. Research shows that those who regularly spend time in green areas are healthier, less depressed and less dependent on medication. Just a short walk each day improves our health and well-being considerably, reducing illness and improving the quality of our lives; something that also leads to lower health and medical costs for our society. Enabling groups of all ages to access open space helps them and their families build relationships and neighbourhood networks that can bind communities and promote social inclusion.

We believe that design has, should, and can support the therapeutic programmes of health-care buildings and campuses. Appropriate architecture and design can provide a healing, restorative environment for patients, families and staff. Outdoor spaces at healthcare buildings can be 'salutogenic', meaning that they can be designed to reduce stress and encourage healthy behaviour.

Landscape design should be applied in a considered manner to support patients to heal and recover while providing spaces for visitors, care-givers, staff and neighbours. Planting and hard landscaping should be visually, physically and environmentally beneficial, both to the neighbourhood, the hospital staff, patients and visitors.

The new location for the NMH on the SVUH campus is to the east of the main hospital building, and just north-west of the SVUH Private facility. The new building and its main entrance will be subject to open views by passersby along Merrion Road immediately to the north. The NMH at SVUH will be at the centre of a panorama of beautiful views – south to the Dublin and Wicklow Mountains and north across Dublin Bay to Howth from the upper floors.

Landscape design proposals have been developed on a number of levels to address the integration of existing buildings, proposed architecture, access, infrastructure and context.

The spatial arrangement of the landscape plan relates directly to and is informed by the architectural proposals to create a unified whole and settle the proposed development into the site context. Movement patterns, orientation, context, prospect and microclimate have been considered in the design and detail of the scheme.

The open space requirements of the new NMH comprise a north-facing main entrance plaza, an east-facing emergency entrance plaza, a central entrance courtyard aligned along the main approach, a series of secondary courtyards at ground floor level, a south-facing entrance plaza at level 1 and a series of roof gardens, external spaces, and play areas arranged throughout the upper floors.

Landscape proposals for the site are intended to contribute towards:

- A unique sense of place;
- A site-specific design proposal generated from existing landscape elements and context;
- A high-quality environment;
- A permeable layout that assists ease of movement for pedestrians and vehicular traffic;
- A development that acknowledges the local landscape character and integrates well into the receiving environment;
- A development that promotes beneficial effects on biodiversity by providing new habitat.

Issues that have been considered throughout the landscape design are:

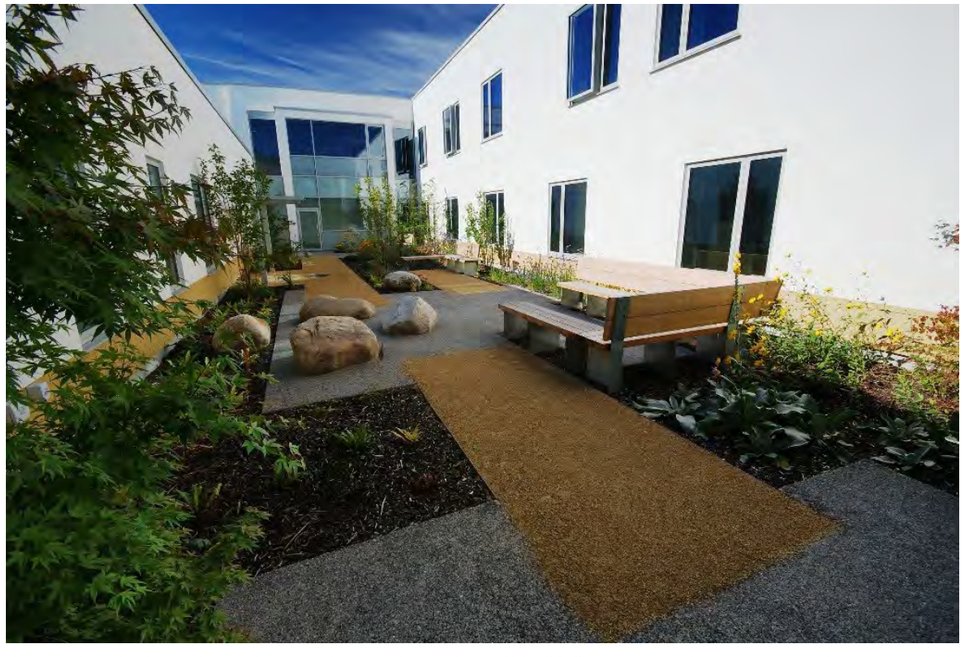
- Connection to the existing landscape, adjacent land use, proposed buildings, pedestrian and vehicular circulation, shared space;
- The appropriate selection of hard and soft landscape materials;
- Specification of tree and shrub species to enhance biodiversity and visual amenity.

'Greenspace Scotland' defines green space as any vegetated land or water adjoining an urban area, e.g. disused railway lines, woods, countryside, gardens or parks adjoining a town. A growing body of evidence-based literature links greenspace use to positive health outcomes, including mental and physical health benefits as well as associated social benefits for local neighbourhoods.

There are two main ways to explain links between greenspace and health, and both of these relate to the 'natural' elements of greenspace and its associated 'restorative' benefits. The first explanation is that natural spaces are 'restorative environments' that with time allow visitors to positively distract themselves and thus ease stress. The second explanation is that we are evolutionarily wired to derive comfort from nature; thus brief moments spent in contact with nature, or even looking at greenspace through a window, can boost well-being and improve recovery responses. Greenspace can also improve health and well-being through physical activities carried out within such spaces.

There are four types of interaction with nature that have been shown to benefit health. The first is viewing nature – from a window or in a photograph – which has been shown to improve concentration, support good mental health, reduce stress and tension, aid recovery from traumatic events, decrease levels of fear, improve job performance and positively influence the immune system. The second is the act of being in nature, which has been shown to reduce the effects of ADD in children, enhance neighbour satisfac-

Acute Observational Pocket Courtyard, Beaumont Hospital APU, by SDA. Planting, seating, and sunlight combined to create a salutogenic, restorative environment.



Beaumont Acute Psychiatric Unit, view of therapeutic courtyard, SDA 2012. Views of nature can reduce stress and anxiety on waiting patients.

tion, help heal emotional and psychological conditions, and boost confidence and self-esteem. Thirdly, there is interacting with nature in the form of plants or gardens such as horticultural therapy programs and exercise. The fourth is that of encountering animals in the form of therapy pets or wildlife such as birds.

SVUH Building Setting

We would like to integrate nature back into the plan of the National Maternity Hospital and create a strong sense of place in the design of the landscape or backcloth of trees, grasses and flowers, and create a strong visual and physical link between nature and the health architecture setting. External spaces around and in hospitals should be more than smoker's hangouts, lightwells, helicopter landing areas and car-parking. Landscape design proposals have been developed to address the potential of the open spaces surrounding the NMH and inside the NMH as 'healthy spaces' where staff, patients and the community can go to experience nature, to escape the clinical environment, and to relax.

Research conducted since the 1980's continues to show that access to, or even views of, gardens and green spaces during stays in healthcare facilities can help patients recover faster. Patients with a view of green space have been shown to require less time spent in the hospital, to have been happier in their care, and to require less pain-relieving medication.

In healthcare environments, what you can do in the garden is as important as what you can see. Research has shown a need for private conversation areas, play areas, smooth tree-lined paths that invite strolling but accommodate wheelchairs and naturalistic landscaping that attracts birds, butterflies, pollinating insects, squirrels and other wildlife. Patients often need peace and quiet in a healthcare garden; however, there is also a requirement to provide for those with a preference to seek stimulation within external areas. Such requirements can be addressed through the provision of walkways through a variety of landscape character areas, varied terrain, vegetation to attract wildlife and sculpture to engage the mind. Staff often account for as many visits to the gardens in healthcare environments as patients.

At maternity hospitals where patients tend not to stay for long, even a view of appropriately landscaped greenspace can have a health-promoting effect. For other groups, such as those undergoing rehabilitation, gardens must be suitable to be enjoyed while using a walking aid. A separate area or garden space designated for staff can provide a valuable break from a stressful work environment. A garden can create a space for patients to receive visitors outdoors and gently exercise, and can welcome local families and care-givers into an on-campus space to remember a loved one in the comfort of a greenspace. Sensory gardens can create naturalistic, welcoming, enabling spaces for children and adults suffering from autism, ADD and other disabilities.

Very 'natural', very verdant and lush planted environments tend to provide the best counterpoint to the hospital environment, serving as a natural counterbalance and providing a place of sanctuary and recuperation.

The design of the open spaces created as part of the new works have been developed to support a network of woodland, gardens, courtyards and plazas. Greenspaces and pedestrian routes are designed to assist wayfinding and navigation through the hospital, as well as creating a therapeutic and restorative environment.

New garden spaces have been designed to link in with the surrounding setting and other greenspaces. These spaces place aesthetics, well-being and accessibility as priorities. Nurses, doctors and other staff working at the hospital will be able to use the open spaces to get some fresh air during the working day, go for a brisk walk, or gossip outside while eating lunch on a bench.

The new SVUH at The National Maternity Hospital is located to the east of the existing main hospital block, and the construction of the new support access roads and links to the main buildings have created new opportunities for the introduction of 'green space' into the floor plan of the hospital.

We propose to offer garden 'rooms without roofs' for socialising and spontaneous meetings between people and at the same time opportunity for seclusion and contemplation. The landscape design is intended to create and heighten qualities and characteristics in the open spaces enjoyed in nature such as change, awareness of transition and movement; weather, seasonal change, use and maturing.

The landscape design includes for a variety of open spaces ranging from fully public to semi-private. The most prominent of these is the main entrance forecourt which is proposed as a new civic space that accommodates drop-off but is principally pedestrian in nature. The entrance forecourt incorporates tree planting, public art, signage and appropriate night time lighting. The design of the north-facing Main Entrance Plaza and the east-facing access area to the Emergency Department has been treated in a careful considered fashion, with building entry highlighted by restorative spaces, and detailed in a universally accessible manner.

The other notable public spaces include the southern entrance plaza and the north south aligned entrance boulevard and cycle route, which provides separate pedestrian and cycle access from the junction of Nutley Lane and Merrion Road through to the main entrance plaza. New tree, shrub and perennial planting beds have been introduced to place emphasis on this

Roof Garden at the Mater Adult Hospital extension, Dublin, by SDA. This space is intensively used by hospital staff to take breaks outside and enjoy the local views of planting and long-range views over the city.

access route and create a pleasing environment on approach to the heart of the campus.

Ground level courtyard spaces include the 'Central Courtyard', the 'Consulting Courtyard' and 'Bereavement Courtyard'. The 'Hospital Street Courtyard' is situated at level -1, along the new pedestrian link corridor. Further courtyards and roof terraces are provided at level 1, level 2, level 4 and level 5.

External works to the site are made up of a number of differing soft and hard landscaping finishes.

