



Updated
Architectural Design Statement
for amended DA

Camden Private Hospital
and Biomedical Research Building

Camden Medical Campus Precinct
Gregory Hills Corporate Park

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For

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1 Introduction

1.1 Purpose of this updated Architectural Design Statement

This updated Architectural Design Statement has been prepared to accompany the amended Concept State Significant Development Application and EIS submission for the proposed Camden Private Hospital, now including the Biomedical Research Building as well as other amendments described herein, inclusive of additional environmentally sustainable design initiatives, and relocation of selected elements on site.

It is noted that this statement addresses the New South Wales Department of Planning and Environment Secretary's Environmental Assessment Requirements (SEARs) for the proposed development located on The Hermitage Way, Gledswood Hills Lot 846 within Gregory Hills Corporate Park (Lot 8000 DP 1209013).

1.2 Camden Medical Campus Precinct

The proposed Camden Private Hospital is planned to be the centrepiece of the **Camden Medical Campus Precinct**, itself located within the Gregory Hills Corporate Park, a development that is at present well underway, with many components already complete and operating.

The Camden Medical Campus Precinct incorporates two adjacent sites fronting The Hermitage Way, i.e. the Camden Private Hospital site itself and an adjoining smaller (60-bed) private paediatric hospital/medical centre facility, and as well, the SOMA Wellness Centre (now open and operating), having frontages to three streets, Gregory Hills Drive, Holborn Ct., and Digitaria Drive.

Details of the individual facilities and the status of each is listed below:

Facility	Location	DA/Approval status	Comments
Camden Medical Campus Precinct	The Hermitage Way, Gledswood Hills (Part of Lot 8441 in DP 1218173)	State Significant Development SSD 7387, consent approved April 2017 for concept proposal for development of site as medical precinct including private hospital and medical centre.	Application for modification to this consent is the subject of this current exercise.
Private Hospital, Medical Suites	1A and 1B The Hermitage Way, Gledswood Hills	DA 172/2016 determined (approved) November 2017 under Sydney Western City Planning Panel PPS-2016SYW037 and modification August 2019 PPS-2019WCI017	
SOMA Wellness (mixed-use commercial development inclusive medical suites, chemist/ dispensary, cafés, business/retail)	7 Gregory Hills Dr, Gledswood Hills NSW 2557	Development consent 1326.1/2015 granted 3 August 2016	

Construction of both the **Camden Private Hospital** and **Biomedical Research Building** will complete the key elements of the development of the Camden Medical Campus Precinct.

1.3 Camden Private Hospital and Biomedical Research Building

The proposed Camden Private Hospital and adjacent Biomedical Research Building, both to be located within the Camden Medical Campus Precinct, together promise an iconic landmark development for Camden and South Western Sydney. Camden Private Hospital will provide much needed healthcare services to this dynamic and growing community, and the Biomedical Research Building offers the opportunity for collaborative research work together with the hospital and potential synergies in attracting staff of high capabilities and experience.

The proposed hospital represents an efficient and contemporary infrastructure option to address the required current and future medical services to this fast-developing region of Sydney. The need for medical services has substantially outpaced supply in this region of Sydney consistently in the past, a scenario the Camden Medical Precinct, including especially its new Private Hospital, will help to alleviate.

1.3.1 Camden Private Hospital

The vision for the Camden Private Hospital is a superior and highly functional Hospital symbolising growth and development of the Macarthur region, and providing:

- a patient-centric care environment creating a smooth-flowing and seamless experience for patients, families and carers
- high-quality care and emphasis on patient comfort and safety
- service delivery based on 'barrier-free' accessibility principles
- compliance with all Australasian Health Facility Guidelines and relevant codes and standards
- an iconic landmark in and for Camden and South Western Sydney, with a contemporary and vibrant presence
- integrated patient care, incorporating a collegiate teaching and learning environment
- a healing environment that is enhanced by the maximisation of green space and provision of patient-accessible landscape settings
- an efficiently functioning digital hospital maximising new technologies and robotics to facilitate patient care and safety
- a hospital that encourages eco-friendly and sustainable operations that are supportive of environmental, social and governance (ESG) objectives
- efficient staged development potential
- an attractive work environment for staff and medical professionals, designed to facilitate and cater to the busy work schedules of doctors and nurses.

The integration of education, teaching and research facilities within the Hospital, together with the close adjacency of the Biomedical Research Building, will provide a unique opportunity for the Camden Medical Campus Precinct to become a 'Knowledge Hub' within the community and be attractive to doctors and other clinicians, as well as professionals in medical-related industries. The educational facilities within the Hospital, linked in turn to the biomedical research activities adjacent, will assist in creating an innovative and vibrant learning community, with lecture theatres and tutorial rooms throughout, offering opportunities for teaching and collaborative work.

Best practice models of care and hospital operational policies are continually being developed, improved and implemented. Therefore, today's design solution may not suit tomorrow's advances in models of care and operational procedures and processes. Both the briefing and design need to maintain flexibility. Most spaces need to be capable of potential multiple use and adaptation. If key clinical spaces are thoughtfully designed to be capable of coping with multiple operational models of today, they will have a much better chance of catering to the operational models of the future. In the hospital's design philosophy, the building's overall configuration, the grid, corridor networks, clear heights, floor structure and services network will be sufficiently adaptable to allow the future conversion of any clinical area into an alternative clinical function.

1.3.2 Biomedical Research Building

The vision for the Biomedical Research Building, sited immediately adjacent the proposed new Camden Private Hospital, is to provide a centre of excellence for biomedical research in south-western Sydney, offering:

- high-quality research and laboratory facilities supported by spaces for teaching, study and collaboration, as well as collegiate connections to the adjacent private hospital facility
- the strength of capability and capacity to deliver world class clinical outcomes, create knowledge bases and potentially establish new products and industries
- a bright and stimulating environment and facilities to attract and support internationally recognised scientists and researchers
- the opportunity to undertake collaborative research integrating clinical research activities within nearby teaching hospitals at Liverpool and Campbelltown and Western Sydney University's School of Medicine (Campbelltown campus)
- a facility which delivers high sustainability outcomes for an energy-efficient and environmentally responsible research operation.

The Biomedical Research Building has been planned to integrate visually and functionally with the adjacent Camden Private Hospital facility, and to work side-by-side with mutually supportive facilities within the overall Camden Medical Precinct.

Planning of the Biomedical Research Building has been kept deliberately simple and efficient to maximise clear and open laboratory facilities and their key ancillary research and support areas, with provision for a café or similar refreshment facility plus on-site carparking.

1.4 Site Location

The site location for the Camden Private Hospital and the adjacent Biomedical Research Building is within the Camden Medical Campus Precinct, which has been established within **Gregory Hills Corporate Park**.

Gregory Hills Corporate Park is sited within the heart of Gregory Hills (Camden LGA) approximately 1-hour drive from Sydney CBD and a 10-minute drive from Campbelltown CBD.

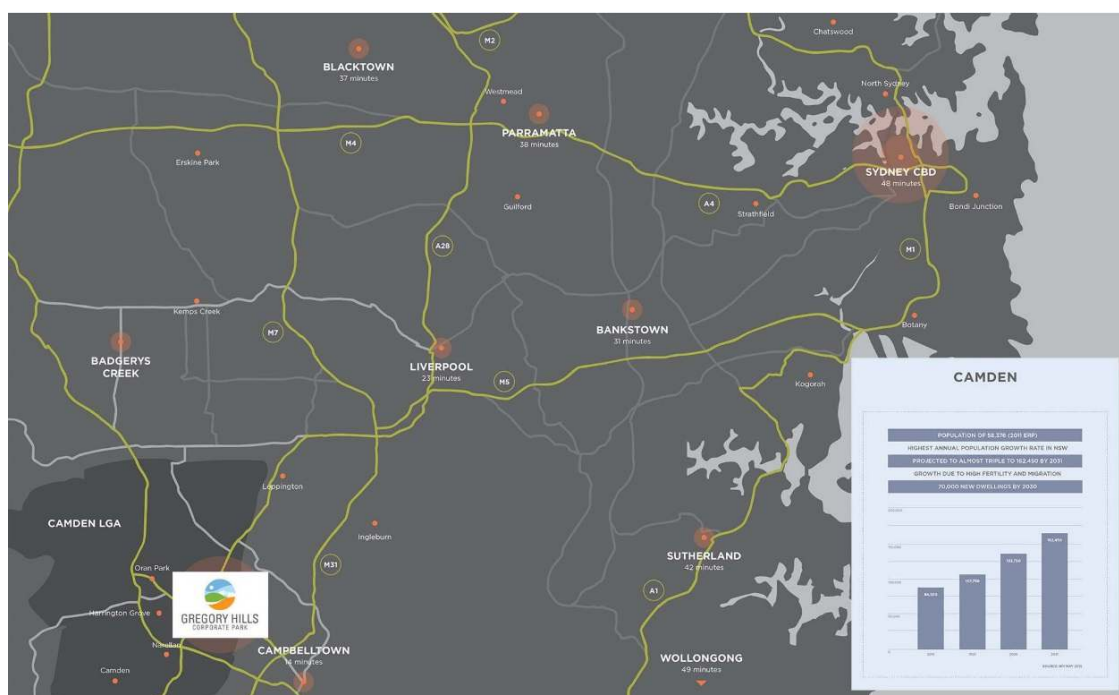


Figure 1: Regional Plan

Situated centrally within the **NSW Government's South Western Sydney Growth Centre**, it is projected that there will be at least 300,000 people and 110,000 new homes by 2030, with 70,000 new homes in Camden alone. The Government has committed \$3 billion for infrastructure investment.

The site is located directly adjacent to a 0.8 hectare committed specialist medical centre development, and close to commercial and retail spaces as well as having direct access to land dedicated for recreational use.



