

APPENDIX C

Architectural Report Architectural and Landscape Drawings



The Chris O'Brien Lifehouse at RPA

PART 3A APPLICATION

JUNE 2010



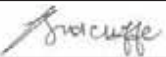

The Chris O’Brien Lifehouse at RPA

CONTENTS

EXECUTIVE SUMMARY	3
INTRODUCTION	5
LOCATION	5
SITE ANALYSIS	6
EXISTING SURROUNDING BUILDINGS	7
ARCHITECTURAL CONCEPT	9
CIRCULATION PATTERN	12
BUILT FORM AND ARCHITECTURAL DESIGN	13
FAÇADE MATERIALS	16
FACADE DESIGN PRINCIPLES	17
LANDSCAPE STRATEGY	18
VEHICULAR AND PEDESTRIAN ACCESS	19
DETAILED DESCRIPTION	20
STAGING	33
SOLAR STUDIES	34
ENVIRONMENTALLY SUSTAINABLE DESIGN	38
CONCLUSION	39
APPENDICES	
BCA COMPLIANCE	40
DDA COMPLIANCE	41
HELICOPTER CONSULTANT	43



East elevation

Date Issued	Originator	Approved
Rev. 01 23.06.2010	 NAME: J. SUTCLIFFE	 NAME: R. HICKS



The Chris O'Brien Lifehouse at RPA

EXECUTIVE SUMMARY

The vision for Lifehouse is to become Sydney's premier Integrated Cancer Centre, uniting clinical treatment (for all tumour groups), cancer research and education under one roof. A facility which delivers uncompromised care for patients and families affected by cancer. A building that strongly reflects the comprehensive vision of the late Professor Chris O'Brien.

The existing Sydney Cancer Centre will be relocated from its existing accommodation within Gloucester House and merged with cancer facilities from Royal Prince Alfred Hospital (RPAH) and research facilities from Sydney University.

The site is located within the western campus of Royal Prince Alfred Hospital in the Engineering Services Precinct. The 42,000sqm facility is located on the site of the former Page Chest Pavilion and Brown Street Outpatient Clinic. It is located to the south of the existing heritage King George V (KGV) on Missenden Road, opposite St Andrew's College and the major heritage buildings forming the street edge of the east campus of RPA Hospital.

The Lifehouse envelope will be built as one development and will include 26,000sqm fit out accommodation for Stage A and 16,000sqm shelled accommodation for Stage B1. Stage A will be completed by April 2013 and Stage B1 fit out accommodation will be undertaken in/during 2016. Stage B1 will provide inpatient areas (96 beds), an additional seven theatres, intensive care (18 beds) and diagnostic imaging expansion.

The proposal is for a building with a ground level and 9 upper floors, with the upper two levels significantly set back from the Missenden Road edge of the building.

Lifehouse incorporates three basement levels providing 100 car parking spaces for staff and for patients undergoing treatment. Lifehouse has a dedicated loading dock with space for 3 trucks and 3 courier spaces collocated with the support accommodation provided in basement levels.

The three dimensional design addresses the challenge of introducing a building of this scale into the urban fabric of Missenden Road. The building mass is divided into three major volumes along the north south axis. These volumes reflect the functional planning concept, identifying and expressing the centralised circulation that defines the planning. This open central space focuses on a central atrium which rises the full height of the building.

The Missenden Road façade is articulated into two volumes by a glazed vertical recess providing glimpses of the interior and the major public vertical movement core. The two facades are expressed differently – the northern element, a glazed façade with horizontal fritted glass louvres floating free of the curtain wall, reflects the strong horizontal language of the adjacent Stephenson and Turner King George V building. The glazed faces are intended to reflect, rather than imitate, the rich heritage fabric of KGV, the Victoria Pavilion and St Andrews College on the eastern side of Missenden Road. To the south the building façade contrasts with a strong vertical language of polished precast concrete blades used as shading devices over the curtain wall structure below.

The western facade utilises narrow glazed slots set into polished precast concrete wall panels to reduce and control solar penetration. A number of service, support and plant facilities are planned within this zone. The major plant and equipment floors are located on levels 4 and 5 and are enclosed by metal louvres set back from the building edge.



The Chris O'Brien Lifehouse at RPA

EXECUTIVE SUMMARY

Vertically the design is modulated into a series of paired levels – the base, three pairs of mid level accommodation floors and the recessed metal clad inpatient units expressed as a roof element above the main building street wall façade.

Material selection reflects the contemporary expression of the design. Natural products are the key elements. Metal finishes will largely be anodised and not painted. Colours will be neutral within a warm grey palette. Glass curtain walls make up a large proportion of the major facades. The façade design utilises carefully articulated shading devices set within concrete framed elements and clad with overlapping vertical polished precast concrete blades. A clay tile cladding systems is used to clad the base of the building. The public street edge is formed primarily by large vertical frameless glass panels to the ground level retail outlets. To the south this glazing has a green landscape screen filtering light and providing a level of privacy to the internal spaces.

Three landscaped courtyards are set at the lower ground level and provide a level of privacy from the street edge, whilst allowing glimpses into the interior. They are focal points for viewing from important internal spaces and introduce natural light to accommodation on the lower ground floor.

The majority of the design will be Deemed to Satisfy, however fire engineered solutions will be required for elements of the design. Building compliance issues related to the staged fit-out will be addressed within the BCA report. Similarly the Disability Discrimination Act report will cover issues of accessibility critical to the functioning of this facility.

The proposal will provide a new landmark Integrated Cancer Centre for Sydney. Lifehouse will facilitate multi disciplinary collaboration attracting the best clinicians and researchers stimulating translational research 'from bench to bedside' to enable improved patient outcomes for rare and complex cancers. The building has been benchmarked to world class facilities in the United States and Canada to ensure Lifehouse will deliver the highest standards of patient care.

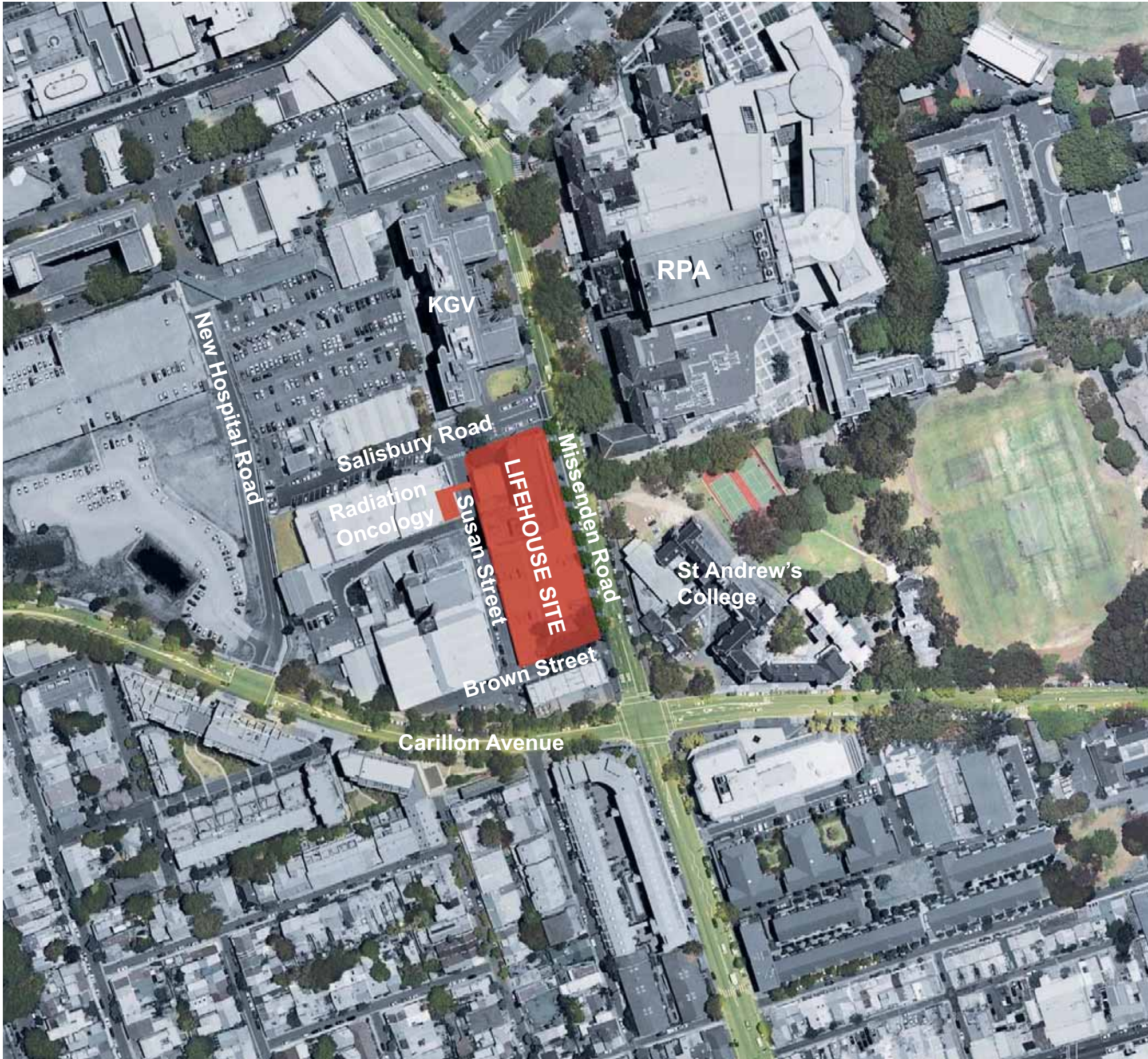
CONSULTATION PROCESS

Through the development of the design, consultation has occurred with important stakeholders within the City of Sydney. This has included extensive discussions and presentations to the planners, architects and project managers as well as landscape architects within the departments at Council.

