



BlighVollerNieldArchitecture



AUSTRALIAN RED CROSS BLOOD SERVICE

17 O'RIORDAN STREET, ALEXANDRIA, NSW

ARCHITECTURAL DESIGN REPORT

AUGUST 2008



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1.1 INTRODUCTION



Bligh Voller Nield has been commissioned to design a purpose built laboratory facility with associated administration for the Australian Red Cross Blood Service (ARCBS) at 17 O’Riordan Street Alexandria. This facility is to be the NSW state headquarters and central blood processing centre for the state of NSW/ACT Principal Site - a purpose built facility for processing blood and blood products, distribution, blood testing, tissue typing and research laboratories, warehousing and ancillary office/administration and staff amenities functions. All blood donated in NSW will be delivered to this facility, processed, typed, packaged, stored and distributed out to users across the state and Australia. Donors do not come to this centre to donate blood and it is a blood products processing and administration facility only.

It is a project of high public importance for the day to day well being of the people of NSW relying on blood transfusions and it is a facility of high emergency security in the event of disaster. Therefore it can be appreciated that its smooth operations and secure safe access is paramount to the successful operations of the facility and the well being of the persons relying on its important service of supplying blood to the population of Australia.

The project is being completed with Goodman as the site owner, project developer and final building owner from which ARCBS will lease the facility on a long term basis.

The project proposal is a 4 storey building with approximately 13,500m² GFA and a single storey basement carpark for about 100 cars. The primary purpose of the building is to receive blood donations delivered primarily by vans from the donor centres around the state, process/test the blood, package the blood, safely store the blood and distribute the blood product to the required users.

This design report includes and presents the following:

- context and site constraints/opportunities
- urban and building design parameters
- urban and building design approach methodology
- final design proposal

1.2 VISION

The design team's vision is for a strong urban statement which signals the regeneration of O'Riordan Street as an urban corridor building which is an extension of the Green Square Town Centre, while delivering an appropriate response to the context of the site and the 'visual image' desired by ARCBS.

The building proposal aligns itself to the 2.4m front street setback allowance as prescribed in the Green Square DCP which allows the creation of a strong street urban edge to O'Riordan Street. This is in line with the intended urban design principles for the Green Square area and the City of Sydney intent for O'Riordan Street to continue to evolve into a significant entry corridor from the airport to the CBD.

The proposal creates a building with a strong visual urban presence onto O'Riordan Street through the formal use of a façade with a predominant vertical orientation. This is achieved by the use of deep vertical concrete blades at close centres which has the affect of a dense colonnade as one moves along O'Riordan Street by either vehicle or by foot. The effect is enhanced by reinforcing the vertical through the concealment of the horizontal floor plates behind the glazing plane. The deep vertical blades also form sun-shading elements as this is a east facing facade. The repeating order of the blades is interrupted by strategic openings that are placed according to functional and formal needs articulating the building plane. The most significant of these being the entry 'portal' which has a generous scale signaling the main entry of the building. This 'entry portal' opens up onto an internal atrium linking all floors of the building which also acts as a large 'window' into the building where habitation and occupant movement over multiple levels can be witnessed from outside. Importantly this atrium also delivers natural light deeper into the floor plates.

The north, west, and south facades have a more regularly proportioned façade with an emphasis on balancing the horizontal with the verticals to create a contrast with the street elevation and emphasize its urban importance.

Materiality is intended to be expressed predominantly through pre-cast face concrete representing the structural and formal framing systems of the building. Placed within this formal ordering is a combination of grey tinted performance glazing and prefinished charcoal coloured cladding elements which contrast with the light colouring of the concrete to emphasise its framing and proportioning strength.



1.3 SUMMARY OF PROJECT BRIEF

The design teams brief was to provide a purpose built facility to meet the current and future expansion needs for the ARCBS. The current planned facility was briefed to have 13,400m² GFA incorporate the following key areas;

- central processing laboratory on ground floor
- secondary laboratories on single or multiple floors
- administration on single or multiple floors
- freezer storage + connected freezer dock
- temperature controlled warehouse
- goods handling – deliveries and distribution
- clear, secure and safe delivery vehicle logistics

A vital aspect of the ARCBS brief is that the 'central processing operations' in associations with blood product deliveries, storage and dispatch operate solely on the ground floor in a clear and precise linear system to ensure quality handling of blood products to eliminate possible 'errors' or mistakes. Simply expressed donor blood products need to be delivered to one side of the building processed and dispatched on the other side of the building to ensure a one-way 'work flow' which reduces the risk of errors, miss-handling or miss-direction in the processing of the blood products for which the importance of exactness can not be understated.

The ARCBS wished to represent an 'open and transparent culture' which is reflected through the large 'urban atrium window'. This element allows views into the entry and circulation spaces reflective of the working culture ARCBS wishes to project externally. It also provides internal transparency by visually and physically connecting multiple levels around a central social space.

Generally laboratories need to exclude most direct sunlight which is why traditionally laboratories have had small strip windows with larger solid facades. The street façade challenges this perception by being more transparent. This is achieved by consolidating predominantly administration, meeting rooms and staff service uses around the atrium and along the street elevation. These uses have a higher level of movement, denser habitation and more social interaction providing for a more activated street façade demonstrating habitation within.



BRISBANE ARCBS LABORATORIES



GREEN SQUARE STRUCTURES PLAN

2.1 SITE LOCATION AND CONTEXT

The site is located at 17 O’Riordan Street in the suburb of Alexandria to the south of the CBD about halfway between the airport and the CBD. The site is located near to the south-west edge of the proposed ‘Green Square Town Centre Development’ just 250m south along O’Riordan Street from the existing Green Square train station.

While the existing pattern of uses is predominantly bulky-goods retail, light industrial and warehousing the nature and uses in the area are rapidly changing. The impetus for change shall be strongly influenced by the future development of Green Square and the increasing local residential population.

Good service vehicle and truck access is required direct to the site as well as good connections to major road systems to facilitate quick and easy delivery and dispatch of blood products. The close connection to the airport, South Dowling/Eastern Distributor and M5/M7 are seen as crucial benefits to the sites location.

These excellent delivery road transport connections work very well in conjunction with a near-by train station and developing public amenity. The ARCBS will have a working population of about 500 persons which need to commute to the centre each day and have day-to-day support services. The location of the site is seen as highly beneficial as it allows for the unique situation of;

- close proximity to the CBD
- provides good access to public transport
- has a developing work-force amenity
- has excellent road transport connections



EXISTING SITUATION



PROPOSED SITUATION

2.0 CONTEXT/SITE ANALYSIS

2.2 SITE ACCESS

Vehicular and pedestrian access is achieved directly from O'Riordan Street. Left and Right Hand vehicle turns, including trucks, into the site are currently allowed as is typical for the majority of development fronting O'Riordan Street.

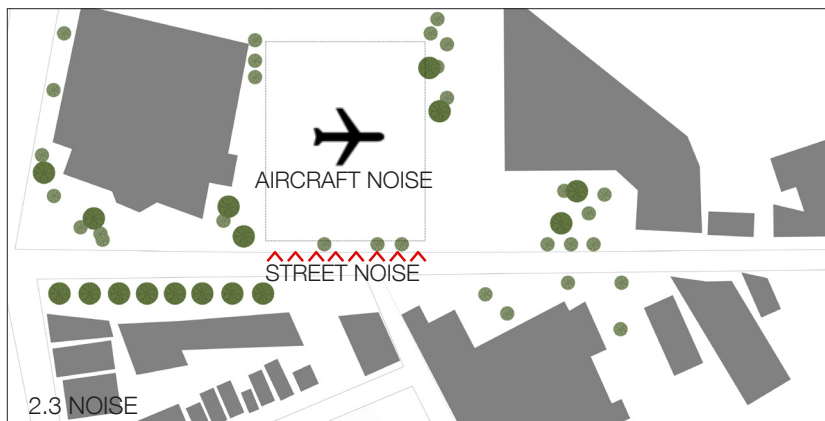
All vehicle circulation in the proposal will be required to enter and exit from O'Riordan Street.



2.3 NOISE

The predominant sources for noise affecting this site are generated from traffic on O'Riordan Street and airborne noise from aircraft above due to the proximity to the airport.

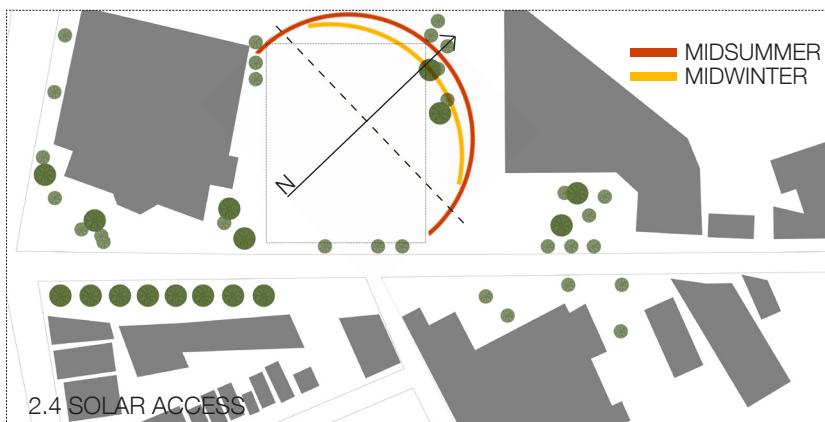
These noise generating items have been taken into consideration in the design of the building to reduce their impact on the occupants. Sound insulation of the envelope of the building will be included which brings the interior ambient noise levels down to required levels. A concrete roof is proposed which will aid in sound insulation against airborne aircraft noise.



2.4 SOLAR ACCESS

The site has reasonable solar access currently as the neighboring site immediately to the north and west is unoccupied which allows sun penetration to the site for the great majority of the day. The future development of these sites has been taken into consideration.

The site is orientated 37 degrees to due north, with the O'Riordan Street elevation facing south-east. This means two facades of the building have access to northern sun during the course of a day.



2.5 STREET PRESENTATION

The site has only a single address off O’Riordan Street and therefore its public face and presentation will be predominantly from this single street elevation. O’Riordan Street is nominated as a major gateway road from Sydney Airport into the CBD. It is important for the project to provide a positive street presentation to O’Riordan Street which responds to the City of Sydney’s intent to generate this as a well presented route into the CBD.

With O’Riordan Street being a major route into the CBD it allows ARCBS to announce its presence and promote the important public service it performs to the wider community.



2.6 VIEWS

From the upper levels of the proposed building long distance views are available of the city to the north, north-west and down into the Mascot basin to the west, south-west.

Contextual views over the Hill View heritage precinct in Beaconfield to the east and south-east of O’Riordan Street with a green reserve in front are available from the street side of the building.

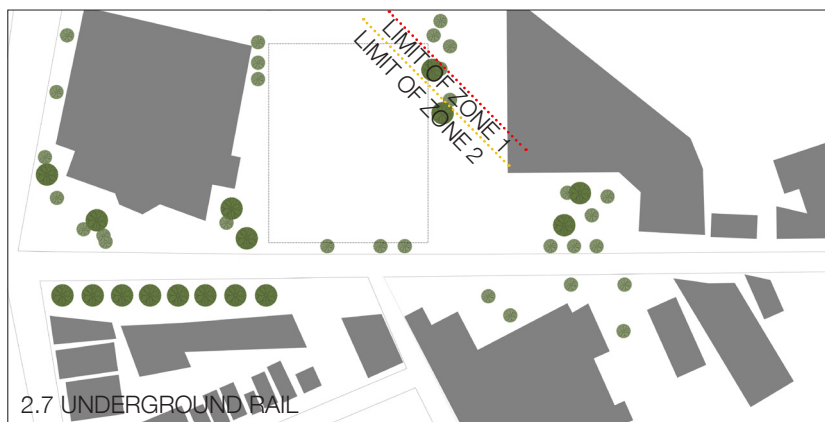
These views including views to the north-east will improve over time as Green Square town centre develops.



2.7 UNDERGROUND RAIL

The site is minimally impacted by the airport underground railway line. The tunnel itself does not pass under the site, but the zones of minimally encroach the northern corner. See site survey and site plan.

No intended built structures on the site encroach into these zones of influence.



2.0 CONTEXT/SITE ANALYSIS

2.8 EXISTING PATTERNS OF BUILT FORM

The existing patterns of built form are ones of large footprint low scale 2-3 storey, warehouses, bulky goods retail and light industrial. These are predominantly surrounded by large open area surface carparks or goods handling hardstand areas. The result is one of varied street definition, and minimal pedestrian amenity.

The subject site also has a unique setting along O'Riordan Street as it is located opposite a green reserve call McConville Reserve. Sheltered behind this reserve is a low scale mixed development area including residential. The reserve provides the building with a unique green setting which is intended to be engaged with via the largely glazed street elevation. Horizontal 'Green Views' can be experienced from all floors.



VIEWS OF EXISTING SITE + PATTERNS OF BUILT FORM



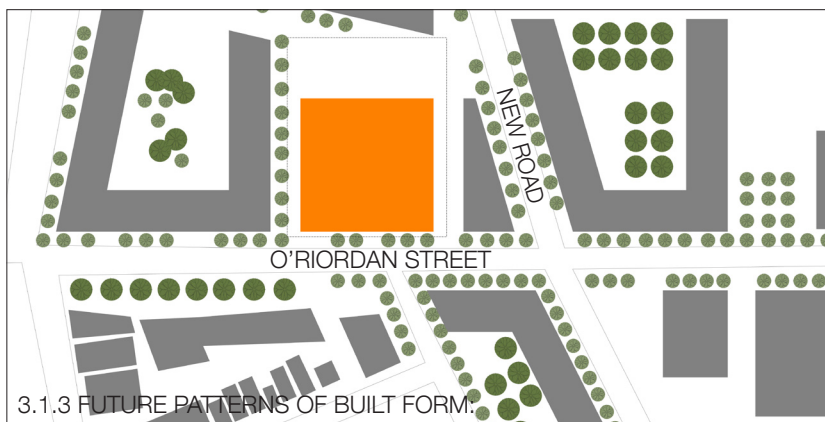
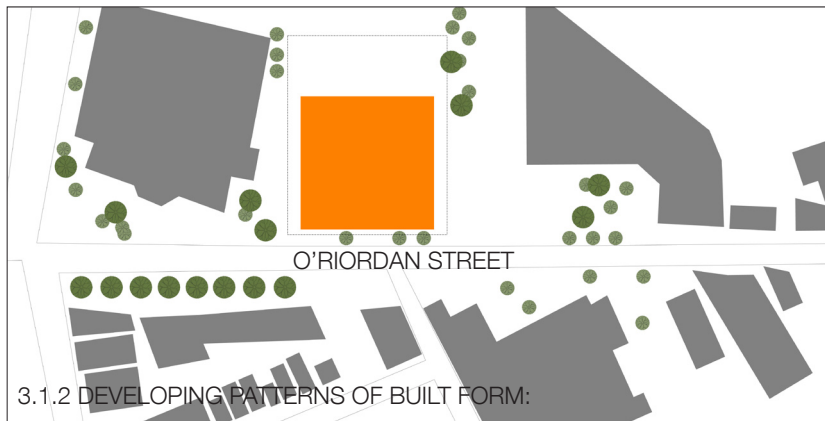
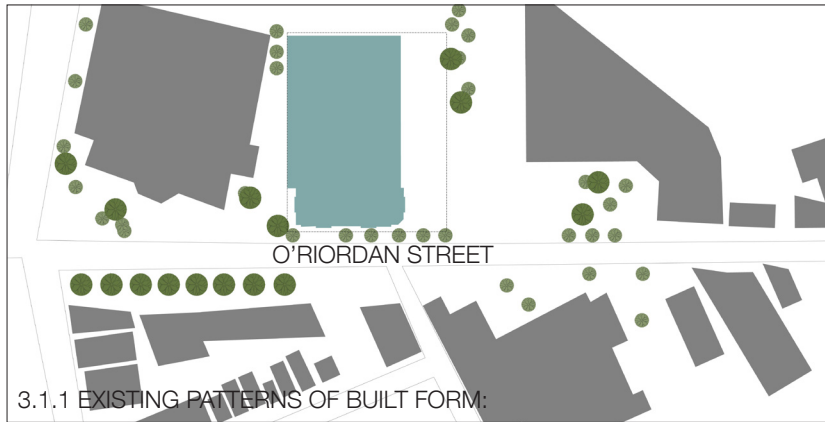
VIEW OF EXISTING SITE

3.1 URBAN RESPONSE

In response to the intent of the Green Square masterplan the building is proposed to be positioned to the front extremity of the site at the required site setback alignment. The site-setback of a 2.4m land dedication as prescribed in the Green Square DCP has been incorporated which will help achieve continuity of the built form street edge over time.

