



Health Infrastructure NSW  
Liverpool Health and Academic Precinct  
**Main Works - SSDA**  
**Landscape Design Report**

SI9-001 | R-3000  
Issue F • 06/05/2020





Cover Image:Artists impression of Forbes St Forecourt courtesy of F+P Architects

Inside Cover:Artistic impression of Campbell St



Clouston associates

LIVERPOOL HEALTH & ACADEMIC PRECINCT  
MAIN WORKS SSDA  
LANDSCAPE DESIGN REPORT

Client:



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S19-001 I R-3000	E	05/03/2020	FINAL	JG	MOD	CL
S19-001 I R-3000	F	06/05/2020	FINAL	AD	MOD	MOD

Note: this document is preliminary unless validated.

# LANDSCAPE ARCHITECTURAL REPORT

This landscape design report complements the architectural design report. There are a number of areas of overlap with other disciplines and this report provides more detail on the landscape design elements. This report outlines the landscape design considerations for the Hospital main works. It covers design principles, the SEAR’s requirements and associated plans and graphics. Locations of sections based on the SEARs requirements are as follows:

SEARS Requirement	Relevant report pages
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**Landscape Plans**

Landscape Architectural drawings showing key dimensions, RLs, scale bar and north point, including:	Page 14-16,19-28 & refer to AI drawing pack
Integrated landscape plans at appropriate scale, with detail of new and retained planting, shade structures, materials and finishes proposed	Page 14-16,19-28 & refer to AI drawing pack
Plan identifying significant trees, trees to be removed and trees to be retained or transplanted	Page 19-20 & refer to AI drawing pack

# INTRODUCTION





# CONTEXT



Western Campus aerial imagery  
Base image source: Skyview



## Introduction

Liverpool Hospital is located within the Liverpool Central Business District (CBD), on the corner of Elizabeth Street and Goulburn Streets, Liverpool. The hospital campus includes land east and west of the Main Southern Railway, which forms an eastern and western campus. The proposed works are located in the western portion of the western hospital campus. The site is legally described as Lot 501 in DPI 165217.

This application seeks consent for the construction and operation of a redevelopment of the Liverpool Hospital Campus including:

- Construction of a new 6-storey Integrated Services Building (ISB) as well as building refurbishment, demolition and site preparation work;
- Pedestrianisation of Campbell Street between Goulburn and Forbes Streets;
- Internal road re-configurations and revised connections to the existing road network;
- Covered pedestrian walkway connections to the existing hospital facilities;
- Wayfinding and signage; and
- Associated landscaping.



Liverpool Hospital location  
Base image source: nearmap



## Location

Liverpool Hospital occupies a large site to the north east of the Liverpool CBD. Geographically it is bounded by the Georges River to the south and the site straddles the T2, T3 and T5 rail lines.



Main Works scope of works  
Base image source: nearmap



## Context

The main works site is bounded on the west by Goulburn Street, by Campbell Parade to the North and Elizabeth Street to the south.



# INTRODUCTION

## Background

This SSDA report covers the landscape and public domain areas of Liverpool Hospital. Like many hospitals, Liverpool has evolved incrementally over time; there are multiple eras of building works and development. The landscape spaces and public domain provide the opportunity to be the unifying element between all of these varied built forms. They can provide spaces that are calming, easy to navigate and restorative.

## Best practice review

Our review of research on “landscapes for health” identified the important role that green infrastructure can provide patients and staff.

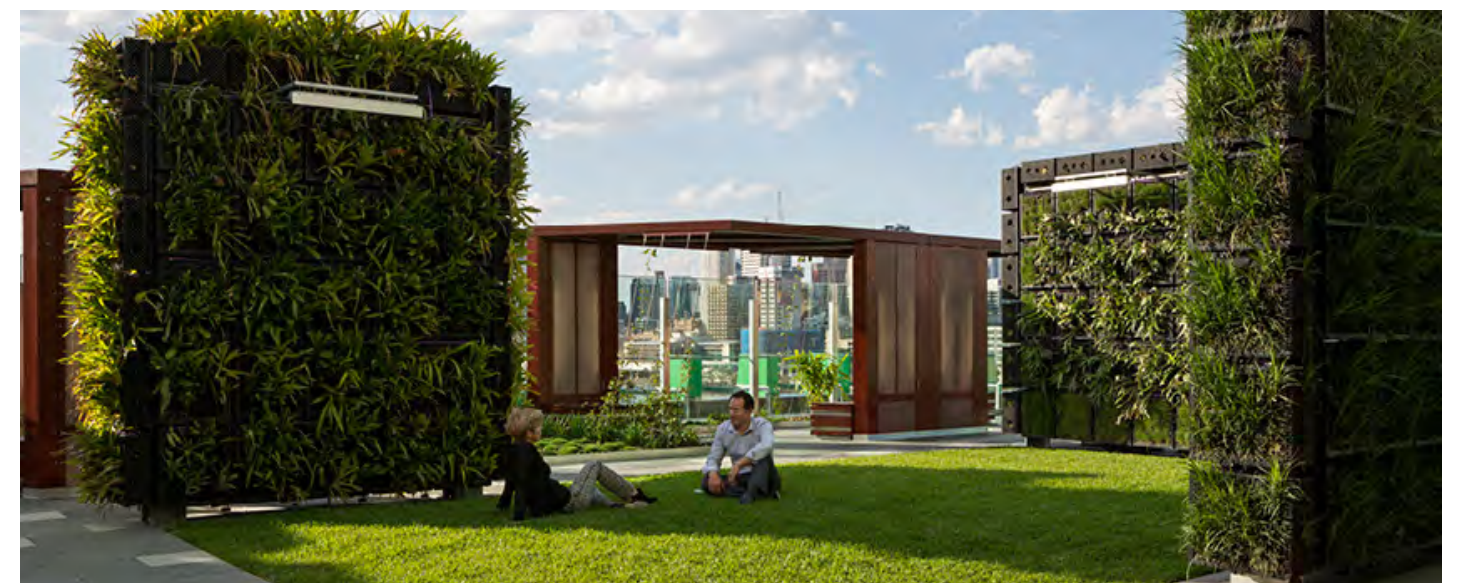
This included faster recovery time for patients; in addition it also provides respite areas for staff - particularly for those with no access to natural light (eg radiographers) and others who spend extended time in enclosed spaces.

A range of contemporary best practice precedents were reviewed. These precedents demonstrate the value of green in the hospital landscape. The precedents included Lady Cilento Children's Hospital in Brisbane and the Fiona Stanley Hospital in Perth, both of which have demonstrated how such principles could be applied.

## Research findings

Research into health landscapes has identified a number of findings:

- More than 100 years of evidence of the healing role of landscape in hospitals and the wider environment
- Views of green (even pictures) have a calming effect
- Bed nights (overnight stays) found to be reduced in hospitals with green space and windows viewing onto green space with flow on effect for bed numbers
- Ratio of 70:30 green to hard space was found the most effective in calming and reducing stress
- Engaging multiple senses improves stress reduction, although high fragrance should be avoided (chemotherapy, allergies etc)
- Hospital staff are some of highest users of green space, esp radiographers and those in rooms without windows
- Domestic garden elements (clothes lines, lemon trees, BBQs etc) resonate with patients, especially elderly and dementia patients
- Hospital landscapes contribute to the broader urban landscape and can even extend ecological services (see roof garden plantings at Fiona Stanley Hospital)
- The importance of quietness. Being away from interior hum or external air conditioning noise. While quiet moving water in fountains was considered calming, loud water elements were not
- Moveable furniture allows patients, visitors, staff flexibility in how they socialise
- More green spaces could help reduce the energy required for building cooling and help mitigate Urban Heat Island Effect in Liverpool
- Covered green spaces can provide patients refuge from heat during outdoor recreation and rehabilitation



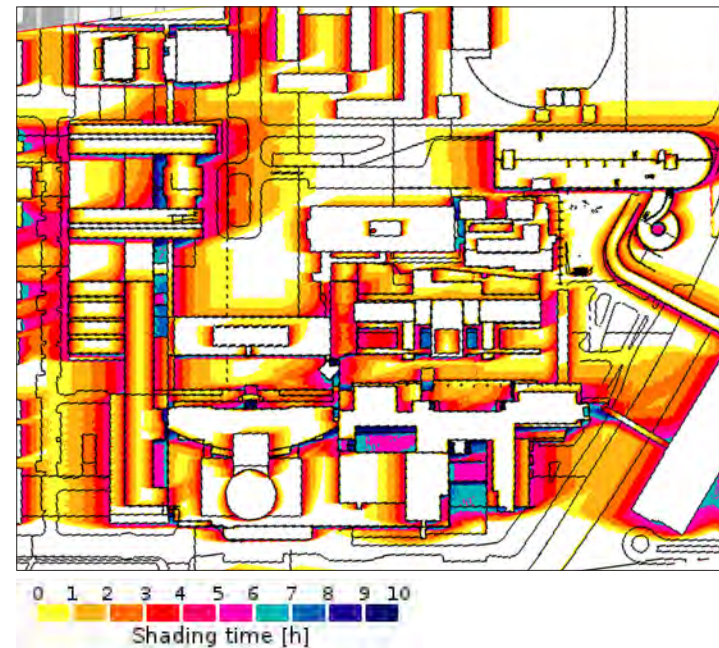


# SHADOW ANALYSIS

## Sun shade analysis

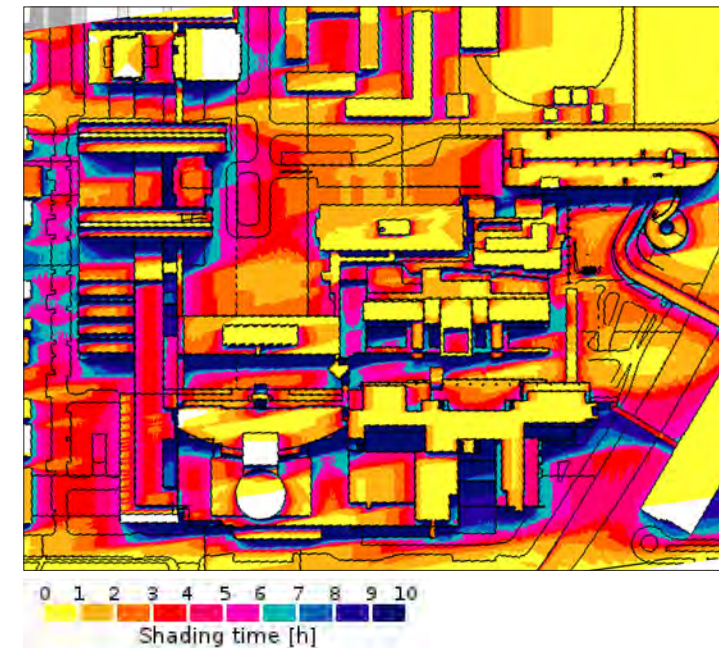
A shadow analysis of the proposed design was undertaken to review the different microclimatic conditions on the site.

These different conditions effect human comfort and the type of planting that can be realistically established.



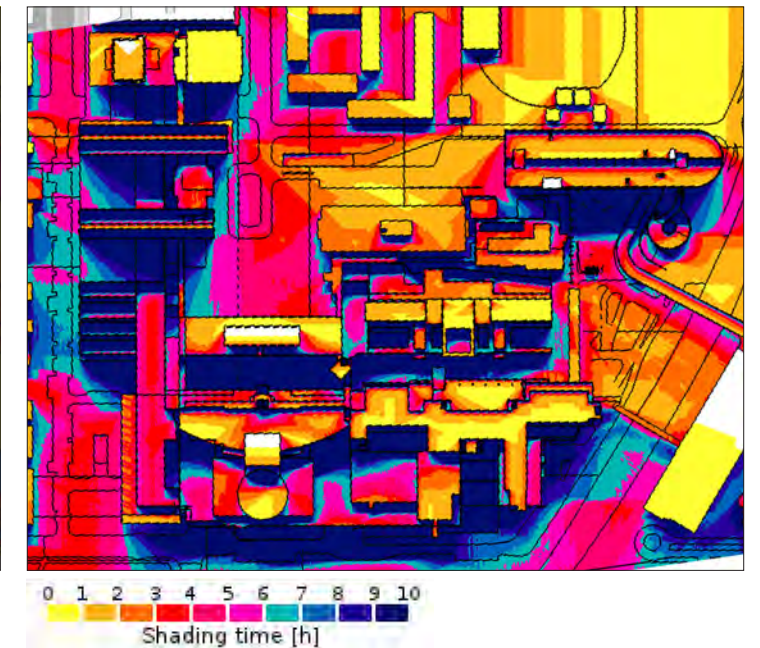
### Summer

In summer, much of the open space has many hours of sun a day despite the six storey building height. Summer shade will be managed by tree canopy and structure where appropriate



### Spring / autumn equinox

The equinoxes, bring more shade to the site, with most areas receiving up to three to five hours of shade.