Figure 2: Local Context Plan

Several private and public hospitals are located within 20 minutes' drive from the Camden Medical Campus Precinct, accessible by way of a good network of roads and public transport to all population centres. New and established houses surround the site within proximity to Western Sydney University Medical School.

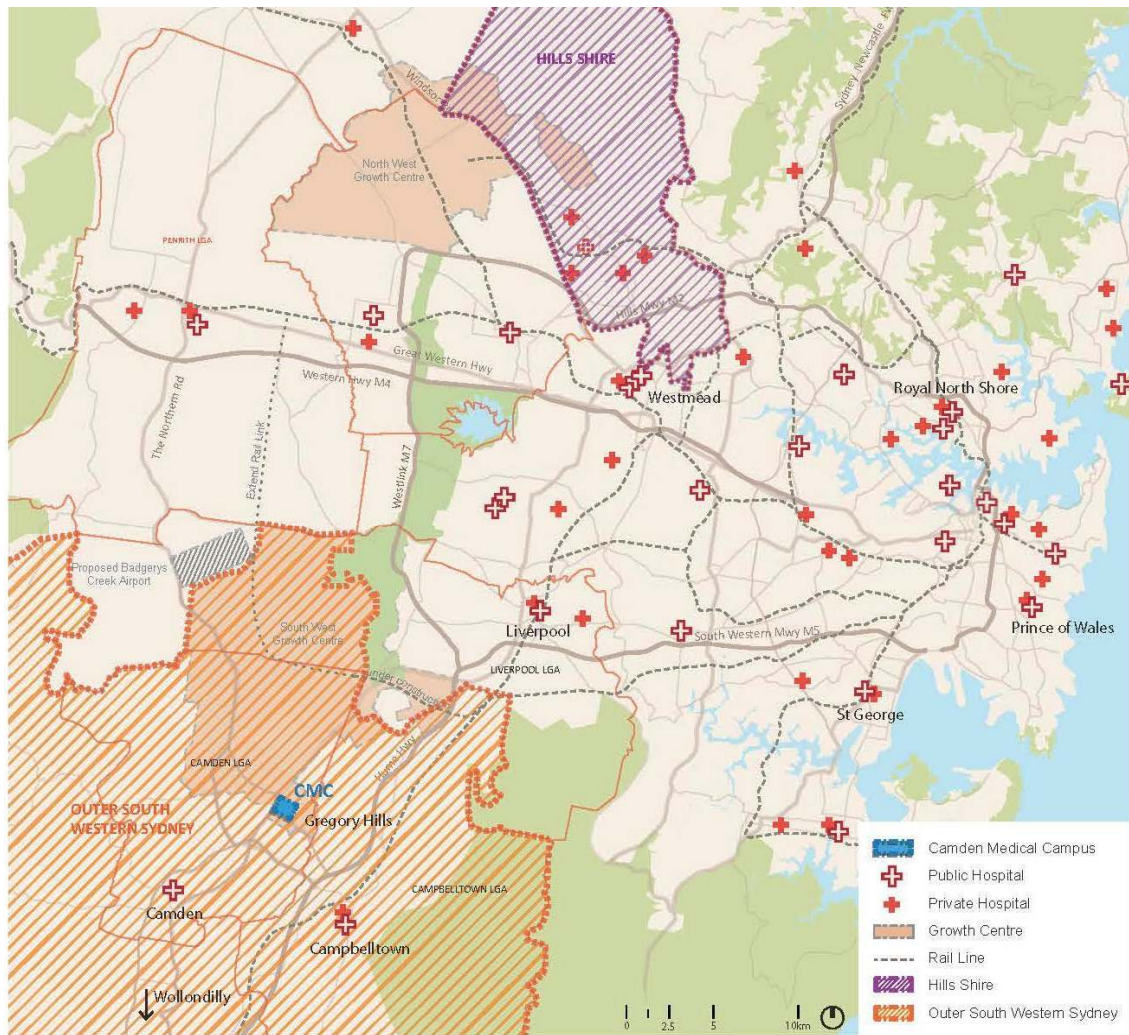


Figure 3: Regional Distribution of Private and Public Hospitals



Figure 4: Local Distribution of Hospitals and Travel Times to Camden Medical Campus

The subject site is situated to the South Eastern zone of the Gregory Hills Corporate Park development with The Hermitage Way to the East and Digitaria Drive to the North and the Riparian zone to the West.



Figure 5: Gregory Hills Corporate Park – Approved Master Plan

2 Built Form and Urban Design

2.1 Site Analysis

The following site characteristics and controls have been considered in the process of developing an appropriate architectural response to the client's brief for a private hospital.



Figure 6: Site Analysis Plan



2.1.1 Area and configuration

The total area of the site is 4.2 hectares or 42,000 square metres. It has a length of approximately 260 m along The Hermitage Way and approximately 250 m along Digitaria Drive. The site can be described as being the shape of a truncated triangle which tapers towards Gregory Hills Drive to the South.

The hospital occupies the zone towards the north end of the site and the biomedical research building the southern end, with a multi-storey carpark provided adjacent to the hospital.

2.1.2 Zoning

B5 zoning of the site allows for the development of a private hospital.

2.1.3 Topography

The site generally slopes east to west, with the highest point in the north-east and lowest in north-west, which then falls towards the riparian zone in the west.

2.1.4 Ground conditions

Geological survey indicates suitable sub-grade soil on the site with no significant rock formations.

2.2 Site services

2.2.1 Water

A 150 mm diameter DICL (Ductile Iron Cement Lined) water main has been constructed as part of the Stage 4 works of the Gregory Hills Corporate Park development on the northern side of Digitaria Drive. 2 x 150 mm diameter tees have been constructed off this main to provide a connection point to Lot 846 in the north western corner of the site, for both potable water and fire services.

The design of these works has been undertaken by consulting engineers Mott MacDonald as the Water Servicing Coordinators (WSCs) for the proposed development.

A 150 mm diameter PVC pipe is also located on the eastern side of the Hermitage Way, with connection also being able to be provided to this pipe if required. Connections provided to the site are sufficient for the proposed hospital site, with no amplification required.

2.2.2 Sewer

An existing 375 mm diameter PVC main runs within the South Creek tributary along the western boundary of the subject site. As part of the Stage 4 works of the Gregory Hills Corporate Park development, a 225 mm diameter PVC pipe with terminal maintenance shaft has been provided off the 375 mm diameter main for the connection of Lot 846, with realignment of this 225 mm line required to accommodate the proposed basement in the Biomedical Building.

The design of these works has been undertaken by Mott MacDonald, as the water servicing coordinators for the proposed development. Connections provided to the site are sufficient for the proposed hospital site, with no amplification required.

2.2.3 Electricity

An underground electrical network has been constructed as part of the Stage 4 works of the Gregory Hills Corporate Park development within Digitaria Drive and the Hermitage Way on both sides of the road. The design of these works has been undertaken by Estate Power Design Pty Ltd with allowance made for the connection of Lot 846. An electrical substation has been provided for the hospital site along Digitaria Drive

2.2.4 Gas

A 110 mm gas main is located along the eastern boundary of the site on the eastern side of the Hermitage Way. Connection to this main is proposed for the site. Connection requirements are to be determined during the detailed design phase once usage requirements have been determined.

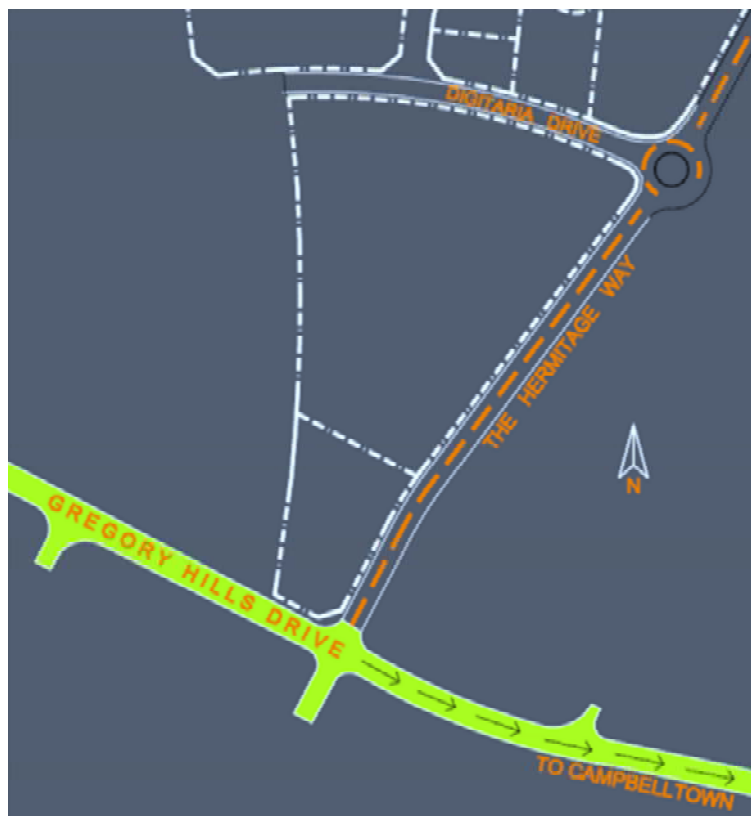
2.2.5 Telecommunications

An underground telecommunications network has been constructed as part of the Stage 4 works of the Gregory Hills Corporate Park development within Digitaria Drive and the Hermitage Way, on both sides of the road. Connection to these cables is proposed for this development.

2.3 Site Infrastructure and surroundings

2.3.1 Roads

Existing and new road infrastructure is being established with the development of the Gregory Hills Corporate Park, which services the site on two sides. South of the site Gregory Hills Drive provides access to Campbelltown. The Hermitage Way has moderate to heavy traffic flow to the rest of Gregory Hills and its residences.