Soft landscape finishes consist of:

• Earthworks grading and topsoil works;
• Mitigation screen planting to site boundaries and services areas;
• Extensive and semi-intensive green roof plantings of sedum etc;
• Tree shrub and perennial planting to entrance plazas, courtyards, roof gardens, terraces, footpaths, car parking and roadways;
• Landscape fabric and bark mulch application to all planters

Hard landscaping elements include:

• Roadways to civil engineer specification;
• Natural stone paving, exposed aggregate concrete paving and hard compacting gravel.
• Kerbs and edging trims to paving and soft landscape
• Drainage gullies
• Retaining walls, universal access ramps, steps and handrails
• Street furniture seating, litterbins, landscape lighting, and raised planters;

An automated drip-line irrigation system will be provided to all roof gardens and terraces located above built structures. This installation will include moisture sensors and a controlled timer system to reduce water consumption levels.
Hard landscape works for the site have been proposed to enhance the overall design, compliment the soft finishes and allow vehicular and pedestrian traffic to and around the site.

Screen Planting along Eastern Side of Services Yard

A raised planter of 1m height by 2m width, reducing to a minimum width of approximately 1.5m has been introduced along the eastern side of the service yard to mitigate the proposed developments visual impact on Herbert Avenue residences.

An irrigation system (drip line type) will be installed along a central section of this planter where it crosses over a below ground surface water attenuation tank which runs along the interface between campus access road and service yard.

This linear planting strip provides a second layer of screen planting to supplement pre-existing tree and shrub planting along the rear boundaries of Herbert Avenue Residences.

Native Betula pubescens (Downey birch) trees are proposed at 5m ctrs along the planter's full length. Planted at a height of approximately 5m-6m height these trees will attain a height of approximately 14-16 metres fifteen years after planting and would be expected to reach 20-25m height when mature.

An under-planting of nectar and pollen rich native and ornamental perennial ground cover plants will provide visual interest at footpath and road level.

Multi Storey Car par Extension and surrounding Landscape

An informal planting of fast growing native Downey Birch (Betula pubescens) punctuated by the native evergreen Scots Pine (Pinus sylvestris) is proposed on open grassland north, south and west of the existing and proposed multi-storey car park extension to settle this structure within a woodland setting.

Tree numbers and densities have been concentrated along the northern and western elevations to screen views of the car park from Nutley Lane and adjacent housing.

A stainless steel wire trellis system is proposed to the full height of the car park's west elevation to support Lonicera japonica 'Halliana'. This a fast growing honeysuckle is expected to screen this blank elevation within approximately 5-7 years. Its pollen and nectar rich white flowers climber will enhance biodiversity by attractive butterflies, bees, hoverflies and birdlife.

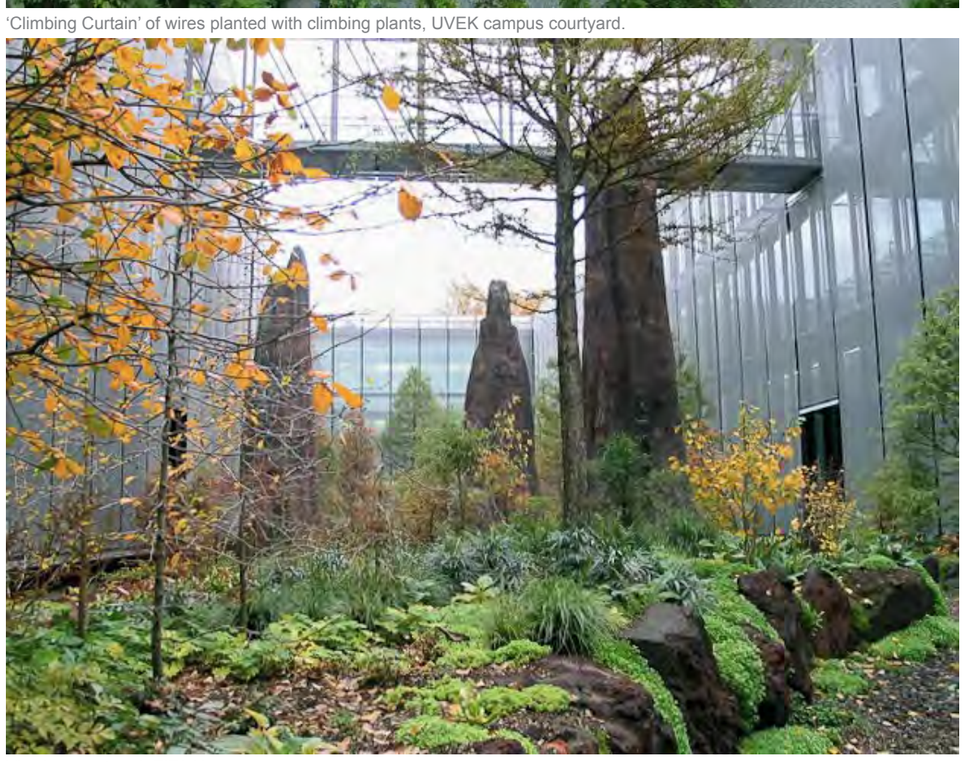
NMH Level 0 Entrances

The design of the north-facing Main Entrance Plaza and the east-facing access area to the Emergency Department has been treated in a careful considered fashion, with building entry highlighted by restorative spaces, and detailed in a universally accessible manner. Edges of the building are designed to meet landscape with vertical plantings to reduce visibility of consultation rooms from external areas.

We propose a simple and clear banding of verdant green plantings settling the building into the site, with planting used to screen offices, consulting rooms and treatment rooms from perimeter paved area.

The Main Entrance Plaza and approach from the west is clearly signalled by the entrance plaza paving layout and planting to welcome patients and families from the set-down area nearby and the SVUH car-park to the north-west. The perennial planting in this area will be planted in strips

'Climbing Curtain' of wires planted with climbing plants, UVEK campus courtyard.



Viewing courtyard, FIFA Hq.

to echo the 1250mm wide building grid, and will comprise shade-tolerant perennial shrub plantings.

The plantings have been arranged to screen the main entrance doors from the harsh winds that bluster across the campus, prevent cars from driving straight up to the entrance doors, and to create a sheltered piazza entrance area with seating where patients, visitors, staff and care-givers can congregate. The main entrance piazza is proposed to be paved in a quality natural Irish blue limestone and exposed aggregate concrete.

NMH Level 0 & Level -1 Courtyards

The courtyards at Level 0 in SVUH have been named as the 'Central Courtyard', the 'Consulting Courtyard', the 'Bereavement Courtyard'. The 'Hospital Street Courtyard' is located at Level -1. Each courtyard has been designed with a distinctive and different character to aid way-finding, but are unified by a similar treatment of stone edging to the planted areas, which can fold up to create a seating element or fold down to act simply as a trim to a gravel base at the bottom of internal building elevations. Plantings are dense and verdant, to encourage the creation of a 'restorative' environment.

NMH Level 0 'Central Courtyard'

The central courtyard is designed to act as a 'green-heart' to the SVUH, and is designed like the traditional cloister-enclosed courtyard at the heart of a monastic healing hospital. It will be the focus of the view when the visitor enters the NMH, and should be a welcoming space which expresses the values of the hospital. It will be both an 'in-nature' courtyard at Level 0 and a 'viewing' courtyard from the levels above.

Enclosed by the NMH, the central courtyard can provide exterior spaces for active and passive uses, allowing interior activities to spill outdoors, and creating views of daylight and planting from interior spaces.

General hospital out-patients sitting waiting for a consultant appointment can absorb stress from their neighbours, and the provision of a nearby verdant greenspace where they can feel a breeze on their faces while they sit helps release a lot of built-up tension as they sit outside with a tea from the nearby café.

The courtyard space is set against a backdrop of humped and mounded planters containing shade-tolerant plants such as Ferns, Foxgloves, and Serviceberry extending into shadier part of the courtyard. The water surface will bounce and reflect natural light up through the courtyard.

Three sculptural large inverted cones made from stainless steel wires will form a frame-work for climbing plants to grow up to create a strong vertical element in the courtyard, and screen views higher up the building from the hospital street into private bedrooms.

NMH Level 0 'Consulting Courtyard'

This courtyard is designed as an 'in-nature' courtyard at Level 0, and a 'viewing courtyard' from the levels above, so a vertical element should be incorporated.

The internal public waiting area will open onto a paved patio, organised on the 1250mm grid of the building. Play equipment and features form part of this courtyard so that children accompanying mothers on hospital appointments can 'break-out', and seating elements to encourage stressed parents to get a moment outside.

Being 'in nature' has been shown to reduce the effects of ADD in children, enhance neighbour satisfaction, to help heal emotional and psychological conditions, and to boost confidence and self-esteem.

The external area where patients and staff are welcome to gather will be screened from adjacent consulting rooms by a curtain of bamboo planting, which will provide an evergreen planting in the space year-round.

We propose to provide a high sculptural 'Climbing Curtain' of stainless steel wires to support climbing plants such as vines and hops in this courtyard, which visiting children and parents can wander through. As this curtain rises through the building and the climbing vines grow up it, the plants will mature to create a valuable green resource and screen sensitive rooms and spaces across the courtyard from each other.

NMH Level 0 & Level -1 'Bereavement Courtyard at Level 0 & Hospital Street Courtyard Level -1'

The concept for these spaces, linked by a glazed corridor, is the creation of a restful space, to be directly viewed by parents and families visiting the Bereavement Suite, physiotherapy consulting rooms, parent education room, and staff moving along the new NMH Link Corridor, and from above by staff in the café roof garden.

As a 'viewed' space – through a glazed window – this space has been designed to help improve concentration, support good mental health, reduce stress and tension, and aid recovery.

We have chosen to heavily plant this courtyard as a kind of primeval forest, with evergreen woodland plants such as ferns, mosses and lichens, inhabited by 'menhir' stones and boulders.

NMH Level 0 'Emergency Entrance Plaza'

The concept for this plaza and small garden area is to create an 'in nature' space next to the Emergency Entrance area, where stressed families and staff can emerge to get a blast of green

Courtyard for medical research building, Idealice

Courtyard garden for medical research building, Idealice.

and wander through a verdant space planted with flowering shrubs, decorative multi-stemmed trees and evergreen plants, on gravelled and in-situ concrete paths. Some seating will be provided, solid wooden elements to give the sense of solidity and permanence.

NMH Level 0 'West Courtyard'

This courtyard has been designed as a 'viewing' garden, planted with verdant grass lawns, banks of perennial ornamental planting and multi-stemmed decorative trees.

NMH Level 1 Roof Gardens

The level 1 'Staff Garden' and NMH 'Street Pocket Garden' are open to the sky. These spaces can support the therapeutic programme of the healthcare environment in different ways, depending on the patient or user group nearby.