### Winter shadow

The Winter shadow diagram shows that the bunker courtyards are fully shaded all day, as is the Goulburn street entry forecourt.

# DESIGN PRINCIPLES





# DESIGN PRINCIPLES

There are four main masterplan principles guiding the landscape design that are applied to the design of the hospital landscapes.



## Patient focused

- Make patients hospital stay as stress free as possible.
- Give patients, visitors and staff opportunities for respite in garden areas.
- Maximise external landscape indoor / outdoor connections and views.
- Provide as many green spaces as possible, preferably 70% green to 30% hard.

## Campus wide integration

- Provide a clear identity to the public domain.
- Utilise a consistent palette of materials for the public domain areas of the hospital.
- Retain and protect existing significant trees where possible.
- Connect to the wider public domain of the Liverpool CBD.

## Circulation & wayfinding

- Make it easy to find your way around the hospital.
- Create clear and legible pedestrian arrival and drop-off areas.
- Provide a series of placemaking elements including external views, courtyards and artworks to aid internal navigation.
- Capitalise upon public transport and pedestrian arrival.
- Provide high quality active transport options.

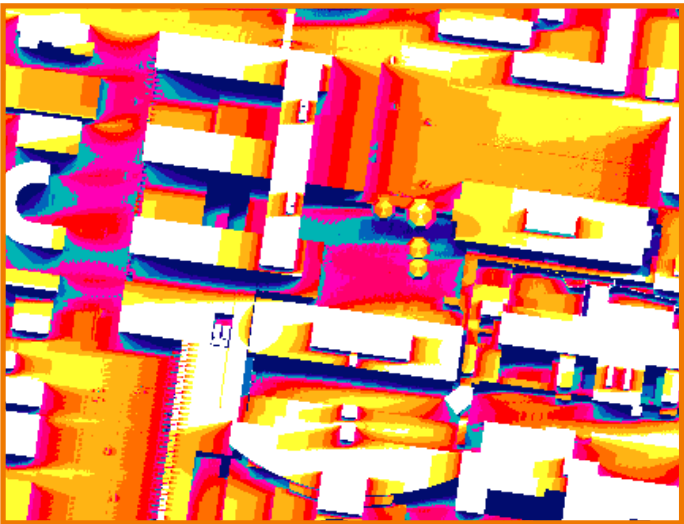
## Open and connected

- Provide summer shade and winter sun where possible to courtyards and external spaces.
- Enhance the site's environmental values.
- Connect visually and physically to existing public spaces such as Bigge Park and Liverpool Girls High school.



# DETAILED LANDSCAPE CONSIDERATIONS

Key ideas addressed in the detailed design of individual spaces and places include:



## Microclimate / amount of sun and shade

Building overshadowing creates very specific microclimates:

- Some areas are permanently in shade.
- Some areas get morning sun, others afternoon sun.
- Some areas have the undesirable combination of summer sun and winter shade.
- Sun and shade determines location of key amenities such as seating.
- Sun and shade determines location of planting types and species selection.

## Function, purpose and users

Most spaces have a different functions and purpose. Not all spaces are accessible to all users:

- Inaccessible courtyards serve more of a visual purpose.
- Accessible courtyards need to cater for staff patient movement, providing seating and respite areas.
- Some areas are only for patients from specific wards or for staff only.

## User amenity

Amenity is critical to the health and wellbeing of staff, patients and visitors including through:

- Tree canopy and green outlooks
- Provision of shade, shelter and seating
- Barrier free access throughout
- Crime Prevention Through Environmental Design (CPTED) considerations

## Landscape maintenance

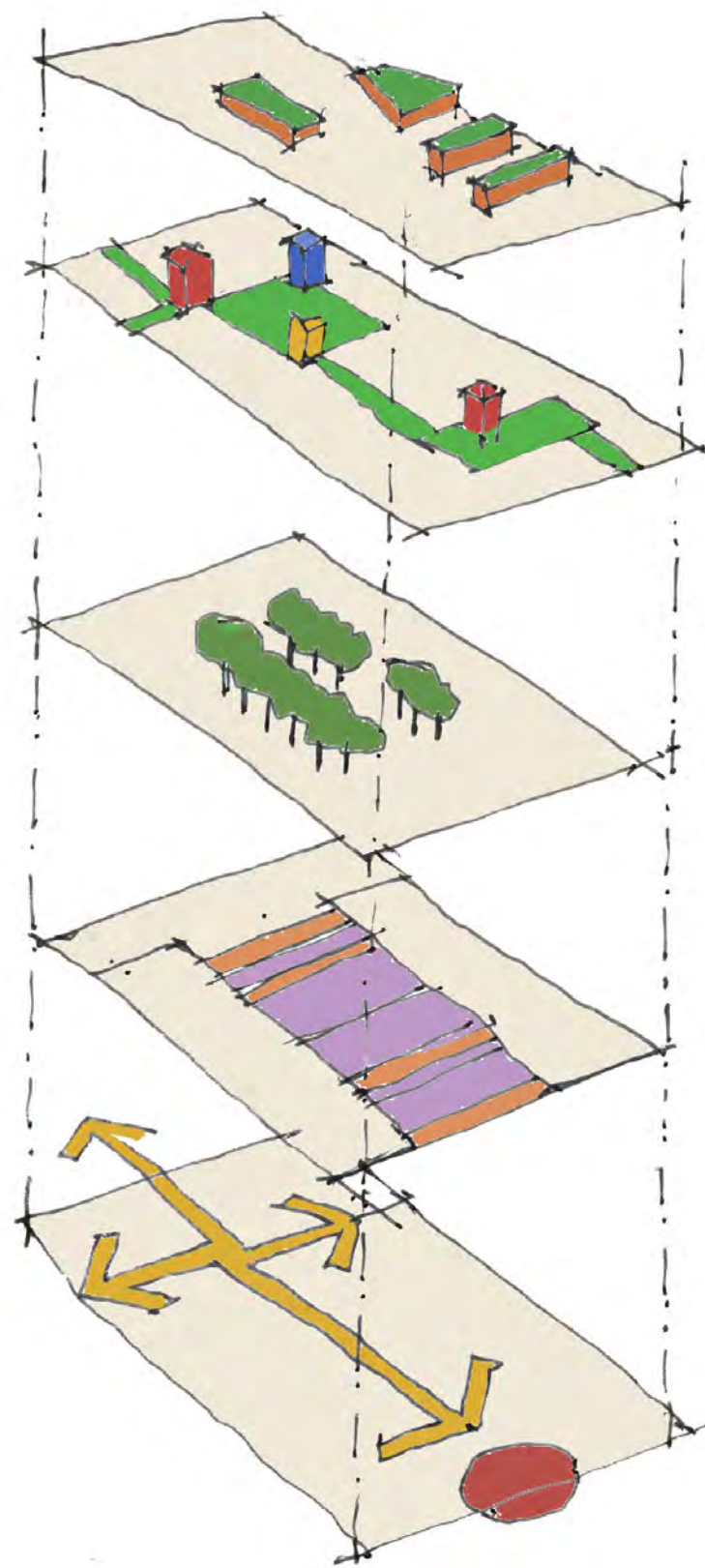
Landscapes are living entities and need care and management:

- Maximises value of landscape for patients and staff.
- Established annual maintenance budgets allows accurate forecasting of hospital costs and cashflow.
- Low water use plants, low maintenance planting in remoter areas minimise maintenance.
- Leak detection technology for any planting on slab minimises remedial works.



# LANDSCAPE ELEMENTS

The landscape provides a unifying driver that links all the built forms.



## USEFUL AND ATTRACTIVE COURTYARDS AND ROOF SPACES

- Visual amenity / attractive outlook
- Functional Space where feasible
- Visual and physical respite



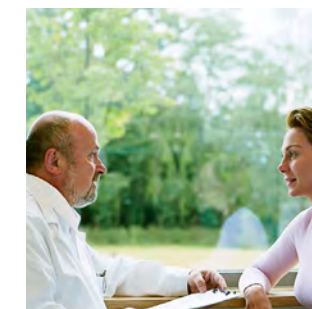
## OUTDOOR SPACES FOR SOCIALISING AND WAYFINDING

- Spaces for socialising and respite for patients, visitors and staff
- Sense of place, through public art or colour features to assist wayfinding - "meet you at the red courtyard"



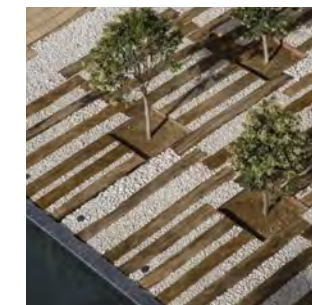
## TREE CANOPY - GREEN OUTLOOKS FROM WARDS

- Attractive green views for patients
- Filtered foil to the building
- Pedestrian scale, shade and amenity
- Managing urban heat island effect



## UNIFIED GROUND PLANE PAVEMENTS

- Landscape as the unifying element of the master plan spaces
- Providing a sense of order and cohesion
- "Stitching" together buildings from different eras