A roundabout exists at the corner of The Hermitage Way and Digitaria Drive, which has been taken into consideration in the design of traffic flow to and from the hospital and biomedical research building within the site.

Figure 7: Roads

2.3.2 Acoustics

The primary source of acoustic impact will be from The Hermitage Way along the eastern boundary of the site. Digitaria Drive will contribute to a far lesser degree to the level of acoustic impact within the hospital site and buildings. The effect of sources of has been mitigated by maintaining significant setbacks from the site boundaries and locating more sensitive site functionality well within the site. In addition, landscaping buffers and planting soften the impact all around the site.

Additionally, inpatient accommodation is located above the podium level on Level 2 and above, being set back further still from the boundaries than the extents of the podium itself. Proposed vegetation within the setback zone will attenuate noise generated within the site and from outside the site.

2.3.3 Current surrounding uses

The immediate surrounding uses consist of primarily B5 business to the north, west and south of the subject site. Low density residential is located to the east across The Hermitage Way. Both areas have now been well developed to date and are anticipated to complete their development in the near future.

2.3.4 Riparian zone

A defined riparian zone exists along the western boundary of the site. This riparian zone has been fully revegetated now in accordance with the approved Vegetation Management Plan (2017).



The design strategy of both the hospital and the biomedical research building has been to take advantage of the views to and along this boundary of the site, incorporating recreational areas for people to enjoy the local flora and fauna.

Integration with the natural environment by way of providing opportunities to the hospital community such as the walkway along the riparian zone, and views from both hospital and biomedical research building, have been considered carefully and where applicable form key features of the design.

Figure 8: Riparian Zone Adjacent to Site

2.2 Design Guidelines

Design guidelines and development parameters have been established within the context of the locality and adjoining land. These are:

2.2.1 Site Layout

The site plan comprises three main building blocks – the Hospital Block, the Biomedical Research Building Block, and the Multi-storey Parking Structure.

Though physically separate, the Hospital Block and the Biomedical Research Building Block are related visually in following the curve of the easterly façade, and share other visual cues including the rhythms and articulation of the façade as well as colour and texture. The rich and extensive landscaping softens the impact of the solid building features and ameliorates the approach to the buildings by patients/visitors.

The Multi-storey Carparking structure is also a separate building, designed to serve the Hospital Block. It too has been provided with landscaping to soften the visual impact of the structure both from the riparian zone and from the hospital itself.



Figure 9: Site Master Planning

2.2.2 Gross Floor Area

The site area is approximately 4.2 Ha or 42,000 m², and the proposed Gross Floor Area is 63,688 m², giving an FSR of approximately 1:1.52, exclusive of basement or multi-storey parking structure.

2.2.3 Building Footprint

The Ground Level building footprint is 15,164 m² (inclusive of hospital, biomedical research building, and multi-storey parking structure), representing 36.1% of site coverage. The remainder of the site is dedicated to landscaping or landscaped carparking.

2.2.4 Landscaping, tree planting and interface with riparian zone

The landscape strategy has been detailed in the landscape plan, which includes appropriately addressing the Lukes Creek riparian zone. Refer Chapter 5 of this report for further detail in relation to the landscaping approach.

2.2.5 Building height

The proposed maximum building height is RL 129.10. It is noted that this maximum is a localised occurrence at the roof top lift overrun. The building is of a tower-and-podium typology. Whilst the tower sits above the podium it is also substantially set back from the edge of the 3-storey podium.

2.2.6 Setbacks

The proposed development on the site maintains substantial setbacks on all frontages. The red dotted lines below represent the 5-metre setback from The Hermitage Way and 3 metres from other boundaries as specified in the Camden Council DCP. A particularly generous setback has been proposed on The Hermitage Way frontage, which faces low-density residential lands across the road to the east.



Figure 10: Ground Level Building Footprint and Setbacks

2.3 Building envelope study

The proposed group of buildings form a highly articulated series of elements which respond to the opportunities and constraints of the site. Collectively the design seeks to positively contribute to the urban design of the locality with generous setbacks, particularly that aspect which faces residential development across The Hermitage Way. The diagrams below show the east-west cross section of the site through to the residential lands across The Hermitage Way, and the north-south cross section which indicates the location of Digitaria Drive. The red zone represents the maximum building volume envelope and minimum setback requirements are per Camden Council DCP. The difference is significant on both the eastern and western site frontages, and intentionally so to create a landscaped setting in which the hospital and biomedical research centre are situated.

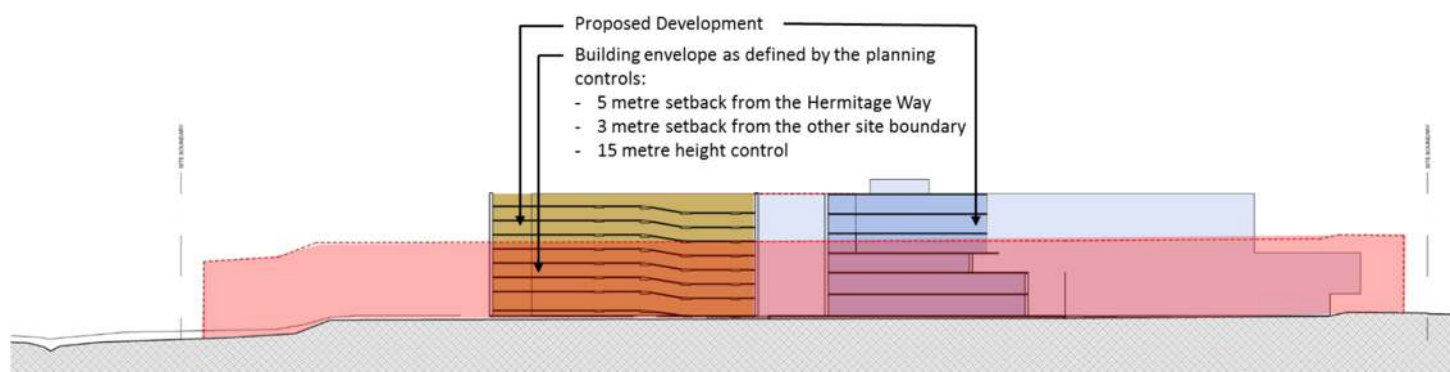


Figure 11: East-West Site Section

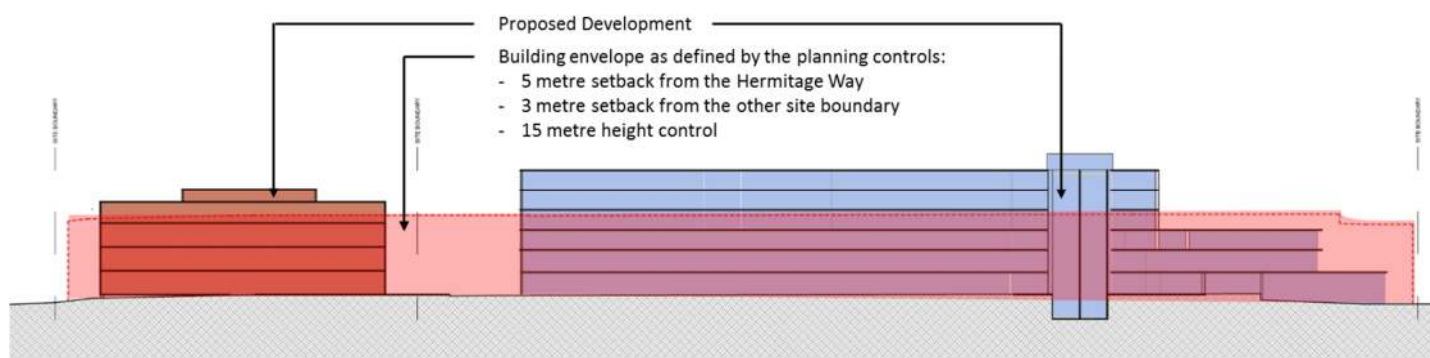


Figure 12: North South Site Section

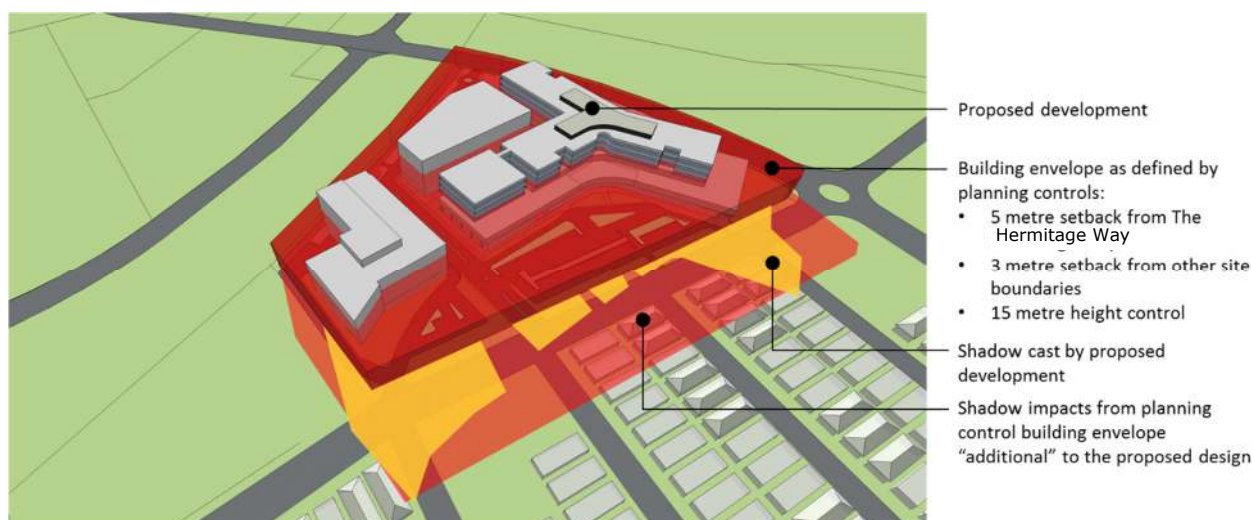


Figure 13: Building Envelope Analysis

2.4 Façade concepts and street frontage

To meet the needs of the growing community of Camden and the Greater Macarthur region, and to emphasise the knowledge industry aspects of the biomedical research institute, the related façades concepts of the individual buildings reflect a contemporary and inviting people-focused amenity with ecologically sustainable design emphasis, that delivers world class health services, and offers an appealing place to work and visit.