All roof gardens will have raised planters, paving and furnishings in a design that supports the envisioned outdoor activities, be it play, conversation, peace and quiet, strolling or just simply gazing at nearby planting or a far-away view. Some may have a specific use for health therapy. These spaces can support the therapeutic programme of the healthcare environment in different ways, depending on the patient or user group nearby.

NMH Level 1 'Staff Garden'

Staff and workers in a health-care facility have therapeutic needs as well, and need to be able to escape to an area where they can vent their frustrations and sadness sometimes, as well as having a social space of their own for gatherings. This courtyard also acts as a light-well to surrounding rooms and rooms below at Level 0 through roof lights. We have decided to heavily plant the area where the roof lights are located, and create an open decked gathering space near the entrance areas to the courtyard, surrounded by raised planters contained by Corten steel retaining walls. Seating elements would be provided for the enjoyment of the staff, and multi-stemmed trees to create small local canopies to seating, and screen views of people chatting from above rooms.

The Level 1 "Staff Garden" also acts as an outdoor facilitiy for Dermatology out-patients who will benefit from the daylighting.

NMH Level 1 'Street Pocket Garden'

This small pocket roof-garden will provide a visual green break along the corridor of the New Hospital Street, and visually link down to the 'Bereavement & Hospital Street Courtyards' at Level 0 below. We would intend that this roof-garden be simply planted with a 'semi-intensive' green roof 'mat' planting of alliums and wildflower grasses. A small paved area is provided for staff to step out and take a breath.

Starting in the roof-gardens, storm-water can be collected and cleaned in the surfaces, the planting and permeable paving treatments. Rainwater run-off can be collected in the design of the landscape through channels and pools to allow rainwater to be re-used in irrigation or other non-potable uses.

Living roofs (or eco-roofs) will be installed on suitable roofs of the new building to reduce heat absorption and absorb, detain and clean storm-water run-off. Water-proof, these roofs will have a lightweight soil system to support drought-resistant plants.

NMH Level 2 Roof Gardens

At this level, three large roof gardens are proposed, the 'Entrance Roof Garden', the 'Staff Café Garden' and a 'Family Roof Garden'. Again, all three are provided with appropriate paving, seating and planting materials, contained in raised Corten steel planters.

NMH Level 2 'Entrance Roof Garden'

The Entrance Roof Garden is located above the main entrance, and faces north. It will enjoy long-range views over Dublin Bay from its elevation, and will provide an important resource as an 'in-nature' relief from the clinical hospital environment.

We have proposed a heavily planted screen along the Patient Link Corridor bounding the roof-garden to the south, and created a balancing treatment to the 'Staff Garden' at the Level below, with a central congregating space paved in hardwood, surrounded by wooden seating, and enclosed by raised planters.

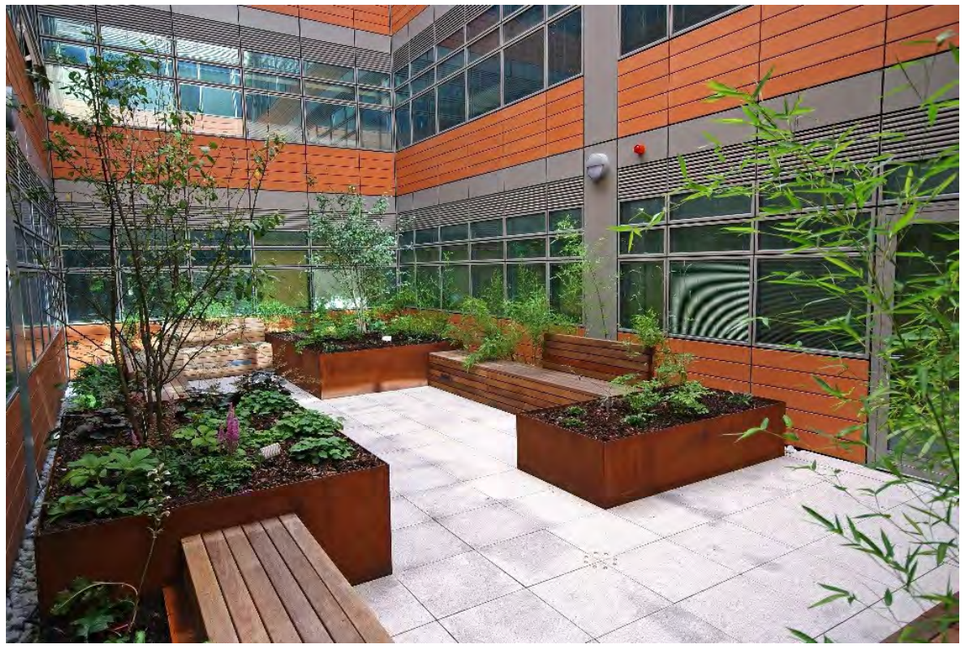
NMH Level 2 'Staff Café Courtyard'

Visually this space is closely connected with the 'Bereavement & Hospital Street Courtyards' at Level 0/Level -1 and the 'Street Pocket Garden' at Level 1, so we have taken the visual language of the 'Street Pocket Garden' and continued it in this roof garden.

A 'semi-intensive' green roof mat planting of alliums and wildflower grasses can be mounded higher in selected areas to allow for small tree and larger shrub perennial plantings to screen views of staff having their lunch. A south-facing hardwood deck has been provided to allow staff to enjoy a sunny day and the wonderful views south over the city. Protection from harsh winds will be provided by a 2m high glazed screen to the perimeter of the roof garden supplemented by soft landscaping.

NMH Level 2, 4 and 5 'Family Roof Gardens'

The 'Family Roof Gardens' at Level 2, Level 4 and Level 5 will share a common design language, provided with raised planters, seating, tree and shrub planting to create small intimate



Pocket roof garden for staff at the Mater Adult Hospital Extension, Dublin by SDA. Hard landscape materials selected for their colour, durability and quality, with naturalistic shade-tolerant plantings, creating a breathing space in the hospital floor plan.

Cafe roof garden at the Mater Adult Hospital extension, SDA.

spaces for family gatherings.
A wooden 'promenade walk' is provided along the eastern boundary of the NMH gardens, linking the family gathering areas, which are surfaced in bouncy green-coloured rubber safety surfacing, and provided with wooden seating.

Raised planters separate and screen each gathering space from each other, and from the entrance areas, surfaced in concrete paving slabs on the 1250mm grid dimension of the building.

A dense 2m height hedgerow of evergreen Laurus nobilis (bay laurel) will extend along the full length of each of the Family Roof Gardens' provided at Level 2, Level 4 and Level 5 to screen views and prevent possible overlooking of Herbert Avenue residences.

Soft landscape proposals will incorporate a diverse planting scheme of native and naturalised trees, shrubs and flowering perennials selected to enhance the development site's biodiversity value and visual amenity.

Planting concepts relate to biodiversity, circulation, SUDS, landscape character, architectural language and microclimate.

The use of native and strategically located non-native plants will provide optimum biodiversity and aesthetic values. This varied profile is designed to provide a diversity of landscape and habitats throughout the site.

Hard and soft landscape and streetscape elements will be fully detailed and completed to the required level to meet current building regulations and best practice provided by the relevant guidance documentation e.g. Technical Guidance Document Part M – Access and Use Building Regulations (2010) and 'Building for Everyone: A Universal Design Approach' by the National Disability Authority.

We take universal design/access or design-for-all as a point of departure for the design of all external space.

Our aim is to design a landscape where build development, nature and amenity facilities co-exist.

Paving

Paving materials within the development have been specified with the intent of providing high-quality surface materials which will survive well over the long-term and require little maintenance.

All paving materials have been specified as level, with no changes in level across paving which might cause a slip, trip or fall, and are suitable for access by all abilities.

Natural stone paving is specified to help define the access routes and seating areas and signal a stop off point to sit, relax and enjoy the landscape open spaces. Stone paving has been specified to provide a natural and durable, hard-wearing, high-quality surface to these areas. A Flame-textured finish has been specified to reduce the risk of slipping on the surface of the stone. It has a slightly translucent mottled blue/grey colour with slightly paler areas. The surface has a smooth, slightly dusty appearance with an irregular overlay of minor pits, peaks and flakes.

The paving is to be laid with cross-falls on a sub-base to engineer's details.

High-quality hard-wearing paving material such as these will require low levels of maintenance and will retain their slip resistance qualities as they age.

Planting

The detailed specification of planting – trees, ornamental grasses, flowering perennials - attempts to recreate the sensory experience of lush Irish nature. Trees and shrubs will be used to provide a counterpoint to the hard landscape and built elements so as to provide dynamic and sensual external spaces.

Ornamental perennial, shrub and tree planting has been concentrated along the public and courtyard spaces, to improve the visual amenity of the development. The specification of planting material will act to improve the micro-climate of the open spaces, providing shade, year-round visual interest, and improving the biodiversity of the site by attracting wildlife.

The visual impact of the development is softened by the specification of flowering perennials, ferns and leafy groves of decorative trees. Throughout the seasons the colours and textures in the planting change to constantly provide new sensory experiences for the residents.

Tree planting

It is the intention to provide a feeling of maturity and permanence as soon as possible by planting semi-mature trees of varying height and form to include 18-20cmg and 20-25cmg specimens.

A mix of native and non-native deciduous trees has been specified to provide year-round visual interest, habitat and screening. The detailed specification of trees is inspired by the species of tree currently found on the site, and suitability of the tree to the location.

Where non-native species have been specified it is for their decorative features, fruit and suitability to the context. The cultivars specified are all similar in form, habit and potential to support wildlife to native Irish trees. Clear-stemmed trees are specified to create a sense of security, clarity and free movement beneath the leaf canopies.

All semi-mature trees will be guyed underground

or staked and planted as per details. 75mm depth bark mulch and 600-1000mm depth topsoil will be provided to all semi-mature tree planting.

Ornamental shrub planting:

The design and specification of the ornamental shrub and perennial planting is intended to add interest and variety as well as assist in defining spatial qualities across the site. Species have been selected that will successfully establish and grow in the local conditions as well as being sufficiently robust to survive in the public realm and courtyard spaces with limited maintenance.

Ornamental shrub planting is contained with a series of defined planter beds. 300mm depth topsoil to BS3882 is provided to shrub planting, topped with a landscape fabric and 75mm depth medium-grade bark mulch.

The planting consists of a range of flowering evergreen and deciduous perennials, selected for their suitability to the site conditions and to provide year-round visual interest.

These perennials will also attract a variety of pollinating insects, honeybees, butterflies and birds to the development, increasing the biodiversity potential of the gardens.

Landscape Construction

The hard and soft landscape works shall be completed as part of the general construction works, with all trees and shrub planting implemented within the first suitable planting season after completion of the general construction works.

The tender information for the works shall include for a minimum 12-month maintenance period and defects liability period.

Paving materials within the development have been specified with the intent of providing high-quality surface materials which will survive well over the long-term and require little maintenance.