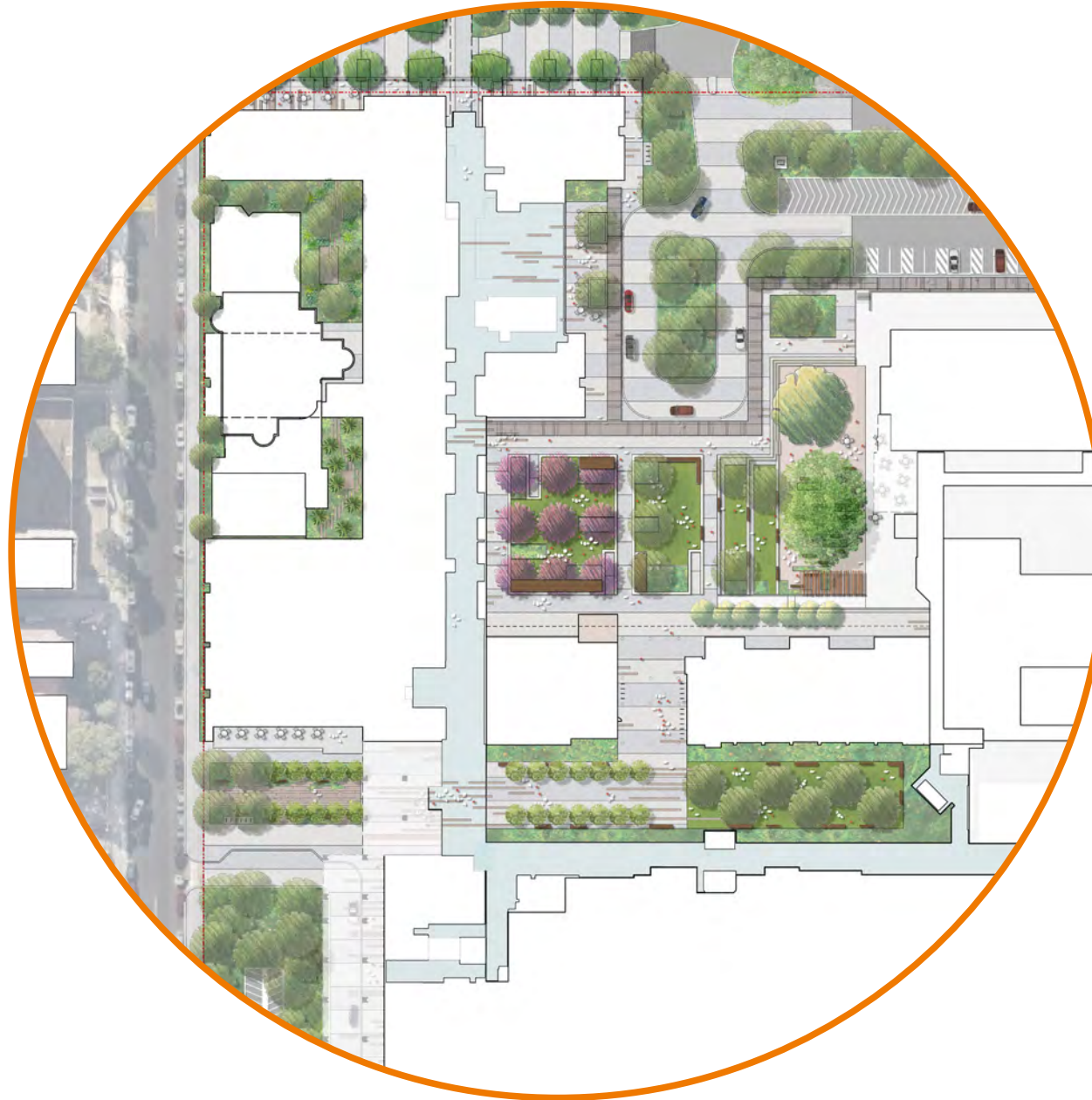
## SIMPLE AND EASY CIRCULATION AND ADDRESS

- Making it easy to find the hospital 'front door', and from there navigate to where needed
- Shade and rain protection along key pedestrian routes





# THE MASTER PLAN





# LANDSCAPE DESIGN STATEMENT

The redevelopment of Liverpool Hospital provides the opportunity to reset the public realm. This can be the single unifying element that can not only tie the various stages of hospital development together, but provide for a cool green environment for patients, staff and visitors.

The landscape has been guided by a range of principles described in the report.

These principles will be realised through five strategies:

- Making it easy to find your way around
- Providing a unifying landscape ground plane
- Bringing a tree canopy for green outlooks from wards and a cool environment on the ground
- Offering a range of outdoor spaces for socialising and wayfinding
- Creating visually attractive roof spaces and useful courtyards.

## Making it easy to find your way around

It can be stressful visiting a hospital. The landscape and the building design have sought to make finding your way as simple as possible. This is aimed at making it intuitive and easy, starting with the front door. Indoor circulation routes have views into the landscape, aiding in place making and mental maps. Key outdoor routes to the car park are fully covered for shade and rain.

## Providing a unifying landscape ground plane

Liverpool hospital has developed over the last century. There are a range of ages of buildings and disparate landscape finishes. The large scale redevelopment of the site provides the opportunity for the landscape to become the unifying element for the hospital campus. This allows the landscape to be the driver for the public realm.

## Bringing a tree canopy for green outlooks from wards and a cool environment on the ground

Research has shown that a landscape for health is predominantly green. Views of the landscape, and green surroundings can be beneficial to patients in wards and for their visitors. It can also provide respite for busy staff, who are often inside for long periods of time.

The design has sought to maximise soft spaces in the public realm to increase the amount of green, including:

- Healthy soil for the establishment of tall trees that provide canopy outside patients windows
- Cool shaded environments in the ground
- Filtered foils to the building
- Pedestrian scale, shade and amenity
- Reduced urban heat island effect

## A range of outdoor spaces for socialising and wayfinding

Patients, visitors and staff will come from a range of cultural backgrounds. The ground floor and public realm is where they all interact and mingle. The open spaces are intended to perform a range of functions. Some for social interaction, quiet areas for rest and respite, or just a place to walk and get some fresh air, with others as movement corridors to get around easily.

While the ground plane will have a unifying language there will be some areas that have their own distinctive character that can provide identity.

## Having visually attractive roof spaces and useful courtyards

With many wards located in high rise sections of the hospital, the ability to look down onto an interesting environment and not a plant room all day is important. The existing bunker roof will be made more visually appealing with decorative gravel paving. The two new building roof spaces will be planted with a range of hardy vegetation that can provide visual interest to patients. There may also be temporary or movable artwork that provides interest, or elements that reflect the sky.

There are two courtyard spaces in the hospital. One is at ground level beside the bunkers, the other in the maternity wing. The heavily shaded bunker courtyards will be planted with trees and ferns that provide a visually attractive outlook from adjacent treatment rooms. The maternity courtyard will provide respite for mothers, before, during and after labour. These spaces can be accessed only by patients and their visitors on that ward.

Over arching all of these concepts have been considerations of an ecologically sustainable landscape, one that manages its water and provides for equal access for all.



# GROUND LEVEL PLAN

This ground floor plane illustrates both the internal Hospital ground floor spaces and the external public realm.

The two internal hospital streets are clearly defined here along with the indoor - outdoor connection that this provides.

The new public realm areas provide a consistent design and materials language to link the various hospital buildings together.

The pattern language of the external spaces links into the interior hospital spaces at all the key entry points.

LEGEND



Existing trees retained



Proposed Trees



Paving and banding



Mass Planting



Lawn



Gravel



Mulch



Road



Internal Walkway



Covered Way



Main Works scope of works






# COVERED WAYS

Making it easy to find your way around is a key design principle. The external covered walkways provide a clear line of sight, and weather proof connections from car parks to the hospital entrances. Refer also to the circulation plan on page 17.

LEGEND




Existing trees retained




Proposed Trees




Paving and banding



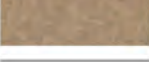
Mass Planting




Lawn




Gravel




Mulch




Road



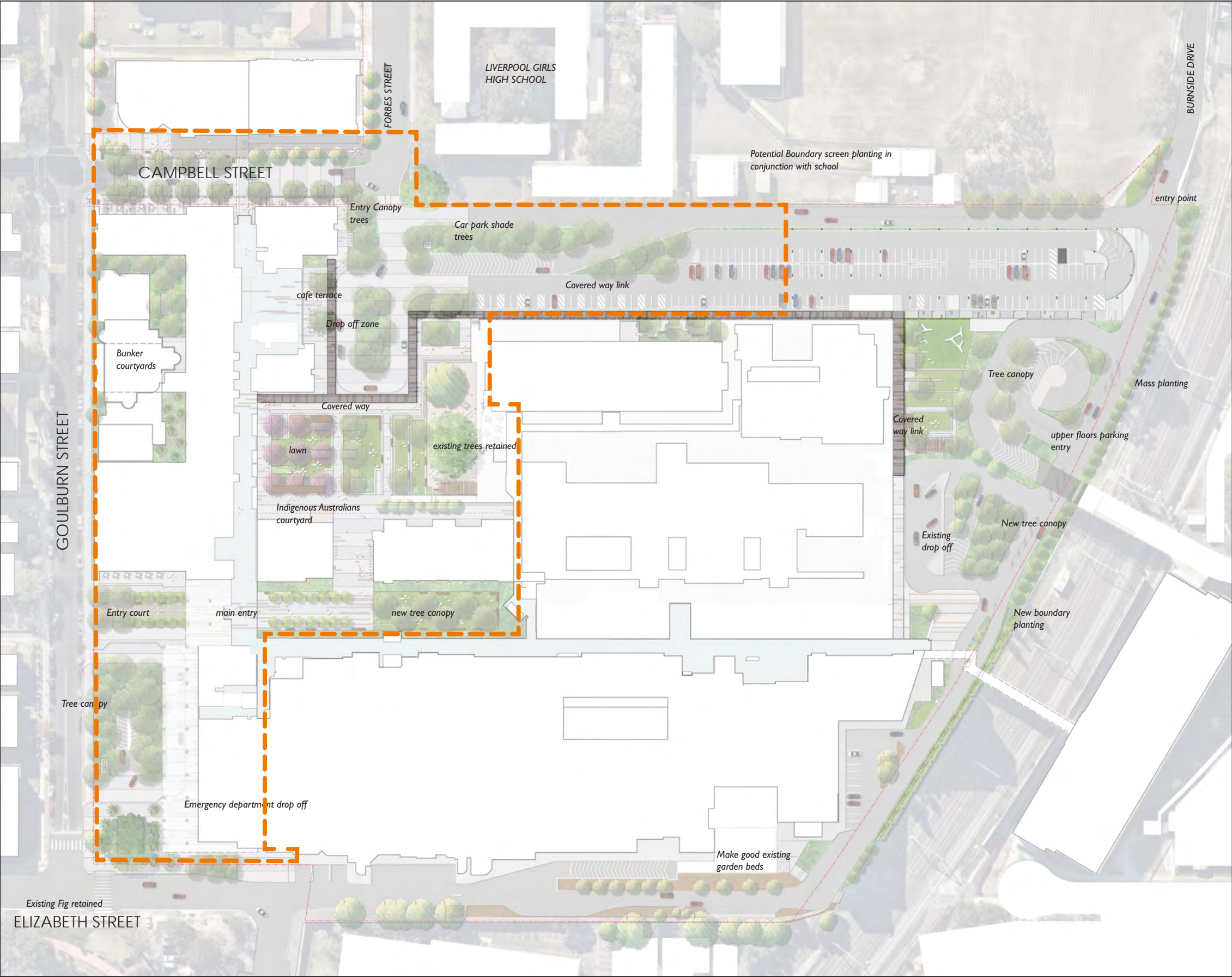
Internal Walkway



Covered Way



Main Works scope of works





# ROOF PLAN

There are a number of roof areas and enclosed courtyards that are visible from the upper levels of the hospital wards.

The roof areas, are not accessible, other than for maintenance and are intended to provide visual interest.

The maternity courtyard can only be accessed by patients in the maternity ward. Refer to page 28 for a fuller description.