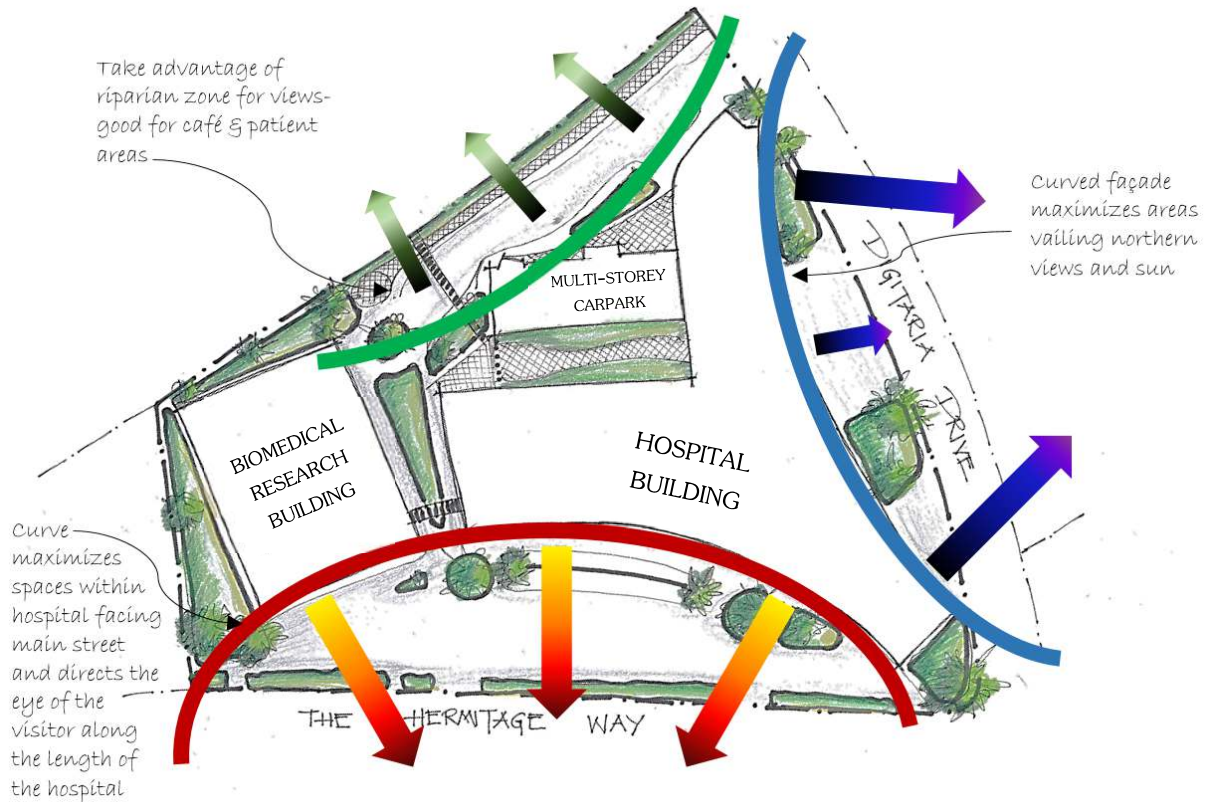


Figure 14: Environmental Considerations on Each Façade

Collectively the hospital and its adjacent biomedical research centre project an 'active' street frontage, adding interest, life and vitality to the surrounding areas and the community. This is achieved with the following design considerations:

- The axis and façades of the two key buildings, the hospital and its adjacent biomedical research building, are oriented to focus toward the eastern boundary of the site along The Hermitage Way. The intention is to reinforce the street character and provide a good visual presentation of the Hospital and Biomedical Research Building as tandem related entities as seen from the street. This planning also improves pedestrian wayfinding and orientation at street level.
- Ancillary retail spaces within the hospital are positioned along the main façade; likewise, the biomedical research building's café/retail zone is oriented similarly. This helps to achieve an 'active' street frontage for the building.
- A soft zone of transition for visitors to the hospital approaching the main entrance allows for a friendly and calm landscaped point of arrival, with a generous covered zone to ameliorate immediate weather impacts, but with the presence of trees and landscaping as a healing and welcoming aspect upon arrival.
- Street setbacks are determined not only to provide sufficient traffic access to the hospital and urgent care ward entries, but also to help create street proportions that enhance the building's setting on the site. Well-managed street setbacks offer comfortable wind conditions, view corridors, appropriate pedestrian scale, and good growing conditions for trees along the main street and within the site itself.
- The selection of a façade system that offers the necessary and desirable access to daylight into clinical/inpatient areas has been managed carefully to minimise excess insolation and its consequent demands on energy usage and efficiency.

2.5 External Views

Together the hospital and its adjacent biomedical research building have been designed to project a strong street presence with active street frontage facing The Hermitage Way, with softening landscape and other ameliorating features providing a welcoming and attractive place to be.

The design proposal acknowledges the corner location, with provisions in place to ease traffic, particularly at the roundabout at the corner of The Hermitage Way and Digitaria Drive.



Figure 15: Indicative Overall View looking North-West across The Hermitage Way



Figure 16: Indicative View looking West from near the corner of Digitaria Drive and The Hermitage Way

2.6 Building Form & Massing

The hospital building is articulated as a podium-tower typology; it comprises a 3-storey podium and a three-winged 'tower' above. The podium level contains the reception, admissions, and surgical spaces as well as the services for the entire building. This necessitates a larger footprint on site for the first three floors (Ground Level, Level 1 and Level 2). The 'tower' component is predominantly made up of inpatient ward units branching out in three directions, taking in the views from various angles.

A plant room level is at the top level of the podium (Level 2). It is set back from the main podium below and is differentiated from the podium and tower by material and colour. It is an articulated connecting piece between the tower and podium.



Figure 17: Functional Blocking

2.7 Vertical Zoning

Vertical zoning of the hospital building places prime importance on public and service lifts to connect various areas of the Hospital with one another, particularly Urgent Care on the ground floor with the Operating Suite on Level 1, and the Operating Suite with the inpatient wards above. Vertical relationships of departments and zones of the Hospital allow efficient patient flow and staff movement through the Hospital, minimising distances travelled by moving upwards or downwards to services required. Segregation of public and service elevators minimises congestion and enables the critical uses of the lifts to transfer patients and staff to take priority where required.

The plant rooms for the Hospital and the operating theatres are positioned on Level Two. This allows for a roof space that is free of equipment and therefore can facilitate staged development without unduly affecting hospital operations.

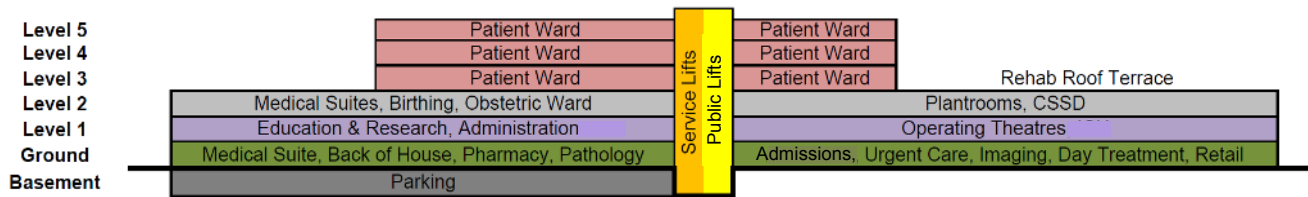


Figure 18: Vertical Stacking (Hospital Block)

2.8 Alternative Architectural Design and Planning

Alternative architectural and site masterplan options have been explored, analysed and measured against fundamental design objectives such as amenities of public domain, planning efficiency, mass, height, formal articulation, traffic and safety...etc. These have ultimately lead to the development of the current proposal. The current proposal represents a well-balanced architectural and planning strategy that will guide detailed design going forward.

3 Environmental Amenity

3.1 Solar Access and Overshadowing

The orientation of the hospital promotes the infiltration of natural daylight into the following areas of the Hospital:

- Patient care and treatment areas, such as inpatient units, recovery areas and consultation rooms.
- Staff areas where staff are located for long durations at a time, such as offices, nursing stations, receptions and patient treatment areas. This helps to promote staff wellbeing and encourage greater productivity.
- Public areas, including corridors, waiting areas as well as the café

At the same time, patients undergoing care are not exposed to excessive temperature, direct sunlight and glare. This will be achieved through passive control measures with the application of insulation, and the use of tinted glazing

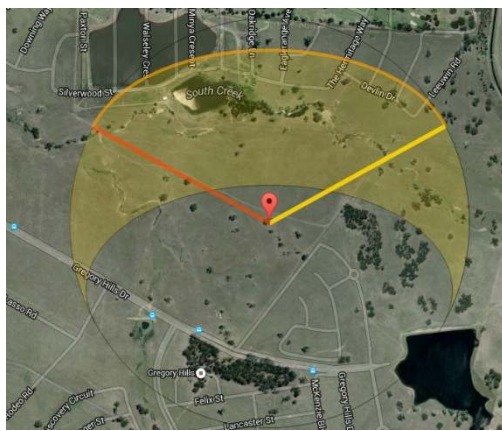


Figure 19: Sun Path Over Site on Winter Solstice

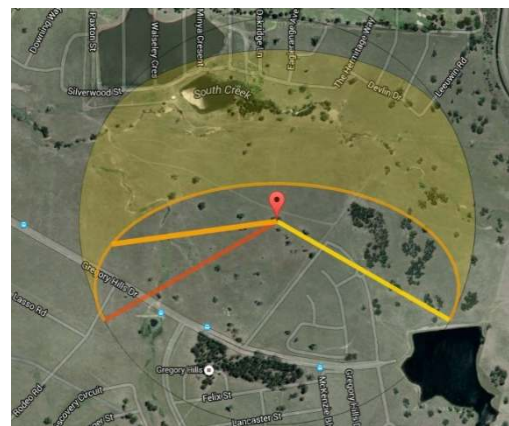


Figure 20: Sun Path Over Site on Summer Solstice

3.1.1 Shadow analysis

Shadow analysis during winter solstice demonstrates that the hospital will have minimal impact on all adjoining lands.