This strong alignment of the building to the street edge of the site is intended to begin the urban regeneration of O’Riordan Street in response to the Green Square masterplan.

As the neighboring sites are redeveloped the intended street alignment will reinforce itself by replacing the mix of zero setback to deeply setback low scale warehouses sitting in a field of hardscape carparking with street aligned taller buildings creating stronger urban edges to the streets. This will build on the patterns development intended for Green Square and extend them into the wider context.



3.1.1 EXISTING PATTERNS OF BUILT FORM:

- varied street edge

3.1.2 DEVELOPING PATTERNS OF BUILT FORM:

- continuity of street edge
- proposed building - street presentation

3.1.3 FUTURE PATTERNS OF BUILT FORM:

- reinforcing the street edge and alignment

3.2 ARCBS BLOOD PROCESSING OPERATIONAL + FUNCTIONAL REQUIREMENTS

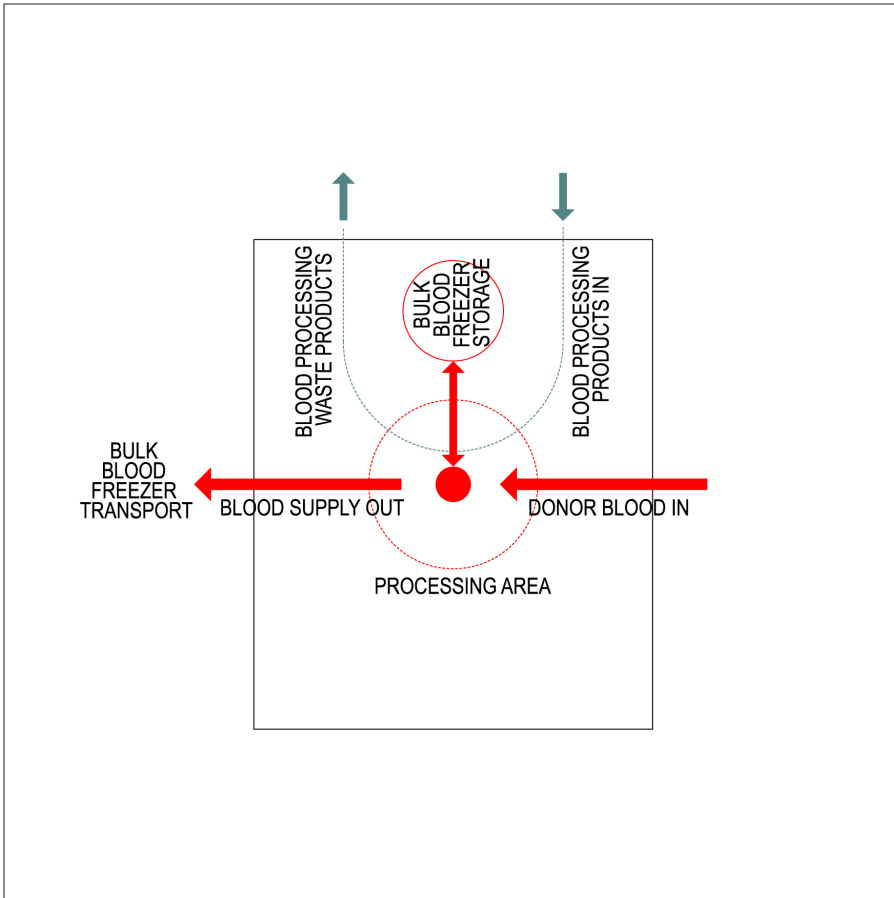
ARCBS requires a very precise operational work-flow process to ensure the high standard of handling blood products. Key to the successful operation is a single direction work-flow which is organised around liner processing, combined with a logical vehicle delivery and dispatch system.

Vehicle deliveries and dispatches are also split into three main categories which require clear and precise logistics to ensure a safe and secure operation of the facility, which ensures the highest standards of blood product handling.

Service vehicle operations require the separation of;

- Blood Product Delivery & Dispatch
- Goods Delivery (including blood processing materials) & Waste
- Bulk Frozen Storage and Distribution

It is also required to separate the staff and visitor carparking access from the main transport vehicle access and circulation in order to avoid 'blocking' of emergency donor vehicles urgently arriving or departing the facility.



3.2 ARCBS BLOOD PROCESSING OPERATIONS DIAGRAM

3.3 BLOOD TRANSPORT VEHICLE SERVICING STRATEGY DIAGRAM

In response to the important ARCBS requirements described in 3.2 above the site planning vehicle circulation strategy is proposed to operate in the following way.

The two key strategies is a single direction service vehicle circulation in a anti-clockwise direction around the perimeter of the facility; and locating the differing service vehicle access requirements on separate sides of the facility. Goods delivery and waste handling are to the rear of the building, blood donor vans are to the north and south sides. The less frequent (one a week only) bulk blood distribution truck is to south side so it is located in the dispatch zone maintaining the single direction work flow of the facility. Staff and visitor carparking is via a separated entry directly through the front of the building.

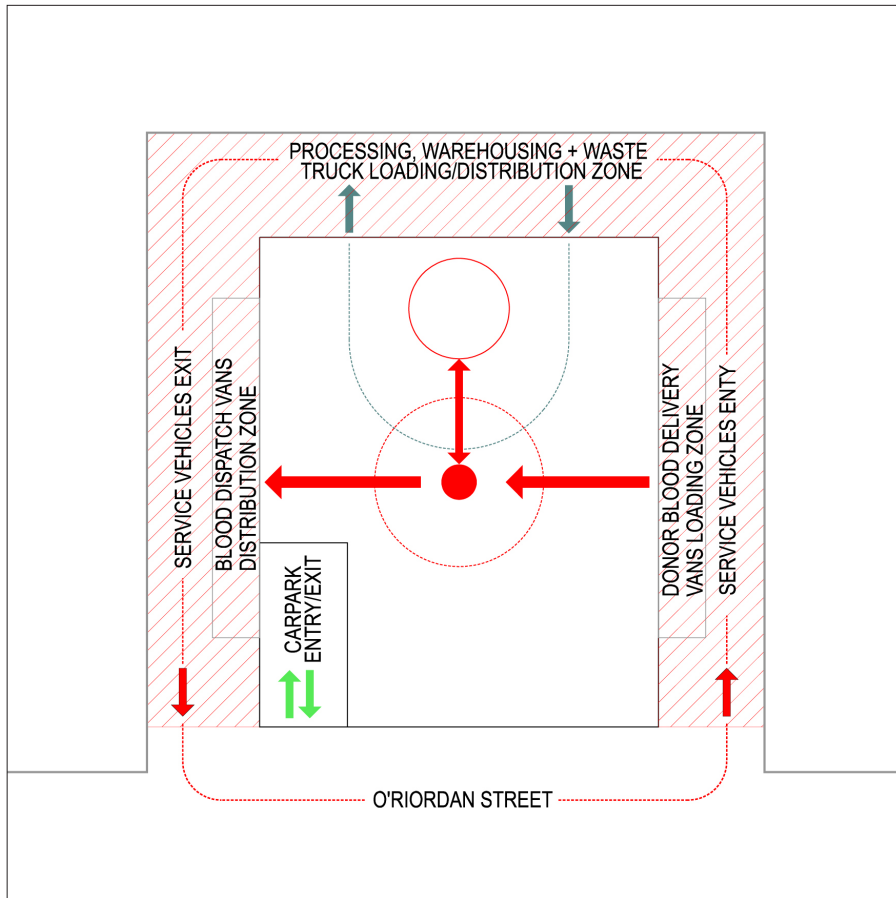
The Donor Vans are the type which is side loaded through a sliding side door therefore an anti-clockwise circulation allows for a safe left side unloading and loading of the Donor Vans along the north and south sides of the building.

Donor Vans arrive and deliver newly donated blood products to the north side of the building directly through entrances located here where it is transferred into the linear processing system. The Vans then drive around the facility and collect newly processed blood products from the south side of the facility directly dispatched through entrances located here.

Other goods delivery (not blood products) is to the rear side of the building through large rollers doors at the north end. This area will handle large deliveries by truck as well as by vans. Waste handling and dispatch will be through the rear of the building on the south end so there is separation from deliveries due to the sensitive nature of some items be delivered to ensure elimination of potential contamination of the fresh products.

The ARCBS bulk distribution freezer truck arrives for collections once a week. The freezer store and truck are maintained at -25 degrees celsius so a loading position with a direct connection to the freezer is required. As the freezer truck is required to be loaded only once a week which occurs out-of-hours there is no impact on the blood dispatch vans.

Staff and visitor carpark access is directly of O’Riordan Street through the front elevation to ensure complete separation from the service vehicles so blocking of the blood handling vehicles cannot occur. It also provides a clear point of access for arriving visitors to avoid confusion which may block the blood handling vehicles access.



3.3 ARCBS BLOOD PROCESSING VEHICLE OPERATIONS DIAGRAM

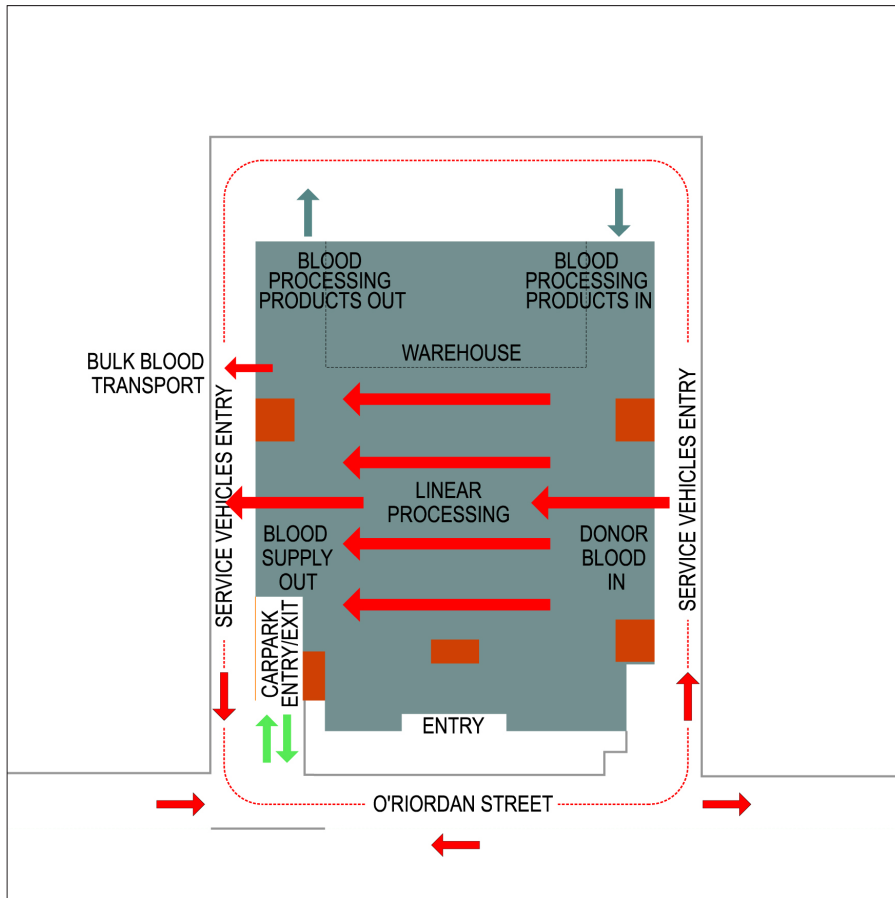
Site planning strategy provides a clear separation of:

- donor blood delivery vans
- blood product distribution vans
- goods delivery and Waste vehicles
- bulk freezer storage and distribution truck
- staff & visitor carparking vehicles

3.4 BLOOD TRANSPORT VEHICLE CIRCULATION + BLOOD PROCESSING STRATEGY

This diagram demonstrates how the 'single direction work flow' internal operations of the ARCBS 'linear processing' systems have been resolved in the project proposal to work seamlessly with the external vehicle operations.

The proposed arrangement is intended to ensure an efficient, safe and secure handling of blood products meeting the highest international quality standards.