LEGEND



Existing trees retained  
Proposed Trees



Paving and banding



Mass Planting



Lawn



Gravel



Mulch



Road



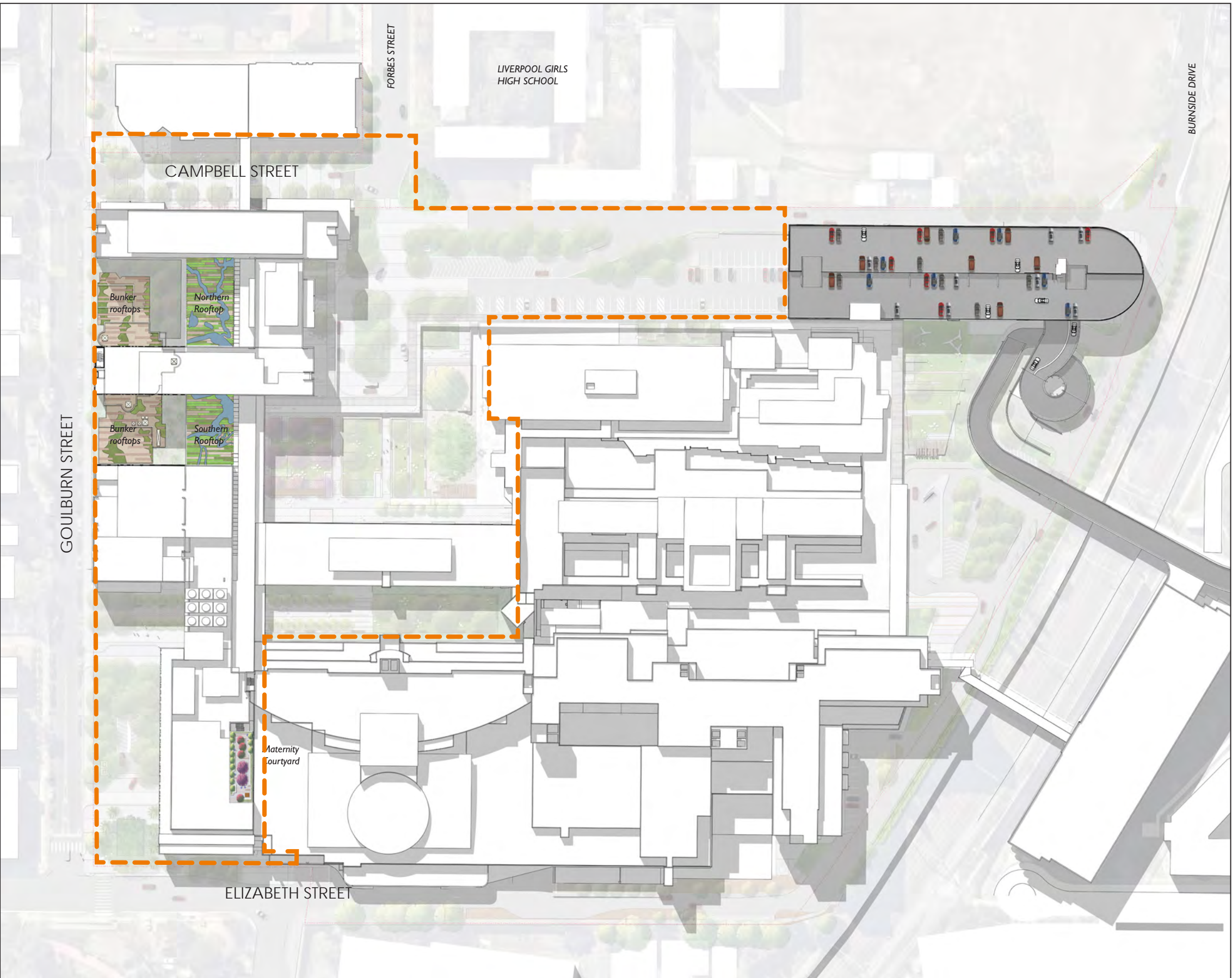
Internal Walkway



Covered Way



Main Works scope of works





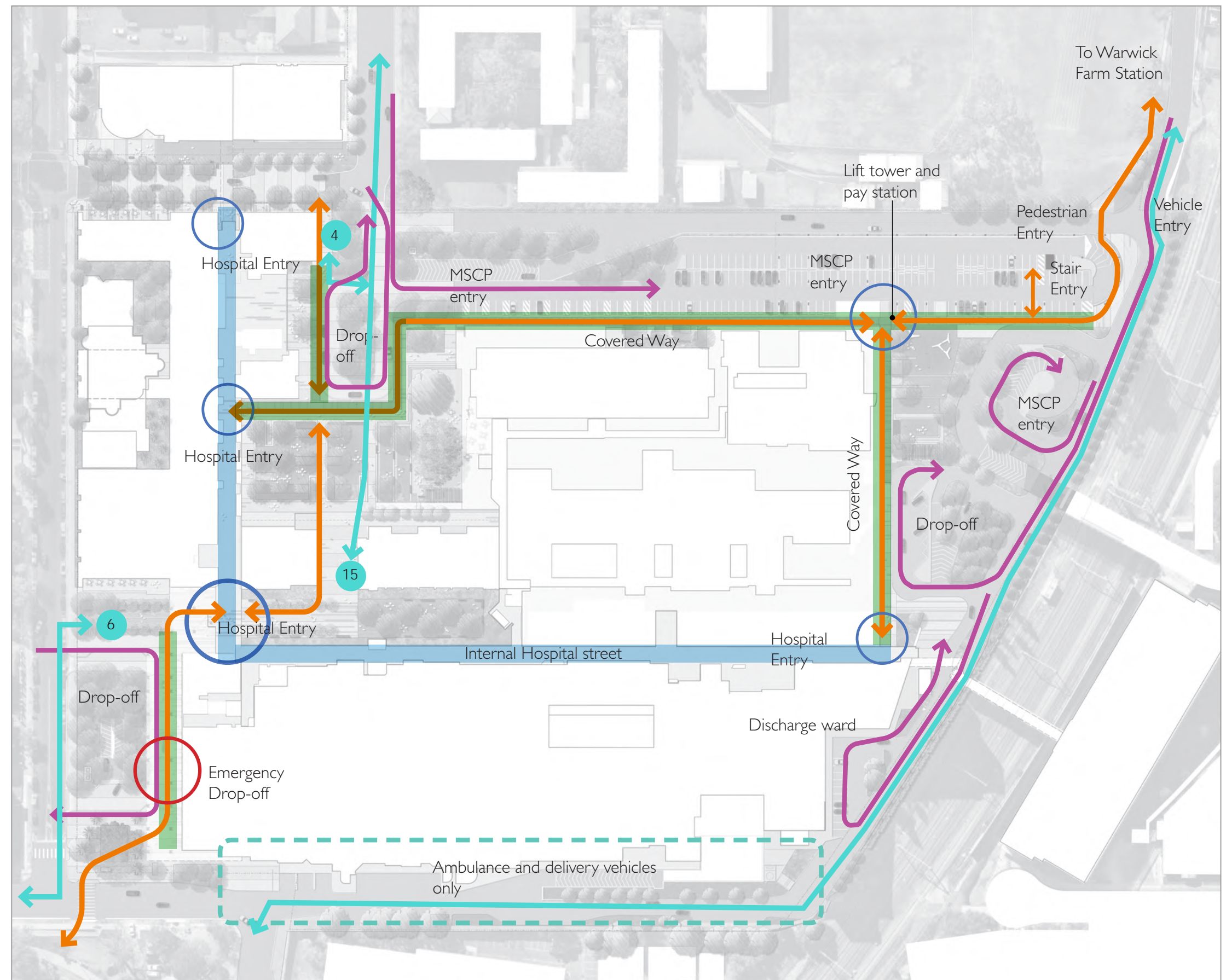
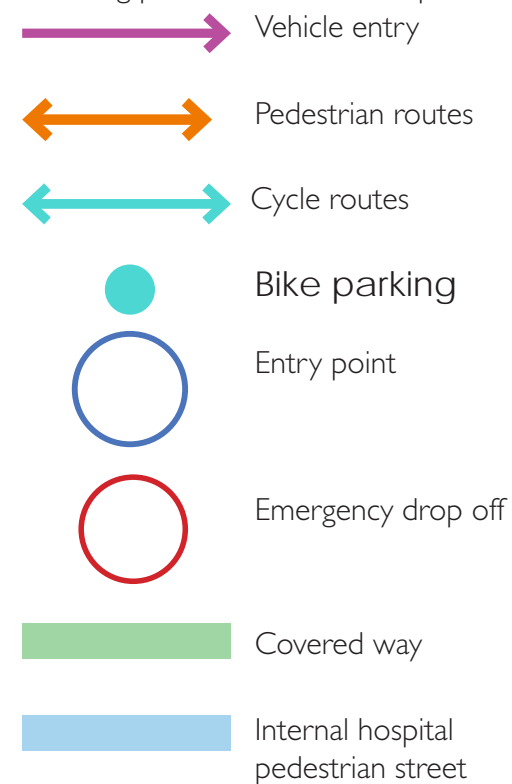
# FINDING YOUR WAY - CIRCULATION

Finding your way around a hospital can be difficult and confusing. Particularly for the first time visitor:

The masterplan has sought to greatly simplify both the internal and the external circulation. The plan creates:

- Three clear and legible vehicle arrival and drop-off areas.
- Separate emergency drop off from other drop off points
- Separate ambulance only drop-off and delivery drop off areas from public access
- Provides clear, simple pedestrian walkways both internally and externally
- External windows to the outside to aid internal navigation.

Refer also to the architectural SSDA report for a wider picture of access and circulation, including public and active transport.





# TREE REMOVALS & REPLACEMENTS

68 trees will be removed from the site as part of the main works, with approximately 42 pieces of vegetation not recorded as trees within the arborist report (labelled 'non schedule' on the plans) also being removed.

There are some significant trees that will be retained, including the large fig tree at the Goulburn St entry as well the two eucalypts and two fig trees within the Forbes St entry and forecourt.

All trees to be removed will be identified using suitable non-injurious, easily visible and removable means of identification.

All tree removal works will be undertaken by a level 5 qualified arborist with a minimum of five years' experience.

A pre-clearance survey will be undertaken one week prior to removal to identify any likely hollow-bearing trees and trees occupied by fauna. These trees will be specially marked, so that they can be easily identified on the day of removal.

Trees will be felled in a safe and approved manner and in accordance with safe work method statement and industry standards/protocols. Any identified nesting hollow will be protected from damage so if feasible, they can be re-used by native fauna on site.

Felled trees will be inspected for fauna, particularly those identified in the pre-clearance survey prior to being chipped for re-use as mulch on site. If any fauna is present, they will be safely collected using non-injurious techniques and delivered to an appropriate equivalent habitat or wildlife centre.

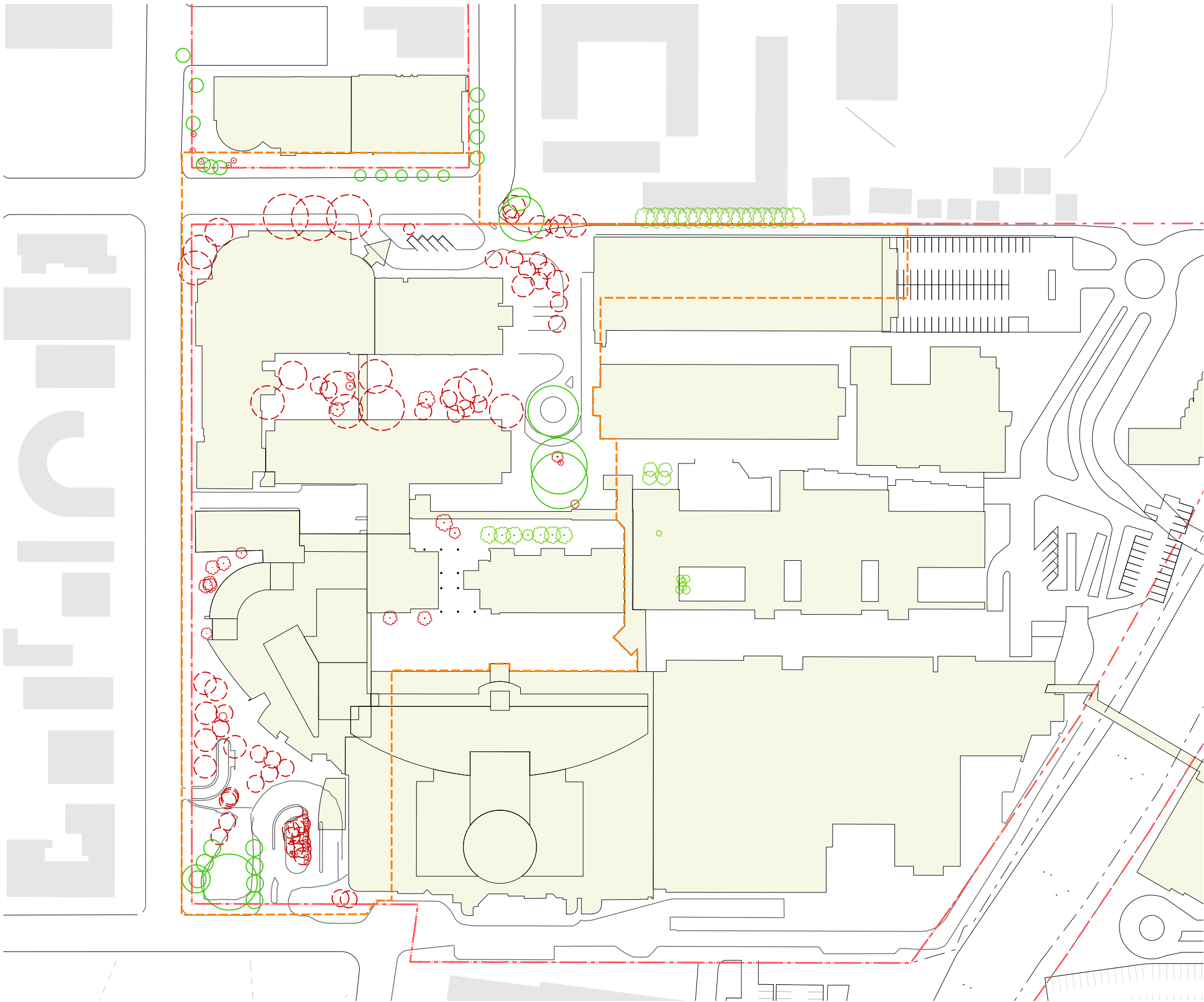
## Replacement trees

Replacement tree planting will be incorporated wherever possible within the new hospital campus, with the intent to increase canopy coverage and biodiversity across the site. For the most part these trees will be natives, however deciduous exotic species will also be utilised within the inner courtyards to allow summer shade and winter sun.