All paving materials have been specified as level, with no changes in level across paving which might cause a slip, trip or fall, and are suitable for access by all abilities.

The paving is to be laid with cross-falls on a sub-base to engineer's details.

The planting programme shall generally be carried out during the following periods;

• All root-balled trees 7 November – 31 March
• Bare Root Shrubs, Whips etc, 7 November – 7 March
• Container Grown shrubs perennials at any time

Planting outside of the above periods must be agreed with the Landscape Architect, with appropriate container grown stock used and an additional watering programme enforced.

The remaining soft landscaping works will be undertaken following the completion of the main elements of construction.

The works to the soft landscaped areas will involve:

• Placing of topsoil;
• Planting of trees and shrubs;
• Seeding of grass.

The works to the hard landscaping areas will be undertaken following completion of the main elements of construction. These will include roadways, footpaths and paved areas and the works will involve:

• Placing and compacting of hardcore sub-base;
• Casting of concrete kerbs and footpaths;
• Laying of road surfacing;
• Installation of paving.

Landscaping

The landscaping construction will commence with the hard landscaping areas. These will include footpaths and paved areas and the works will involve:

• Placing and compacting of hardcore sub-base.
• Casting of concrete kerbs and footpaths
• Installation of paving.

The works to the soft landscaped areas will involve:

• Earthworks, grading and placing of topsoil.
• Planting of trees and shrubs.
• Seeding of grass.

Establishment Maintenance:

(i) Establishment maintenance will form part of the landscape contractors works. The period of establishment maintenance will be 12 months after the completion of the planting and grassing works prior to handover.

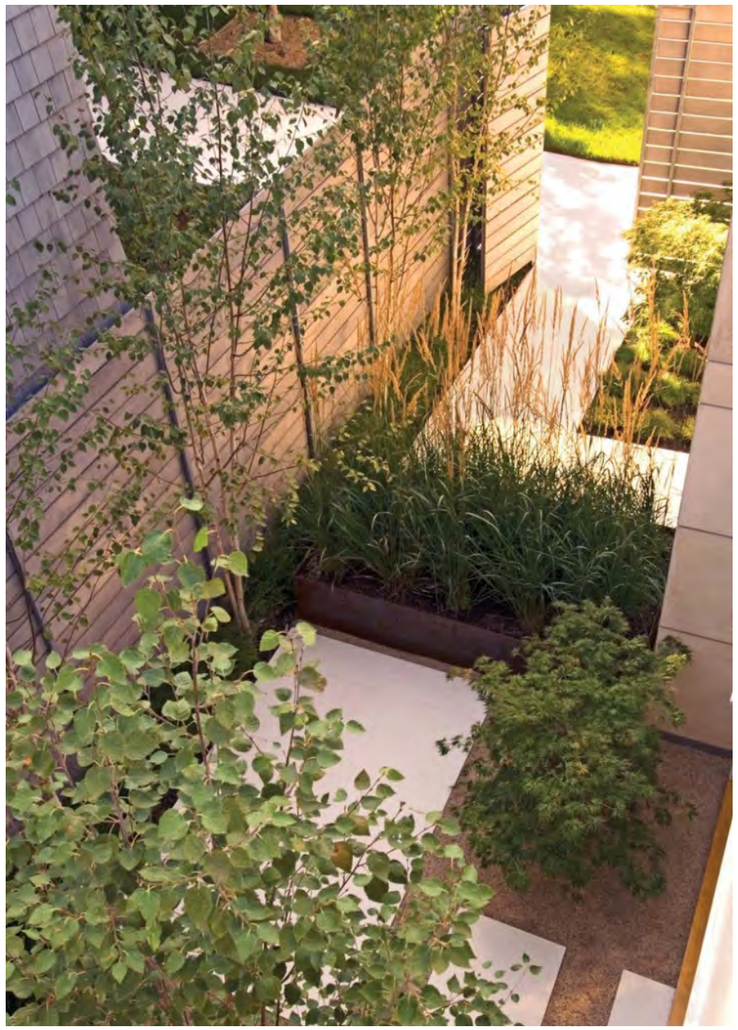
(ii) Prior to handing over all plant deaths shall be replaced, and all defects made good to the satisfaction of the landscape architect and / or the management company.

(iii) The landscape architect will be retained by the developer to inspect all planting works until handover to the management company.

Landscape Maintenance:

Planting Preparation Specification And Management Notes For Soft Landscaped Areas - General Information

Area: Soft landscape areas to include the following elements:
• Grassed Areas;



Small raised planters in Corten Steel, intimate gathering areas for quiet chats. Andrea Cochran.

• Perennial shrub planting;
• Tree Planting.

Management Responsibility:

Following the completion of the one year's defects liability period for the main landscape contract, responsibility for the day to day maintenance of all areas in the site curtilage will be passed to a landscape management company.

The management company will engage a landscape sub-contractor. It will be the management company's responsibility to monitor and review the works of the sub-contractor to ensure the management objectives as outlined below are attained.

Management Objectives:

• The objectives of the management company will be as follows;
• To maintain all areas in a neat, tidy and substantially weed free condition,
• To ensure that all seeded areas are maintained in a condition that contributes to the visual amenity of the development,
• To establish and maintain tree and shrub planting to provide an overall landscape framework for the development.

Performance Criteria:

Performance criteria are indicators for assessing the quality and success of the particular plant mixtures used for a purpose i.e. structure/ screen planting, specimen planting, tree planting etc. Such indicators will be based upon aspects such as;

- Health and condition of planting
- Plant growth
- Achievement of desired effect

The achievement of the performance criteria and the monitoring of the landscape contract will be under the direction and supervision of the developer's landscape architect. As previously stated the management company will monitor longer-term performance criteria.

Appendix B Lighting Design Report

Appendix B - LIGHTING DESIGN REPORT

1.0 EXTERIOR LIGHTING

1.1 General Overview

The lighting strategy for the outdoor spaces is such that it supports the identity of the building itself and its connections to nature.

The night time lighting will not be excessive, but in harmony with its surroundings.

• All external lighting will be designed to avoid night sky pollution / upward light spill.

• Tree canopies will be illuminated from below with highly controlled optics and low light levels.

• The external lighting will not overspill into the adjacent residential property boundaries. Pole fixtures will be of the highest quality optics.

• External lighting will dim through the night as through-route usage decreases.

Within the building at night, the light overspill will be limited through the following lighting control mechanisms:

• Outpatient departments' and general day care areas' lighting will be controlled on absence detection and should generally be 'off' except for security checks.

• Patient bedrooms will have blinds which are likely to be closed, patients control their own lighting which is most likely to be off at night or at low level based on task lighting for reading

• The emergency department will be open with lighting on. This is at ground floor level and will therefore have the least impact to adjacent properties in terms of overspill / visibility. Areas such as operating theatres will be in use for emergency operations only and will be provided with blackout blinds to reduce light spill. Critical care /intensive care will be operational at night, albeit with lower lighting levels in the patient areas which are on the perimeter.

• The atrium lighting will be dimmed based on general reduced usage (closed to the general public).

1.2 Design Criteria

The following standards will be adopted in developing the external lighting design:

• CIBSE Lighting Guide LG6:2016, Outdoor Environment
• PD CEN/TR 13201-1:2014 (E), Road lighting. Guidelines on selection of lighting classes
• ILP GN01:2011, Guidance Notes for the Reduction of Obtrusive Light
• IS EN 5489-1:2013, Code of practice for the design of road lighting. Lighting of roads and public amenity areas.

1.2.1 Light Trespass

Light trespass is a measure of spill light which gives rise to annoyance, discomfort and distraction. It is evaluated by measuring the amount of vertical illuminance on the windows of the properties surrounding a light installation. ILP Guidance notes provides a set of tabulated target values that for a medium brightness zone are:

- Ev < 10 lux Pre-curfew
- Ev < 2 lux Post-curfew

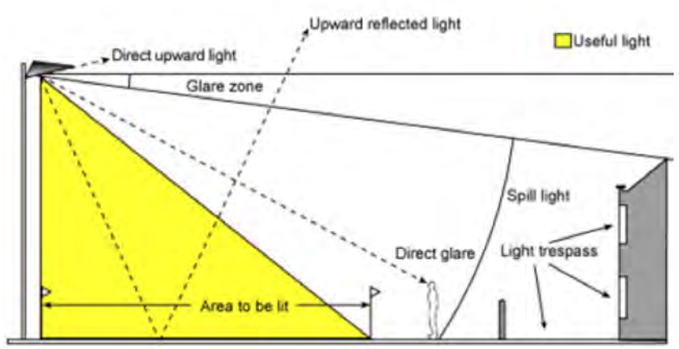
1.2.2 Building Luminance

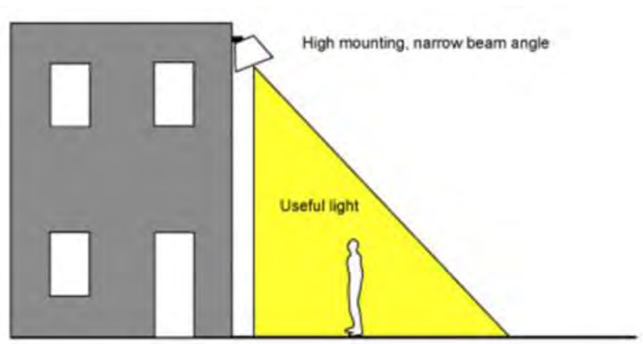
This requirement from the ILP Guidance Notes GN01 details how to avoid over lighting of architectural flood lighting schemes. The pre-curfew average building illuminance should not exceed the following limit:

- L < 10cd/m2 Post-curfew

1.2.3 Light Pollution and Control of Light Spill

The lighting strategy seeks to provide a secure environment for pedestrians whilst minimising light pollution, particularly to the houses in the surrounding area. The lighting should not over





light and waste energy, and should reflect the usage of the walkways whilst at the same time enhancing way finding by providing a clear and simple visual language. All external lighting will be designed to avoid night sky pollution / upward light spill and overspill to the adjacent residential property boundaries.

Light pollution can be simply defined as light directed into areas where is not needed or wanted, and can be separated into basic parts:

- Sky glow
- Glare
- Light trespass

The impact of light pollution can be reduced through considered design and using the following methods:

• Use of flat glass lanterns with horizontal cut-off
• Limit tilt angle of light fittings to be positioned, as far as practical, horizontal to the ground.
• Use of fixed louvers, cowls and snoots to prevent light spill outside of the task area.
• Correctly focusing light towards task areas.
• Use of appropriate illuminance and luminance criteria for each task area.

The primary walkways are within the hospital boundary and thus will be lit to a minimum of 10 lx either by building mounted lighting or by amenity columns to provide the required levels on the path with zero upward light and glare control to eliminate as far as possible glare to those outside the site boundary.