At 9:00 am, shadow is cast on lands to the west (Riparian Zone) and to the south (Parking structure of adjoining health facility subject to a separate DA by others). At 12:00 noon almost all shadow is contained within the subject site. At 3:00 pm small portions of residential lands to the east are impacted, which otherwise remains unaffected by the proposed development throughout the day. The extent the building is set back from the boundaries to the east and west limits the impact on adjacent properties. It is considered that there will be no or negligible impact on the amenity of neighbouring properties.



Figure 21: Shadow Diagrams on Winter Solstice

3.2 Acoustic Impacts on Community

Potential sources of noise generation is from the loading dock and the public patient drop-off area. To some extent ambulances entering and leaving the site will also generate some noise. However, operational policies will dictate noise minimization practices, such as, when appropriate, not turning on the siren until a certain distance away from the hospital. The hospital is surrounded by B5 zones and a riparian zone, which are much less sensitive to noises compared to the residential lots lying to the east.

To minimise noise to the residents to the east, the loading dock and ambulance yards are located on the north of the site off Digitaria Drive. Its immediate neighbours are B5 zoned. The service dock is screened by the hospital building itself such that noises can be contained. To the east the generous setback creates a highly landscaped setting to absorb sounds as patients enter and leave the hospital, which is not a noisy activity in itself and is further moderated by the appropriate landscaping.

3.3 Privacy and View Loss Impacts

The subject site does not form an identified view corridor or obstruct any significant views shared by the community. It is sufficiently setback from its boundaries to allow landscaping to form the street edge, thereby softening views along surrounding streets.

The patient wards are located on levels 2, 3, 4 and 5. These have generally arranged to face north and south, away from the residential areas. Where it faces east towards the residents to the east, the windows are setback approximately 60 metres from the eastern boundary at the closest point, and a further distance of approximately 19 metres to the street boundary of the closest residential lots to the east. As such there are no adverse privacy impacts as a result of the proposed development.

3.4 Pedestrian Wind Comfort and Safety

Pedestrian wind comfort and safety within and surrounding the site has been assessed and mitigated. The effects of wind tunnel through the narrowing of wind passages and downdraft from uninterrupted tall vertical faces have been identified as the potential source of issues. Strategies for mitigation can be summarised in the diagrams below:

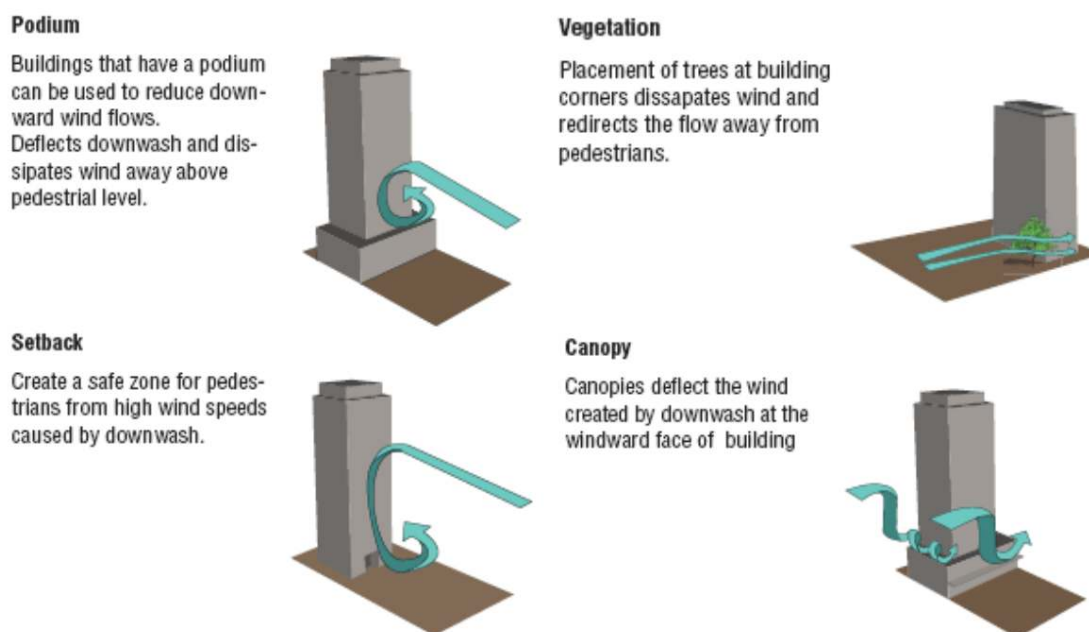


Figure 22: Wind Mitigation Strategies

Podium

A podium with a footprint wider than the tower has been proposed to break up continuous vertical faces and wind paths.

Setback

Setbacks from site boundaries are generous and vary such that pedestrian along the site boundaries are not subjected to wind deflected off the building.

Vegetation

Trees and shrubs have been proposed across the entire site to dissipate winds within the on-grade parking area and along street frontages.

Canopy

Canopies have been proposed along main paths of pedestrian movements as weather shelters and wind deflectors.

In addition, gaps between buildings have been orientated away from the cold south-easterly or have been protected from wind tunnel effects by clustering buildings to form mutual wind screening, and mitigated by landscaping, trees and planting.

4 Site Access & On-site Parking

4.1 Parking requirements

Parking requirements are based upon those outlined in the Traffic Impact and Parking Assessment (TIA) submitted in July 2016, and as accepted by the Minister for Planning on 27th April 2017 under SSD_7387. The approach used in the approved submission has been replicated for calculating the required number of parking spaces in this proposed modification, including generation rates for specific usages.

4.2 Parking provision generally

The approved parking allocation for the whole site (hospital and biomedical research building) is 1,080 spaces. There have been minor alterations to the car parking allocation following the design changes, however more significant changes to locations and layouts of parking facilities.

The relocation of the multi-level parking facility to the hospital site is a positive outcome for pedestrian movement around the precinct. The direct pedestrian access achieved to the main hospital building from the parking facility removes all pedestrian-vehicle conflicts.

4.3 Hospital traffic generation

The traffic generation for the development is based on those outlined in the TIA submitted in July 2016, and as accepted by the Minister for Planning on 27th April 2017 under SSD_7387. The expected operational characteristics of the proposed hospital have again been adopted to remain consistent with the parking assessment.

The changes to land use within the hospital have resulted in a reduction to the traffic generation of the development. While overall, the GFA of the development has decreased by 12.7%, decreases to trip generation of 19% and 39% exist for AM and PM peak hours respectively. This is due to:

- the change of land use within the hospital, with the result spreading trip demand over the day rather than within peak periods, and
- the removal of the research unit from the hospital site

Detailed breakdowns for traffic generation numbers and flows are available within the traffic report.

Considering that the access points to the hospital development remain unchanged, the proposed traffic figures will not create a negative impact on the surrounding road network.

4.4 Hospital parking provision

Provisions are made in the design for an underground carpark for doctors and surgeons. The natural gradient of the site allows for basement access from the north-western entry to the site.

The proposed design provides 885 parking spaces for the hospital site, 59 more than the requirement. This parking allocation includes 5 accessible parking spaces, and more will be designated utilising the surplus of spaces provided.

4.5 Biomedical Research Building traffic generation

The removal of the biomedical research unit from the hospital to the independent facility has resulted in the need for a standalone calculation of the parking requirements. The parking requirements are based upon those outlined in the TIA submitted in July 2016, however with revised staffing requirements and occupancy levels.

4.6 Biomedical Research Building parking provision

The GFA proposed for the biomedical research land use has increased significantly. This increase is matched by an increase the parking requirement of 114 spaces. Four accessible parking spaces are also required for this facility. This proposal is seeking approval of the parking requirement of 167 spaces, including 4 accessible spaces, for the Biomedical Research Building.

69 car parks have been provided on-grade over two locations on the research building. Additionally, the basement to the research building provides car parking for 126 vehicles, 7 of which are proposed as a stacked arrangement.