This interaction has proved to be very constructive, and has influenced the approach and outcomes of the evolving design. Amendments have been made, suggestions have been incorporated where possible and the interaction has been constructive and positive. This consultation has contributed to the design process and outcome.

The discussions have been broad and encompassed a range of topics. Important considerations have included: the overall building mass and approaches to minimise the urban impact, activation of the urban edge of the building, movement patterns and overall circulation strategies, overshadowing and strategies to minimise impact on surrounding properties, approach to facade and discussion regarding the approach to the surrounding heritage fabric.





The Chris O'Brien Lifehouse at RPA



INTRODUCTION

The business case completed in 2008 proposed the existing Sydney Cancer Centre be relocated into a new state of the art facility and expanded to include research and education to become The Chris O'Brien Lifehouse at RPA.

This new facility will form a benchmark for Australian Integrated Cancer Centres providing a world class clinical environment attracting the highest class of clinicians and researchers. Lifehouse will provide a platform for these clinicians and researchers to work collaboratively to enable cutting edge research developments to be rolled out quickly and efficiently through clinical trials programmes to Lifehouse, RPA and other SSWAHS hospitals.

The information presented includes the architectural vision for Lifehouse, an Integrated Cancer Centre of Excellence and of national significance.

Most critically this facility will provide a holistic approach through the care provided, a unique and special place created in the vision of Professor O'Brien and the legacy he has left.

LOCATION

The Chris O'Brien Lifehouse at RPA is located on the west campus of the Royal Prince Alfred Hospital in Missenden Road Camperdown. The site has had a limited clinical role for some time and previously accommodated the recently demolished facilities of the Page Chest Pavilion to the north, and the Brown Street Outpatient Clinic to the south. The Page building was a 8 level structure with a single basement level, and the Brown Street Clinic was a single storey structure. A small landscaped private open space existed at the southern edge of the site. The existing subterranean service tunnels of RPAH cross Missenden Road and bound the site to the north and west.

The eastern edge of the site is defined by the busy Missenden Road, a major regional road linking Parramatta Road to the north and King Street, Newtown to the south. Part of the new City of Sydney cycle-way will be constructed along the eastern edge of Missenden Road and a new taxi rank will be created on the footpath adjacent to the proposed Lifehouse.

The site of approximately 4200 sq metres is relatively level and has limited landscape of significance. The site is bounded to the north, west and south by private roads now part of the RPAH campus. Salisbury Road to the north, has traffic lights at the intersection with Missenden Road and is an important point of access to the west campus of RPAH. It provides access to the existing public car-park and is also used by service vehicles. To the west Susan Street is a minor route used primarily to access the existing RPAH Engineering Services Zone and to the South Brown Street, is a closed minor road.

The site is level along Missenden Road, with the grade dropping off fairly evenly to the west and New Hospital Road.

THE SITE

The Lifehouse site is owned by Sydney South West Area Health Service (SSWAHS) and is located on the west campus of the RPA Hospital. The site comprises the following lots: Lot 1 DP 133045; DP 721834; DP 116729; DP 79785; DP 74291; DP 66645; DP 79561 and Lot 2 DP 866035. The west campus comprises five precincts : Queen Elizabeth II; North West Precinct; King George V; Engineering Services and Prince Alfred Private Hospital. The Lifehouse site is part of the Engineering Services.



The Chris O'Brien Lifehouse at RPA



SITE ANALYSIS

EXISTING BUILDINGS

The demolished structures on the site comprised the 8 level Page Chest Pavilion to the north and the single level Brown Street Outpatient Clinic to the south. Photographic records of these structures have been undertaken and will be reflected in an interpretive display within the new Lifehouse project.

The surrounding building fabric is of varying quality. The 7 level King George V building to the north is a good example of the Inter-War Functionalist style in relatively good condition and dominates the street edge to the western side of Missenden Road. To the south the 2 level Heart Research Building is of limited significance.

VIEWS

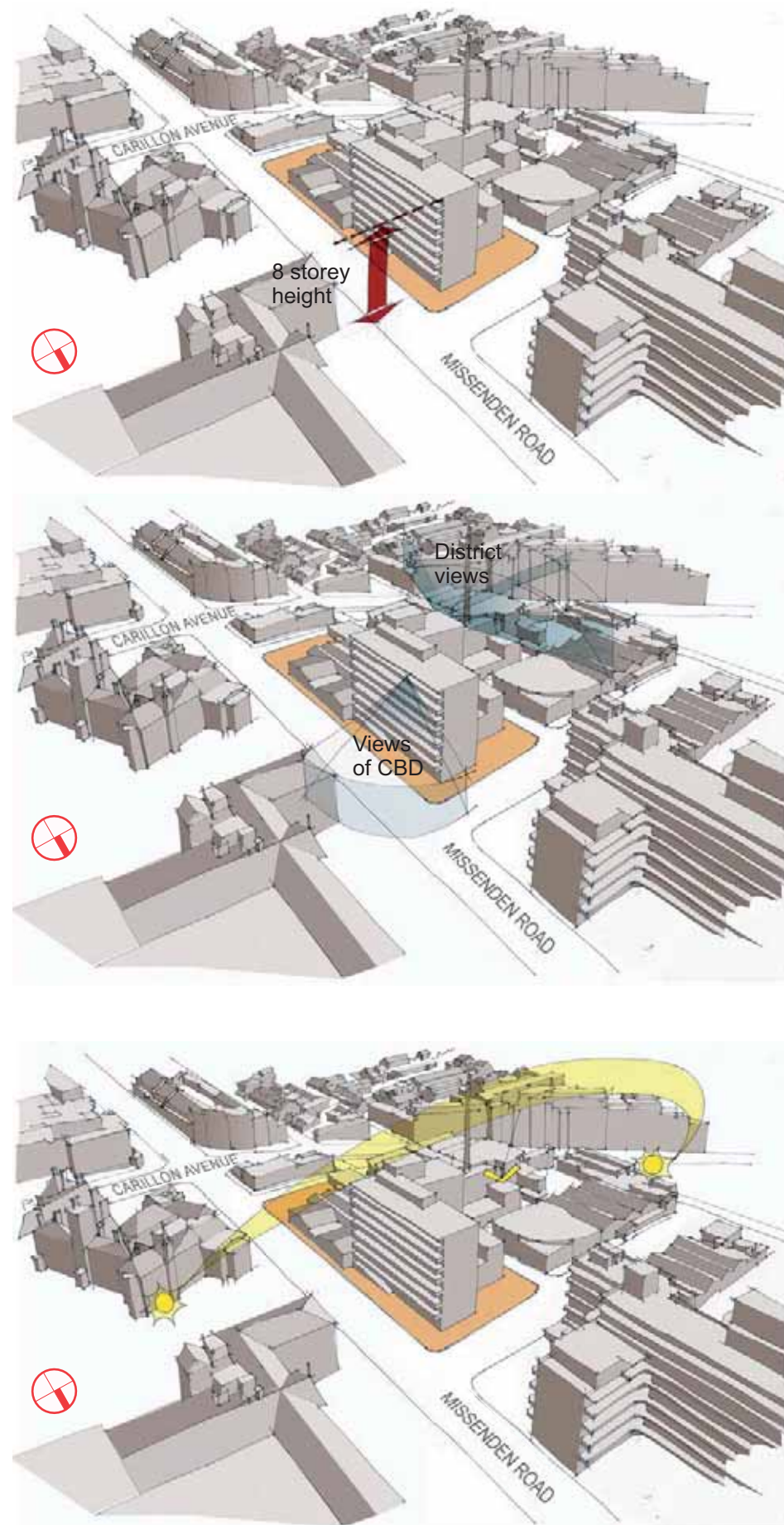
There are no views or vistas from street level. Missenden Road represents a busy commercial edge to the site. The upper levels will enjoy significant views over the existing RPAH campus and the University of Sydney to the city skyline to the east. To the north the existing KGV will be the dominant element. The western views from the upper levels will extend across the inner west of Sydney out towards the mountain zones in the distance. These views, whilst to the west will be shaded and be highly visible from the upper in-patient levels of Lifehouse. To the south the views will be across Newtown.