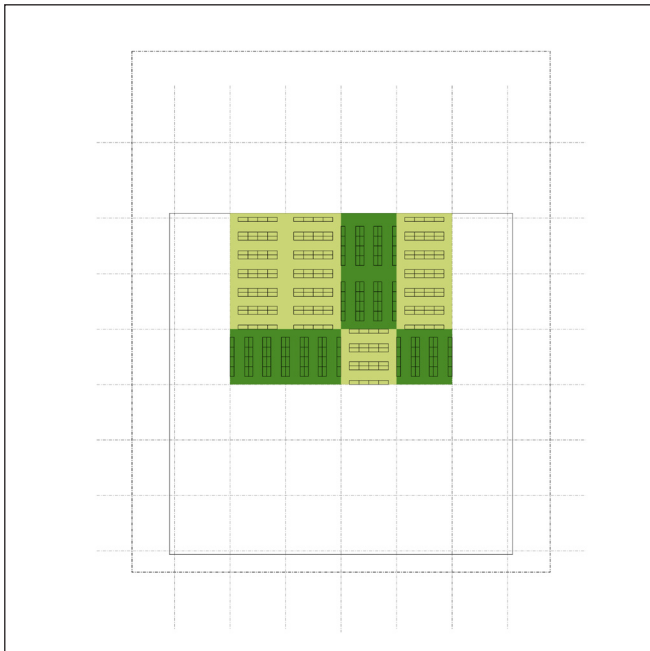
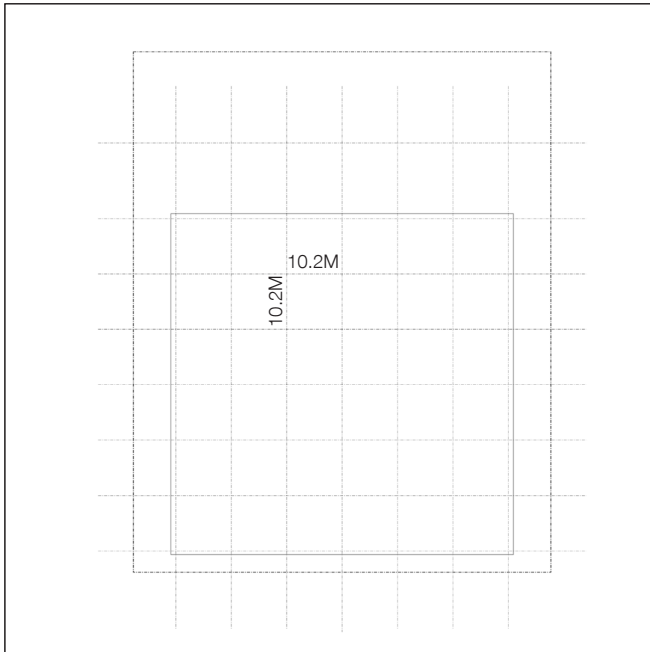


3.4 ARCBS BLOOD PROCESSING VEHICLE OPERATIONS STRATEGY DIAGRAM

4.1 GRID LAYOUT

A key aspect of laboratory planning is the unique 'Structural Grid' that is required in order to deliver the most efficient standard laboratory bench and equipment layouts.

The most efficient grid has been determined by research and experience from previous projects to be a minimum module of 3.4m and therefore can be any multiple of this 3.4m modul.



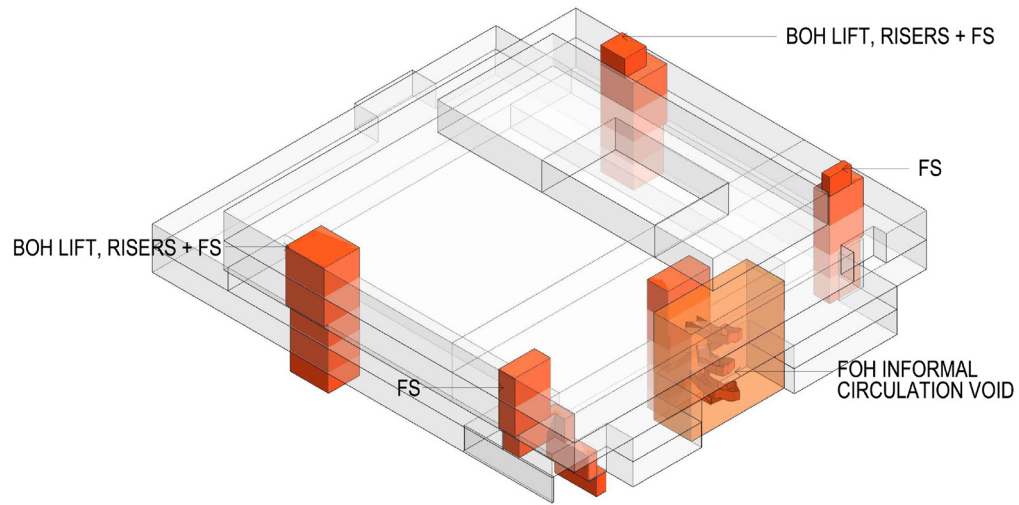
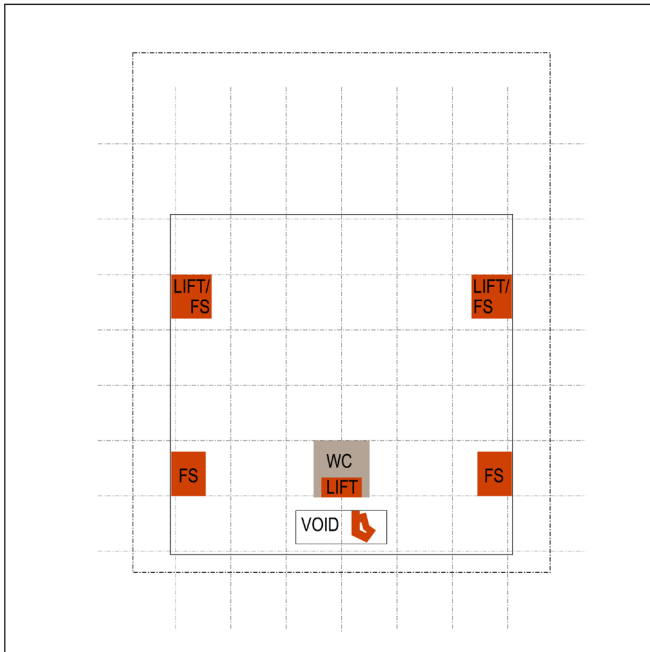
4.2 GRID AND LABORATORIES

It has been determined from planning and structural analysis that the most efficient construction to adopt is a 10.2m x 10.2m grid. This grid dimensions provides an excellent balance of structural efficiency to internal planning flexibility, be reducing the total number of columns within the floor plate. The combination of this grid dimension also works best with the proportion of the site, allowing for an optimally sized floor plate with adequate circulation left around the perimeter for service vehicles. The 10.2m also allows for an acceptable integration of parking layouts without the need for significant and costly transfer structures.

4.3 GRID AND CORE

Items within the base planning of the building such as cores, risers and fire stairs have been determined as 'immovable items' in terms of interior planning flexibility.

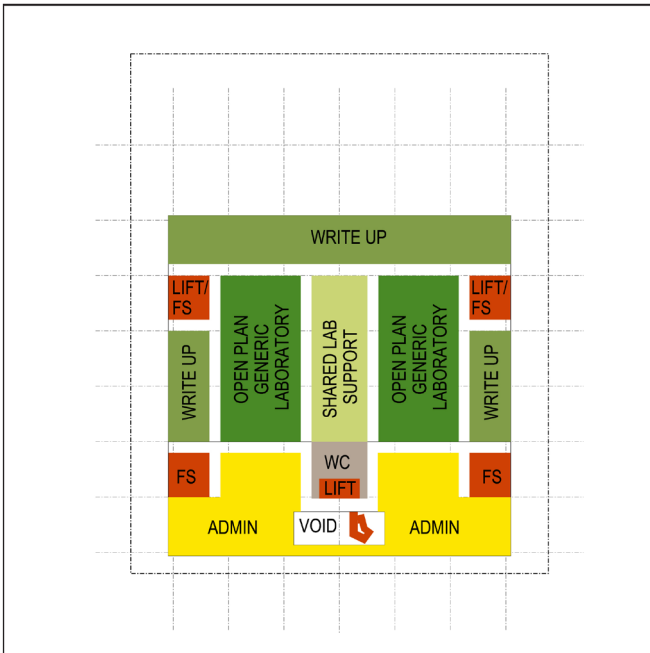
The proposal elects to locate the majority of these 'immovable items' to the perimeter of the building 'freeing up' a large continuous area in the centre of the building. The large central area allows more efficient laboratory planning and greater future laboratory planning flexibility. The large uninterrupted floor area is also key to the planning of the ground floor central processing systems. The ARCBS 'linear processing' blood operations required a series of parallel systems without interruption by elements such as risers or fire stairs.



4.4 TYPICAL FLOOR DIAGRAM - OPTION 1

Key points:

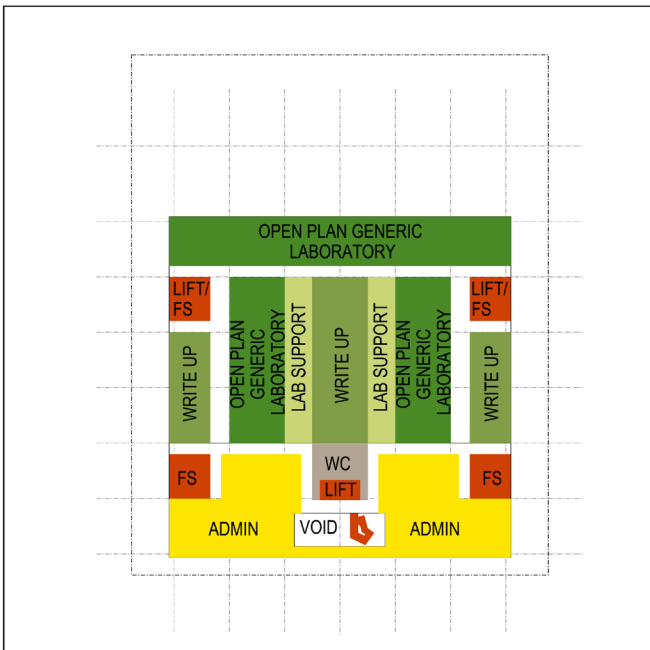
- Write up space on periphery for better natural light and outside views
- This option has 2 generic open plan laboratories with shared support in the centre
- Primary circulation corridor located to periphery of laboratories



4.5 TYPICAL FLOOR DIAGRAM - OPTION 2

Key points:

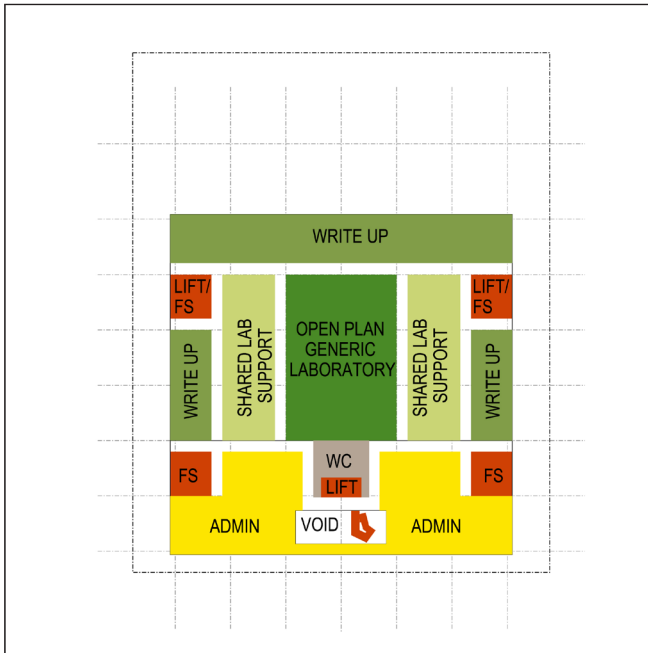
- Write up space on periphery for better natural light and outside views
- Write up space positioned internally separating generic labs as well as creating a shared write up space between labs
- This option has 2 smaller generic labs with their shared support space giving the opportunity to have different lab spaces on one floor
- Primary circulation corridor located to periphery of laboratories



4.6 TYPICAL FLOOR DIAGRAM - OPTION 3

Key points:

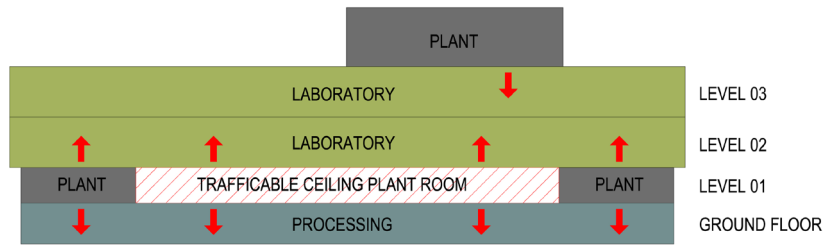
- Write up space on periphery for better natural light and outside views
- One large generic lab in the centre of the building giving maximum flexibility
- Shared lab support spaces located between write up zone + open plan generic laboratories
- Primary circulation corridor located to periphery of laboratories



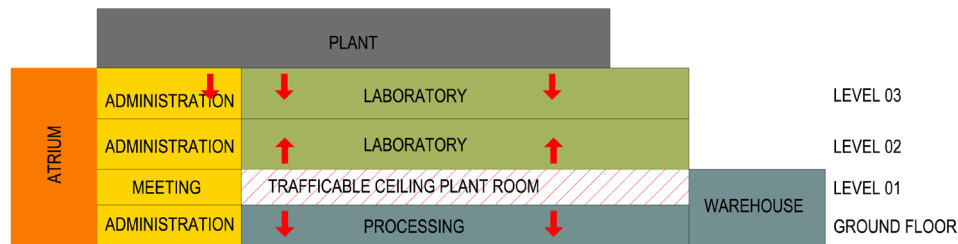
4.7 Building Blocking and Stacking

The blocking and stacking of the proposal is straight forward with main operations, deliveries/dispatch, storage and warehousing located on the ground floor with additional laboratories and administration located on the floors above.

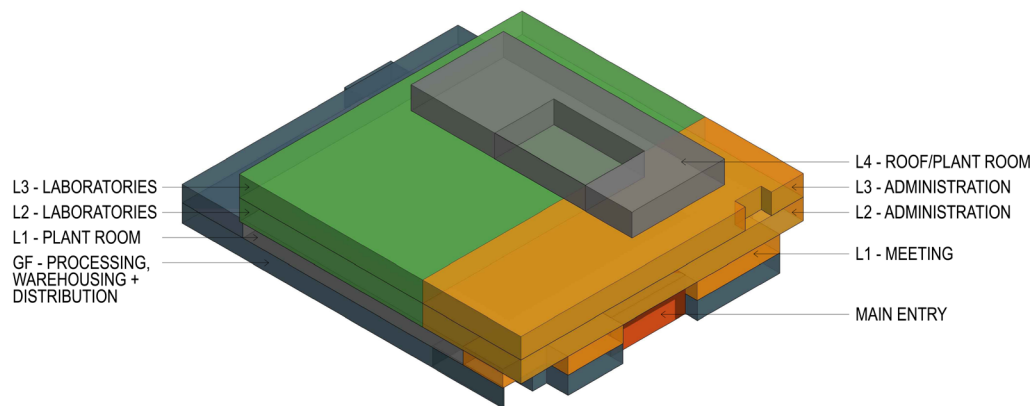
A unique feature of the ARCBS laboratory is the introduction of a 'service and plant' floor above the ground floor central processing area. This floor houses all the plant required to run the system in the central processing area including air-con and freezer units. A trafficable ceiling is utilised over the central processing area so the maintenance of all systems can be performed from above including changing light globes. This allows the processing systems to continue running without interruption. A portion of this floor accommodates some staff services and meeting rooms at the front of the building around the atrium to ensure a habitation of all floors is experienced from the street.