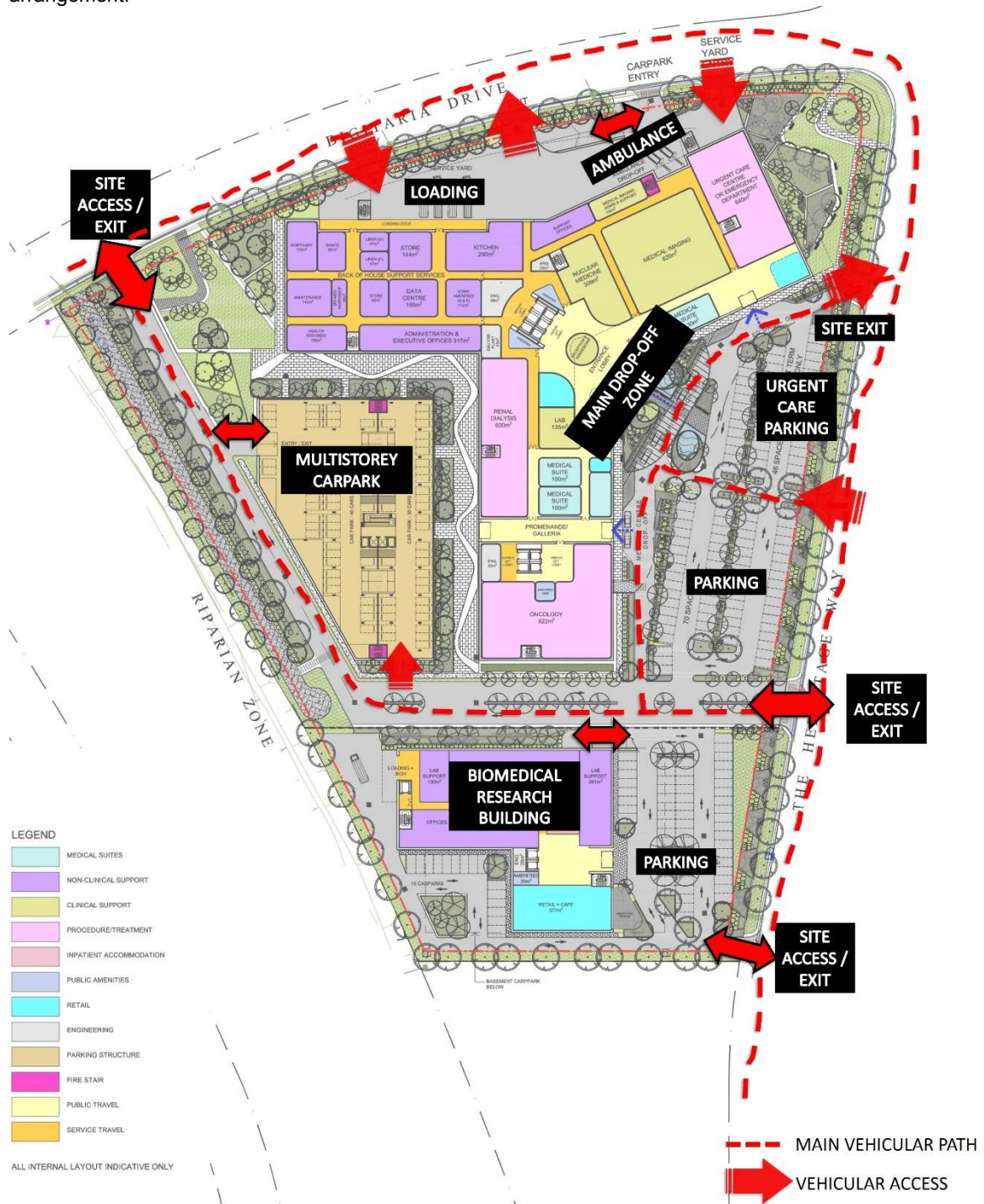


Figure 23: Vehicular Access and Circulation Within the Site

Entry and exit points for ambulances and emergency vehicles are located along Digitaria Drive. This allows ambulances exclusive access to the Urgent Care Ward within the Hospital away from the general public traffic entering from and exiting the site onto The Hermitage Way.

In a similar fashion, trucks have been designated entry and exit points onto Digitaria Drive. This serves not only to give trucks convenient and unhindered access to the loading dock without having to merge with the

visitor traffic to the Hospital, but may also help to keep large trucks away from The Hermitage Way as much as possible.

A dedicated Loading Dock is provided with sufficient space for trucks to manoeuvre and reverse onto the loading platform.

4.7 Pedestrian Access

Pedestrians will have unobstructed access along the public frontages of the site. Throughout the site a strategy is used to define a safe, efficient path of pedestrian movement.

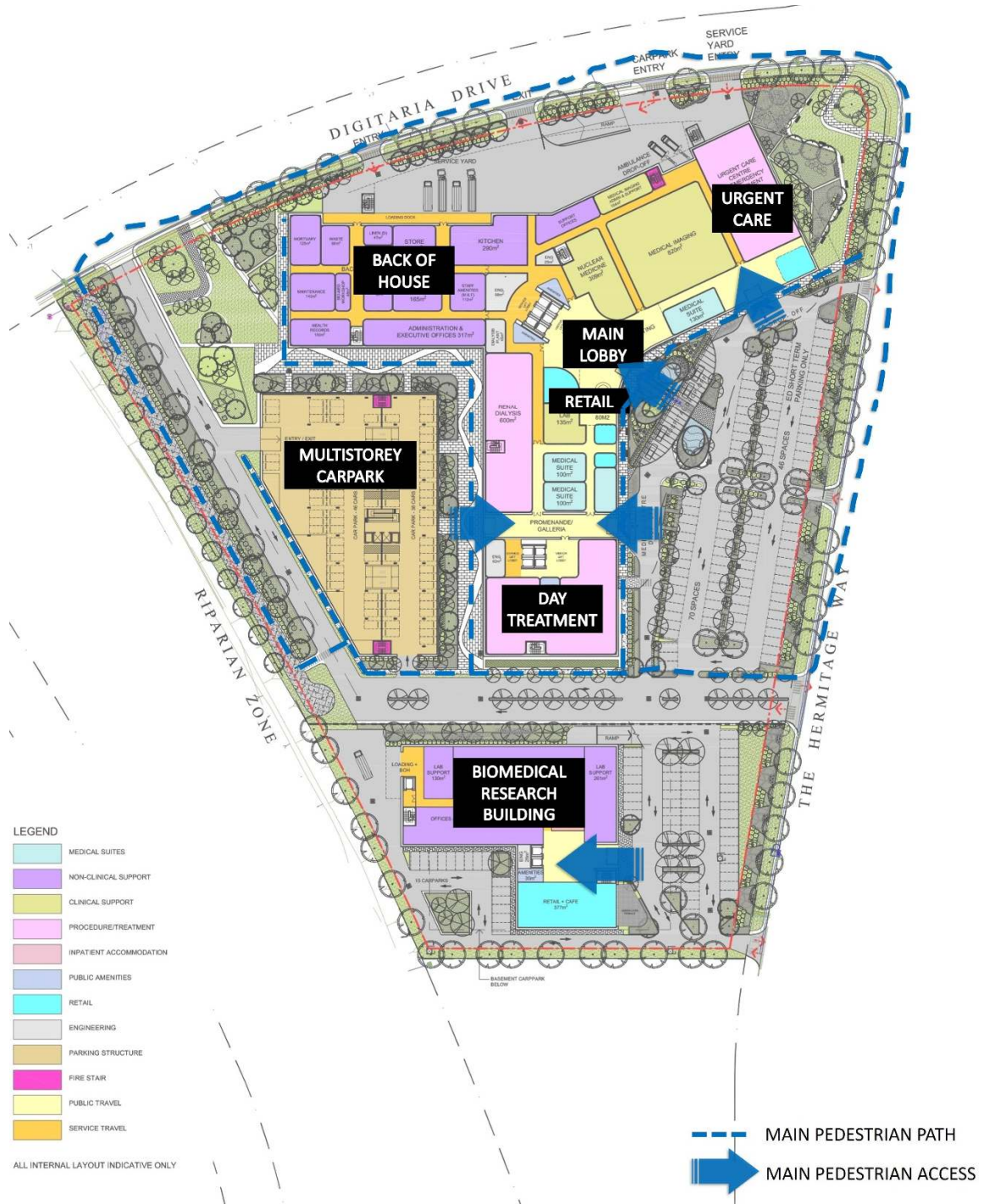


Figure 24: Pedestrian Access and Circulation within the Site

5 Landscaping

The landscape design for the site reinforces and integrates with the architectural site planning, responding to it by the creation of strongly identifying corner landscapes at the principal formal public arrival address to The Hermitage Way/Digitaria Drive.



Figure 25: Landscape Plan

Feature sculpted landscapes and integrated signage are provided to the northeast and northwest corners of the site, creating sinuous slices through the landscapes, with curved landscape/signage walls defining level changes in the undulating landforms. Street tree plantings along Digitaria Drive will be complemented by tree planting along the boundary of the site to 'green' this important frontage, and frame service and basement carpark access driveways.

Street trees along The Hermitage Way will be supplemented with new trees to match the rhythm and spacing of proposed site entries. Wide landscape areas are proposed between and around parking areas, to provide broad canopy shade tree planting. These trees will be suitably spaced so as to allow for safe evening lighting and surveillance of the carpark areas. Contrasting paving to the parking areas will provide visual variety and reduce their apparent size, resulting in an increase in visual appeal with the quality of the pavements and detailing.

The broad landscaped forecourt area to the main building provides a significant transition environment for arriving patients, visitors and staff, engaging the senses and providing a lush landscape experience and relaxing garden spaces. Water features, seating and lawns have distinctive rounded forms, and the water features and lawn are tilted towards the arrival walkway and entry, providing flanking features with significant screening landscape, creating a lush backdrop. A distinct greening of the edge of the carpark will create a strong 'gateway' experience when moving into the forecourt landscape, creating an uplifting environmental experience expressing the principles of sustainability and environmental, social and governance (ESG) objectives.

This striking landscape identity and environmental theme continues into the generous entry atrium spaces, with hanging gardens meeting lush ground floor gardens. A sense of indoor/outdoor continuity is central to the themes of the building, seeking to engender a sense of well-being for patients and visitors.

Rooftop gardens support strong sustainability themes, with organic forms to rooftop photovoltaic cells flowing directly into the forms of the various outdoor garden terraces, and shade canopies integrate with the sinuous/biophilic forms of the gardens.

The Lukes Creek riparian corridor along the western boundary is reinforced with native canopy tree planting and a maintenance access road, respecting the bushfire APZ requirements for canopy separation and vertical stratification of landscape.