ORIENTATION

The site is oriented north south with approximately 100 metre boundaries along the east and western edges.

Whilst this presents a significant street frontage to Missenden Road the extensive western façade in particular has presented a major design challenge to the thermal loading of the building.

The design reflects a considered approach to the varying solar exposure of the site. Varying forms of shading devices are utilised to achieve the appropriate levels of ESD performance from, facades. The ESD report and façade study covers this aspect in greater detail.



The Chris O'Brien Lifehouse at RPA

EXISTING SURROUNDING BUILDINGS

The surrounding building fabric is of varying quality.

The most significant structure is the 7 level King George V building to the north. This heritage listed Stephenson and Turner building is a good example of the Inter-War Functionalist style. The most dominant architectural elements are the characteristic horizontal balcony elements and the 3 landscaped spaces defined along the street edge as defined by the building form. The building is in relatively good condition, but has an unfortunate skyline as a result of the mechanical plant located on the roof of the building 9 levels above the street.

To the east, and across Missenden Road, the street edge is defined by the very significant heritage precinct of the RPAH main campus. Set within the heavily treed forecourts, the three major buildings represent a wonderful edge to the public street. Dating back to the late 19th century these facades are amongst the most significant in the precinct. The Lifehouse design recognises the significance of these face brick and sandstone buildings and the new glass facades to the north east corner of Lifehouse are designed to reflect rather than imitate this important heritage fabric. Behind these heritage facades the 8 levels of the 1970's E Block structure dominates. The 2004 redevelopment of the east campus of RPAH is more sensitive and is less evident from the public street. Directly opposite the site, the existing St Andrews complex of the University of Sydney represents a complex urban composition. Unfortunate additions to the street edge detract from the clarity of the main structures with their steeply pitched roofs of up to three levels.

To the south the 2 level Heart Research Building is of little significance. The intersection of Missenden Road and Carillion Avenue is further defined by the RPAH Medical Centre and diverse residential and low key retail structures.

The western zone of the site is currently occupied by diverse Engineering Service buildings and storage warehouses. The existing Radiation Oncology building of approximately 2 levels is critical to the provision of Cancer Services at RPAH and is located to the north western edge of Lifehouse. The Radiation Oncology building has undergone significant alterations and redevelopment over recent years. It presents an unresolved collection of differing style and fabric.

LEGEND

- 1 - Page Chest Pavilion
- 2 - Brown Street Clinic
- 3 - Heart Research Institute
- 4 - King George V
- 5 - RPA Medical Centre
- 6 - St Andrews College
- 7 - RPA
- 8 - Radiation Oncology with Page Chest in back-ground
- 9 - Queen Mary Building



The Chris O'Brien Lifehouse at RPA

EXISTING SURROUNDING BUILDINGS

The heritage flue from the original hospital boiler house is located within the engineering services zone and is an important urban beacon within the area.

The 11 story Queen Mary Building is the most dominant structure on the West Campus of RPAH and is located to the north west of the site.

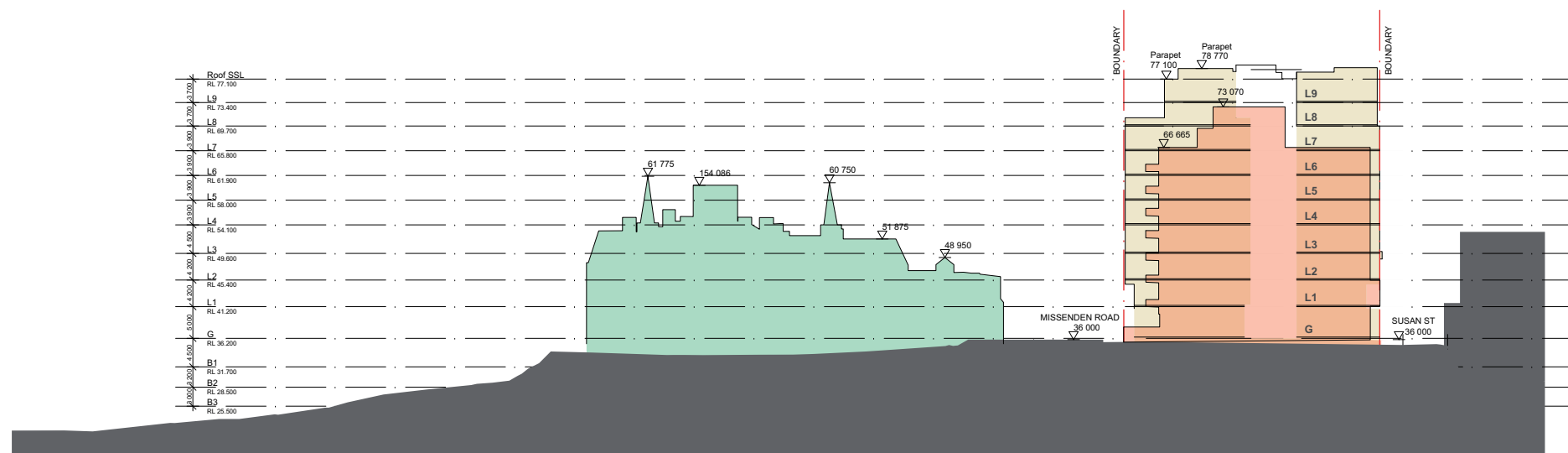
The western edge of the RPAH campus is defined by an existing multi level concrete car-park of poor construction and the vacant private hospital site adjacent to the New Hospital Road.

Cross Section A indicates the Lifehouse project overlaid on the outline of the former Page Chest Pavilion. Whilst the eastern edge is marginally closer to Missenden Road, the new design features a two level recessed base set further back from the footpath. The street wall is only one level higher as a result of the setback achieved on the in-patient units on levels 8 and 9. The building edge along Susan Street is approximately in line with the former structure.

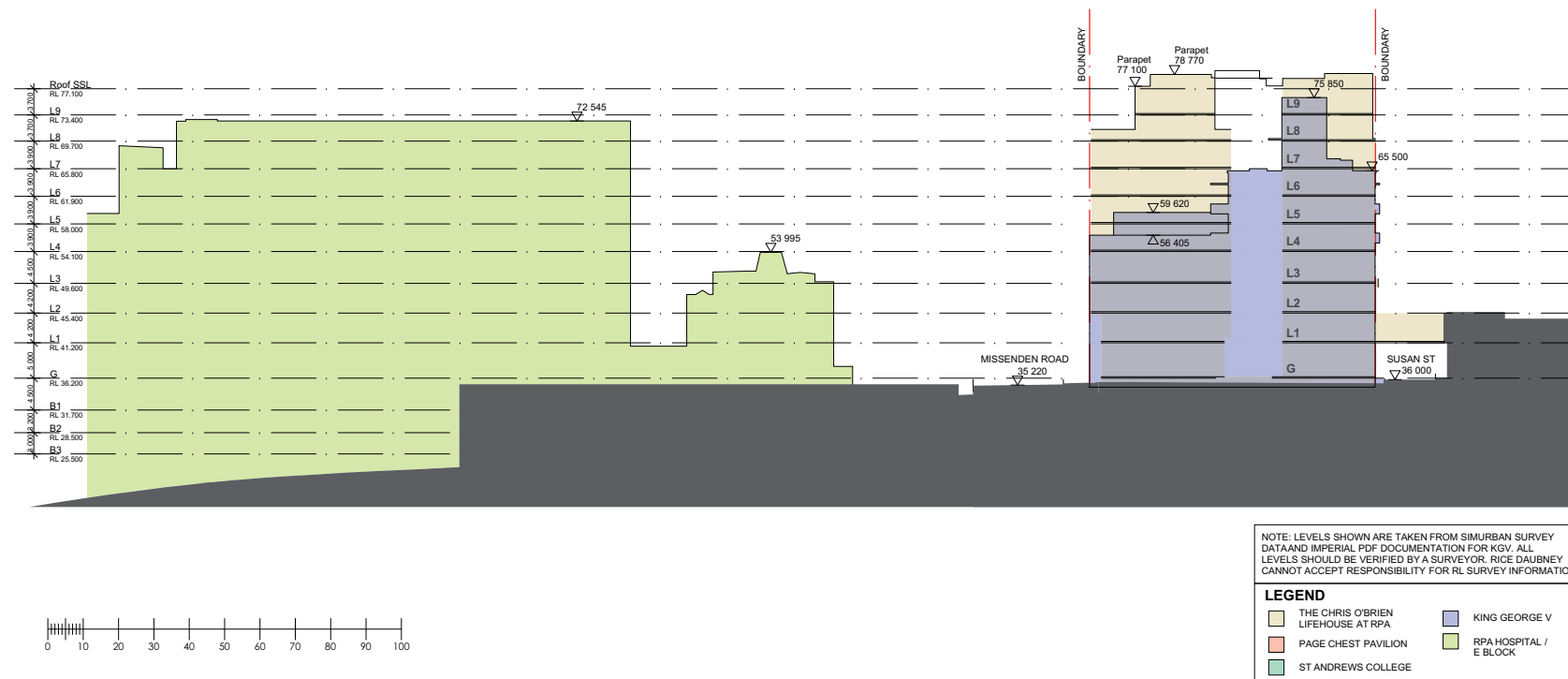
This section also indicates the scale of St Andrews College to the east of Missenden Road, with its articulated profile and steep roof slopes.