CROSS SECTION



LONG SECTION



- Basement Staff + Visitor Carparking
- Ground Floor Central blood processing
Deliveries and Dispatch
Warehousing + Freezer Storage
- First Floor Plant & Services
Meetings Rooms
- Second Floor Administration
Laboratories
- Third Floor Administration
Laboratories



5.1 FORM

The proposal intentionally creates a building with a strong visual urban presence onto O’Riordan Street through the formal use of a façade with a predominating vertical orientation. This is achieved by the use of deep vertical face concrete blades at close centres that has the affect of a dense colonnade as one moves along O’Riordan Street by either vehicle or by foot. The effect is enhanced by reinforcing the vertical through the concealment of the horizontal floor plates behind the glazing plane. The deep vertical blades also form sun-shading as this is an east facing facade. The repeating order of the blades is interrupted by strategic openings that are placed according to functional and formal needs. The most significant of these being the entry ‘portal’ which has a generous scale signaling the main entry of the building. This ‘entry portal’ opens up onto an internal atrium linking all floors of the building which also acts as a large ‘window’ into the building where habitation and occupant movement over multiple levels can be witnessed from outside. Importantly this atrium also delivers large amounts of natural light deeper into the floor plates.

The north, west, and south facades have a more regularly proportioned façade with an emphasis on balancing the horizontal with the verticals to create a contrast with the street elevation and emphasize its urban importance. A ‘double-height’ scale is expressed on these facades by delineating the building into the two bottom floors and two top floors representing the related functions that they house.

A strong solid base is constructed using off-form pre-cast concrete panels, with smaller punched openings. The 1st floors major use as plant servicing the ground floor is represented through the introduction of continuous fine louvers which are also required for supply air to the plant systems. The louvers also provide a material transition to the upper two floors.

Positioned above this base element are the upper two floors of administration and laboratories. The greater habitation of these floors is represented through the introduction of greater amounts glazing, and external sun shading details. The ‘double height’ scale is used here to balance the double height scale of the base element and is expressed through the use of a ‘super frame’ of exposed concrete elements delineating the horizontal floors levels and the verticals of the structural grid. Positioned within these ordering frames are more detailed and lightweight surfaces composed of glazing, cladding and sun shading elements.

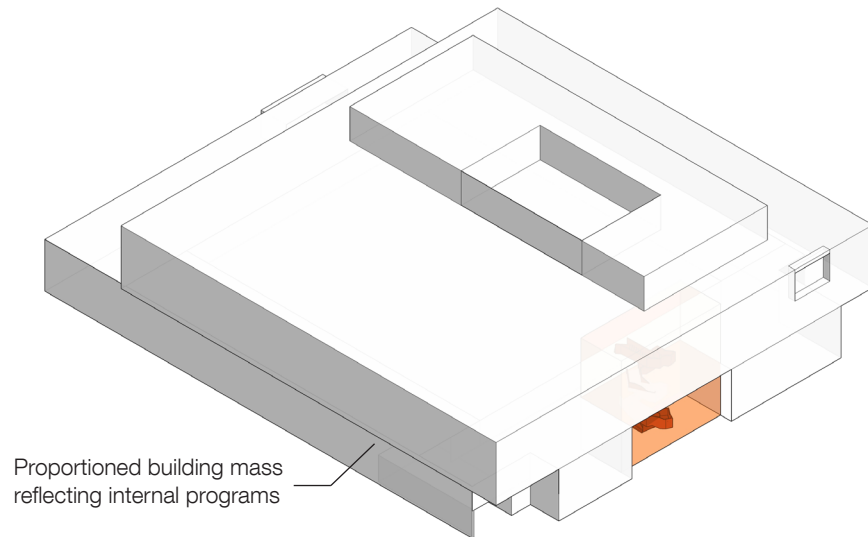


Example of concrete blade facade

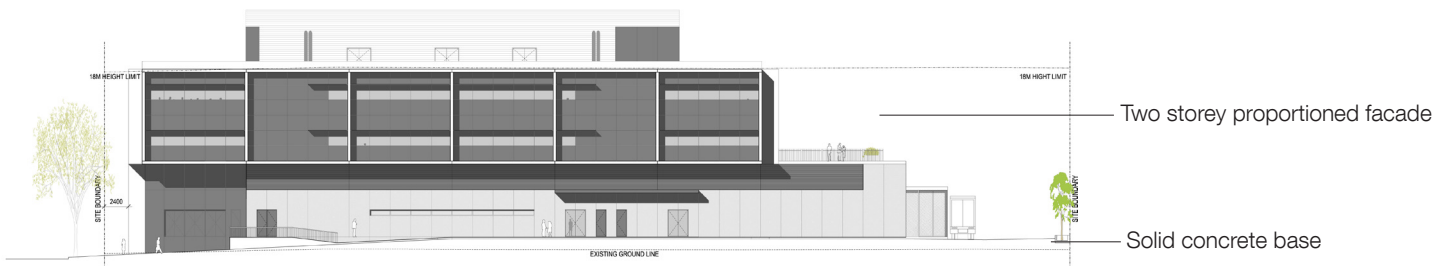
5.2 MASS

The buildings mass is weighted towards the street where it appears as a relatively solid element with openings carved out reflective of functional and formals requirements. Most significant is the central entry portal which reads as a large recess into the building mass signalling the point of entry clearly to the street.

The building massing changes its nature away from the street elevation. Here the building reads as two masses resting on top of each other, with the lower 'slid' back from the street. This is reflective of the programmatic split of the building where the two lower floors relate functionally together and the back area is in fact a two storey warehouse. The program of the upper two floors is similar in nature and represented through uniting them in a single mass resting upon a strong base element.



MASSING MODEL



NORTH ELEVATION

5.2 MATERIALITY

The buildings materiality is intended to be expressed predominantly through pre-cast and in-situ face concrete representing the structural and formal framing systems of the building. Positioned within this formal ordering is a combination of grey tinted glazing and pre-finished charcoal coloured cladding and louver elements which contrasts with the light colouring of the concrete emphasizing its framing and proportioning strength.

The main palette of materials is balanced by the materials defining the main entry portal and atrium. While the portals frame is consistent in natural face concrete the glazing within is clear to allow views inside. Timber is introduced onto the atrium floor which continues out onto the entry stair to the street which in combination with the framed clear glazing suggests 'welcoming' and reinforces the entry experience.

Within the entry lobby atrium there is a continuation of the materials over the floors above to lead the eyes up and signal the direction one is proceed. The timber of the entry stairs continues over the lobby floor and springs vertically up the spirally stair and balcony edges as balustrades. The face concrete continues its role by framing and structuring the façade which now frames views to the outside. Charcoal cladding matching the exterior sheaths the central lift core visually linking all the levels reflective of its physical role.

The main materials are;

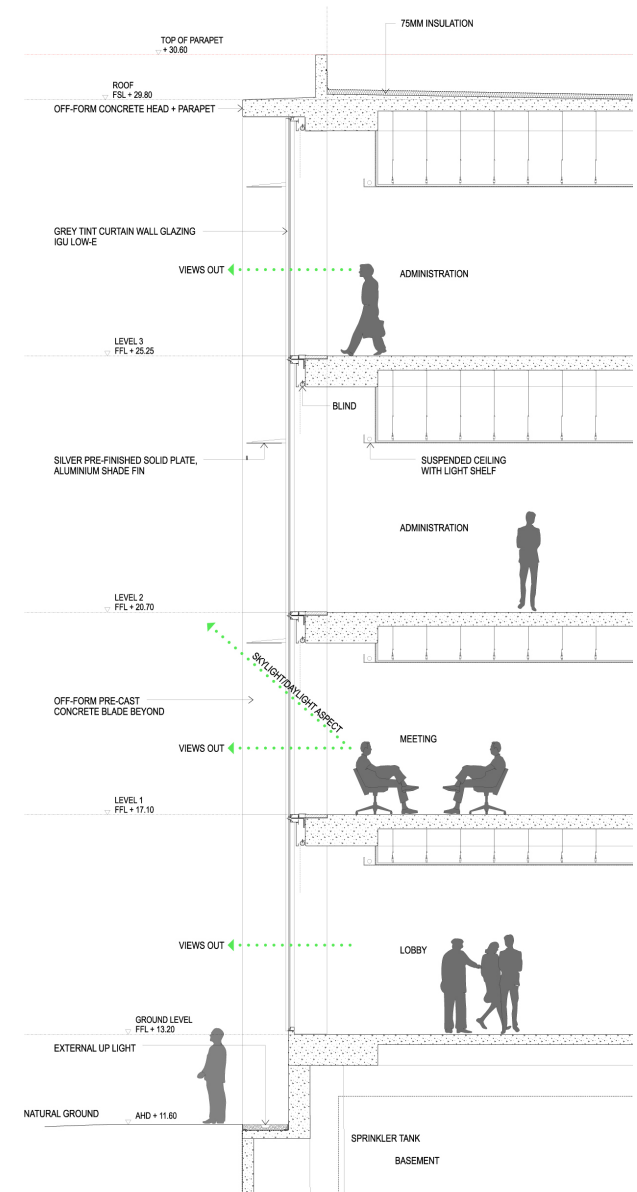
- in-situ face natural grey concrete
- pre-cast face natural grey concrete
- silver aluminium horizontal shading fins
- charcoal coloured pre-finished cladding
- charcoal louvers
- grey tinted glazing with charcoal frames
- clear glazing with charcoal steel/aluminum framing
- timber entry stairs, lobby floor and atrium stairs/balustrades



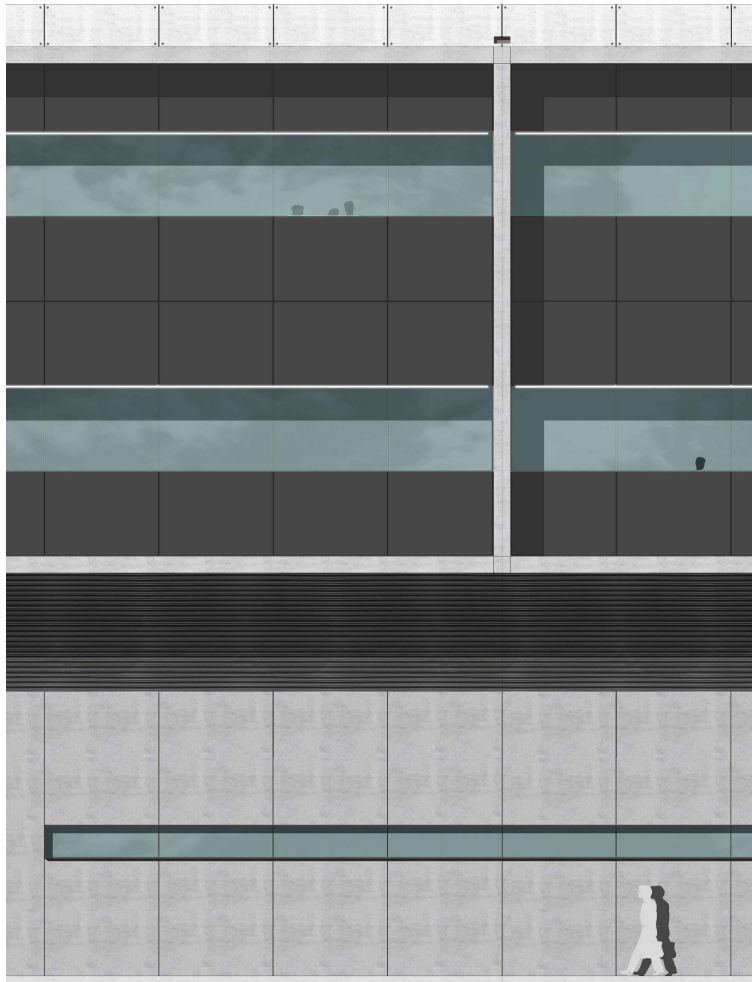
Example of vertical concrete and horizontal metal shading fins



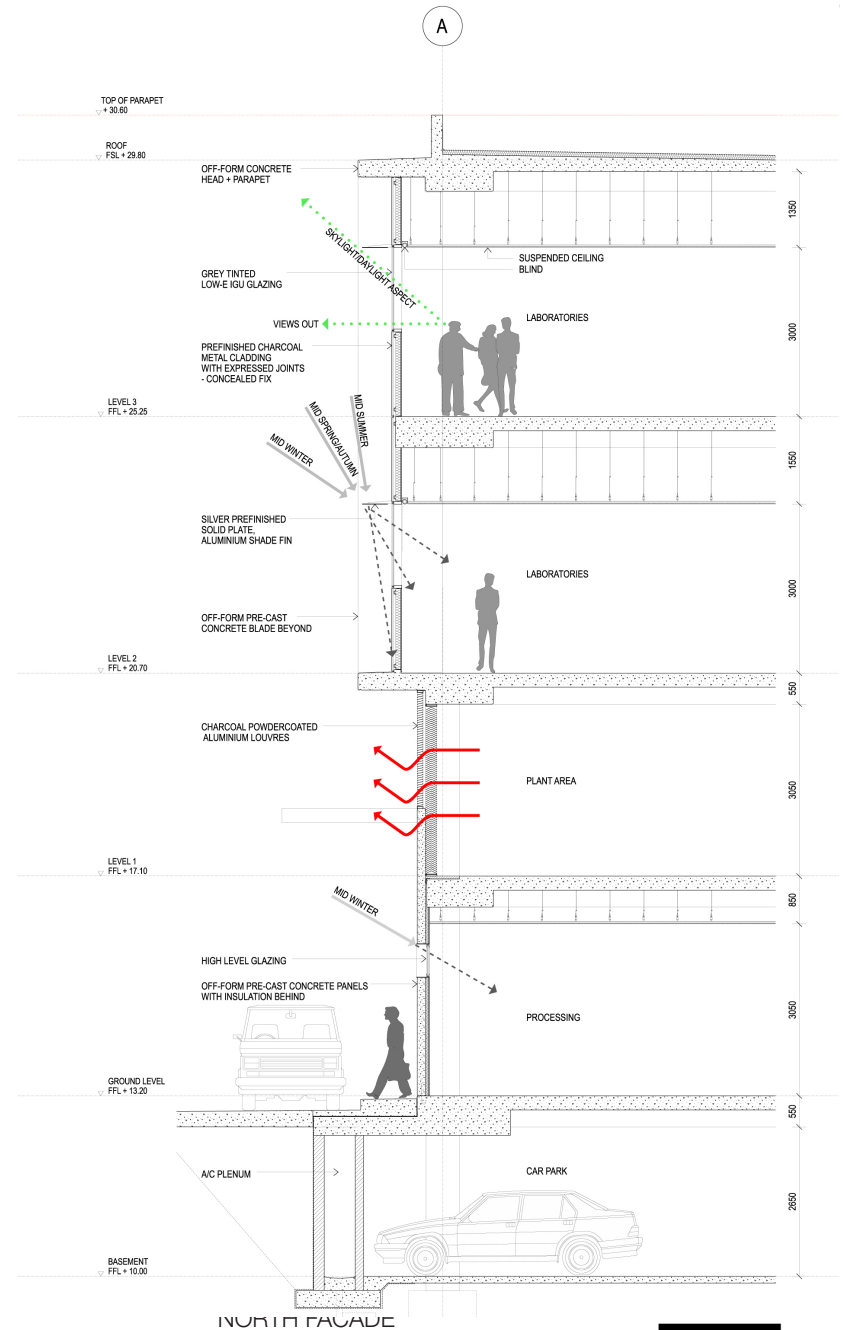
DETAIL ELEVATION
O'RIORDAN STREET FACADE



DETAIL SECTION
EAST FACADE



DETAIL ELEVATION
NORTH FACADE





VIEW OF ATRIUM





MODERN WORKPLACE



EXAMPLE OF WINDING TIMBER STAIR



6.1 APPROACH

It is intended that ARCBS building be a modern up-to-date work place which incorporates contemporary thinking on the nature of working environments and the well-being of the people working in them.