The overall landscape for the site has been developed to be in harmony with the local landscape setting, and provides a comprehensive green setting reinforcing the ESG and innovation themes of the project.

6 Key Medical Design Principles

6.1 Patient-Centred Care

Zoning within the Hospital will achieve the following design objectives:

- Dedicated car parking and convenient access for visiting doctors to outpatient and inpatient clinical areas
- An easily accessible main entry for the Hospital with clear directions to other facilities and departments. The main reception desk is easily identifiable on entering the Hospital or via the multi-storey car park.
- Strategic locations of ancillary retail spaces that place them away from clinical areas yet in close proximity to the main entry and reception.
- A separate drop-off and entry for an urgent care ward externally. Access to the urgent care ward is also provided internally, with an easy path from the main reception area.
- Reduced walking times for visitors, patients and staff between the clinical and non-clinical spaces
- Clear segregation of public and service corridors.
- An optimal location of public and service lifts to facilitate the most efficient working of the Hospital.

To maximise efficiency within the Hospital, the following health planning guidelines are taken into consideration:

a) Clustering of services to promote patient comfort and value

- Clear travel, flows and relationships between inpatient and outpatient spaces
- Clearly definable “hot zone” for the provision of critical and urgent care services
- Integrated chair-based therapies
- Separation of public, inpatient and staff service flows
- Education and research facilities within the Hospital with access to operating theatres and patient wards
- Generous provision of lounges, meeting and teaching rooms to promote a collegial and learning environment for clinicians

b) High Value and Profitable Care Delivery Systems

- Strong focus on ambulatory and outpatient care
- Walk in – walk out clinics
- Day only surgery suite
- Day of surgery admission
- Minimally invasive and robotic surgery
- Ambulatory chemotherapy and renal dialysis
- Overnight care focused on limited and decreasing lengths of stays
- Promotion of self-help facilities for patients and visitors

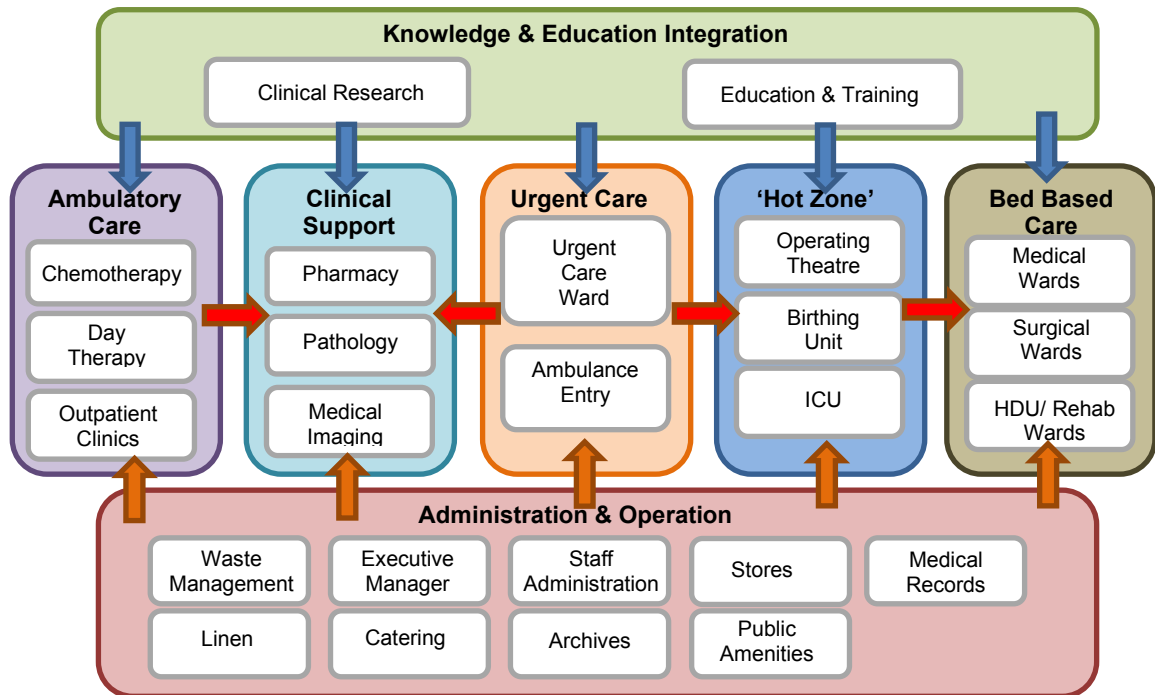


Figure 26: Zoning Principles

6.2 Design Flexibility

Flexibility is designed right into the fabric of the building by an inherent simplicity of building modules. A uniform 8.4 metre grid has been adopted on the podium level, with level 2 being the structural transitional level to take a more efficient, 7.2m grid for the inpatient wards in the tower. These grids have proven to be capable of coping with the pattern of operating room modules, two back to back patient bedrooms, and isolation rooms with adjacent anterooms, large meeting rooms and even for car spaces in the basement car park.

The three-spoke wings on the ward levels have been designed with open ended geometry to allow for staged development without destroying the architectural integrity of the building.

Locations of fixed elements such as fire stairs and lifts are such that they do not prevent future growth. Typical room types such as bedrooms, consultation rooms and patient bays are designed as standardised modules without unnecessary variations that limit the room's functionality and adaptability. This serves an added purpose of keeping staff errors to a minimum whilst giving the hospital management flexibility to use the same space for a variety of purposes. These standardised rooms can be fully designed in great detail, mocked up and verified, then repeated without variation. Modular design makes them interchangeable and adaptable.

A successful Master Plan gives a glimpse of the future which means that every element needs room to grow and remain structurally flexible to allow for internal change. One technique employed successfully involves placing non-critical departments in the space between critical departments. When the Hospital requires quick and disruption-free internal growth, the non-critical departments provide internal expansion space; an example of Operating Suite on Level One of the Hospital.

7 Ecologically Sustainable Design

Buildings account for one third of global carbon emissions providing those in the building industry an opportunity to have a major impact on reducing said emissions. In particular, health facilities contribute significantly more to this degradation. This is due to several factors, primarily the relatively large structures associated with health facilities and secondly the high level of constant energy usage required for the operations of these facilities.

Accordingly, a strategic approach to the development has been formulated which will seek not only to address this and related issues for these building types, but to generate an exemplar for such facilities on the global stage.

7.1 Strategic development for a globally leading Healthcare and Life Sciences Precinct

The driving strategy for this development is derived from a stated aspiration – to be a:

Carbon-Neutral Operation in a World leading Health Precinct

This aspiration is reflected in and guides the entire design and delivery process. It forms its purpose and aligns the project with the project developers' long-term desired outcomes to achieve the highest possible value for environment and conservation obligations, to the ultimate benefit of patients, staff, visitors, community, stakeholders and partners. Essential to all of this is an emphasis on biophilic design throughout.

To achieve this, the following initiatives have been instigated:

7.1.1 Water

- **Reduce consumption** – ensure design and selection of most appropriate products
- **Maximise water capture** – seek to maximise across all green areas, roof areas
- **Maximise reticulation** – achieve efficiencies
- **Incorporate** into design features, harmonising sensory perception and support the patient journey and experience
- **Innovation** Features – key design elements acting as a natural heat transfer
- **Benchmark** against World's Best Practice

7.1.2 Energy

- **Reduce consumption**
- **Maximise energy efficiency** – Innovative natural ventilation & mechanical strategies
- **Maximise energy regeneration** – Solar & battery
- **Maximise the use of renewables**
- **Reduce Solar gain** – Smart glass smart design
- **Materiality** – select the most efficient and appropriate building materials, FF&E, and soft surfaces
- **Innovation** in the use of natural light and labyrinth circulation
- **Benchmark** against World's Best Practice

7.1.3 Waste

- **Reduce consumption** – through smart procurement methodologies & reuse
- **Design** that supports leadership in the reduction of waste, recycling and its safe disposal
- **Maximise Recycling**
- **Maximise Waste reticulation** – use of grey water
- **Innovation** in the strategic reuse of building materials, medical materials, FF&E & technology
- **Benchmark** against World's Best Practice

7.1.4 Building Design

- **Overall goal** – create a healthy environment
- **Reduce impact of building footprint** – bleed external into internal spaces; create multiple use areas/internal to external
- **Biophilic Design** Incorporating:
 - **Maximise** – Green areas
 - **Maximise** – Air quality, natural light, managed views
 - **Minimise** – scale and bulk of building
 - **Minimise Noise** – using materials selection and environmental interventions
- **Innovation in building products sourced** – Façade treatment
- **Benchmark** against World's Best Practice

7.2 Application of the principles in the design

The project will follow through with the principle as declared that it is to be a **carbon-neutral operation in a world leading health precinct**, with empathise on biophilic design.

While detailed design is still yet to follow in terms of actual initiatives to be implemented in the building, some of the measures which promote energy and water savings in previously completed health facilities include the following; these are currently under consideration for the both the proposed hospital and biomedical research building:

- Hybrid airconditioning systems
- Thermally efficient façade design
- Solar pre-heat hot water systems
- Grey water reuse
- Rain water harvesting
- Building features to reduce thermal load
- Heating, ventilation and air conditioning options to reduce energy use
- Electrical options to reduce energy use
- Water conservation
- Daylighting to permit sunlight into the building during the day, through windows, courtyards while avoiding excessive insolation
- Installing solar panels, mounted at optimum orientation
- Installing more efficient lighting such as LED lights throughout
- Installing lighting controls like motion sensors in rooms that are used infrequently, such as teaching facilities, store rooms and utility rooms
- Installing variable speed drives for fans or pumps
- Improving the overall maintenance schedules of building systems
- Installing an energy efficient heating and cooling system

While these generally offer some of the more straightforward choices for incorporation into health facility design since they deliver significant long-term financial benefits despite higher initial capital costs, this criterion is by no means the sole one for their recommendation and selection. *Inter alia*, the criteria for selection of such measures will include:

- Meeting statutory minimum requirements;
- Comparison between ESD initiatives and adopting options which also save operational costs;
- Achieving outcomes that have desirability/potential improved health outcomes from a patient-centric and patient experience point of view;
- Achieving optimum healthy and fulfilling working environment for staff both clinical and non-clinical; and
- Benchmarking the quality of ESD performance and achieved outcomes against world's best practice.