Cross Section B indicates the Lifehouse project overlaid on the profile of the existing King George V building. This heritage building, to the north of the Lifehouse site is certainly the most important existing structure on the east side of Missenden Road. Whilst the street wall of the new design is higher, the overall scale is approximately in line with the existing lift cores of KGV.

To the eastern side of Missenden Road, E Block - the original Clinical Service Building of the Royal Prince Alfred Hospital is the dominant structure. This 12 level building has a helipad on the eastern edge and presents a similar building mass as the proposed Lifehouse. The smaller scaled original Administration Block and main hospital entrance is indicated in front of E Block. This heritage building, together with the Victoria and Alfred Pavilions, set into the heavily landscaped forecourts of the hospital, present the dominant street edge of the main east campus of RPA Hospital.



CROSS SECTION A



CROSS SECTION B

The Chris O’Brien Lifehouse at RPA

ARCHITECTURAL CONCEPT

CONTEXT IMAGES



NORTH EAST VIEW



SOUTH EAST VIEW



WEST VIEW



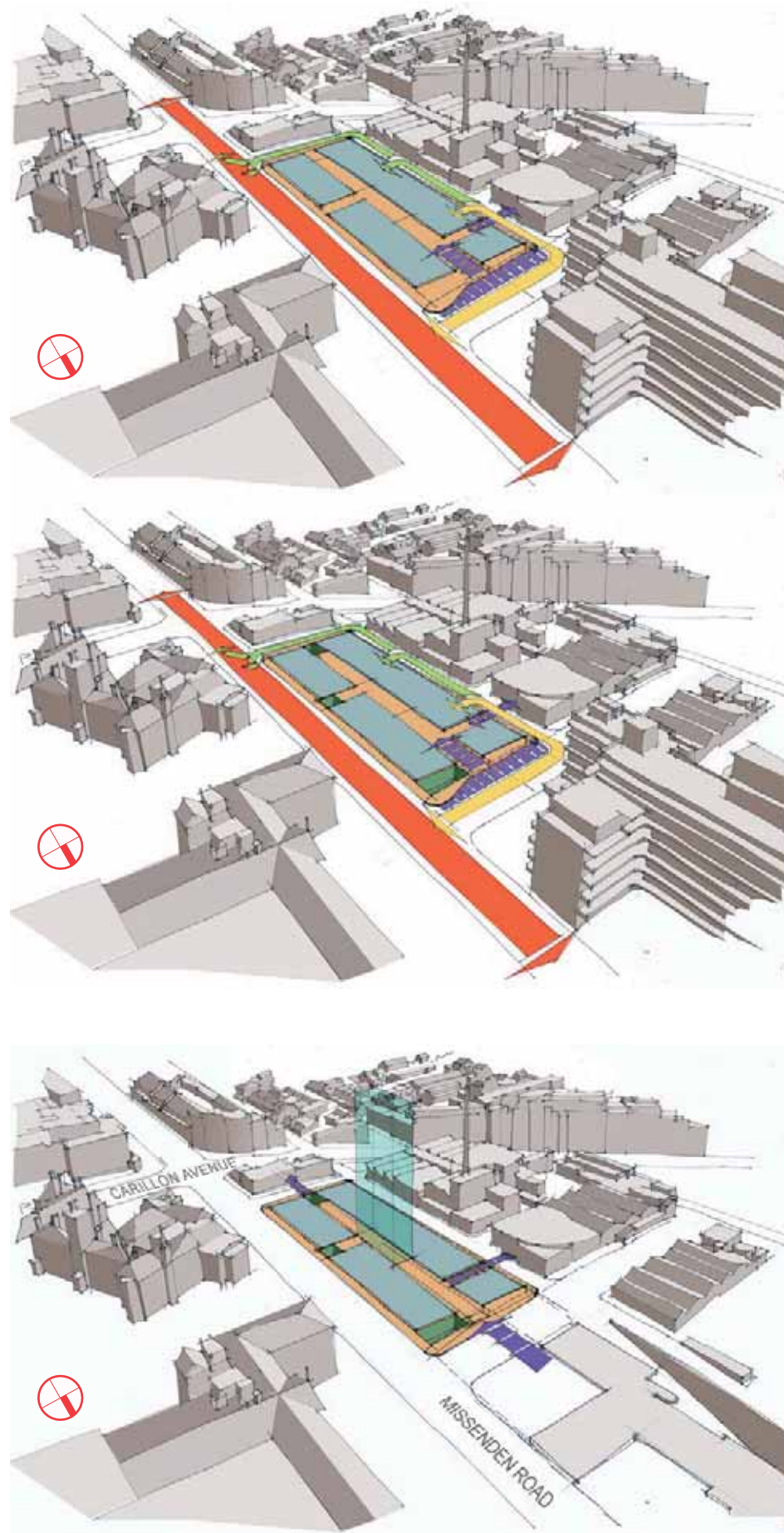
NORTH WEST VIEW

The Chris O'Brien Lifehouse at RPA



LEGEND

- Vehicle movement
- Major Pedestrian Entries
- Service Vehicles



ARCHITECTURAL CONCEPT

The functional zones of the proposed plan reflect the three major volumes aligned along the north south axis of the site. The central space is the primary circulation axis with the new main public entrance and vehicle drop-off centred on this concourse and orientated to the urban space defined between the new building and the southern edge of the KGV building. The decision to locate the main entry on Salisbury Road is a carefully considered gesture aimed at recognising the integrated nature of the facility within the broader RPAH and University of Sydney campus context. A secondary entrance links the existing Radiation Oncology building with the new Lifehouse. The plan form defines the functional zones into two narrow elements around a central circulation spine. A central glass roofed atrium through the full height of the building and introduces natural light through the louvred glazed roof element into the deeper parts of the plan. Functionally this structured plan form places the servant spaces (such as support areas, plant and engineering) to the west, and the served (patient treatment, administration and accommodation) areas to the east.

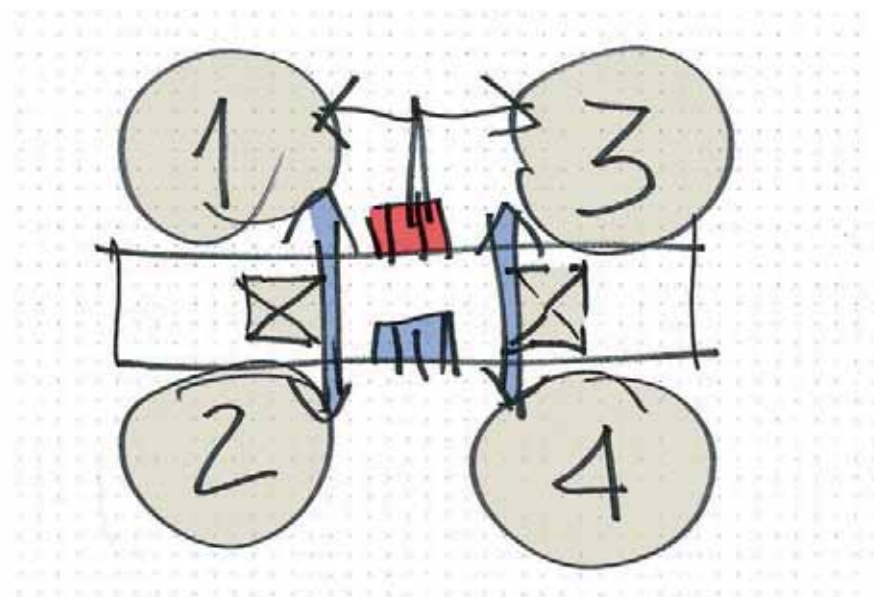
The nature of the Missenden Road street edge was considered inappropriate for entry points into the building. Vehicles will enter the site via the traffic light intersection with Salisbury Road and will proceed past the porte cochere and main entrance and turn left into Susan Street. Vehicles will then pass through a second porte cochere providing a secondary entry point to Lifehouse and the existing Radiation Oncology Facility. Vehicles can then access the entry point to the basement carpark or proceed to exit the site.