# TREE REMOVALS

- LEGEND
- Existing Trees to be Retained
  - Trees for removal
  - Vegetation not included in arborist schedule to be retained
  - Vegetation not included in arborist schedule to be removed
  - LHAP Site Boundary
  - Main Works SSDA Boundary





# PROPOSED TREE PLANTING

New areas on site have been maximised for new tree planting and lawn and garden spaces where possible.

LEGEND

Proposed Tree (Main Works)

Main Works scope of works

An aerial photograph of a hospital site with architectural overlays. A large area is outlined with a dashed orange line, representing the 'Main Works scope of works'. Within and around this area, numerous green circles of varying sizes are placed, representing 'Proposed Tree (Main Works)'. The circles are concentrated in several clusters: a large group in the upper left, a vertical strip along the left edge of the main works area, a central courtyard area, and a horizontal row along the bottom edge of the main works area. The background shows existing buildings, parking lots with cars, and surrounding streets.

**CLOUSTON** associates  
LIVERPOOL HOSPITAL MAIN WORKS  
STATE SIGNIFICANT DEVELOPMENT APPLICATION

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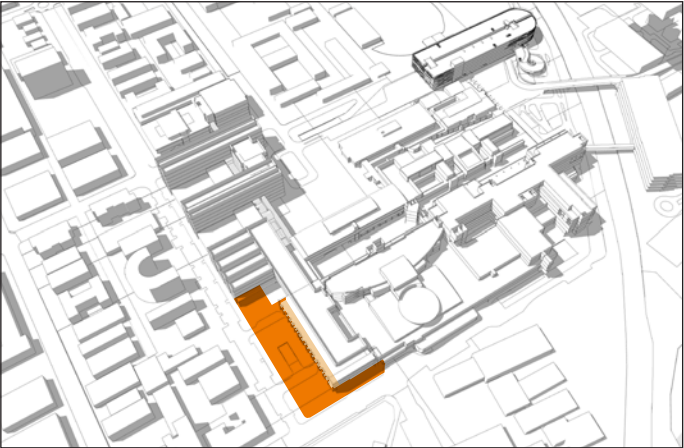


# LANDSCAPE PRECINCTS





# GOULBURN STREET FORECOURT



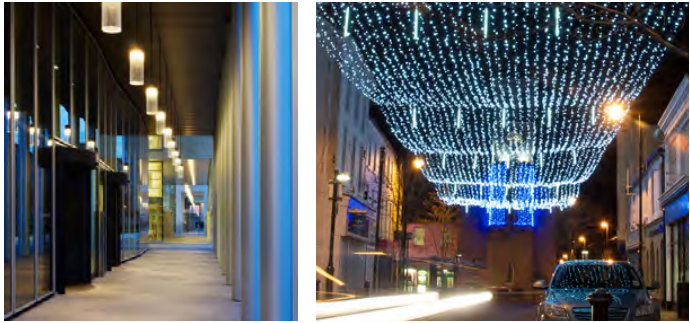
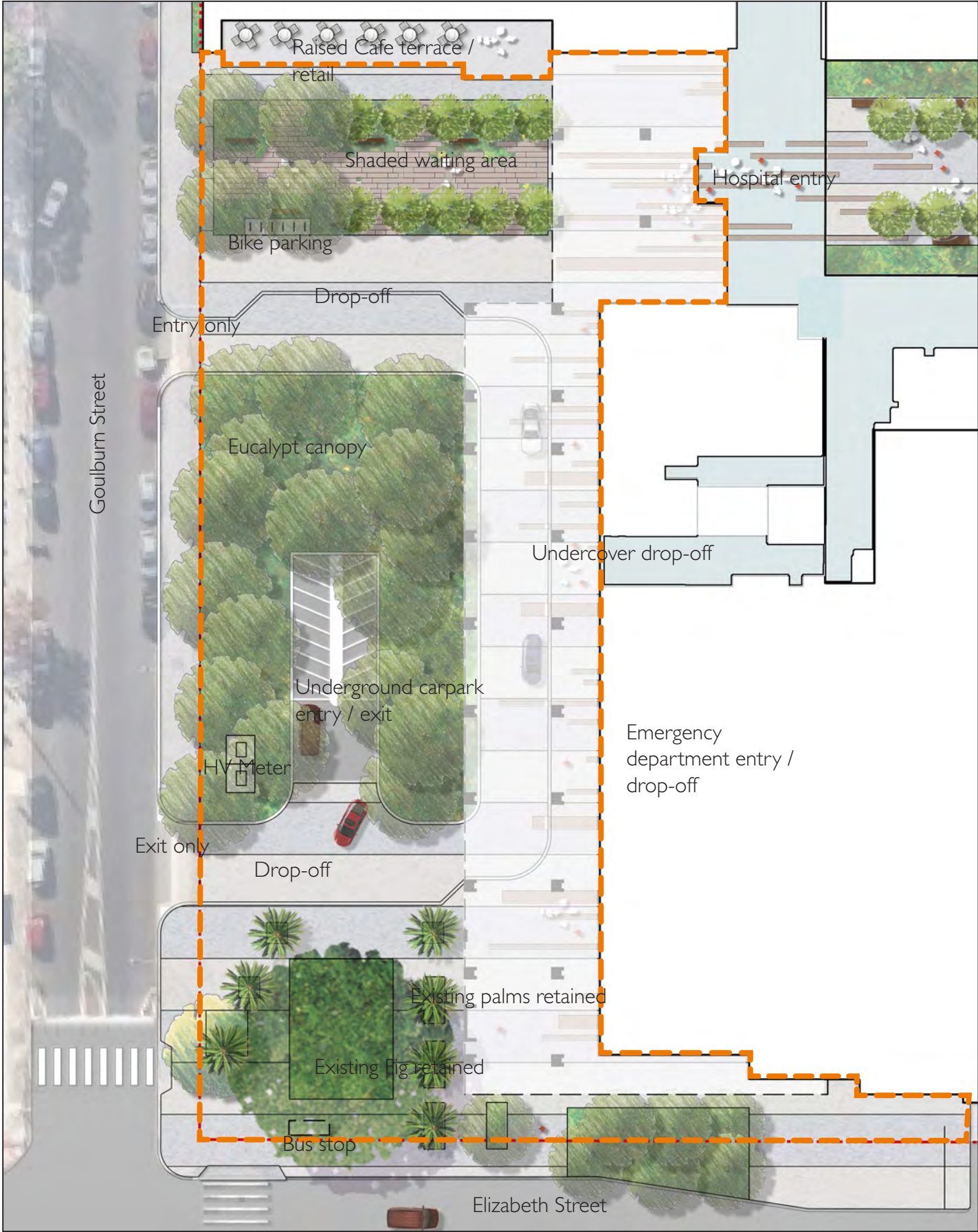
The Goulburn Street entry forecourt remains the Hospital's main front door. It provides undercover drop-off for emergency.

The large Fig tree (*Ficus Hilli*) on the corner has been retained along with several of the Palms (*Washingtonia*).

This precinct enjoys some afternoon sun and the central forecourt enclosed by the drop-off loop, will provide lush green planting with a high eucalypt canopy.

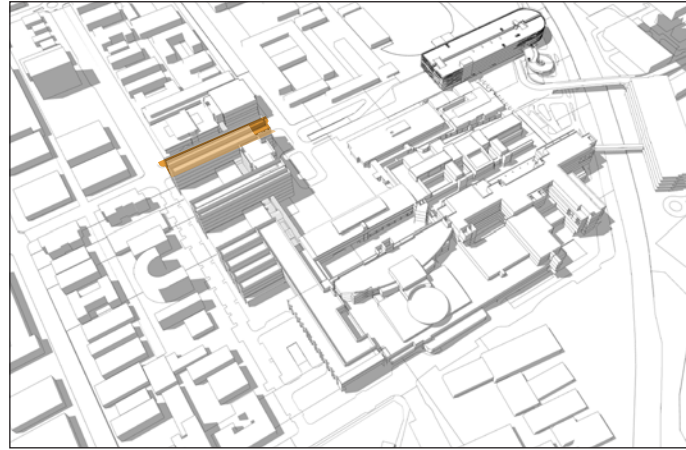
Indoor outdoor connections are made with the exterior paving patterning linking through the internal foyer.

To manage the Possible Maximum Flood level (PMF) there are rising flood gates that protect the main front entry and the underground car park entry.





# CAMPBELL STREET



Campbell Street links the main Hospital campus with the Ingham Institute and the future development of the ERH.

The north face of the hospital on Campbell street will have an active frontage comprising retail outlets allied to the Hospital.

The street is envisioned as a slow-speed street with a narrow carriageway.

The street will be paved flush with the top of kerb and a new dish drain added to passively irrigate the street trees.

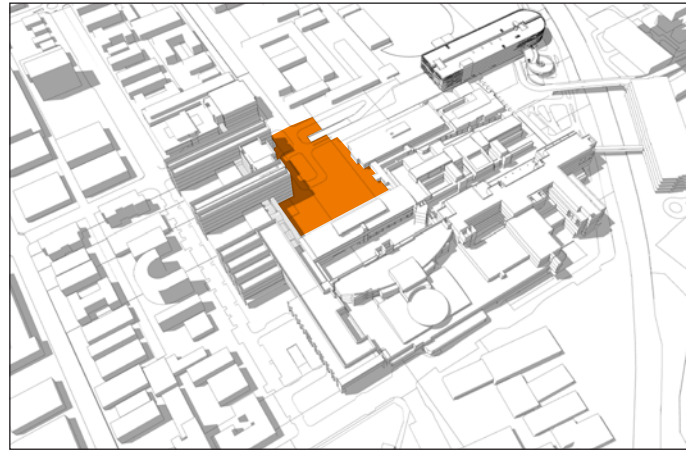
The existing Pyrus will be retained along the northern frontage to the Ingham Institute. The rest of the street is proposed to be *Lophostemon confertus*. This is proposed to provide the following:

- Appropriate scale to the six storey building
- Dappled light to the paved pedestrian areas
- Urban heat island reduction
- Attractive green outlook for patients on the upper IPU floors and wellness centre
- Help mitigate wind.





# FORBES STREET FORECOURT



The Forbes Street forecourt is the largest area of open space on the campus. It has the best microclimate of the campus, with its north facing aspect. The space has two primary functions:

## Plaza entry drop off space:

- Canopy tree gateway to provide shade and patient outlook from upper level wards
- Vehicle drop-off zone with covered way access to the buildings.