The secondary paths are of two types:

• Paths to be lit with bollard type fixtures to provide a low level of illumination to the surface and reduce any light visible from the houses to a minimum.

• Paths not requiring to be lit as they are secondary paths that will receive light from road.

The strategy will minimise light pollution for residents and users by the use of good quality durable fixtures with exemplary optical design.

1.2.4 Light Colour and Quality

Both white light and coloured sources will be used throughout the project. The use of different colour temperatures of white light will be used to highlight key elements within the scheme. All functional light sources should be white in colour. All external routes should have a minimum colour rendering property of Ra 80.

1.3 Concept Proposal

1.3.1 Façade

The night time image of the building will generally be quite dim. Façade lighting / floodlighting is not proposed for most areas. Entrances will be defined by light spilling from within in conjunction with additional luminaires to highlight the entrances and aid wayfinding. Undercrofts at the building entrance will also be revealed with uplighting. This will increase vertical illumination and should aid with perceived brightness and safety.

1.3.2 Roads

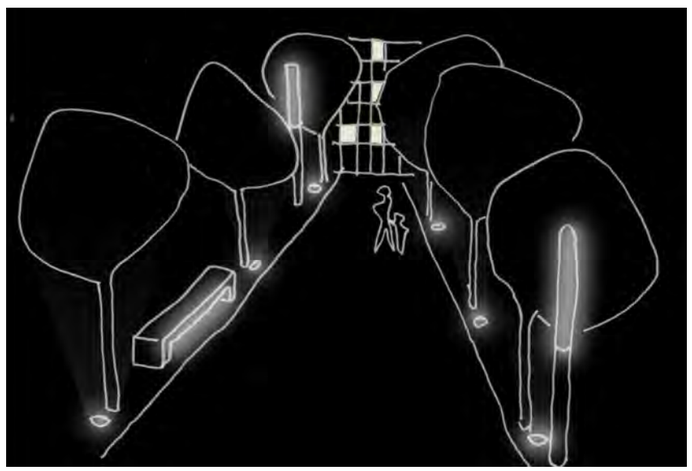
All roads within the site will be illuminated by pole mounted LED luminaires. All luminaires will be equipped with photocell control. In addition, dimming will be considered to allow road illuminance levels to be reduced when usage is low or late at night. Human scale bollard lighting will allow for facial recognition and feeling of safety. The new lighting aims to improve traffic conditions with a particular focus on pedestrian movement.

1.3.3 Pedestrian Entrance

The new pedestrian entrance will become a night time feature. Gentle illumination will uplight the new trees and pools or light are focused on seating or other areas where people are likely to gather. The aim of each is to enhance visual interest in addition to improving perceptions of brightness and safety.

1.3.4 Landscaping

Subtle, low level lighting will be provided in each of the external courtyards and within the landscaped area close to the main building entrance. This lighting will be designed with a focus on reducing light spill and creating a warm and inviting atmosphere for patients, staff and pedestrians.



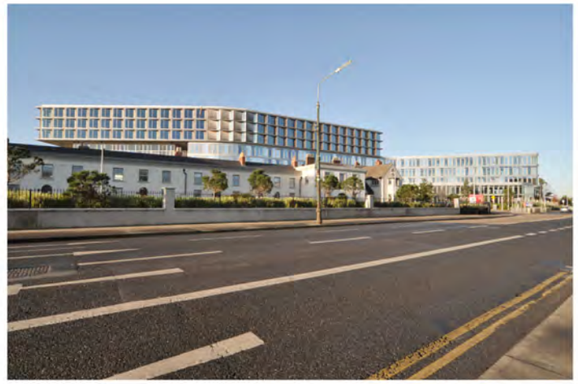
Appendix C Merrion Road Studies

Appendix C - MERRION ROAD STUDIES

ELM PARK

01 TARA TOWERS HOTEL

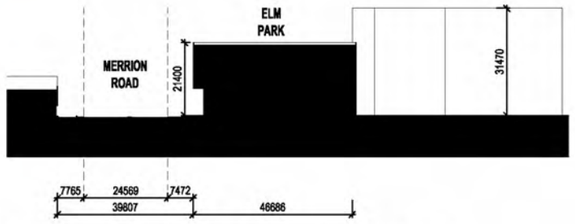
02 ELM PARK



03 ELM PARK

04 ELM PARK

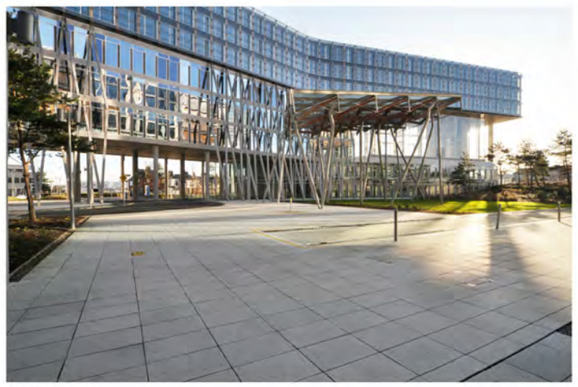
05 ELM PARK



SECTION THROUGH ELM PARK AT CLOSEST POINT TO MERRION ROAD

SECTION A-A

06 ELM PARK



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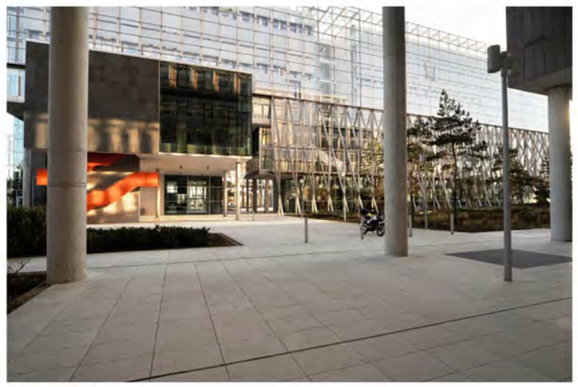
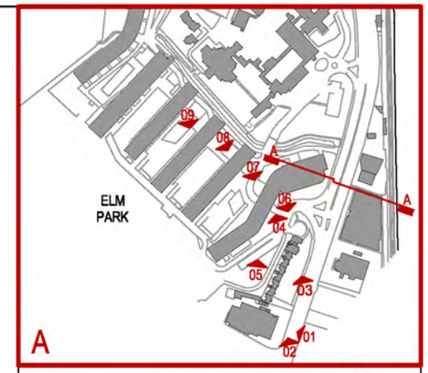
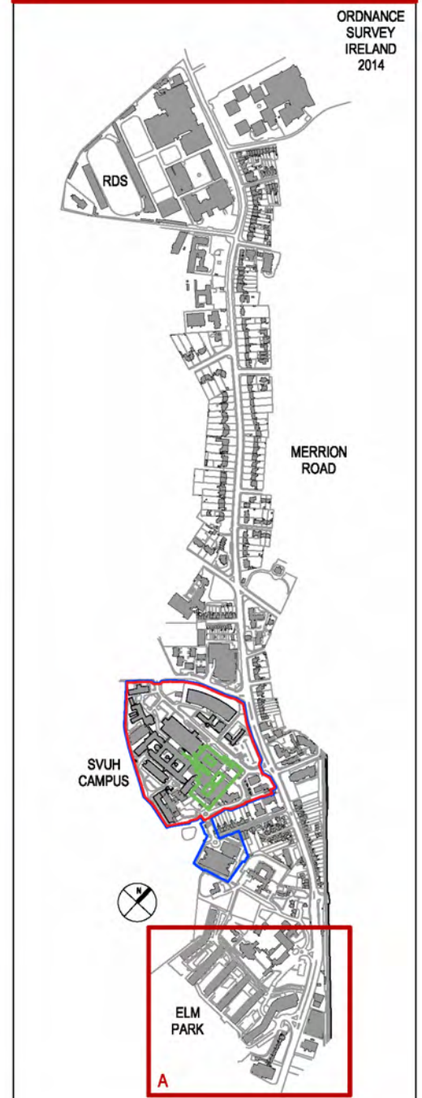


08 ELM PARK

09 ELM PARK





ELM PARK

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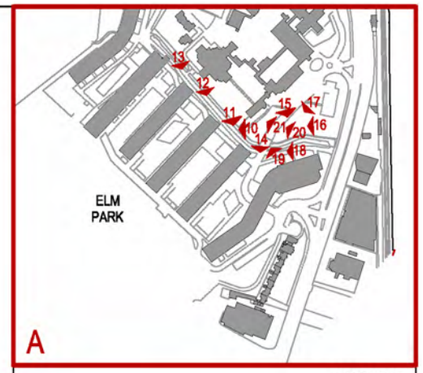
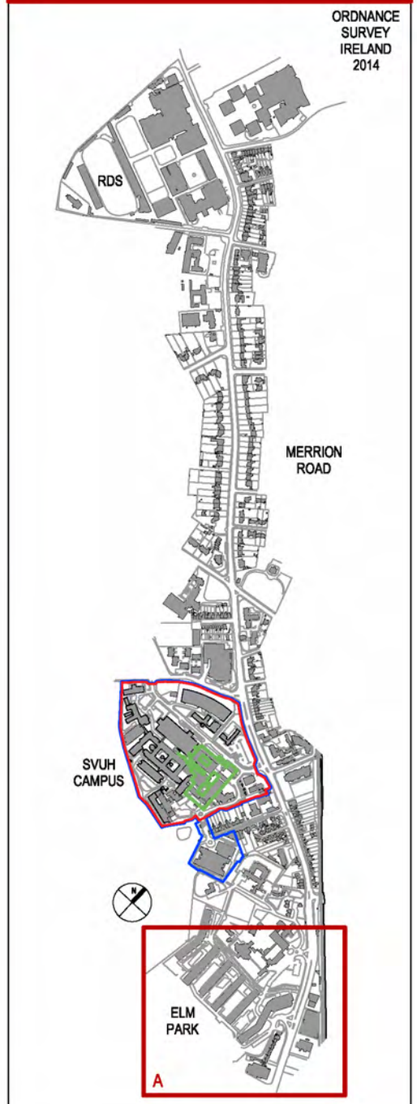


ORDNANCE
SURVEY
IRELAND
2014



ELM PARK / ST.MARY'S CENTRE NURSING HOME

22 ELM PARK / ST. MARY'S CENTRE NURSING HOME

23 ST. MARY'S CENTRE NURSING HOME

24 ELM PARK / ST. MARY'S CENTRE NURSING HOME

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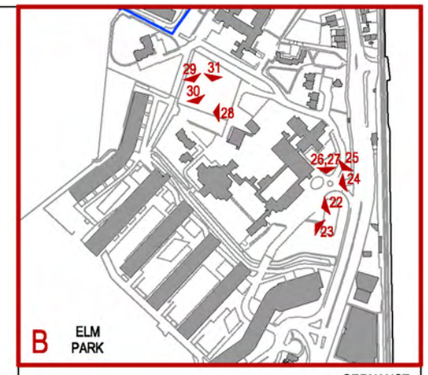
31 ELM PARK / ST. MARY'S CENTRE NURSING HOME