Service vehicles will share this route and access the loading docks on Susan Street with reversing in docks. Service vehicles will exit the site via a new exit provided at Brown Street. A warning system will be provided for pedestrians moving past these docks.

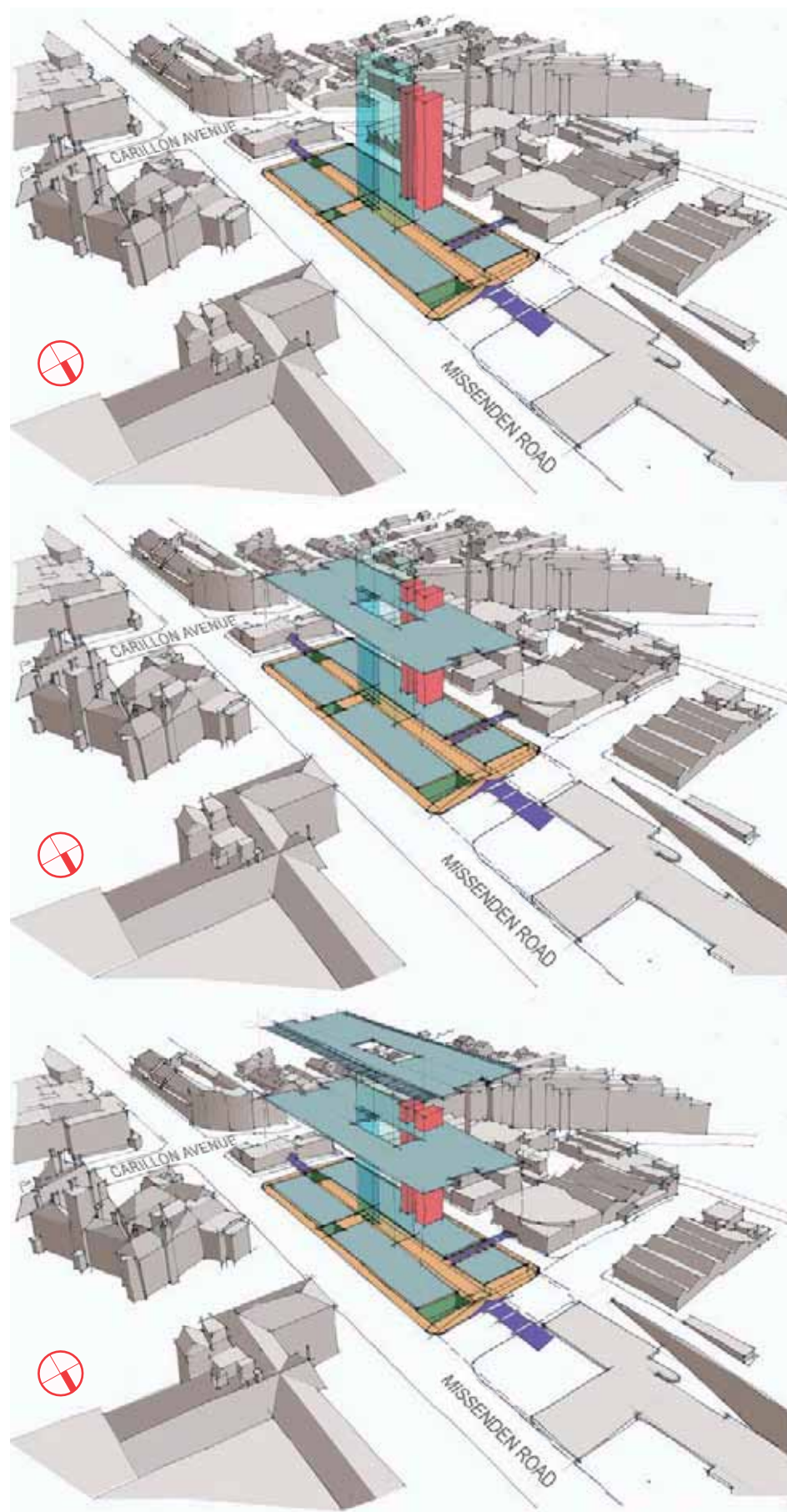
The courtyards at lower ground level will introduce natural light into the clinical and administrative zones on this level. They also provide the potential for glimpses into the circulation zones of the interiors from street level. The southern courtyard provides a major focal point within the planning of the open circulation areas on the lower floor levels.

The central glazed atrium rising through the building introduces light into the deeper portions of the functional planning areas. It also represents a significant conceptual focus. This "cone of light" is an essential part of the architectural concept and is directly aligned with the visionary aspirations of the new centre. It will incorporate a major artwork on the glazed internal walls and represents the physical and spiritual centre of the facility. The vertical circulation core for the public comprises 3 glazed lifts which will pass through this central atrium and will provide glimpses into the various parts of the facility as one travels vertically through the building. The circulation patterns are integral to the concept of an integrated centre and the notion of the coincidental exposure to the various elements that make up the facility.

The Chris O'Brien Lifehouse at RPA



Concept sketch for "open floor" plates



The lower floor levels are conceptually 'open' floorplates and primarily accommodate the ambulatory care zones of the facility. The central circulation spine will allow visual links to the ambulatory care clinics and day therapy areas allowing patients and visitors to easily orientate themselves around the building. Link bridges connect east and west floorplates with waiting areas and meeting spaces spanning this void allowing for a level of transparency and improved visual connectivities.

The upper floor levels become 'closed' floorplates for their functionality and clinical use. The central atrium rises through the full height of the building and allows daylight into this central circulation core and adjacent functional zones. This void is important for way finding and provides an inner sanctuary for patients within the space and reinforces the concept of transparency within the integrated facility.

The in-patient accommodation is provided on the upper two floor levels. These floors have been set back from the street edge to visually reduce the height of the street wall and the perceived height of the building from Missenden Road.

This setback provides an opportunity to introduce landscaping to the rooftop improving visual aspects from the in-patient rooms. Controlled access to the landscape and healing gardens will add to patient and visitor amenity.

To further reduce the visual scale of the building the design uses metal cladding to the structure of the in-patient levels. This sheet metal cladding will incorporate expressed joints emphasising a different visual expression, more typical of a "roof" element. Extensive metal louvres are utilised to control solar exposure to the long east and west facades. These louvres are set below low roof profiles which reduce the scale of the wall edges and reduce overshadowing to the west.

The roof will provide access to the suspension systems to be used for facade cleaning.