Work-places today are enjoyable social places were people interact and the buildings role is provide a platform for this interaction, either formally or informally.

Some key items for successful work places are;

- natural light
- ventilation
- social spaces
- informal/formal meeting spaces
- interesting and inspiring environments
- transparency (working operations and culture)
- vertical integration (mixing of persons on multiple floors)

6.2 ATRIUM

The intent of the atrium with its spiralling irregular stair is to provide a visual and physical connection between all floors and to generate the possibility for formal and informal meeting spaces around the void. Staff can use the stair instead of the lift for travel between floors quickly which reduces the load and energy use of the lifts and creates opportunity for chance meetings and informal chats between staff.

Timber is used throughout the space to provide a 'soft-warm' contrast to the clinical materials of the laboratories and associated spaces. It also provides acoustic performance and can be used in combination with acoustically absorbent materials to reduce the potential echoing of the space.

The atrium allows natural light to penetrate deeper into the floor plates and gives internal views through the work areas which gives a feeling of greater space.

6.3 ACCESSIBLE TERRACE

It is proposed to utilise a portion of the roof area above the warehouse as an accessible outside staff recreation area. The roof of the warehouse is at the same level as that of the second floor within the building which makes this an excellent opportunity. This space also faces north-west which means it has good access to natural sunshine during winter as well as the opportunity for views of the city skyline making it an attractive place to be. Consideration of western summer sun and cold winter winds has been taken into consideration to ensure the space is as comfortable as possible all year round.

An accessible outdoor area will provide a great amenity to the staff of ARCBS, which can be used at lunch and for informal or organised staff social events. Being an elevated exterior space it feels secure and with access to good northern sun ensures it has a good chance of being successful. The added benefit of the space being a secure external space is the potential to have BBQ's for the staff.



EXAMPLE OF LANDSCAPE ROOF TERRACE



7.1 GENERAL DESCRIPTION

The ESD initiatives associated with energy use are limited in this project due to the intensively serviced nature of ARCBS laboratories which also require direct sunlight exclusion, and the associated temperature controlled storage/warehouses.

Taking these particular ARCBS limitations into consideration we have endeavored to introduce ESD initiatives over and above those required by Section J in the BCA where it was considered appropriate or advantageous.

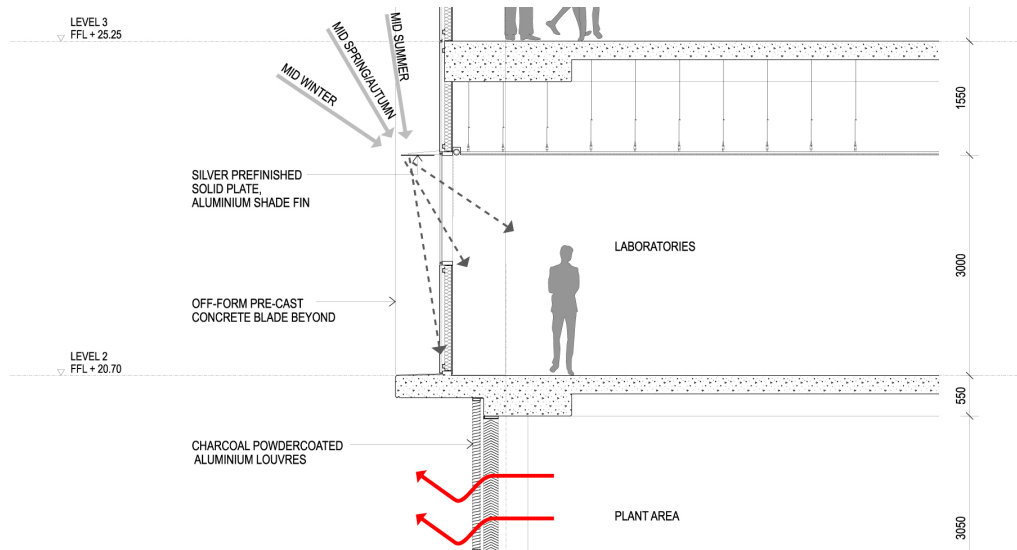
These include:

- shading appropriate to façade orientation
- maximised natural day-lighting where possible
- building fabric and glazing to comply with BCA Section J
- solar hot water heating
- energy efficient light fittings;
- water efficient fittings
- dedicated space for the storage of recyclable waste
- use of low embodied energy materials where possible
- social interaction / breakout spaces for staff
- rainwater tank for water storage and re-use
- air-cooled chillers
- waterless urinals
- dedicated bicycle and motorcycle parking
- planting of native drought-tolerant vegetation

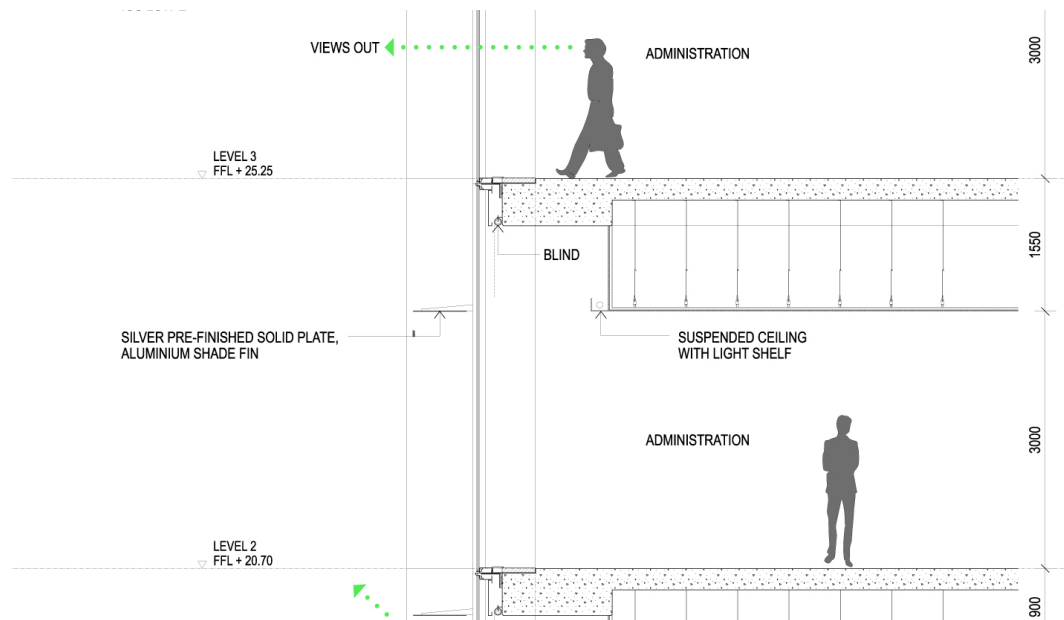
7.2 FACADES

The facades of the building are designed using a combination of performance glazing and external sun shading elements. The glazing is predominantly double glazed IGU's with a 'Low-E' solar shading performance coating. The combination of deep facades with vertical blades and horizontal louver blades aim to exclude the summer sun and permit the entry of winter sun. These are used in combination with internal blinds which provide privacy and glare control.

An atrium is introduced through the predominantly administration zones to the front of the building which provides greater penetration of natural light deeper into the floor plates and gives a feeling of greater space.



NORTH EAST + NORTH WEST FACING FACADES



SOUTH EAST FACING FACADE



VIEW OF ENTRY ATRIUM



7.3 WATER CONSERVATION

Rainwater harvesting is incorporated into the building with a storage tank located in the basement for the irrigation of the landscape.

Air-cooled chillers are used instead of water-cooled to reduce the use of water in these systems and the chance of disease associated with water cooled chillers is also eliminated.

Waterless urinals are intended to be used to reduce the water use and loss normally experienced by these systems.



8.1 LANDSCAPE DESIGN PRINCIPLES

The site for the Australian Red Cross Blood Service Facility is located within the industrial lands of Alexandria and conveniently close to the proposed Green Square Town Centre and railway station.

The proposed public domain treatment ensures a harmonious 'fit' of the new Red Cross facility and its servicing and access requirements into the existing built and landscape fabric of the surrounding area, particularly the streetscape. The current streetscape is constrained by the traffic flows and tight street reserves. The sense of address is important.

8.2 PUBLIC DOMAIN STREET SCAPE

The public domain footpaths is a unifying element in the streetscape where buildings, signs, objects, people, furniture and movement provide constant variation and change.

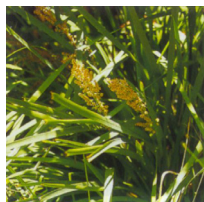
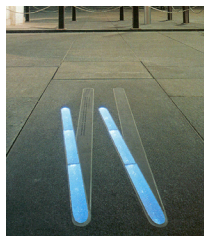
The proposed paving along O'Riordan Street frontage will consist of new concrete paving with tooled joints in a stretcher bond pattern highlighted with paving inserts. The paving will be of high quality and durable finish that supports the operations of the tenants that will use it. This gives a clear expression of address and arrival.

8.3 EXTERNAL LANDSCAPE & ROOFTOP TERRACE

The rooftop terrace is semi-protected from the harsh westerly environment by a screen of native tree planting. The densely planted Casuarina trees in planter boxes filter out sun and wind, providing protection for the users, whilst maintaining visual connection back to the building. The terrace is physically secured by glass screens along the southern and northern boundaries whilst a metal fence / screen runs along the western planter.

Melaleuca tree planting provide dappled shade to the terrace and are complimented by low flowering native groundcovers. The paving is simple and uninterrupted.

The external landscape mimics the liner planting of the rooftop terrace. Casuarina planting flanks the western boundary with low native groundcover continuing along the northern and southern boundary enclosing the site with landscape planting.



9.0 AREA + PARKING CALCULATIONS

SITE AREA	7,357m ²
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LEVEL	GFA m ²	NLA m ²
BASEMENT	167	154
GROUND	4,253	3,984
LEVEL 1	1,600	834
LEVEL 2	3,723	3,453
LEVEL 3	3,804	3,550
TOTAL	13,548	12,477