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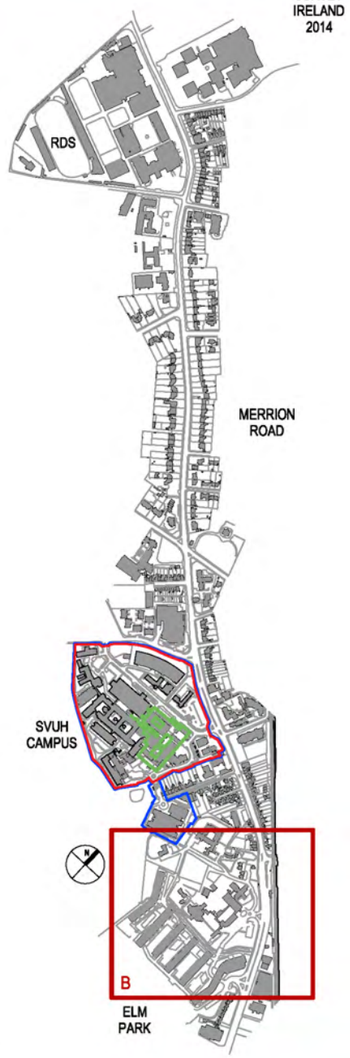
IRELAND
2014



ELM PARK / ST. MARY'S CENTRE NURSING HOME

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33 ELM PARK / ST. MARY'S CENTRE NURSING HOME

34 ELM PARK / ST. MARY'S CENTRE NURSING HOME

35 ELM PARK / ST. MARY'S CENTRE NURSING HOME

36 ELM PARK / ST. MARY'S CENTRE NURSING HOME

37 ST. VINCENT'S PRIVATE

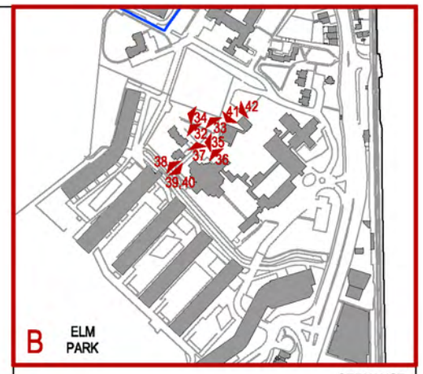
38 ELM PARK

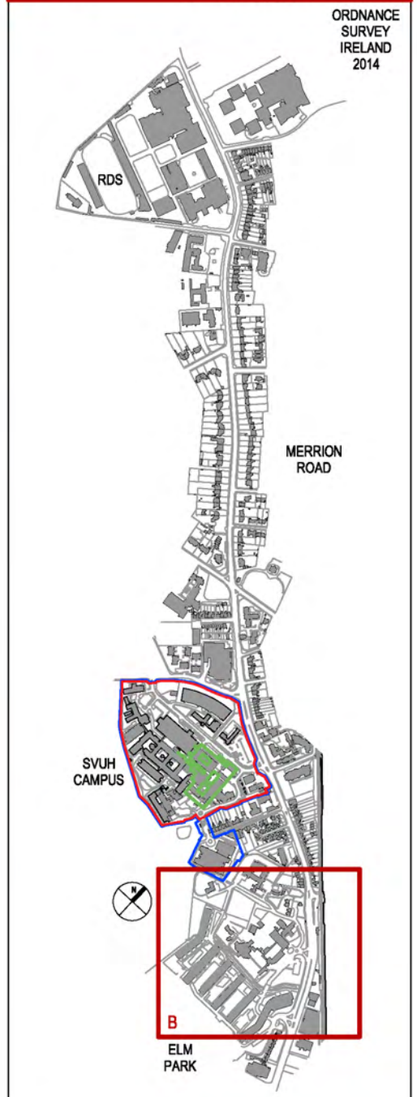
39 ELM PARK

40 ELM PARK

41 ELM PARK / ST. MARY'S CENTRE NURSING HOME

42 ELM PARK / ST. MARY'S CENTRE NURSING HOME





ELM PARK / ST. VINCENT'S PRIVATE HOSPITAL

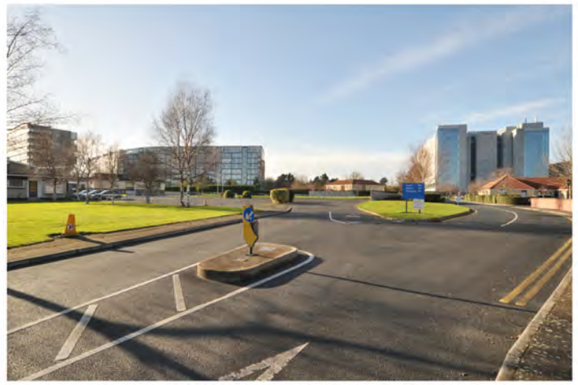
43 ELM PARK / ST. VINCENT'S PRIVATE HOSPITAL

44 ST. MARY'S CENTRE / ST. VINCENT'S PRIVATE HOSPITAL

45 ST. MARY'S CENTRE / ST. VINCENT'S PRIVATE HOSPITAL

46 ELM PARK / ST. VINCENT'S PRIVATE HOSPITAL

47 ST. MARY'S CENTRE / ST. VINCENT'S PRIVATE HOSPITAL



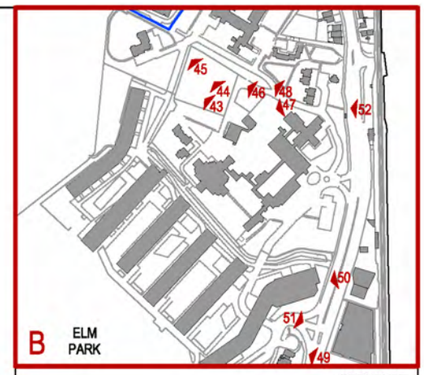
48 ELM PARK / ST. MARY'S CENTRE / ST. VINCENT'S PRIVATE HOSPITAL

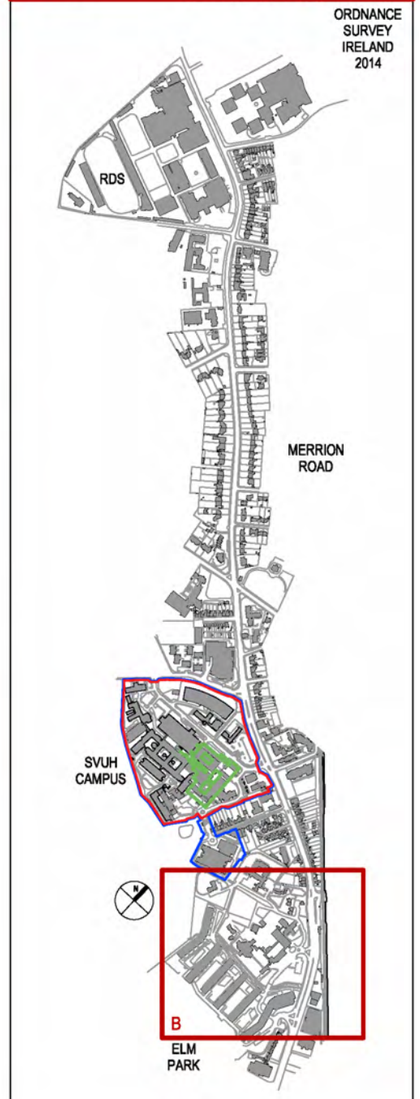
49 ELM PARK

50 ELM PARK

51 JACOBS ENGINEERING

52 ST. VINCENT'S PRIVATE





ST. VINCENT'S PRIVATE HOSPITAL / SVUH CAMPUS

53 ST. VINCENT'S PRIVATE

54 ST. VINCENT'S PRIVATE

55 ST. VINCENT'S PRIVATE

56 ST. VINCENT'S PRIVATE

57 ST. VINCENT'S PRIVATE

58 ST. VINCENT'S PRIVATE

59 ST. VINCENT'S PRIVATE / ELM PARK

60 ELM PARK

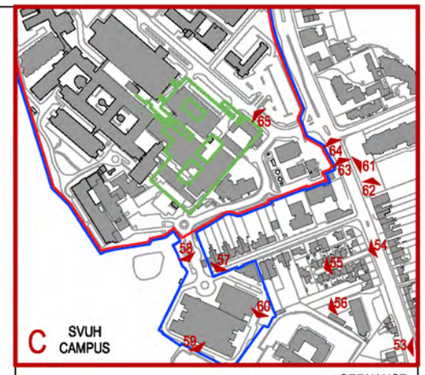
61 CHURCH

62 OUR LADY QUEEN OF PEACE CHURCH

63 ST. VINCENT'S UNIVERSITY HOSPITAL CAMPUS

64 ST. VINCENT'S UNIVERSITY HOSPITAL CAMPUS

65 ST. VINCENT'S UNIVERSITY HOSPITAL CAMPUS



ORDNANCE SURVEY IRELAND 2014

ST. VINCENT'S UNIVERSITY HOSPITAL CAMPUS

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67 ST. VINCENT'S UNIVERSITY HOSPITAL CAMPUS

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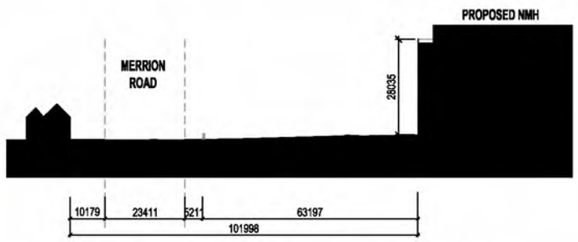
69 ST. VINCENT'S UNIVERSITY HOSPITAL CAMPUS