## Large sunny lawn courtyard for patients staff and visitors

- Two large existing eucalypts retained
- Large Fig retained
- Terraced courtyard with raised lawns to protect from pedestrian cross cutting
- Deciduous trees for winter sun and summer shade
- Cafe terrace indoor / outdoor connection
- Ample seating opportunities
- Enclosed garden spaces
- A range of garden spaces to suit different sized groups and different privacy needs



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LIVERPOOL HOSPITAL MAIN WORKS  
STATE SIGNIFICANT DEVELOPMENT APPLICATION

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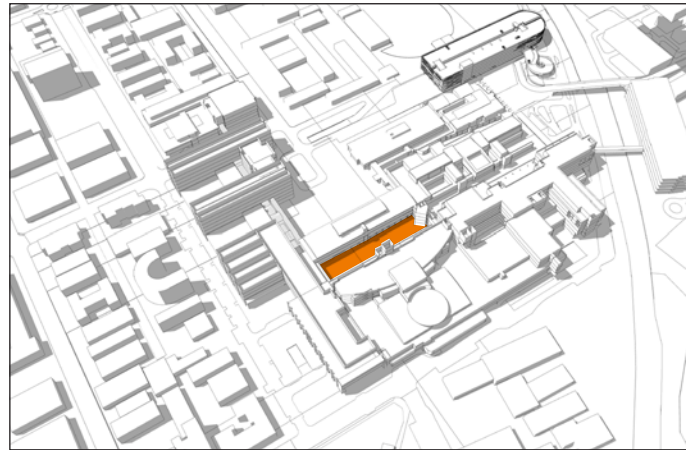
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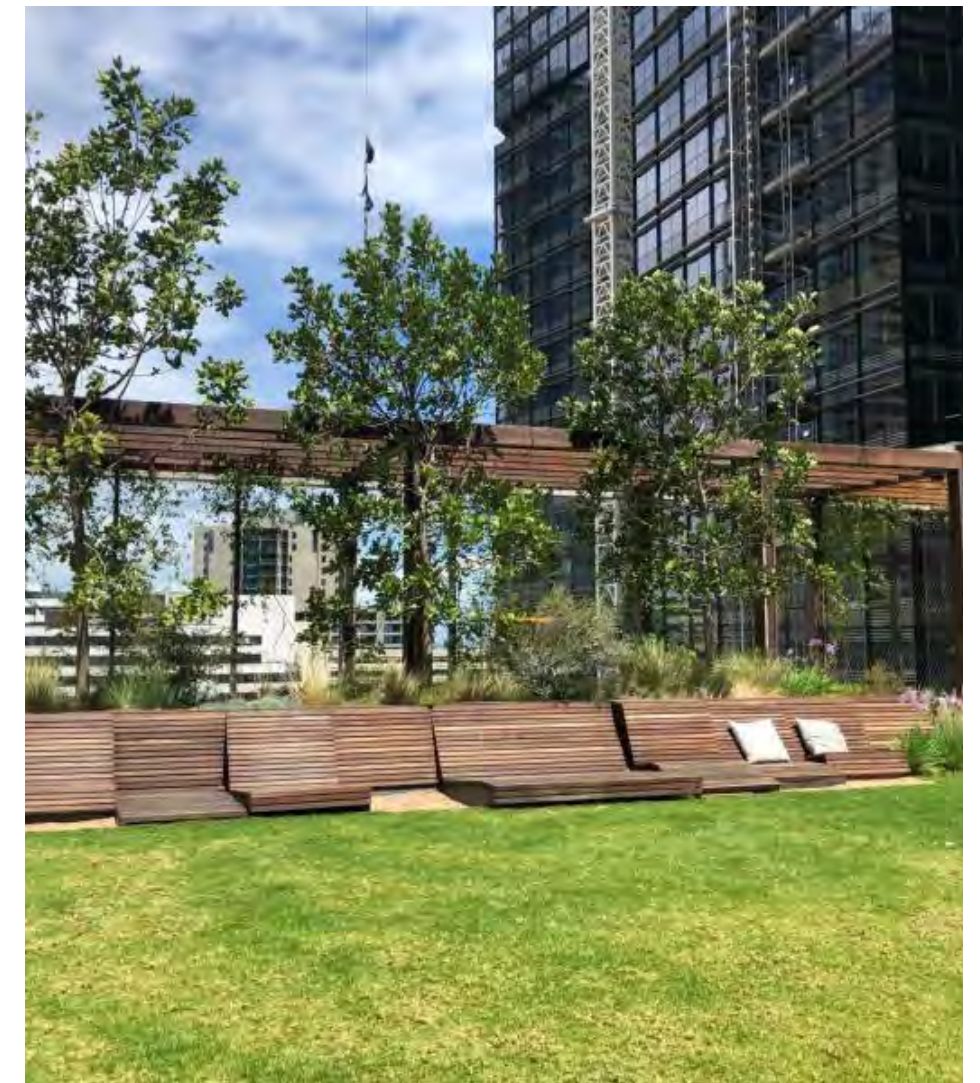
# CAROLINE CHISHOLM COURTYARD



The existing Caroline Chisholm courtyard will change with the relocation of the food and beverage to the northern end of the site. This is a key open space for the site, and has good visual access from the main east-west spine. Beyond the cafe area however, the lawn is poorly utilised and has no canopy trees.

The new hospital development provides:

- Additional tree canopy for green views from wards and shaded pedestrian spaces
- New places to sit and gather
- A range of options for groups through or individuals





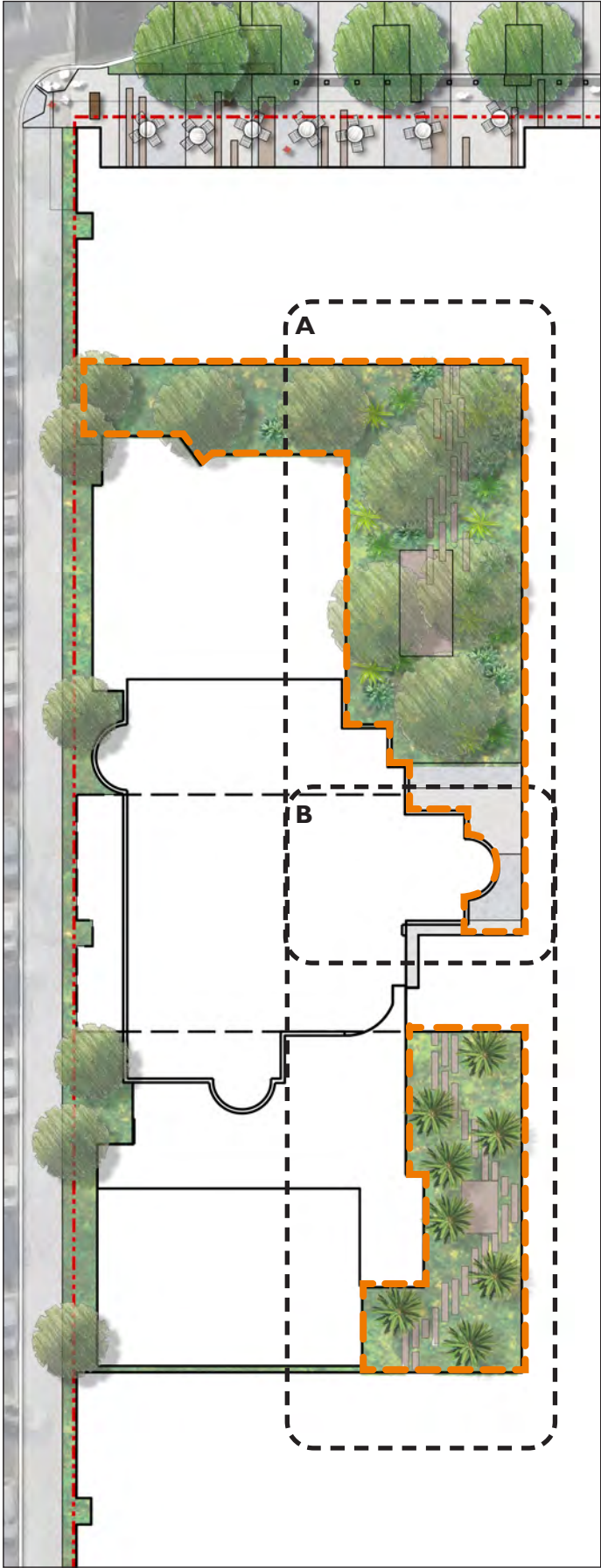
# BUNKER COURTYARDS



The bunker courtyards are enclosed on the western side by the existing bunkers buildings, and on the eastern side by the new hospital building. Sun shade modelling shows that these are in deep shade at their northern ends for much of the year, and in full shade in winter.

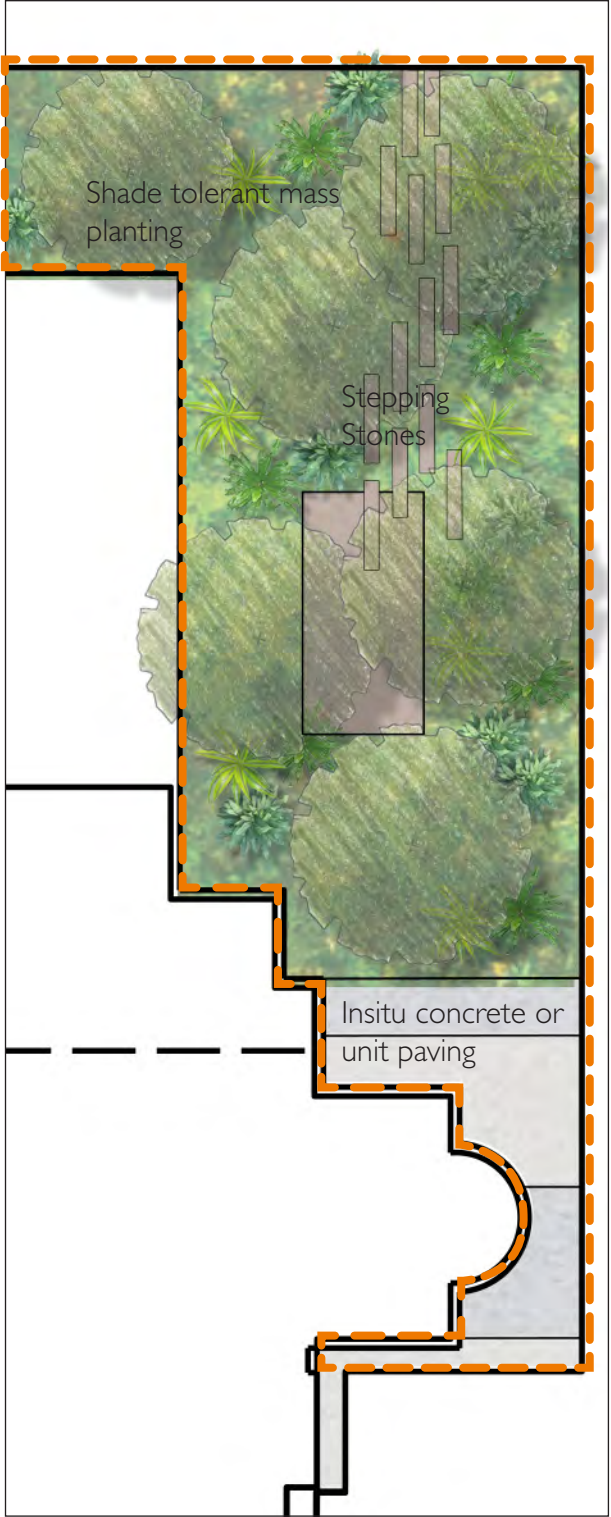
The spaces are visible from the buildings above and from patient treatment rooms on the ground floor.

These courtyards are intended to provide valuable visual green outlooks from wards. To provide subtly different identities for each courtyard the northern courtyard have a eucalypt canopy with Macrozamia and ferns on the ground level, while the southern courtyard contains palms and ferns.