FSR	1.84:1
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CARPARKING

STAFF	88	(INC 2 x DISABLED)
VISITOR	9	(INC 1 x DISABLED)
TOTAL	97	

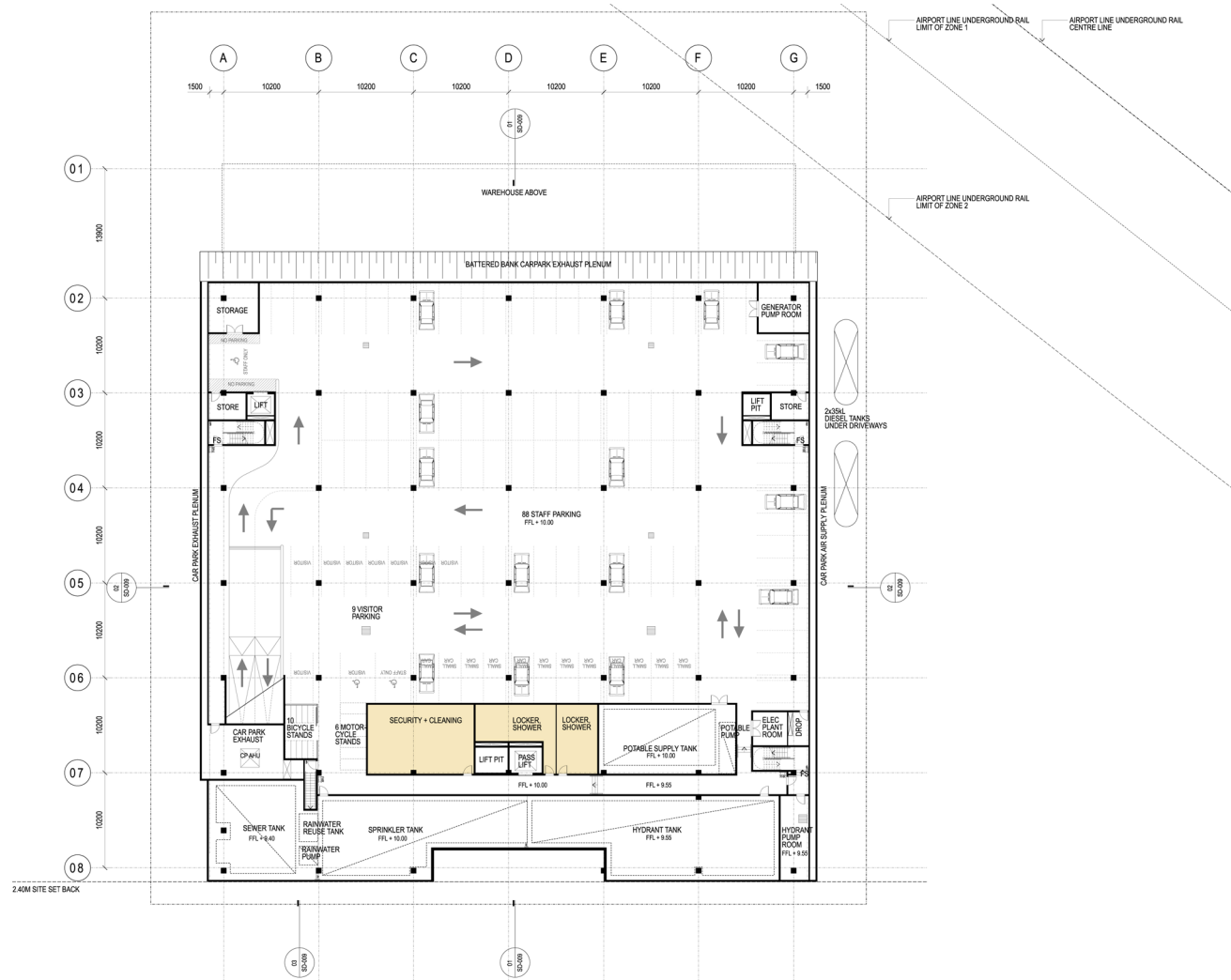
10.2 EXISTING SITE PLAN



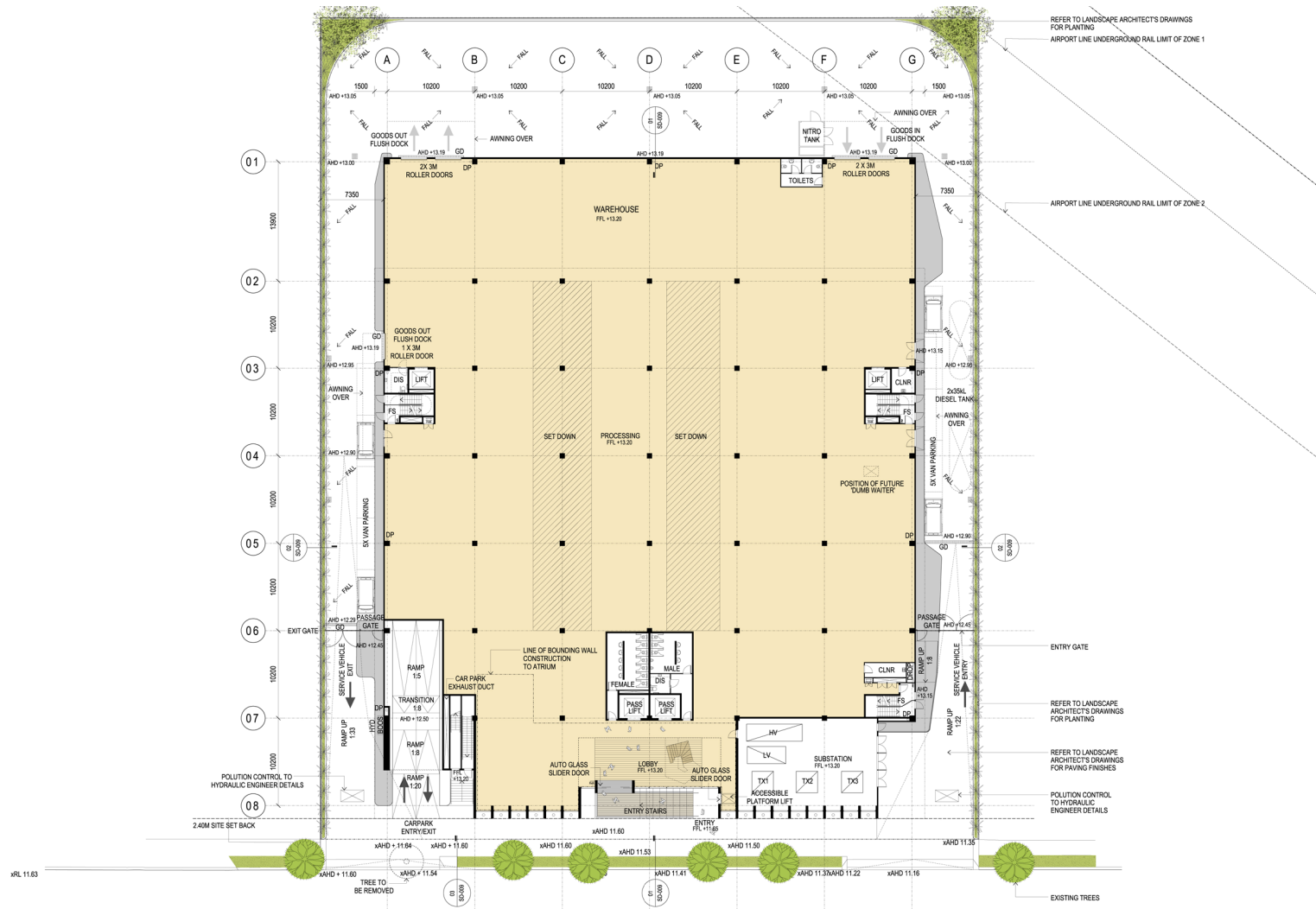
10.3 SITE PLAN



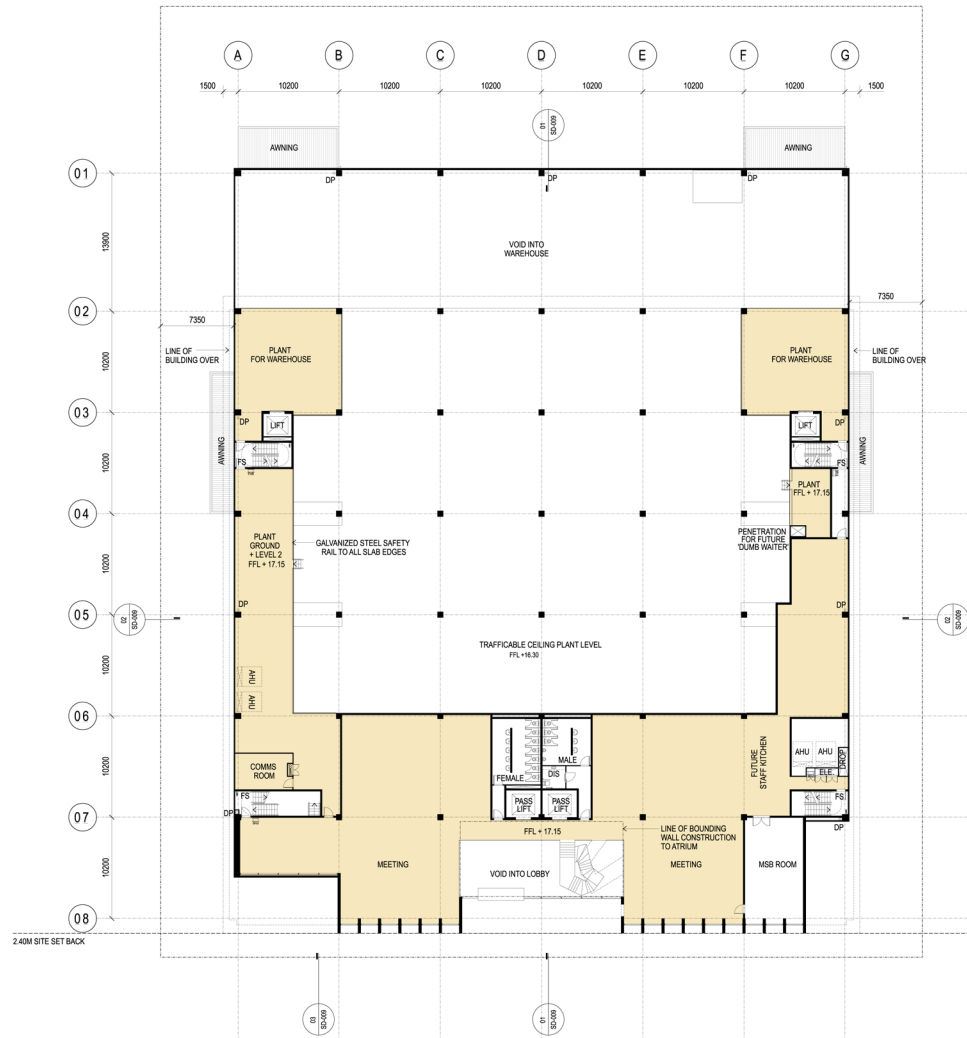
10.4 BASEMENT PLAN



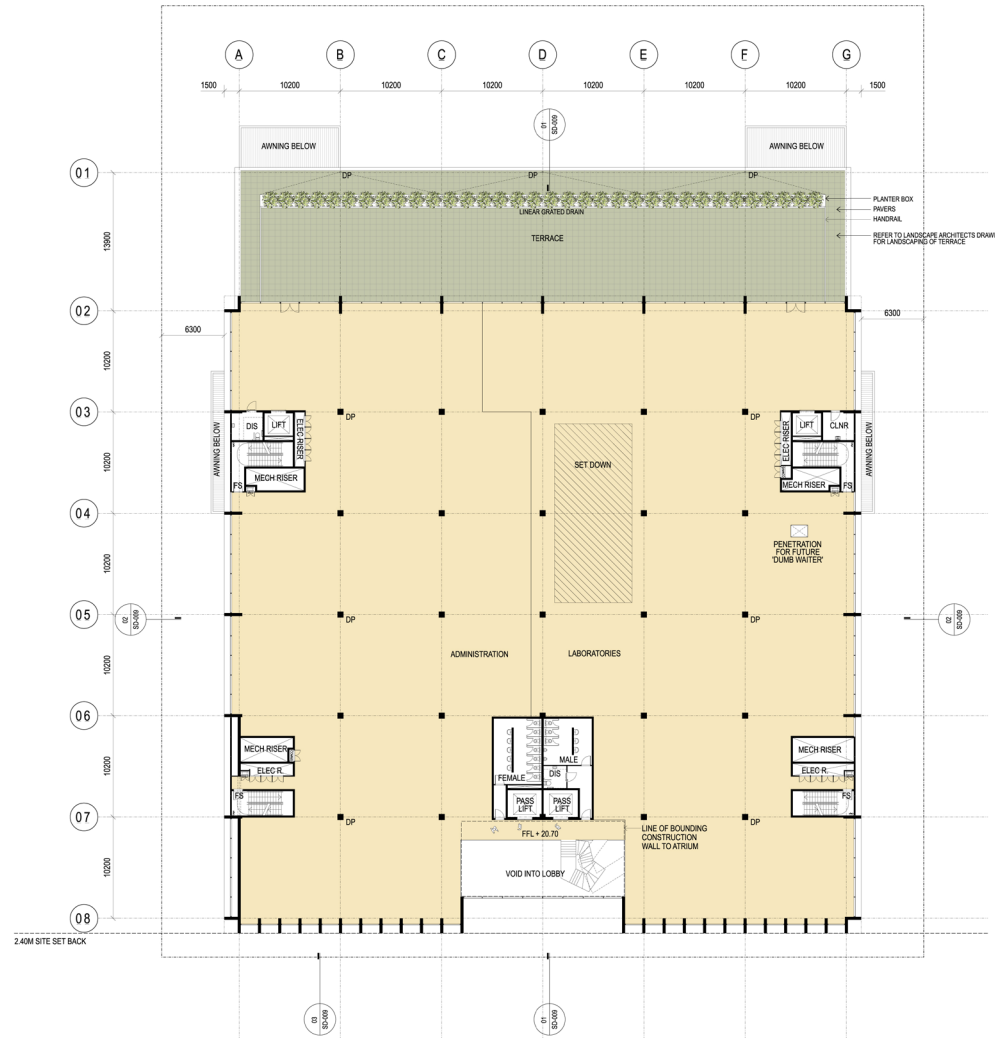
10.5 GROUND FLOOR PLAN



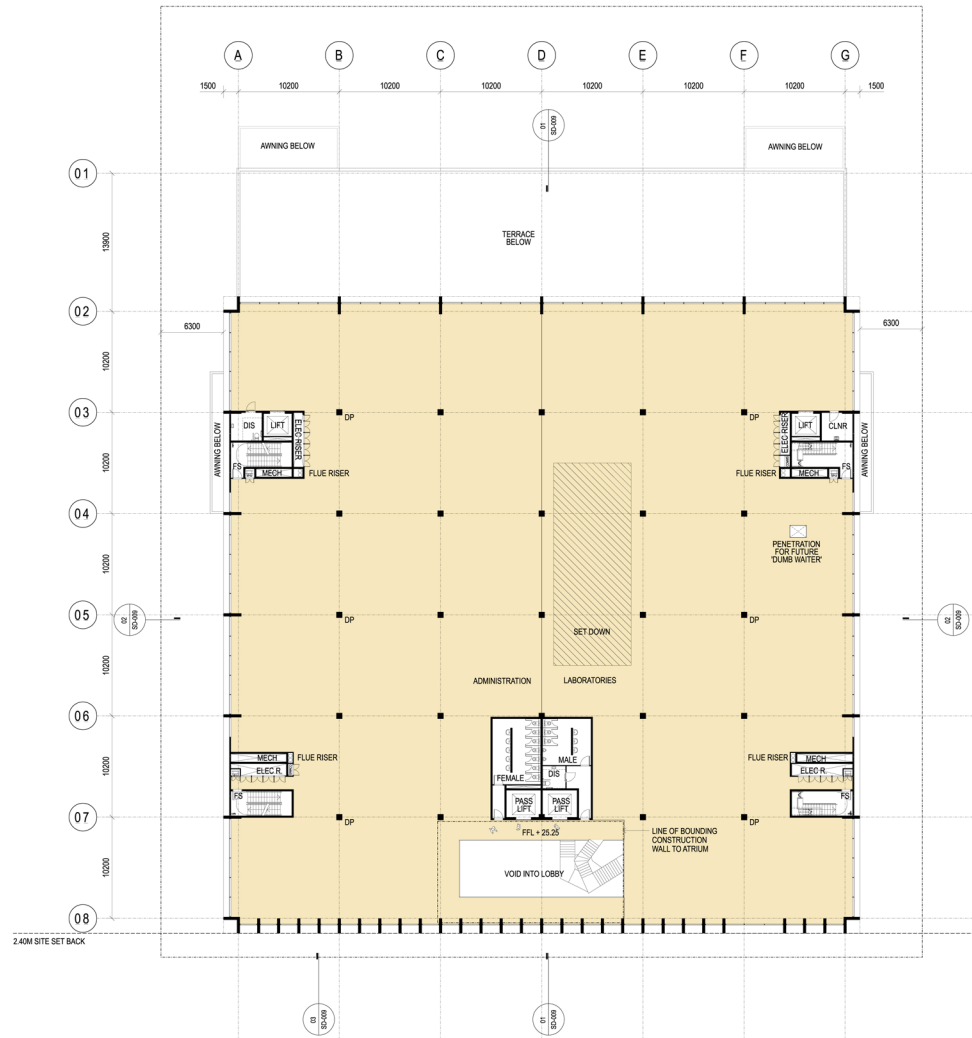
10.6 LEVEL 1 PLAN



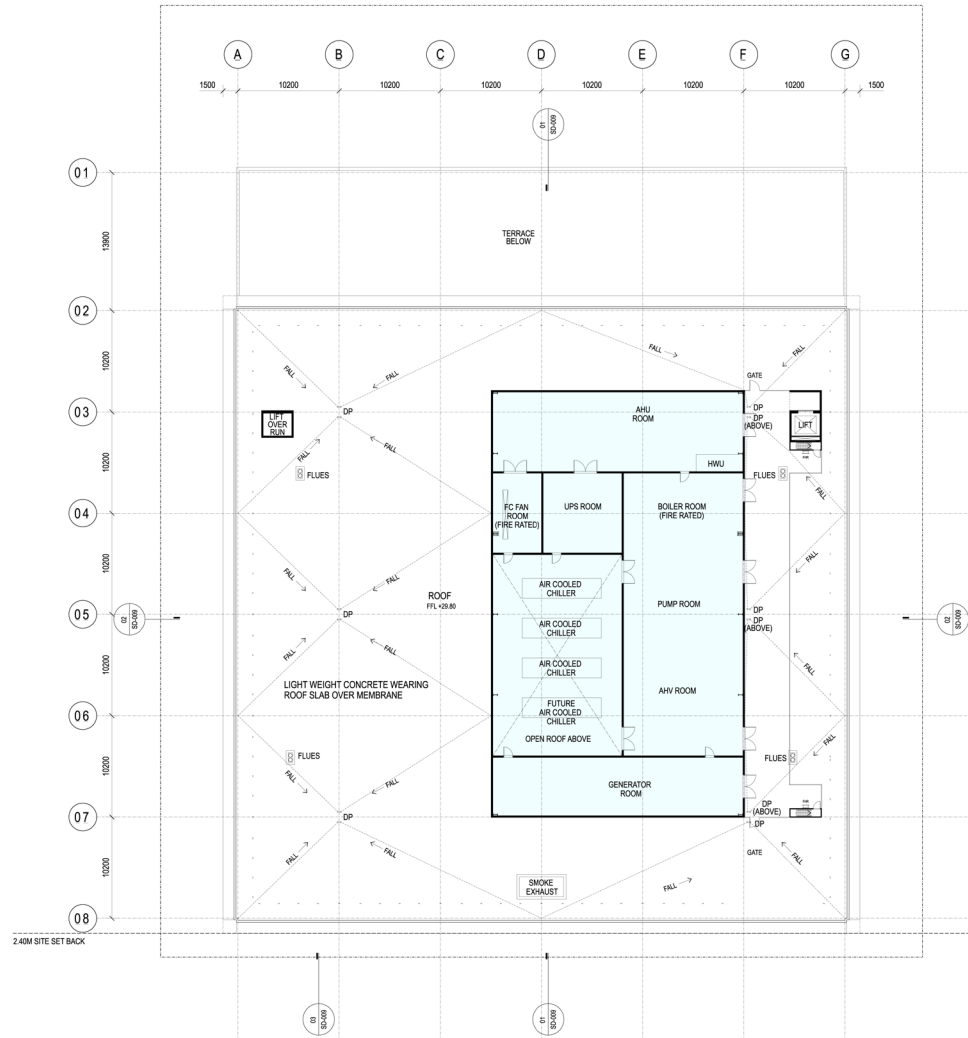
10.7 LEVEL 2 PLAN



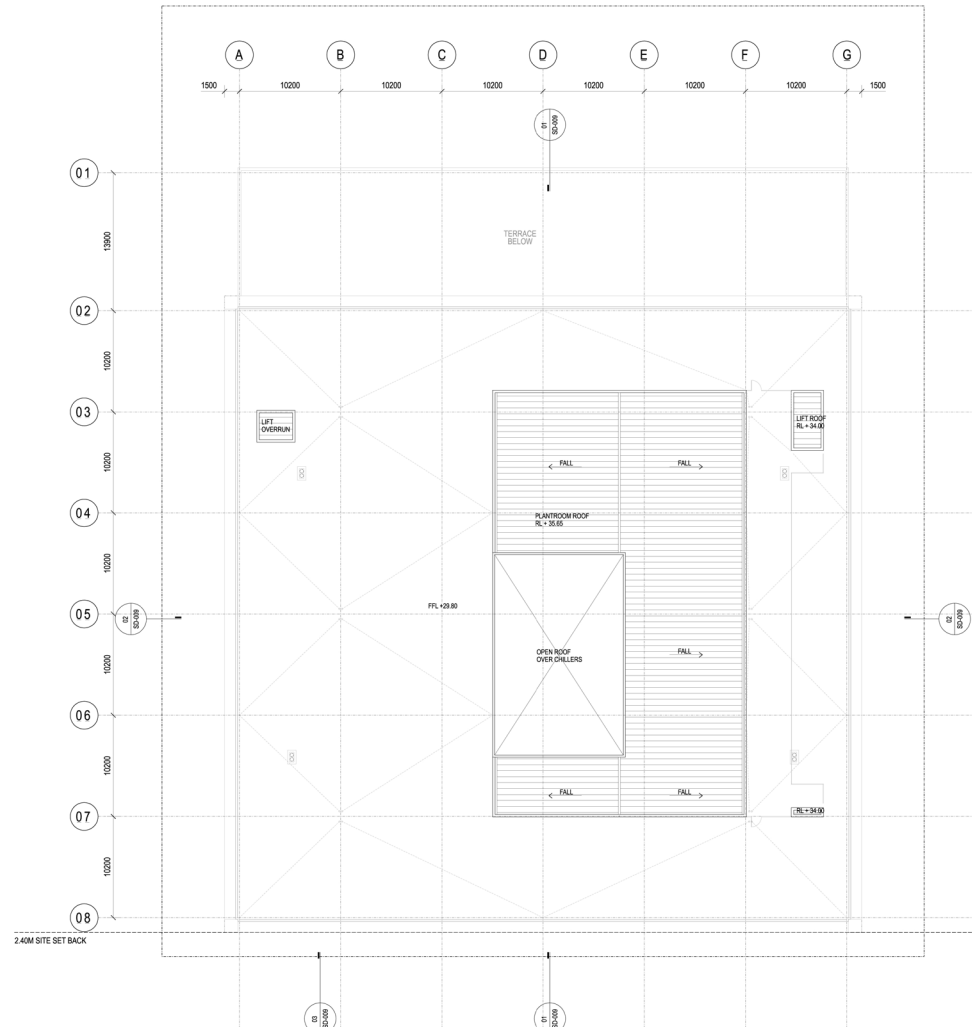
10.8 LEVEL 3 PLAN

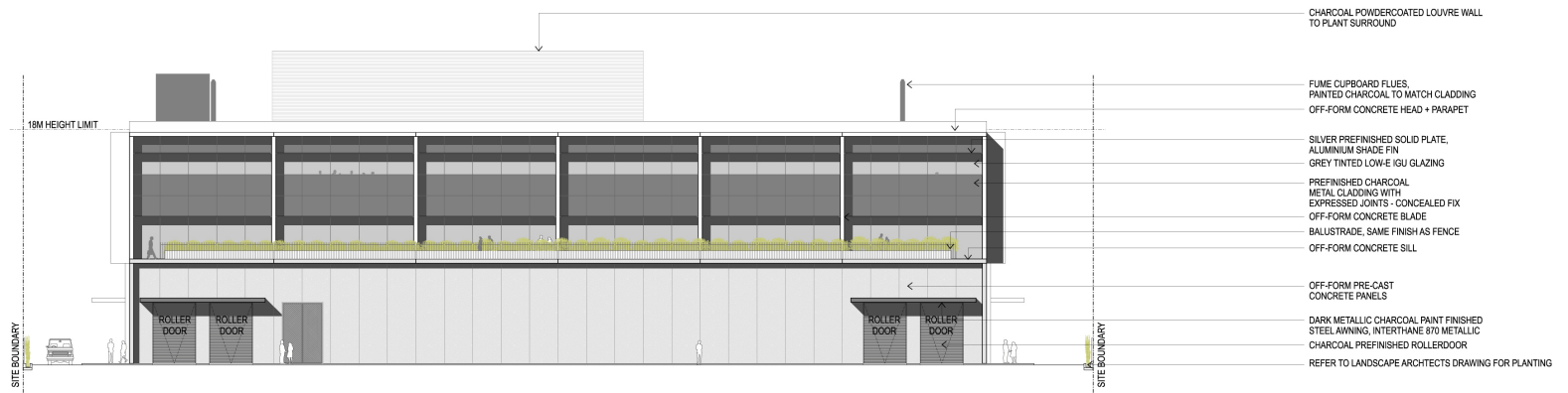


10.9 ROOF PLAN / PLANT ROOM PLAN



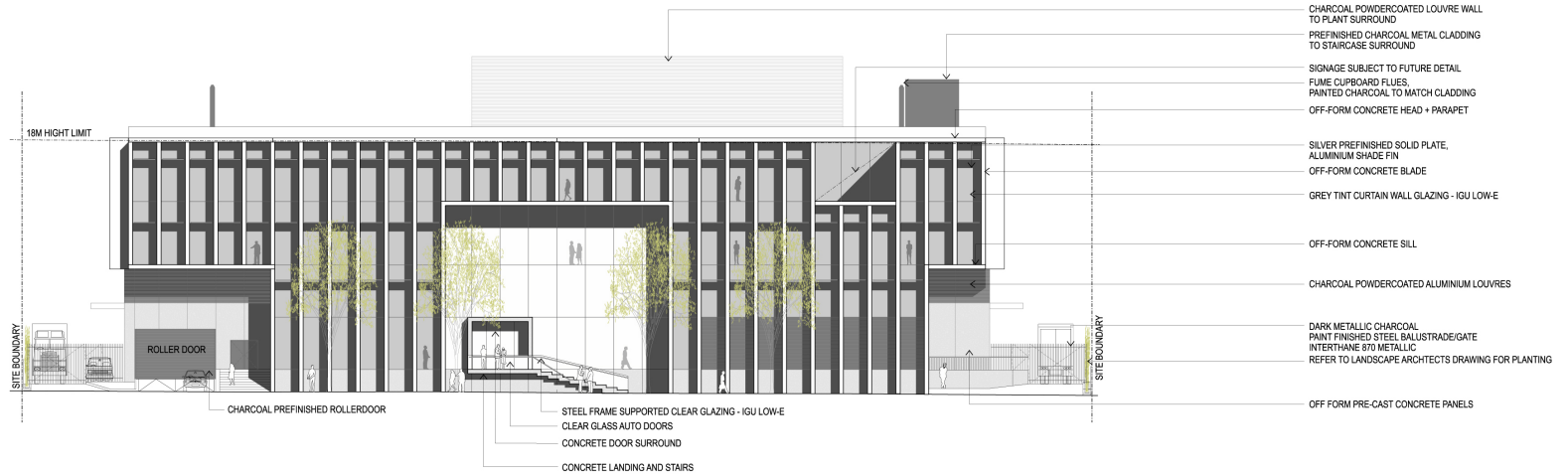