The Chris O'Brien Lifehouse at RPA



Level 8



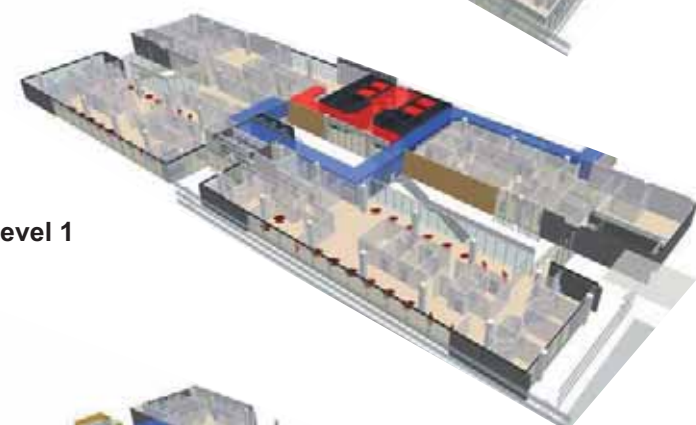
Level 6



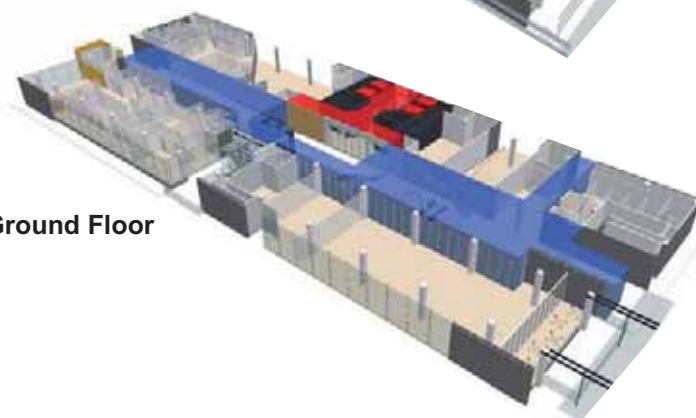
Level 2



Level 1



Ground Floor



CIRCULATION PATTERN

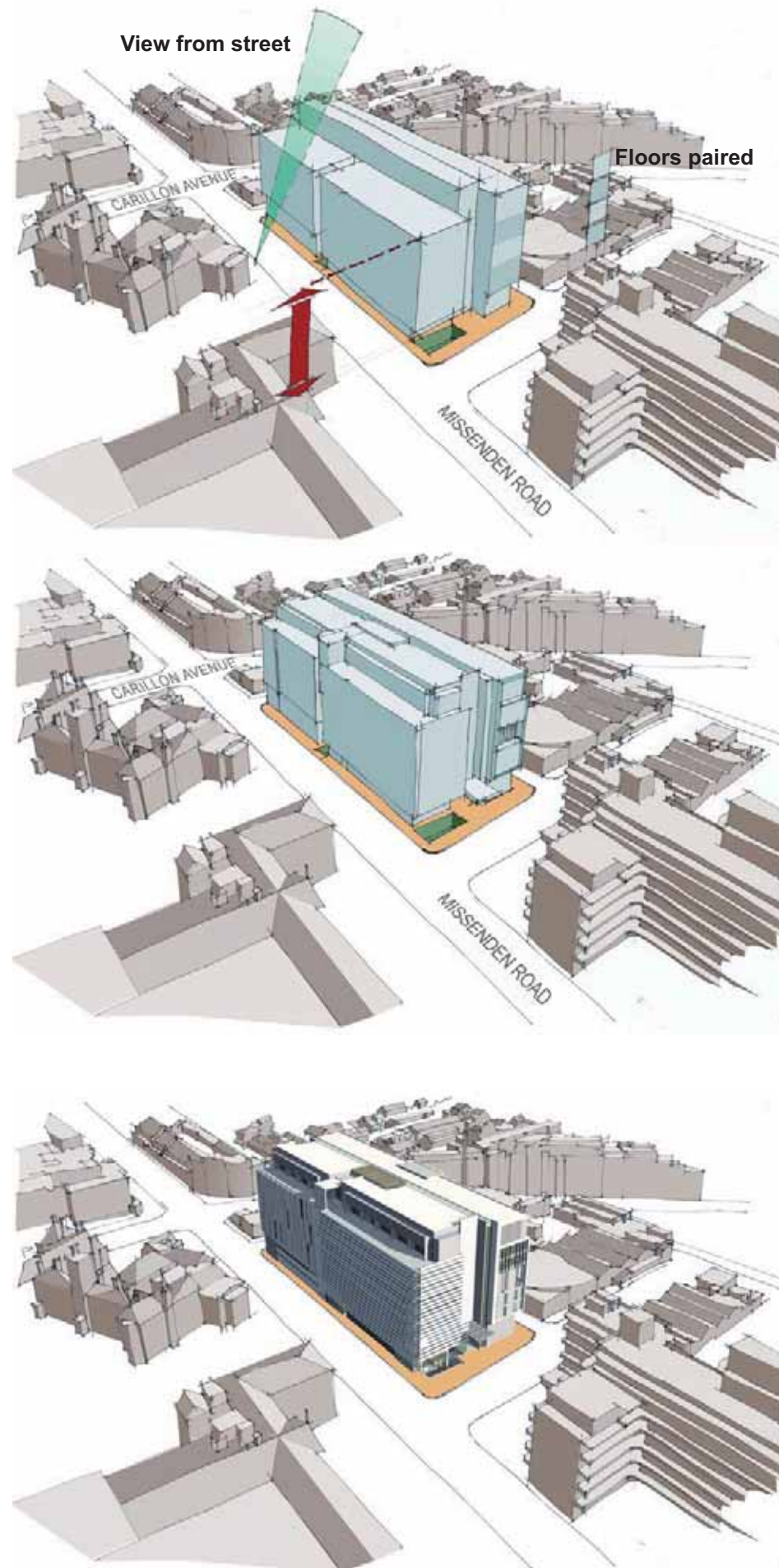
The appropriate control of circulation patterns and movement within a health-care facility is critical. Lifehouse has a carefully considered separation of freely accessible public movement routes, from the controlled patient and staff zones of the building. These dedicated public and staff circulation routes apply to both horizontal and vertical movements. The separation of staff and public corridors and lifts is fundamental to the design, maximising operational efficiencies and providing clear and rational circulation patterns.

Horizontal circulation is separated into public corridors to the east and staff corridors to the west at each level. The designated public and staff routes are vertically linked with separate public and staff lift cores. Three public glass lifts are provided within the central atrium and offer users discrete views into the of differing activities on each level of the building. Four lifts, for service, staff and escorted patients, are located in the west functional zone. These lifts will provide discrete movement to link the more critical clinical zones of the facility. In addition they will be used for all service movements with more direct access to the loading dock and the support and service zones of the facility located in the basement levels.

The central glazed atrium is orientated north south maximising natural light penetration. The glazed roof will incorporate deep internal vertical louvre elements to ensure light penetration is shaded and avoid excessive solar exposure.

The lower open floor plates are focussed around the central circulation concourse with voids and openings to facilitate direct visual access to the principal ambulatory patient areas including the Integrated Medicine or 'Wellness Centre', Day therapy, Diagnostic Imaging and the Ambulatory Care Clinics. This will allow for a more open, less intimidating aspect whilst facilitating intuitive way finding.

The differentiated circulation strategy supports the clinical model and will produce efficiencies in functionality and movement throughout the medical zones of the facility.



The Chris O'Brien Lifehouse at RPA



BUILT FORM AND ARCHITECTURAL DESIGN

The architectural statement and image of Lifehouse needs to recognise a range of factors. From issues such as urban context within the RPAH precinct and University of Sydney campus context, through to considerations of the general "image" or feel the facility presents to all users. The building needs a very contemporary expression - a place of excellence, of cutting edge research and clinical environment. It needs also to reflect the nature of clinical care - the fact that many of the patients are at their most vulnerable. It needs to be seen as a sanctuary, not intimidating and not introverted, but enclosing and protective.

The architectural challenge this represents in terms of a 42,000 sqm building in this urban context is significant. It is a large facility and the proposed design places emphasis on addressing potential contradictions in the broad vision.

Importantly the building will become a major structure on the west campus of RPAH. It is being placed into a sensitive environment with significant heritage fabric. The consideration of scale and overall building mass has been a major focus of the developed design. The articulation of the building mass, the horizontal break-up and the differentiated expression of the street facade, the recessed roofscape, are all strong architectural gestures aimed at addressing this critical consideration of scale.

The plan form reinforces this concept by defining three functional zones. On the lower three floors the central zone is expressed as an open circulation concourse focussed around a central glazed atrium which rises up through the height of the building. Through the height of the building these west (servant) and east (served) zones are expressed differently, recognising the orientation and functionality of the different floors. Central plant is located at mid height providing functional service routes and freeing the roofscape for the creation of in-patient units set within landscape healing gardens.

The main entrance is located on the north facade and aligns with the central circulation concourse. It relates to the important urban space defined by the south facade of KGV and the new building. A central perforated metal screen provides shading to the central volume and an opportunity for graphic signage. A glazed canopy provides an indicator of this entrance from the public footpath and a functional undercover link from the street edge of the building to the main entrance.

The north east quadrant of the Missenden Road façade has horizontal glass louvre shading over a glass curtain. These screens are not only functional, but provide a reflective face to mirror the heritage fabric of the surrounding building fabric. Their strong horizontal expression relates to the expression of KGV and are reminiscent of the facades of the former Page Chest Pavilion. The language of the southern quadrant contrasts with a strong graphic language of polished concrete blades set within a concrete framed box structure over the glazed curtain walls.