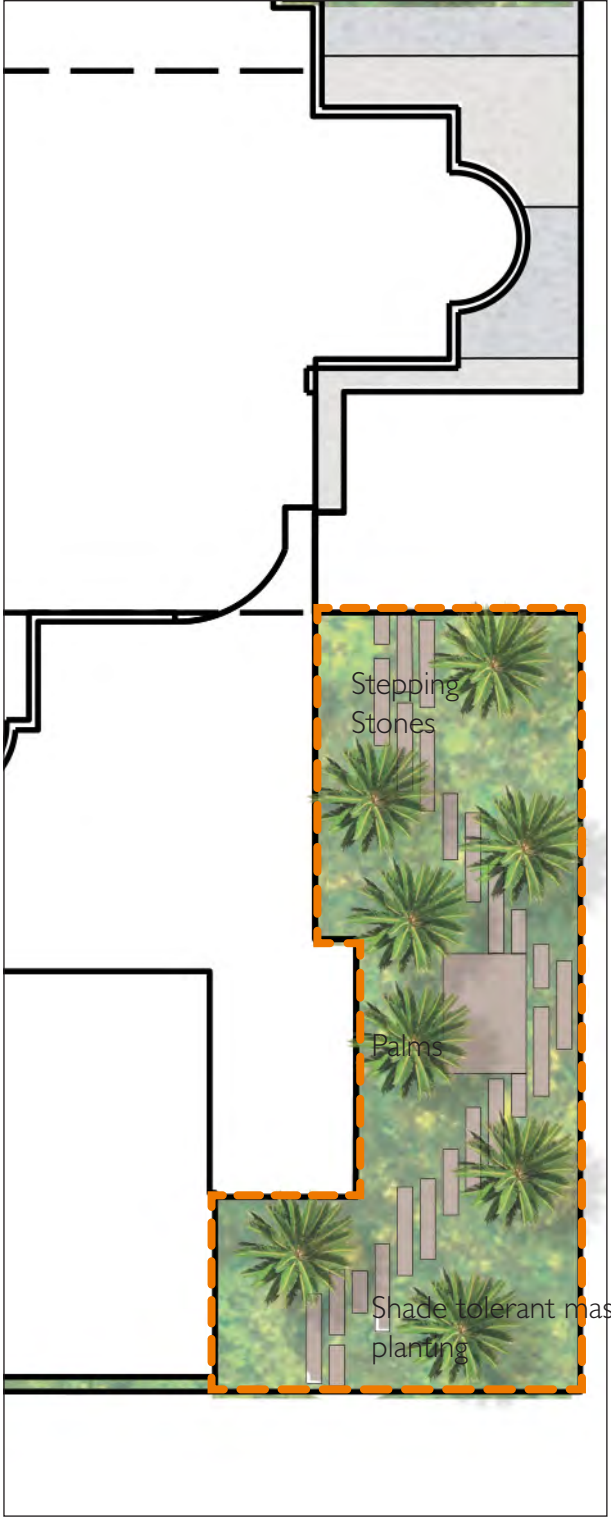
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AREA A



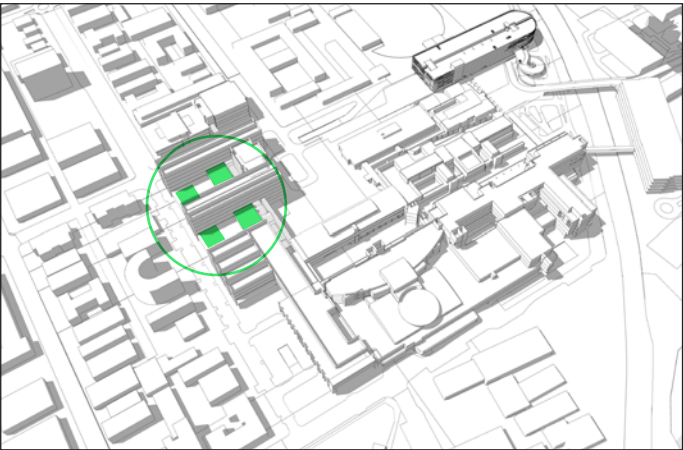
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AREA B





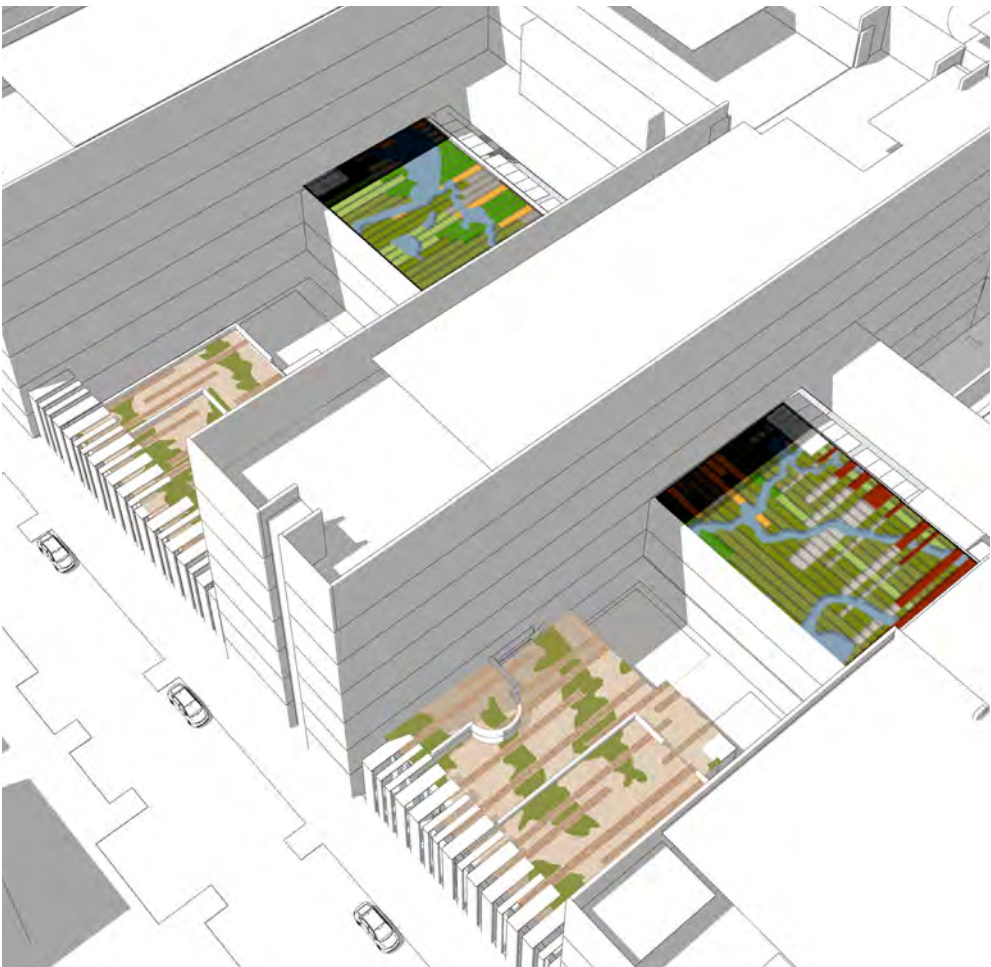
# CENTRAL ROOFTERRACES



With the development of the new hospital around the retained existing bunkers, their roof tops are now in full view from in-patient wards in the adjacent building wings. To improve patient views, it is proposed that the bunker roofs have a decorative gravel treatment applied to the existing spaces, to improve their aesthetic.

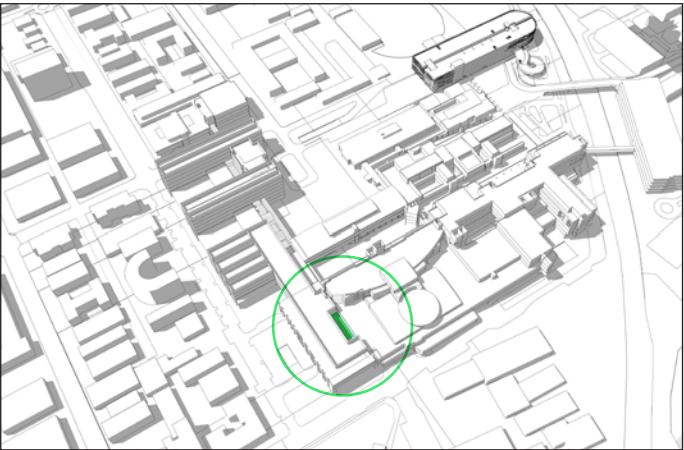
The level three roof terraces on the new building will similarly be visible from in-patient wards in the adjacent building wings above. These will be developed as a planted roof space to provide visual interest, movement and patterns. To provide extra interest, it is proposed that tall grasses, along with small mobile sculptures provide activation of the space. As a reference to the nearby Georges River, a perspex pattern in the form of the river will reflect the changing sky and clouds above the garden.

The gardens will be accessible for maintenance and will have appropriate safety wires, but are not intended to be accessible by patients or staff, recognising the need for privacy to in-patient beds immediately adjacent to the roof terrace.





# MATERNITY COURTYARD



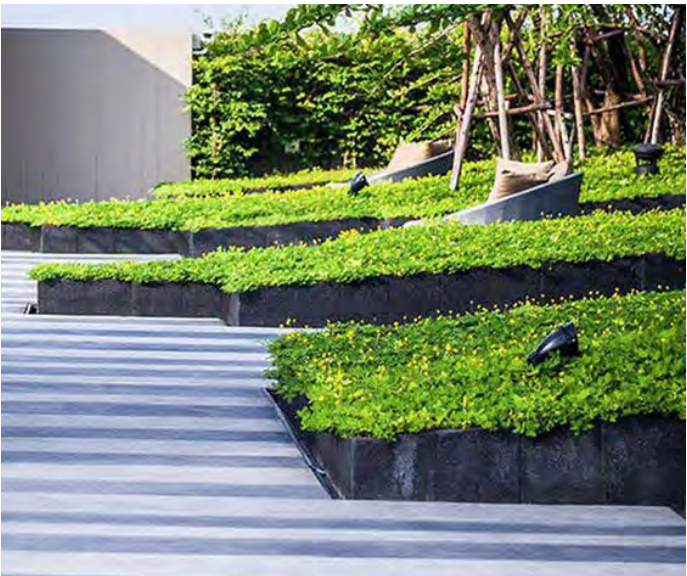
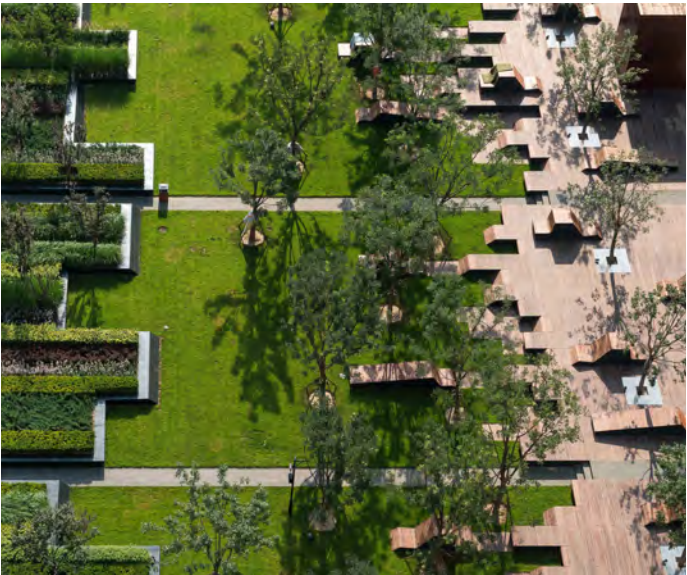
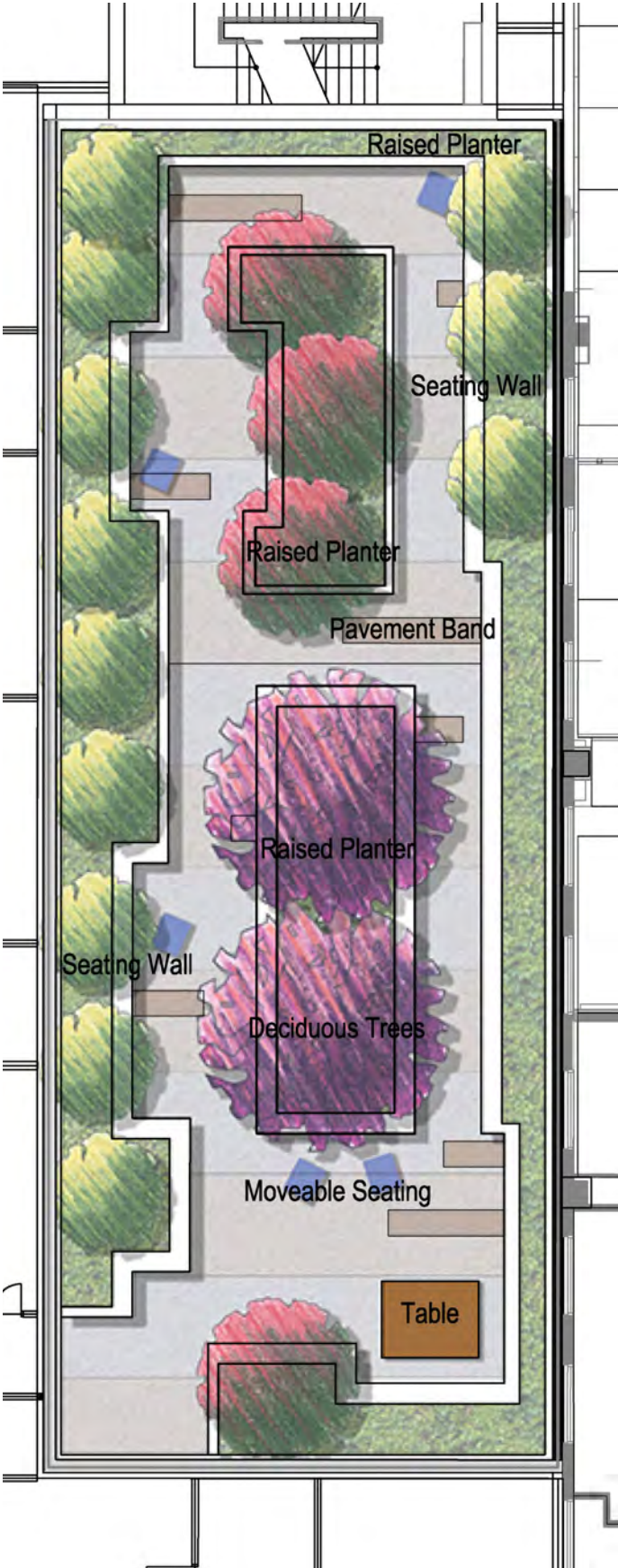
A new upper level courtyard on the maternity birthing floor, provides not only light into the birthing suites but an opportunity for respite outside.