SECTION THROUGH PROPOSED NMH AT CLOSEST POINT TO MERRION ROAD

PROPOSED SECTION B-B

70 SVUH CAMPUS

71 SVUH CAMPUS

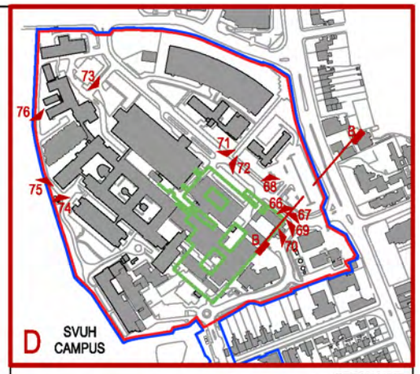
72 ST. VINCENT'S UNIVERSITY HOSPITAL CAMPUS

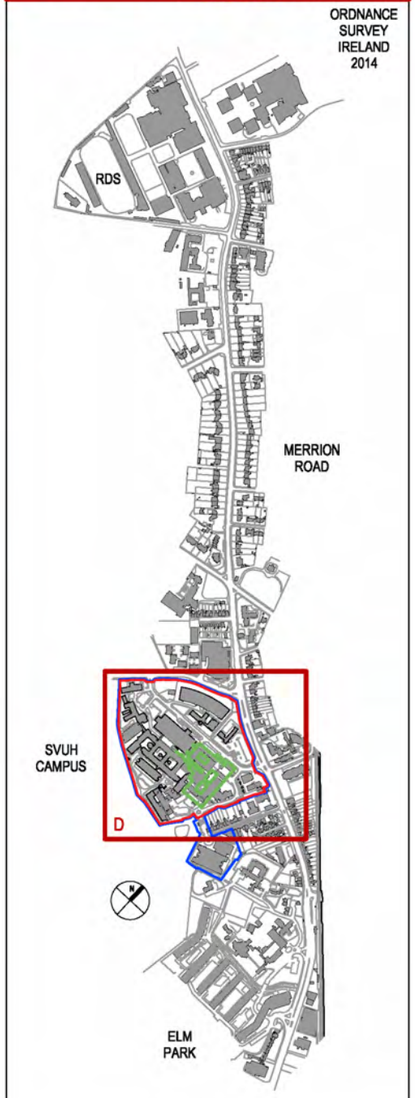
73 SVUH CAMPUS

74 SVUH CAMPUS

75 SVUH CAMPUS

76 SVUH CAMPUS





ST. VINCENT'S UNIVERSITY HOSPITAL CAMPUS / MERRION CENTRE

77 ST. VINCENT'S UNIVERSITY HOSPITAL CAMPUS

78 SVUH CAMPUS

79 SVUH CAMPUS

80 SVUH CAMPUS

81 ST. VINCENT'S UNIVERSITY HOSPITAL CAMPUS

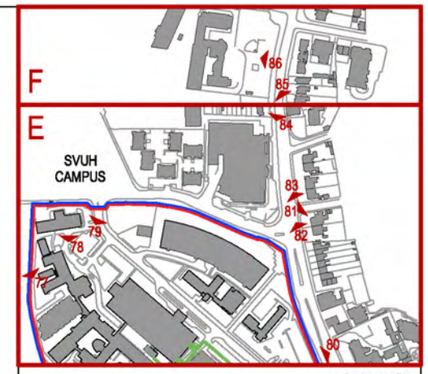
82 MERRION CENTRE

83 MERRION CENTRE

84 MERRION CENTRE

85 CLAYTON HOTEL

86 CLAYTON HOTEL



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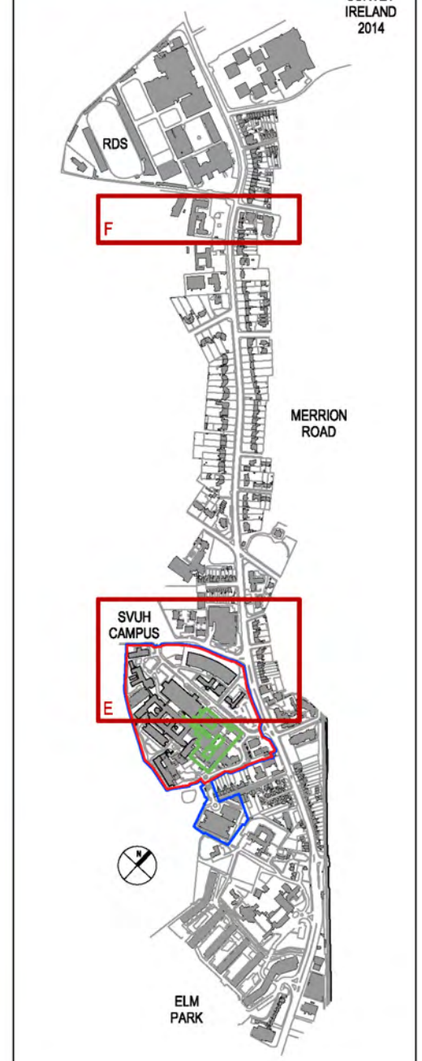


INTERCONTINENTAL DUBLIN / RDS / AIB BANKCENTRE

87 CLAYTON HOTEL

88 INTERCONTINENTAL DUBLIN

89 INTERCONTINENTAL DUBLIN

90 INTERCONTINENTAL DUBLIN

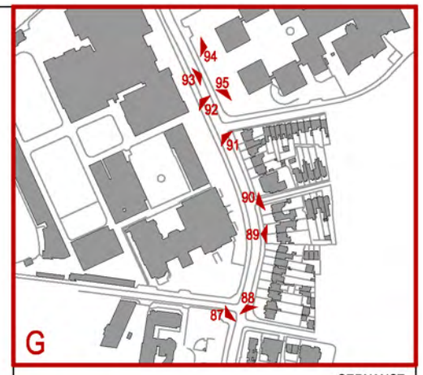
91 ROYAL DUBLIN SOCIETY

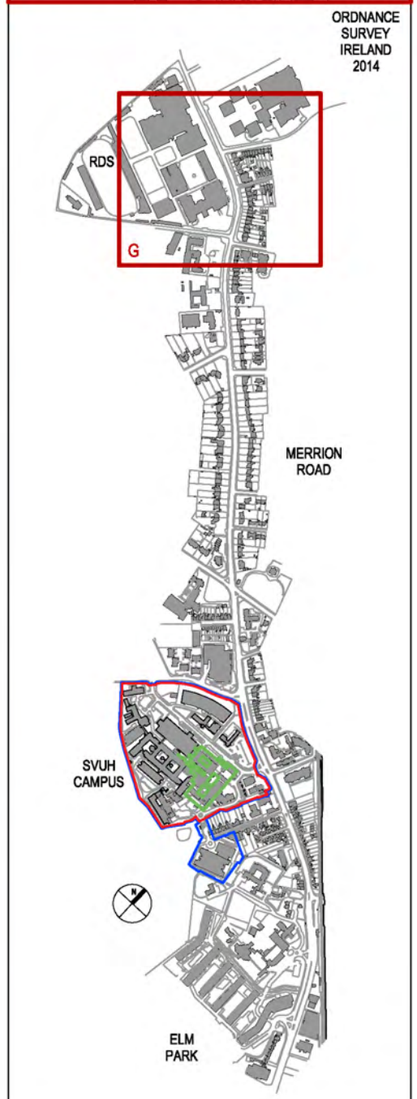
92 ROYAL DUBLIN SOCIETY

93 AIB BANKCENTRE

94 AIB BANKCENTRE

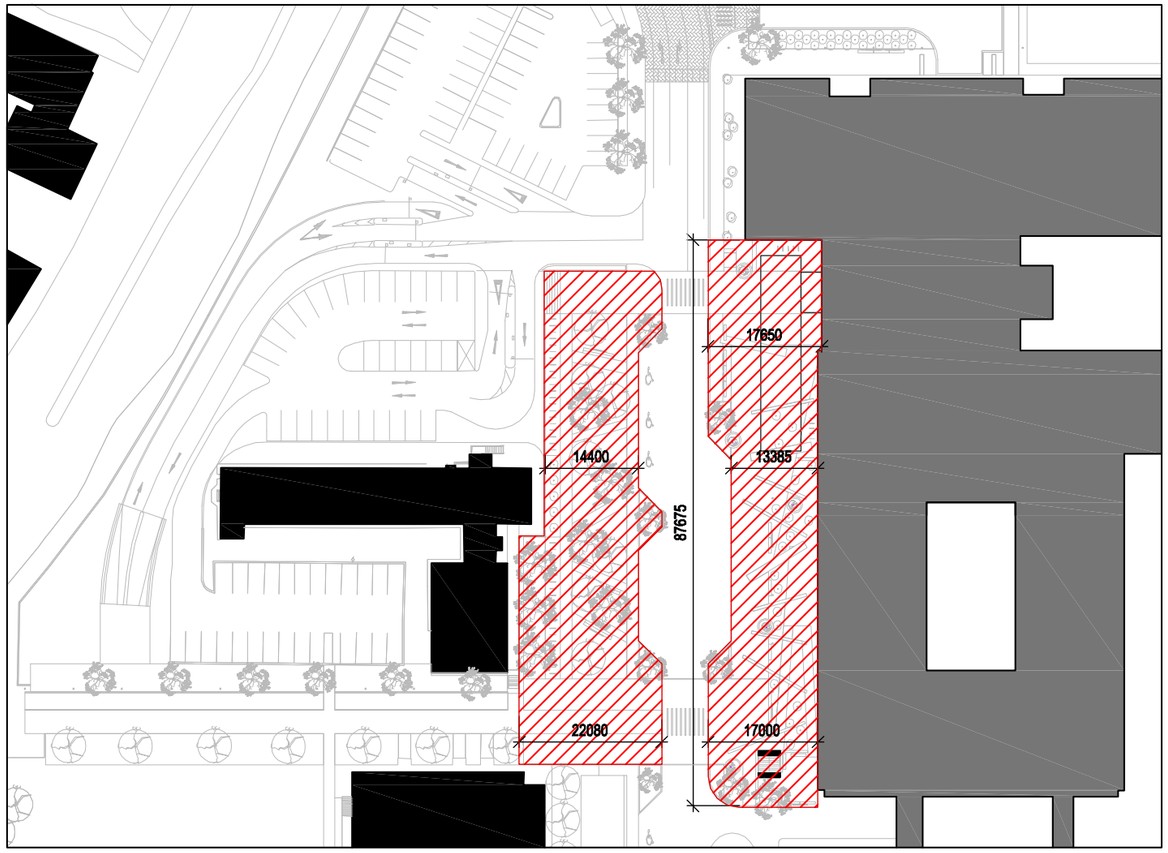
95 AIB BANKCENTRE





Appendix D Dublin Plaza Studies

Appendix D - DUBLIN PLAZA STUDIES



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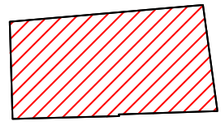

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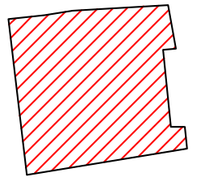