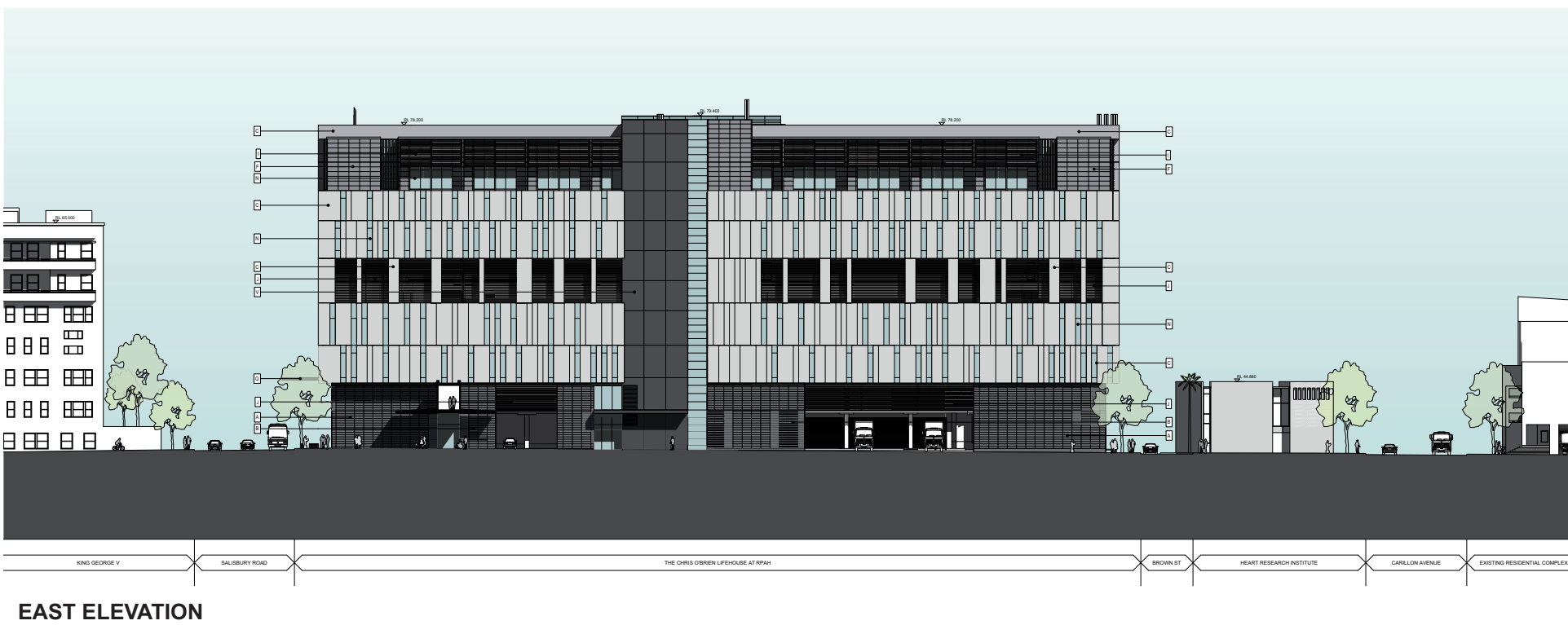
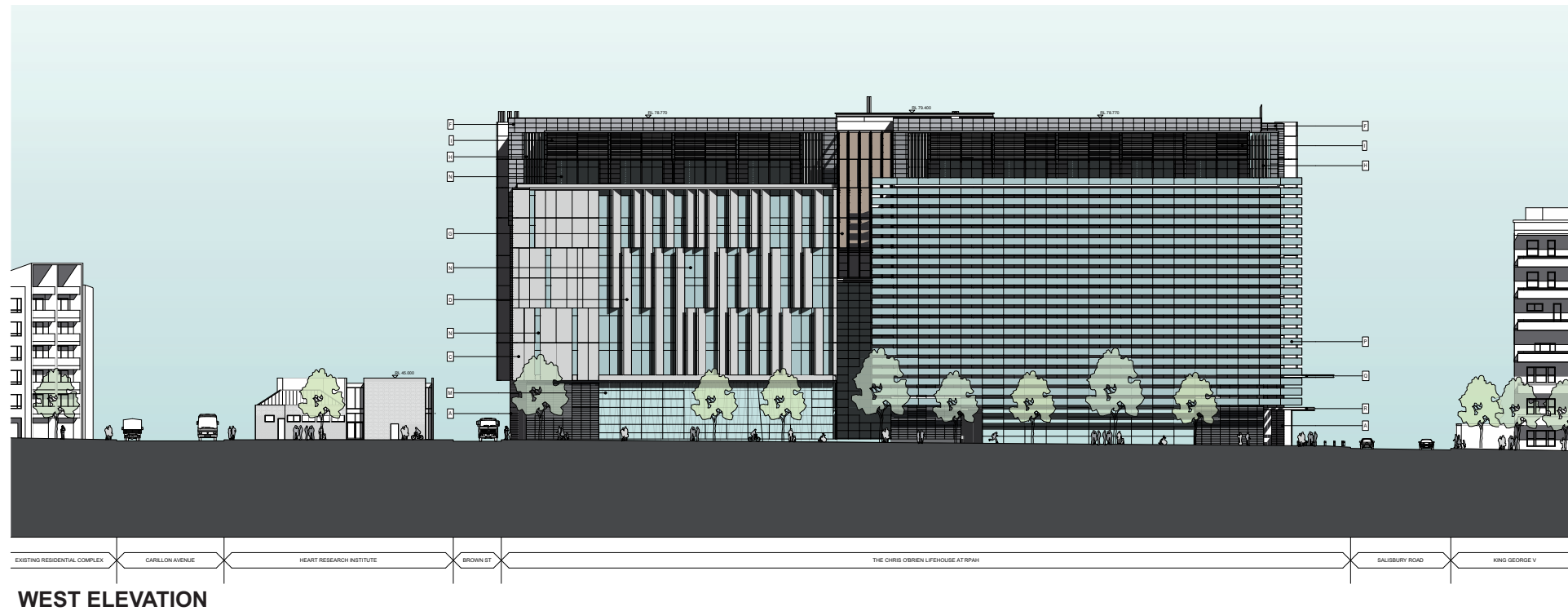
The western facade has narrow glazed slot windows set within precast concrete wall panels. The mid building plant area is set back and clad with louvres on three facades. The building is divided vertically into a series of paired floors.

Philip Chun Building Surveying has carried out a BCA review of the proposed Chris O'Brien Lifehouse building. They have confirmed that the basic BCA philosophies have been reviewed and believe that the building design will be capable of satisfying the Building Code of Australia 2010 requirements for construction. A detailed assessment is appended to this report.

The Chris O'Brien Lifehouse at RPA

BUILT FORM AND ARCHITECTURAL DESIGN

ELEVATIONS



The Chris O'Brien Lifehouse at RPA

BUILT FORM AND ARCHITECTURAL DESIGN

ELEVATIONS



NORTH ELEVATION



SOUTH ELEVATION

The Chris O’Brien Lifehouse at RPA

FAÇADE MATERIALS

Materials selected for the external facades are primarily natural products providing a practical low maintenance finish for the building. The colour palette is a warm grey. Grey tinted glass, anodised aluminium screens, grey metal cladding form the dominant materiality.

A strong base is defined for the building over two levels. The street edge is primarily pin-fixed glazed screens for retail frontages. A similar detail but with a landscaped screen is used to provide privacy to clinical areas. Ceramic tile cladding is used at the base at entry zones and on the service zones to the west.

Extensive areas of performance glass with fritted horizontal glazed screens are utilised on the most exposed facade at the north east corner. The balance of the street facade has the uncapped curtain wall system and a strong language of vertical polished precast concrete louvre blades set vertically across floors. The street facade is articulated by a glazed stair element offering glimpses into the central public circulation void. The upper levels of this recessed element contain open balconies with a perforated metal screen providing protection to the upper-most levels.

The expression of the west facade contrasts with the Missenden Road frontage, and recognises the more service related nature of the site as well as the greater solar loading. Large panels of polished precast concrete with punched vertical glazed slots introduce controlled sunlight into the interiors. The western volume’s staff core is enclosed with off form concrete walls contrasted with the polished precast cast elements. A narrow glazed strip allows light into the lift lobbies whilst offering district views beyond The interstitial two storey plant-room is recessed from the facade face and clad in frameless horizontal powder coated metal louvres.

The fire stairs to the south and north are expressed as strong vertical elements with a glazed face set between two blade elements clad with the ceramic tile cladding system in a graphite colour. These blades are a contemporary response to the masonry construction of the neighbouring buildings. This exterior cladding is taken internally into the major public circulation areas.

The in-patient units on the upper two levels of the building are set back from the building edge and clad in anodised metal sheeting with expressed horizontal joints. Landscaped roof planes provide visual amenity to the patient rooms.

No plant or equipment will be visible on the roof as all equipment will be set on the concealed box gutter or within recessed plantrooms.

Landscaped courtyards set at the lower ground level are important elements along the street frontages.