The two storey deep courtyard offers some morning sun, but is shaded in the afternoon. The courtyard garden is only accessible from the far corridor end of the maternity ward. Climbers on wire trellises on the existing hospital wall will help with the green outlook.

The courtyard is designed to be accessible only to mothers and supporting family members or partners in the birthing suites.

The garden provides the following:

- Direct green outlook for ward beds immediately adjacent to the courtyard. Dense green foliage at the windows will provide a green outlook, but screen the ward room from direct view from the courtyard
- The opportunity for mothers in the early stage of labour to walk around outside. The courtyard provides a loop walk in green surroundings
- Spaces to outside in which to sit with partners or birth support partners





# GA NSW SDRP SESSION #2

A Review of the Main Works Facade and Landscaping was undertaken on the 4th December 2019.

The SDRP was complimentary about the project teams response to the commentary from SDRP #1 and generally supported the facade and landscape design approach.

Following commentary provided by the SDRP, the following items were developed and incorporated into the final SSDA design submission:

- Building upon the idea of the landscape as a driver of the masterplan, the landscape is seen as the unifying ground plane element. This connects the new hospital with the existing older building stock on the campus.
- Options were investigated to increase the landscape footprint of the Caroline Chisholm courtyard, by minimising the vehicular drop off area. An option to rotate the drop-off loop by 90 degrees, to free up more pedestrian space, was investigated, but it impacted the long term expansion footprint of the hospital. The earlier benchmarking exercise of drop-off areas of other similar Sydney Hospitals showed even more area was needed than currently allocated.
- Options to consolidate the green space in the Forbes Street Courtyard have been investigated. The option to remove pedestrian access way between terraces was too difficult due to level changes. However, other areas were expanded.
- The further development of a landscape linkage between the hospital and the Multistorey Car park was investigated. The option to provide temporary tree planting along this link by placing trees in the car parking bays was not possible due to the shortage of parking numbers. The options for vines and creepers on the southern side of the walkway will be investigated at detailed design stage.
- The option to provide more space here, but the school to the north and existing buildings to be retained on the south constrain this option.
- The extent and location of podium courtyards has been predicated on the building functions and adjacent uses. Other than the maternity courtyard, all of the other courtyards provide visual outlooks.
- Public access to rooftop and enclosed ground floor courtyards was not deemed feasible a result of clinical planning, as the courtyards and roofs are immediately adjacent in patient units. The roof terraces would have required high glazing 2.0m high and pedestrian access would have compromised patient privacy in adjacent ward beds.
- The narrative of health and healing has been tied into maximising the amount of green space on the hospital, including tree canopy, lawns, and mass planting areas.
- Cycle routes between the hospital and both train stations is covered in the Architectural circulation and arrival diagrams.
- Street trees in Goulburn Street will be developed by Liverpool City Council in accordance with their Public Domain Plan.
- The focus on landscape as a restorative element has been a key goal of the landscape plan. The target of 70% soft to 30% hard has needed to be balanced against the need for vehicle drop-offs, and pedestrian accessibility. Where possible garden bed and lawn areas have been expanded to maximise the green footprint. The added benefits of this have been reduced costs for hardscape, embodied carbon and energy.
- A more organic approach to the landscape patterning was reviewed. The regular patterning has been used in areas of high traffic for ease of wayfinding. This evolves to a more organic approach in low traffic areas such as enclosed courtyards and roof gardens.
- The need to accommodate various public landscape areas including for different cultural groups with sufficient space and amenity for staff, patients, visitors and the general public was reviewed. This led to the development of the following:
  - a more intricate set of spaces through shrub planting, hedging and seat arrangements. This was to provide a mix of smaller and larger spaces, some more private and others more public
  - A range of different seating opportunities through timber furniture options.
  - An option for moveable loose furniture (chairs) was discounted due to management issues.
- The incorporation of an Aboriginal Cultural narrative would need to be developed in conjunction with Aboriginal input as part of the consultant team. This inclusion of a suitable consultant would need to be investigated and incorporated into the detailed design stage.



# MATERIALS PALLETTE





# MATERIALS PALLETTE

## Design language

The landscape design language has taken its cues from the repeating forms on the building facades. The pattern language overlay on page 32 shows the evolution of this patterning across a range of elements within the landscape.

The dominant unifying element is repeating banding that uses a range of widths, materials and colours. This is expressed in the pavement layer, the furniture layer, and the planting layer.

## Planting palette

The planting palette has been chosen to provide a robust range of plants suited to the western Sydney environment. A visual representation of the selected species are provided on page 33.

Trees: a range of trees will be provided throughout the main works. *Corymbia maculata* and *Lophostemon confertus* provide upper level canopy and deep dappled shade, for mitigating urban heat island effect, dissipating high winds from the buildings and providing a green outlook from wards.

Small trees: to provide human scale in smaller spaces and to provide winter sun, a number of small trees have been provided including *Lagerstroemia indica*, *Pyrus ussuriensis* and *Ulmus parvifolia*.

Palms: six of the existing *Washingtonia robusta* in the Goulburn Street forecourt are being retained adjacent the large retained fig. The southern bunker courtyard is proposed to be planted with palms to provide a different identity to this courtyard to aid in wayfinding within the hospital. These palms include *Livistona australis* and *Howea forsteriana*

Ferns and shade loving plants: a few of the courtyards will be heavily shaded and suitable shade loving species have been selected for these spaces.

Shrub planting: a range of species have been selected to provide screening in a few key locations.

Grasses and ground covers: these provide for colour and movement while leaving sight lines open.

## Materials palette

A simple palette of materials has been chosen to provide for a unifying element to the hospital ground plane. The primary material will be an exposed aggregate concrete provided in two colours. This will be supplemented by unit paving banding. These materials will be carried across road pavements to further unify the entry drop off points and make these spaces more like urban forecourts than roads.

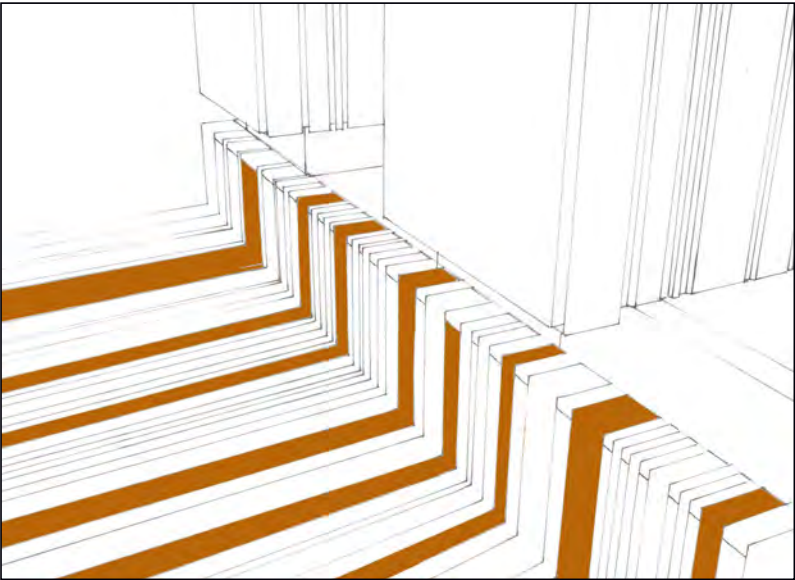
Concrete seat walls again provide a unifying element throughout the public realm. A range of simple hardwood benches and seating platforms will be provided in the main pedestrian courtyards to provide a warmth and comfortable seating surfaces.

The covered ways will be constructed from a combination of Australian hardwoods and steel. A simplified palette of robust street furniture will complement these.



# DESIGN LANGUAGE / PATTERN OVERLAY

Strong building pattern reflected in the landscape as a unifying element



## Pattern evolution

Regular



Irregular



integrated



crossover



landscape integration



3D integration





# INDICATIVE PLANTING PALETTE

## TREES



*Corymbia maculata* | Spotted Gum



*Ulmus parvifolia* | Chinese elm



*Lophostemon confertus* | Brushbox



*Lagerstroemia indica* | Crepe Myrtle



*Pyrus ussuriensis* | Ussurian Pear

## SHADE TOLERANT



*Dicksonia antarctica* | Soft Tree Fern



*Macrozamia communis* | Burrawang

## SMALL SHRUBS



*Westringia fruticosa* 'Mundi' | Native Rosemary



*Scaevola humilis* 'Purple Fusion' | Purple Fusion Scaevola



*Rhagodia spinescens* | Aussie Flat Bush



*Themeda australis* | Kangaroo Grass

## PALMS



*Livistona australis* | Cabbage-tree Palm



*Howea forsteriana* | Thatch Palm



*Lomandra longifolia* 'Tanika' | Tanika Mat Rush



*Rhaphiolepis indica* 'Pink Parfait' | Indian hawthorn

## GRASSES GROUNDCOVERS



*Themeda australis* 'Mingo' | Blue Kangaroo Grass



*Lomandra hystrix* 'Katie Belles' | Katie Belles Lomandra



*Myoporum parvifolium* 'Yareena' | Creeping Boobialla



*Grevillea* 'Royal Rambler' | Royal Rambler Grevillea



*Liriope muscari* 'Amethyst' | Lily Turf



*Impirica cylindrica* | Blady grass



*Pennisetum alopecuroides* 'PA400' | PURPLE LEA®



*Dianella revoluta* | Blueberry Lily



# MATERIALS AND FINISHES

## PAVING / GROUND PLANE



Exposed Aggregate Concrete



Exposed Aggregate Concrete



Feature Banding



Patterned Gravel



Stepping Stones



Potential permeable pavements

## SEAT WALLS AND STAIRS



Terraced Seating Walls



Concrete steps



Concrete seat with timber



Raised Lawn Seating



Timber lounge



Concrete seat wall

## FURNITURE & FIXTURES



Bike Rack



Bollard



Bins



Custom pergola shelter



Free standing seat





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