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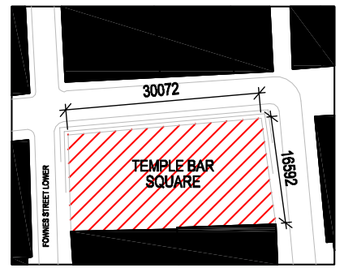
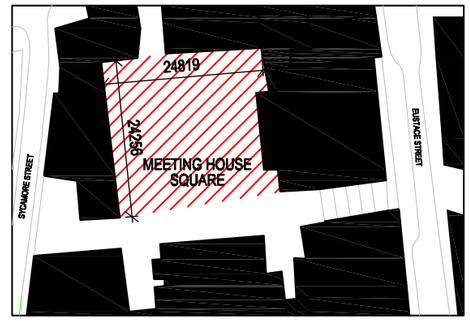
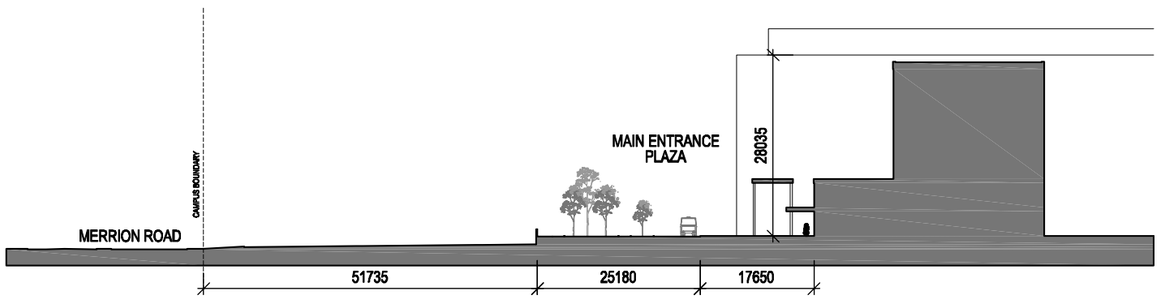
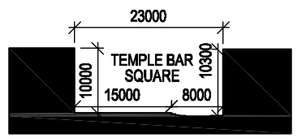


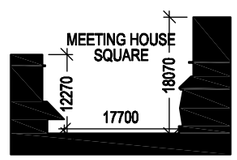




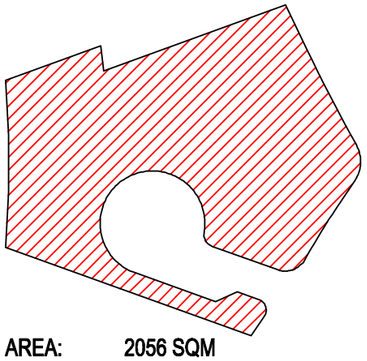
THE NATIONAL MATERNITY HOSPITAL AT ST. VINCENT'S UNIVERSITY HOSPITAL



TEMPLE BAR SQUARE



MEETING HOUSE SQUARE



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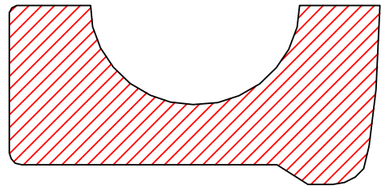

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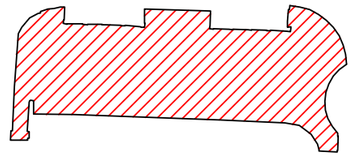

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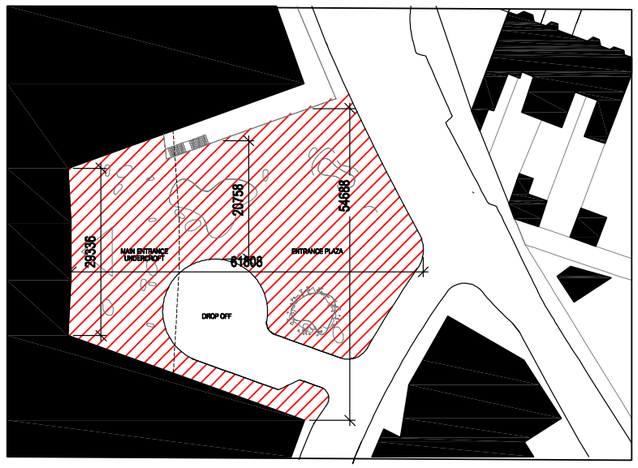
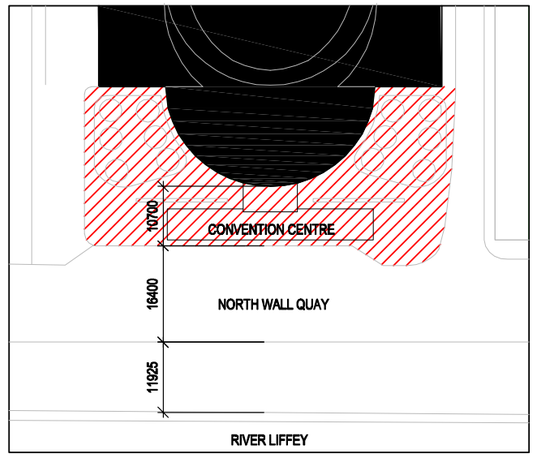
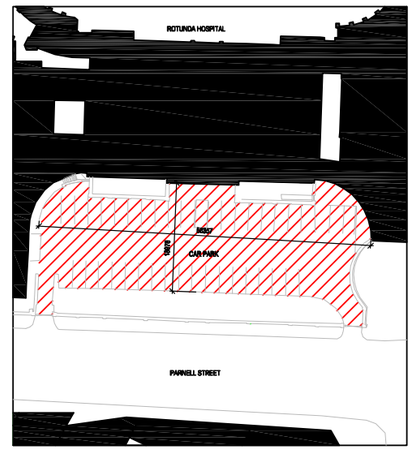
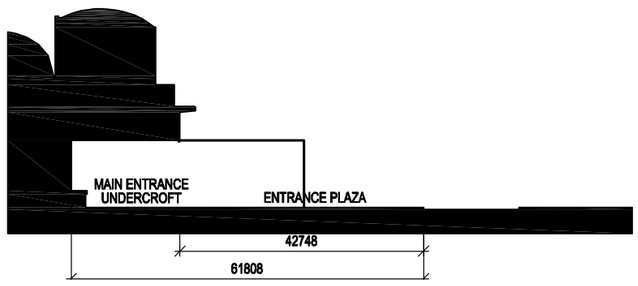
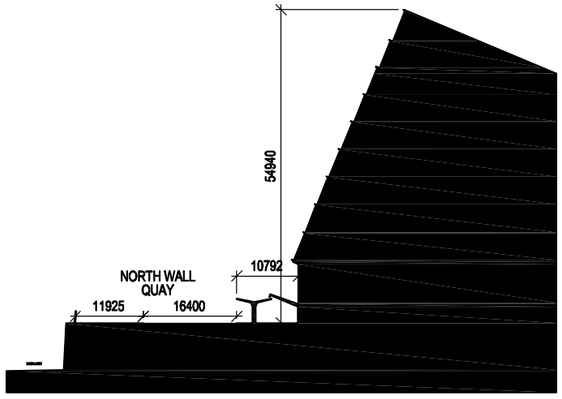




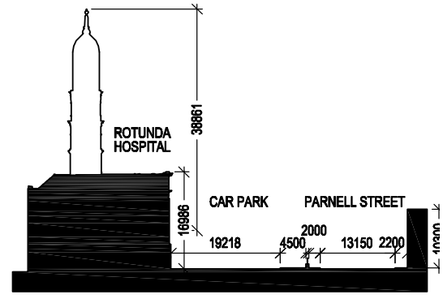




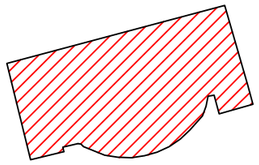
THE NEW CHILDRENS' HOSPITAL



THE NATIONAL CONVENTION CENTRE



ROTUNDA HOSPITAL FORECOURT - PARNELL ST.



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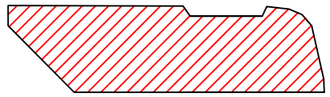
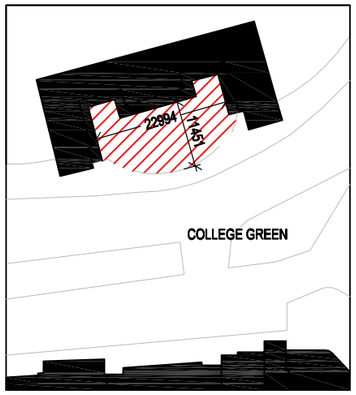
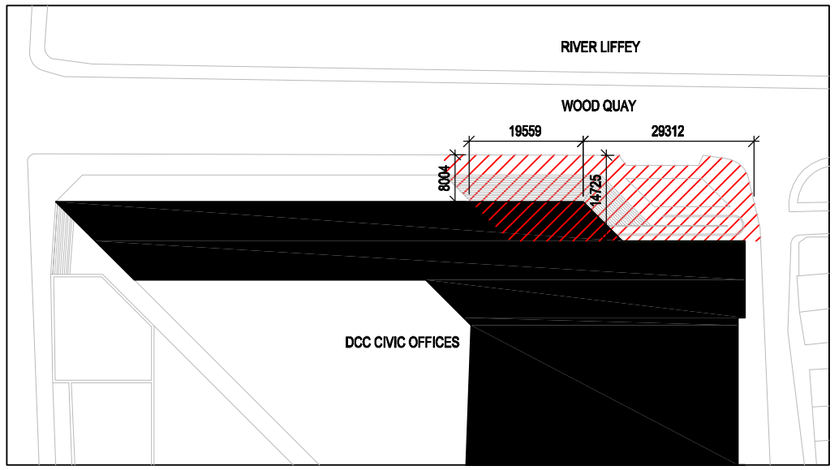
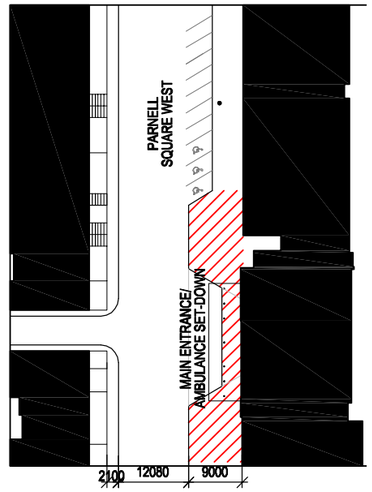


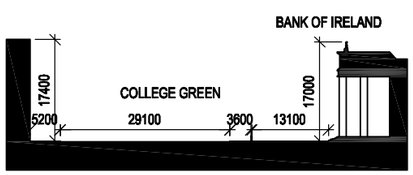
AREA: 685 SQM

AREA: 310SQM

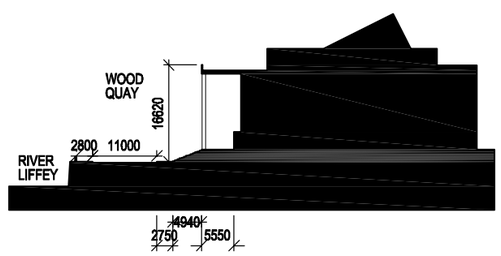




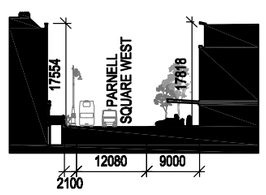




THE BANK OF IRELAND - COLLEGE GREEN



CIVIC OFFICES, DUBLIN



ROTUNDA HOSPITAL MAIN ENTRANCE