- LEGEND
- 1 - Creation tiles
 - 2 - Feature Anodised Aluminium Cladding
 - 3 - Anodised Aluminium Perforated Panel
 - 4 - Low E Double Glazed unit
 - 5 - Polished Concrete
 - 6 - Aluminium Metal Cladding
 - 7 - Anodised Aluminium Curtain Wall



North East aerial



North West aerial



The Chris O’Brien Lifehouse at RPA

FACADE DESIGN PRINCIPLES

The façade details are developed for the various elevations of the building;

- Western elevation – pre-cast polished concrete panel with slot windows, thermal sink. Predominant vertical alignment
- Eastern façade – clear Low E Double Glazed unit curtain wall with vertical sun shading blades and fritted glass panels. Predominant horizontal alignment
- Northern elevation – clear Low E DGU curtain wall with mix of fritted glass panels, vertical blades and perforated screens as sun shading devices
- Southern elevation – clear Low E DGU curtain wall with vertical blades to redirect views and shade south west sun

The façade uses to its advantage the different aspects of each elevation, the eastern face being able to take advantage of daylight into each floor plate, whilst using fritted glass sunshades to control heat gain. The western façade utilises insulated concrete panels as a heat sink.

The north façade uses a mix of both east and west facades to take advantage of day light penetration into the floor plate but offering shading and thermal mass by using precast concrete panels as sun shading and cladding. The south façade is predominantly glazed with some solid elements reflecting the use/function of interior spaces, and vertical blades that shield the south western sun and re-direct interior views towards St. Andrew’s College.

Materials include, fritted glass, Low E DGU and precast polished concrete panels, ceramic tile cladding, metal cladding and perforated metal screens.

Performance Parameter	Requirement
Design Life	All facade elements are to be designed for, 50 years for structural integrity (Framing, brackets and fixings. excl. structural silicone), 25 years serviceable life (life to first major maintenance)
Wind Loads	Ultimate design to 1000 year return period. Terrain Category 2.5 Importance Level 3 Region A
Dead Loads	Design to AS1170 Part 1
Earthquake Loads	Design to AS1170 Part 4
Maintenance Loads	Glass and glazing systems are to withstand maintenance point load perpendicular to the glass surface of 0.5kN. Expressed elements are to withstand maintenance point load of 1.1kN in any direction. Fall arrest fixings, and cladding elements in contact with rope access lines are to withstand 15kN in any direction.
Imposed Loads	Glass and glazing systems situated on floor protecting falls are to withstand barrier loads in accordance with AS1170 Part 1.
Displacement Limits	Serviceability limit state deflection limits (unless stated otherwise): Glass - Span/60 Aluminium Framing - Span/250 Aluminium Panels - Span/110 In-plane Member Deflections – Span/500, or 3mm, whichever is less, unless agreed otherwise. Maximum Displacement (Framing and Glass) – 30mm at any point. Ultimate Limit State Loads – No non-linear (permanent) distortion



CREATON TILES

PRE CAST CONCRETE PANELS

SUN SHADING / GLASS SCREEN



CURTAIN WALL GLAZING

CURTAIN WALL GLAZING DETAIL

PERFERATED METAL SCREEN



The Chris O'Brien Lifehouse at RPA

LANDSCAPE STRATEGY

The building features three 'sunken' courtyards: adjacent the northern entry; at the south terminating the building's central spine; and midway along the Missenden road frontage.

STREETSCAPE

Missenden Road

Missenden Road public domain / streetscape will be upgraded as part of the City of Sydney's cycleway program. The cycle lane is located on the opposite (eastern) side of the street. In terms of levels and kerb alignment the Lifehouse frontage involves only limited modifications. Streetscape materials will be as per documentation by CoS consultants. The preferred outcome for the full length of the footpath is to continue the P1 unit paver.

Salisbury Road Main Entry

The building frontage to Salisbury Road will match the agreed CoS street-scape treatments for Missenden Road, continuing into Susan Street, up to and including the Radiation Oncology entry. The vehicle set down will be defined by bollards with paving sets to match CoS paving Type P1.

Susan and Brown Streets

Susan and Brown Streets will feature concrete footpaths and kerbs.

Missenden Road Boundary Interface

The southern extent of the Missenden Road frontage features a soft setback featuring a combination of ground covers and climbers on a special wire trellis tensioned from the soffit of the building above. Minor retaining walls will be located immediately within the property boundary to maintain consistent footpath crossfalls. At the northern Missenden frontage, paving matching the public footpath occurs within this setback; providing seamless building access along this frontage.

COURTYARDS

The building features three 'sunken' courtyards: adjacent the northern entry; at the south terminating the building's central spine; and midway along the Missenden road frontage. The purpose of these courtyards is to provide a valuable green outlook for adjacent hospital rooms and an occasional 'passive' breakout space at the lower ground floor.

The design approach creates a family of courtyard spaces each featuring: an outer landscape wall, large garden areas featuring species such as native Livistonia Palms, Cyathea tree ferns and viola/ fern understory. A light coloured paving will assist in reflecting light from each courtyard floor while each shallow water pools hold a mirror to the sky. Simple, robust and strongly horizontal seating benches will be located as required.

Main Entry Element

In keeping with the courtyard 'family' the main entry will be flanked by a small garden featuring a corten steel trough containing water, ferns and herbaceous planted in a white pebble surround.

In-patient units levels 8 and 9

Level 8 includes a central terrace featuring a small central garden platform with seating positioned as appropriate for small family groups.

The terrace is flanked by non-accessible green roofs made of native grasses and lawn offering an outlook for adjacent rooms on Levels 8 and 9. Adequate provisions will be made for access and maintenance.

Garden containers of flowers and herbs on private balconies of selected level 8 and 9 patient rooms provide an immediate connection with nature.



STREETSCAPE + COURTYARDS



The Chris O'Brien Lifehouse at RPA



PEDESTRIAN AND VEHICULAR ACCESS

The main public entrance addresses the urban space defined between the southern edge of KGV and the new building. The location of the entrance at this point specifically recognises the RPA Hospital campus concept, and that Lifehouse will form an important component of the overall developing facility. The entrance is defined by a porte cochere and glazed air lock. A glazed canopy extends out to the footpath on Missenden Road and provides an important visual marker to pedestrians to define entry. It also links the location of the new taxi rank on Missenden Road with the main entry. Vehicles will access the porte cochere from the intersection of Salisbury and Missenden Road. The main entrance leads directly into the central circulation concourse and public lift core located at the central glazed atrium space.

A secondary entry is provided off Susan Street. A covered drop-off facility, for both staff and patients, this entry links the existing Radiation Oncology building with Lifehouse, again emphasising the integrated nature of the health facilities. This entry point is immediately adjacent to the security office and will be used for after-hours entry to the facility.

A covered ambulance bay is located in Susan Street adjacent to the transit lounge.

The design allows for the possibility of individual entries to retail tenancies along the Missenden Road facade. The final design of any entry will need to consider security implications and the functionality of the overall facility.

The two level base to the façade on Missenden Road has been set back from the site boundary to the east. This setback provides partial shelter to the footpath. A café/bistro is proposed to the north of the retail tenancies with an external covered deck with a northerly aspect. This deck is set back from the pavement and patient drop-off with a lowered courtyard, providing visual amenity whilst offering a level of privacy for hospital patients, family and staff.

Entrance to the basement car park is provided off Susan Street. This car park is provided for key members of staff and patients undergoing treatment. There is limited service vehicle usage of the carpark, but couriers will access level B2, as will mortuary pick up vehicles and minor service/maintenance vehicles. The carpark is not a general public facility and will be boom gate controlled at all times, with security grilles after hours. Staff will require access cards and patients will be given access passes to the car park for the duration of their treatment protocols. From the carpark levels patients will have direct access to the public and clinical zones of the facility via the public lifts running through the central atrium.

A loading dock is provided at ground level on Susan Street. Trucks will access Susan Street via Salisbury Road with reverse access into one of the three loading dock bays. A warning system will be installed for pedestrians moving along Susan Street. The docks will have a security screen and all waste will be under secure storage. CCTV will monitor the dock at all times and with a data link back to both support service management and the security office. All service vehicles exiting the carpark and the loading docks will exit the site via Brown Street back into Missenden Road.

Lifehouse will be linked to the existing subterranean tunnel network of RPA Hospital. Whilst this tunnel is primarily for the use of RPAH and provides a critical link for delivery of services from the west campus to the east campus under Missenden Road, Lifehouse will have access to the tunnel. Patient transfers from the Lifehouse to Radiation Oncology building will occur via a new lift core linked to the new facility at basement level B1 and level 1 above.