10.10 ROOF PLAN





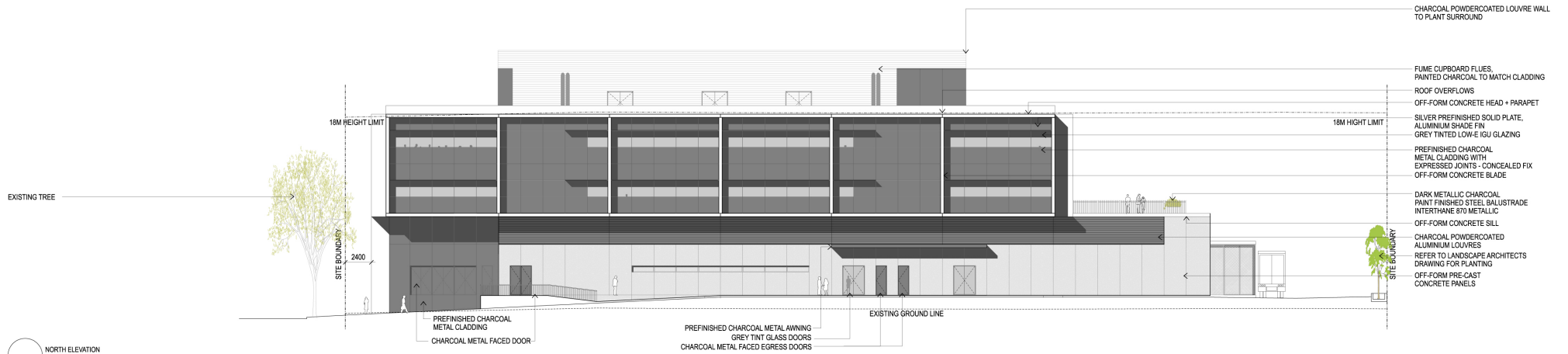
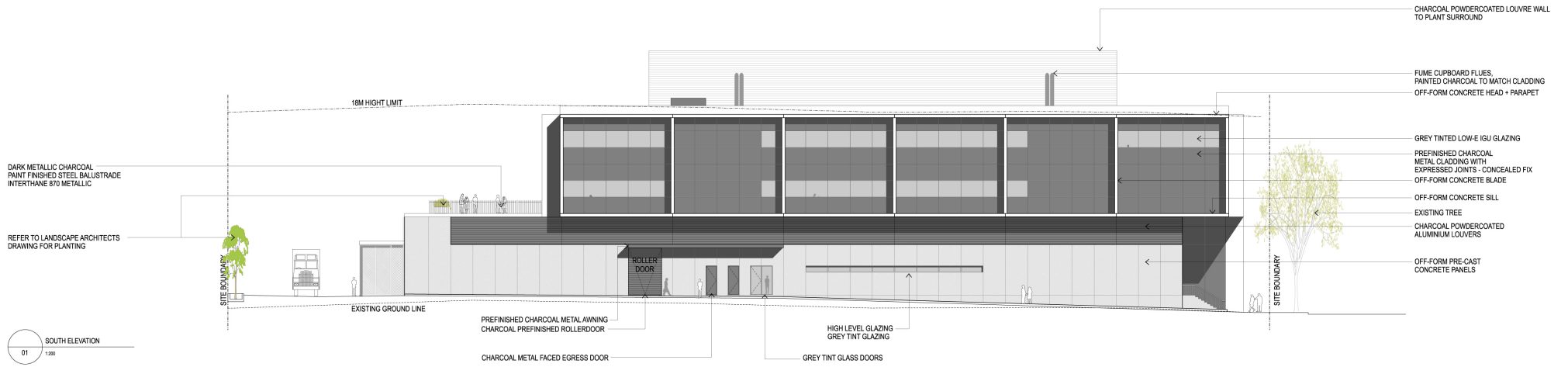
- CHARCOAL POWDERCOATED LOUVRE WALL TO PLANT SURROUND
- FUME CUPBOARD FLUES, PAINTED CHARCOAL TO MATCH CLADDING
- OFF-FORM CONCRETE HEAD + PARAPET
- SILVER PREFINISHED SOLID PLATE, ALUMINIUM SHADE FIN
- GREY TINTED LOW-E IGU GLAZING
- PREFINISHED CHARCOAL METAL CLADDING WITH EXPRESSED JOINTS - CONCEALED FIX
- OFF-FORM CONCRETE BLADE
- BALLUSTRADE, SAME FINISH AS FENCE
- OFF-FORM CONCRETE SILL
- OFF-FORM PRE-CAST CONCRETE PANELS
- DARK METALLIC CHARCOAL PAINT FINISHED STEEL AWNING, INTERTHANE 870 METALLIC CHARCOAL PREFINISHED ROLLERDOOR
- REFER TO LANDSCAPE ARCHITECTS DRAWING FOR PLANTING