8 Staging

Through smart Master planning, efficient health service and facility planning, the proposed design provides the strategies and framework for staged development. It enables the facility to expand horizontally in an orderly fashion whilst the construction stages will have minimal impact on the daily activities of the operating hospital. This section contains diagrams and discussions that form an indicative proposal for staged development.



Figure 27: Staging Plans

8.1 Stage 1

Stage 1 consists of core health services and their support functions, which include, Surgical Services, Imaging, Urgent Care, Nuclear Medicine, Pharmacy, Day Treatment, Day Ward, Birthing, ICU, Pathology, Waste Management, Supplies Unit, Linen, Kitchen, Medical Suites....etc.

8.2 Stage 2

Stage 2 increases the provision of health services, particularly in the number of patient beds and operating theatres. The hospital will expand horizontally toward the west to include additional 100 inpatient beds and more operating theatres. The expansion also will include Back of House support services and clinical services.

8.3 Stage 3

Stage 3 will see the hospital expanded horizontally towards the south to accommodate more inpatient beds and medical suites. The increase in day patients will increase the demand for more carparking spaces.

It is noted that Stage 3 development will not encroach the generous landscaped setback from The Hermitage Way established in Stage 1

8.4 Multi-storey Carpark and Biomedical Research Building

The planned construction programming for the Multi-Storey Carpark will depend on the demand of the Hospital building.

However, the Biomedical Research Building is independent and may be constructed at any time as required.

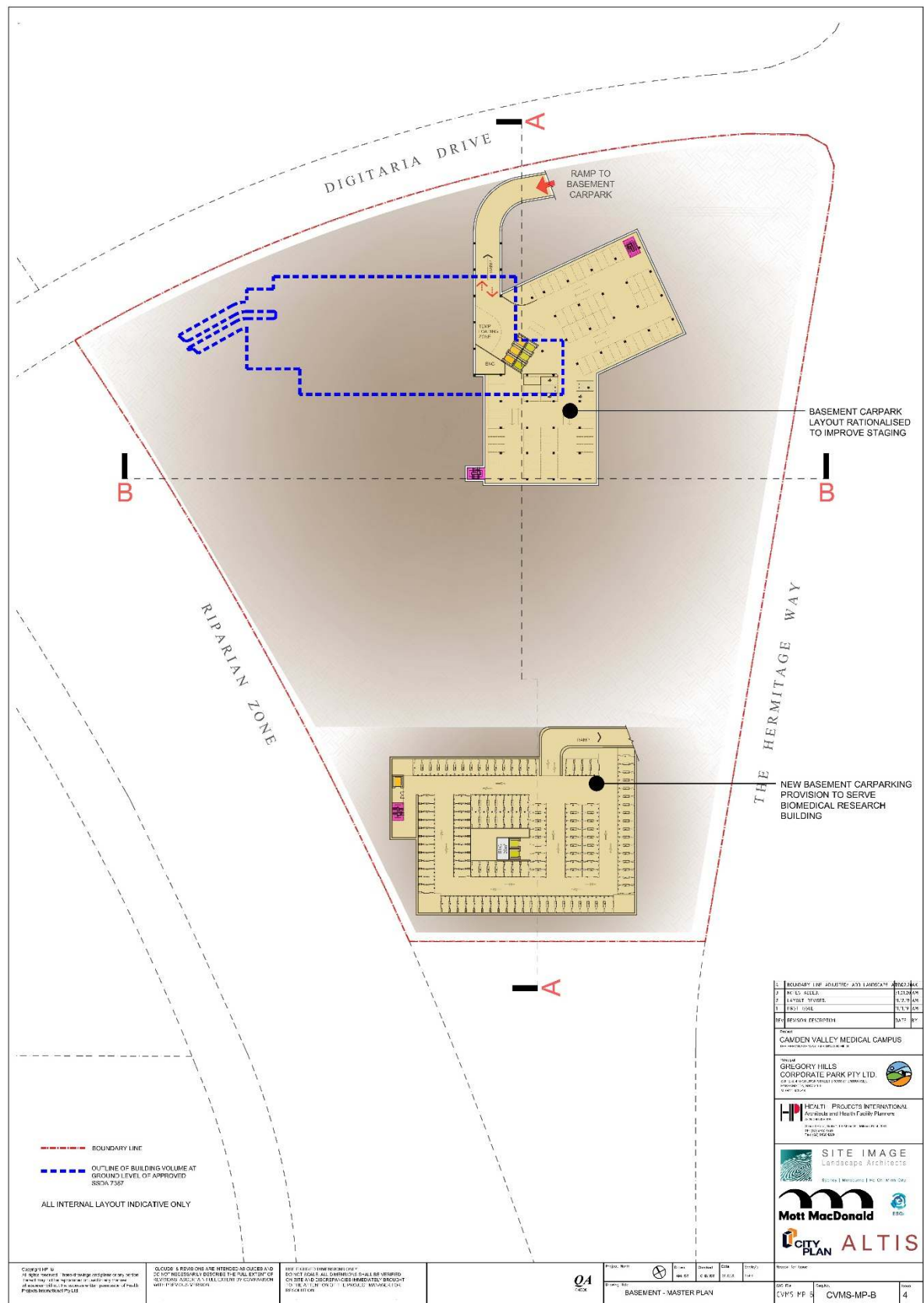
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10 Appendix B: Floor Plans

10.1 Basement Level

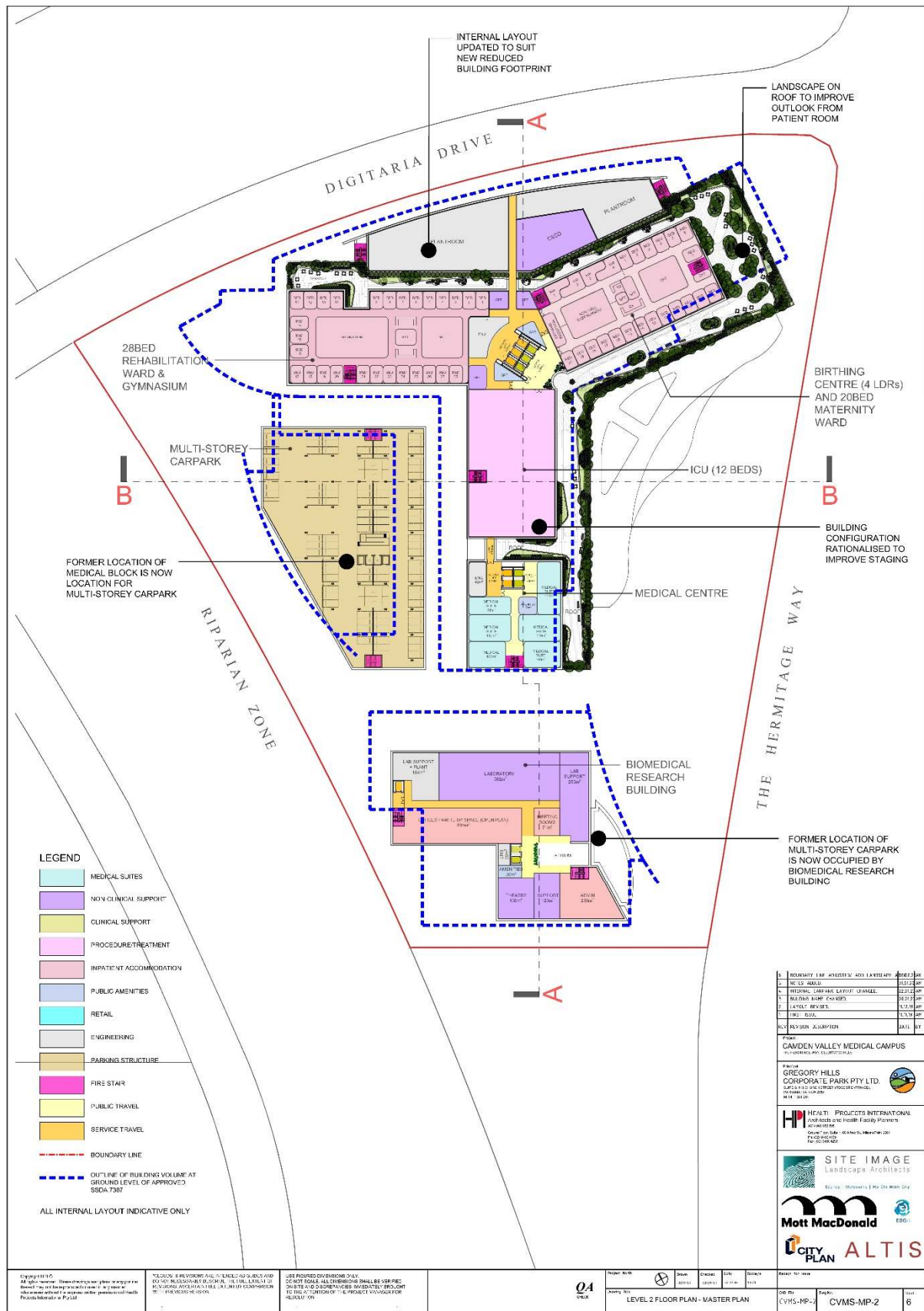


10.2 Ground Floor





10.4 Level Two







11 Appendix C: Site Plan





13 Appendix E: Staging Plan