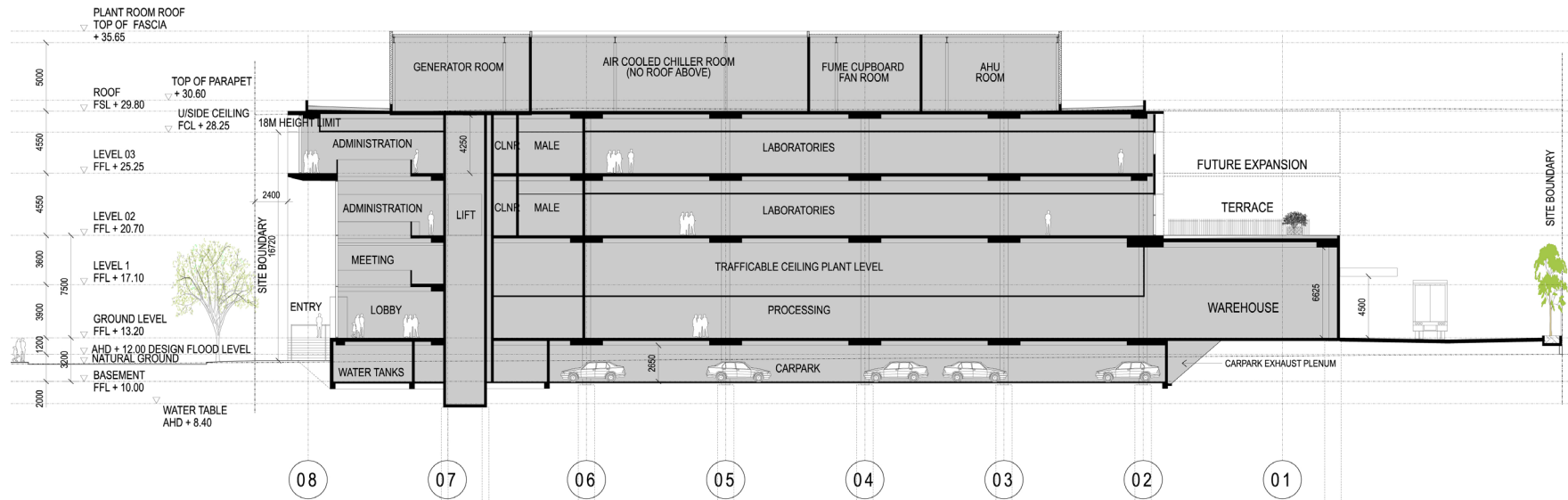
01 WEST ELEVATION
1:200



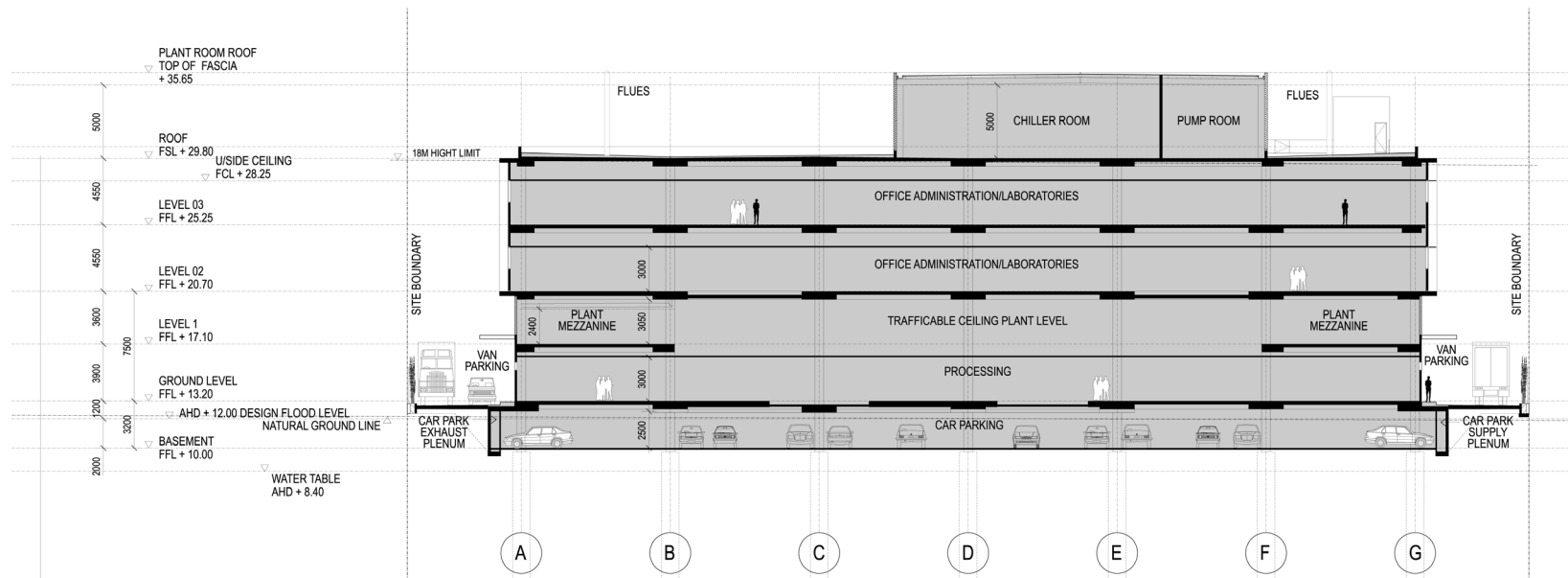
- CHARCOAL POWDERCOATED LOUVRE WALL TO PLANT SURROUND
- PREFINISHED CHARCOAL METAL CLADDING TO STAIRCASE SURROUND
- SIGNAGE SUBJECT TO FUTURE DETAIL
- FUME CUPBOARD FLUES, PAINTED CHARCOAL TO MATCH CLADDING
- OFF-FORM CONCRETE HEAD + PARAPET
- SILVER PREFINISHED SOLID PLATE, ALUMINIUM SHADE FIN
- OFF-FORM CONCRETE BLADE
- GREY TINT CURTAIN WALL GLAZING - IGU LOW-E
- OFF-FORM CONCRETE SILL
- CHARCOAL POWDERCOATED ALUMINIUM LOUVRES
- DARK METALLIC CHARCOAL PAINT FINISHED STEEL BALLUSTRADE/GATE
- INTERTHANE 870 METALLIC
- REFER TO LANDSCAPE ARCHITECTS DRAWING FOR PLANTING
- OFF FORM PRE-CAST CONCRETE PANELS

02 EAST ELEVATION
1:200





10.15 SECTION A



10.16 SECTION B





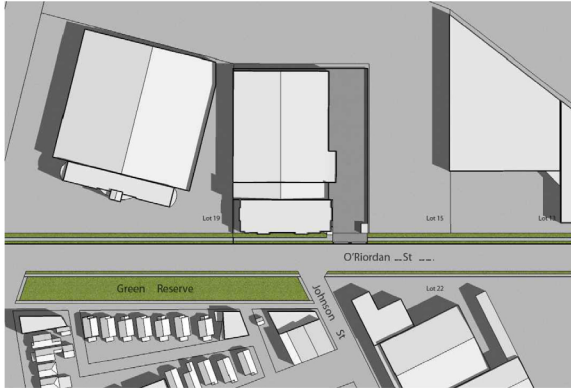
VIEW FROM SOUTH ON O'RIORDAN STREET



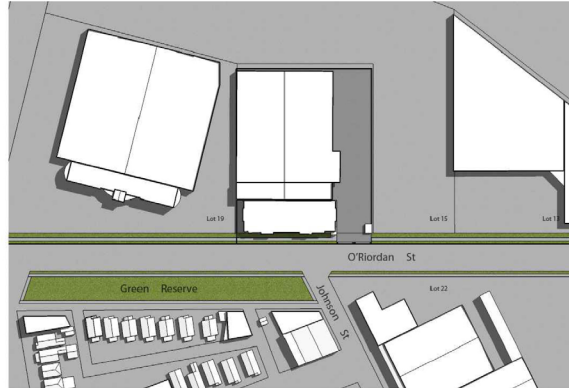


VIEW FROM NORTH ON O'RIORDAN STREET

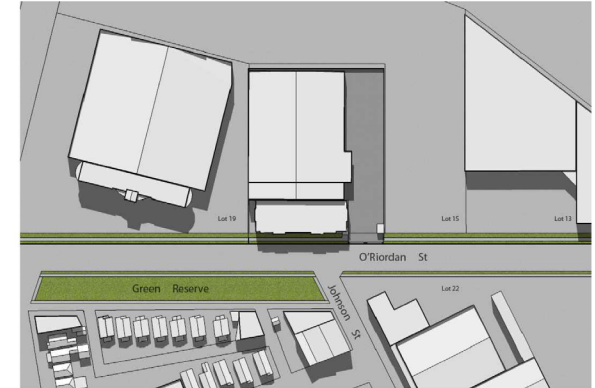




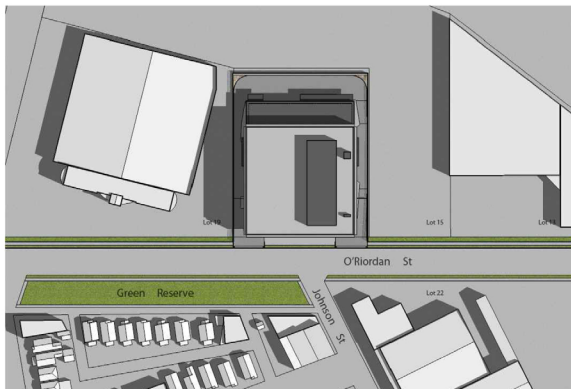
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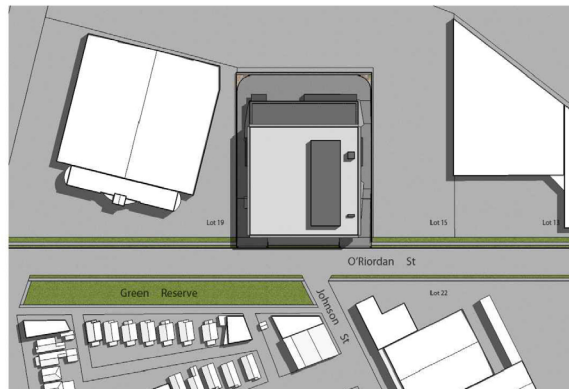
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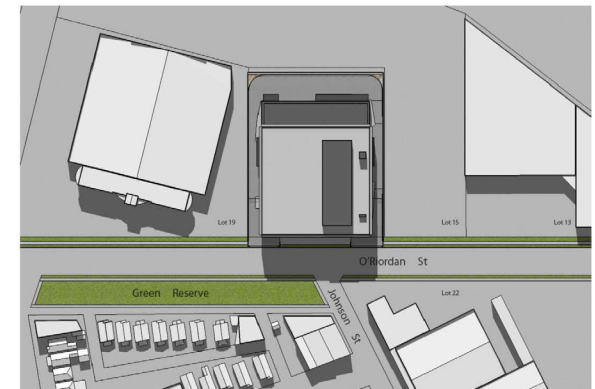
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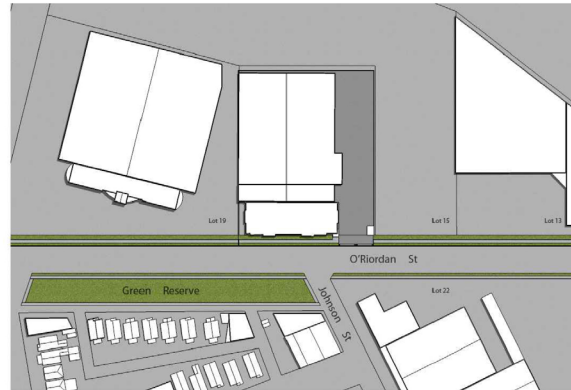
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PROPOSED
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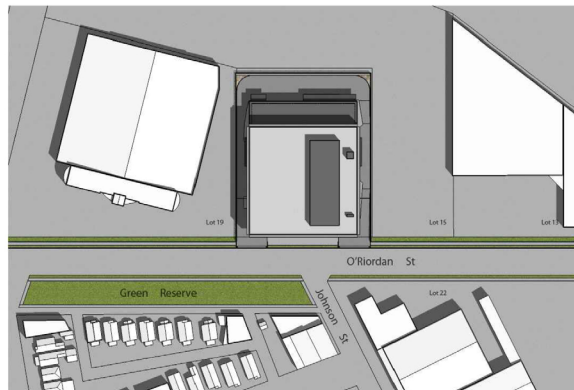
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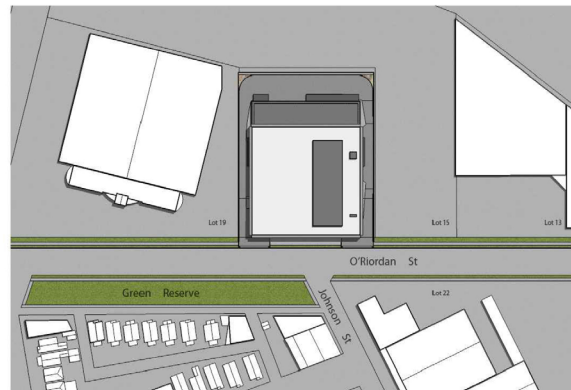
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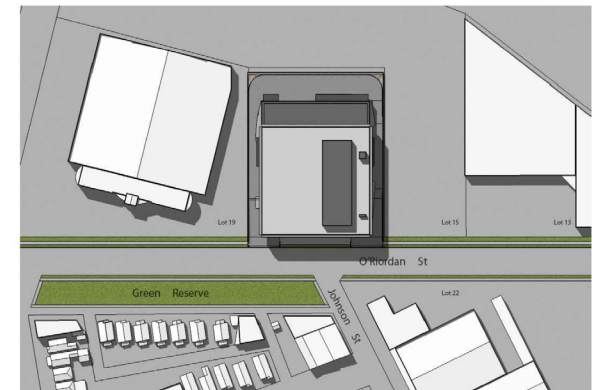
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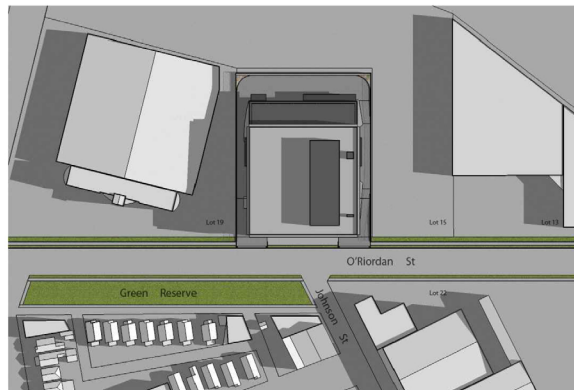
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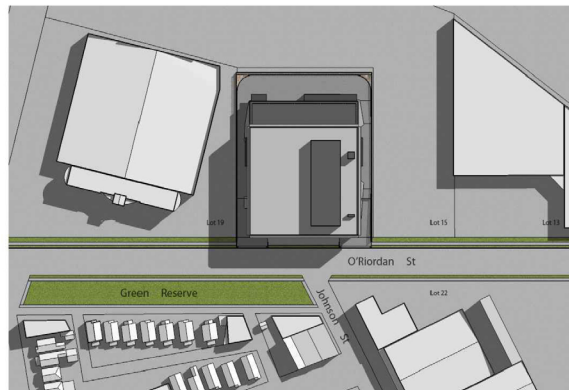
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