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EASTWOOD REDEVELOPMENT

BUILDING SERVICES DA CONCEPT REPORT

22 JULY 2016

Incorporating Hyder

CONTACT

ROB DAGNALL
Mechanical Lead

T 07 3337 0000
E rob.dagnall@arcadis.com

Arcadis
Level 7, 199 Grey Street
South Brisbane, 4101

YUHU GROUP
EASTWOOD REDEVELOPMENT

Building Services

DA Concept Report

Author	Nick de Lacey/Jonathan Daniel/Anna Zolotukhina	
Checker	Glen Sorensen	
Approver	Rob Dagnall	

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REVISIONS

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0	15/06/2016	Draft DA Concept Report	ND	RD
1	22/07/2016	DA Concept Report	ND	RD

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1 INTRODUCTION

The proposed redevelopment of the Eastwood Shopping Centre at 7 Rutledge Street, Eastwood encompasses a mix of vibrant retail precincts, commercial office space, public recreational areas and residential apartments.

This report provides the Development Approval design basis for the mechanical, electrical, fire, hydraulics and vertical transportation services of the Eastwood Redevelopment. The project includes four levels of basement car parking, three podium levels including retail areas, commercial areas, residential apartments and facilities, and four residential apartment towers of various heights.

This services brief herein outlines and describes the following services:

- Mechanical;
- Electrical, including Communications and Security;
- Hydraulics;
- Fire Protections Services;
- Vertical Transportations.

This information is the first stage of our design and will be used to initiate our concepts and complete DA Architectural Drawings.

This report is to be read in conjunction with the Building Services Spatial drawings located in Appendix A.

The objective of this concept design report is to outline:

- The extent of the proposed design including physical spatial requirements for electrical, mechanical, fire protection, hydraulics and vertical transportation services.
- Local authority requirements to ensure compliance, spatial allocation and capital costs are implemented and understood. This will be ongoing into the next design phases.
- Flexibility in design to allow for future modifications with minimal impact on the Development Approval and other disciplines.
- Security of services and the provision of backup systems to cater for primary system failure where applicable.
- Compliance with sustainability requirements outlined in the BASIX criteria.
- Efficiency in services designs to achieve value for money in capital and recurrent costs without adversely compromising operational reliability and installation quality.
- Ready maintainability of services by providing services access corridors and adequate areas for service and maintenance of equipment.
- Selection of equipment with optimum life cycle costs for engineering plant and systems unless other reasons override this choice, these reasons being clearly stated.
- Equipment and Services which comply with the Building Code of Australia (NCC) and Australian Standards, Local Authority requirements and User Requirements.

2 PROJECT DESCRIPTION

The proposed redevelopment of the Eastwood Shopping Centre is a Mixed-Use Precinct and will comprise of the following:

- Four levels of underground basement car parking and storage.
- Lower Ground Floor retail area housing a Major Supermarket and general retail stores.
- Ground Floor containing general retail, restaurants, markets and fast food outlets.
- Level 1 podium containing commercial and recreation facilities, restaurants and a medical centre.
- 7 storey residential apartment building on the corner of Rowe St and Trelawney Rd.
- 7 storey residential apartment building on Rowe St.
- 13 storey residential apartment building on the corner of Rutledge St and West Parade.
- 11 storey residential apartment building on Rutledge St.

The development is located at the current Eastwood Shopping Centre site bounded by Trelawney St to the West, Rowe St to the North, West Parade to the East and Rutledge St to the South. The following site plan shows the extent of the development and abounding properties.

3 OPPORTUNITIES & RISK

The intent of this section is to highlight the risks associated with the current design intent and the technical/commercial opportunities to inform the client and project team as we move forward into the next phase.

3.1 Opportunities

The following table has been prepared to identify commercial opportunities relating to mechanical, electrical and dry fire services and the project impact as a result of investing.

DISCIPLINE	OPPORTUNITY	PROJECT IMPACT
Electrical	Utilising an alternative telecommunications service provider such as OPENetworks as an alternative to NBN Co and provide Fibre to the premise.	Potential saving in spatial allocation. Use of the NBN requires dedicated infrastructure for the NBN broadband fibre to premise telecommunications solution. Combining telecommunications services onto a single structured cabling network such as security, MATV, PayTV, broadband, telephone, etc. – potentially resulting in savings in cabling and some of the associated infrastructure.
Electrical	Request to Ausgrid to confirm Substations will be utilised purely for our development will be sort in order to ascertain if we can achieve an improved voltage drop allowance.	Cable sizing can be optimised to utilise 7% voltage drop rather than 5%. This will lead to cost savings in the site cabling.
Electrical	Embedded Electrical Network	The electrical infrastructure configuration can be designed for the on-selling of power to tenants by the developers preferred embedded network operator. This will hold mutual benefits to both the developer and the tenants.
Mechanical	Motorised Louvres in apartment buildings replacing lobby relief systems (where applicable)	There is the potential to eliminate the need for Lobby Relief Risers and Fan Rooms in Buildings B, D and part of Building C by providing motorised louvres at the ends of the corridors. Pending Certifier and Fire Engineering approval and provided louvres are sufficiently sized the need for 2.5m2 Lobby Relief Risers and Rooftop fan rooms can be removed in the specified buildings.
Mechanical	Natural Ventilation to Corridors	Natural ventilation may be considered for corridors and lift lobbies in Buildings B, D and part of C. This is achieved by use of motorised louvres at the end of corridors. Implementing natural ventilation not only reduces energy consumption and plant space it also aids in BASIX compliance.
Fire	Required review with BCA consultant and Fire Safety Engineer	Reduced extent of fire sprinkler protection and smoke hazard management.

3.2 Risks

The following table has been prepared to identify perceived project risks relating to mechanical, electrical and dry fire services and the proposed mitigation measures aimed at reducing these risks.

DISCIPLINE	RISK	MITIGATION MEASURE
Electrical	The Energy Authority (Ausgrid) has been consulted as part of the preliminary design process however clarity on Network capacity for this development needs to be further developed.	Existing HV infrastructure in the street has been confirmed and the substations have been located to minimise works associated with HV connections. Spatial design has been undertaken in accordance with standard designs.
Electrical	The Telecommunications Service Provider is yet to be confirmed. An application to NBN Co will be made following the decision on telecommunications service providers for the building.	Spatial provision has been designed to allow for either NBN Co or Telstra services to be installed in accordance with their standards.
Electrical	Emergency Generator Sizing. The generator loads have not been defined including fuel storage etc. at this stage.	We have made spatial allowance for a 2 x 500KVA generators and 24 hours fuel storage at this stage. Further details in next design phase will resolve this risk.
Mechanical	Locating cooling towers on a rooftop level adjacent other residential towers introduces the risk of airborne bacteria spreading to habitable areas.	Ensure cooling towers are located a suitable distance away from any openable window, supply intake or recreational area. Ensure adequate redundancy is provided in water treatment systems and correct cooling tower maintenance procedures are followed.
Mechanical	Potential for odours when discharging kitchen exhausts at low level in podium areas.	Care must be taken if locating kitchen exhaust discharges in podium areas. Additional filtration (plant space) will be required to minimise contamination of habitable areas above.
Mechanical	Locating chilled water plant in basement introduces flooding risk and loss of services.	A flood study of the area is required to determine the requirement for additional drainage, construction and prevention measures. Provide a suitably protected plant room if proposed location is below the anticipated flood line,
Mechanical	Noise complaints from equipment located on podium and apartment levels.	Locate problematic equipment away from residential units and suitably attenuate cooling towers and condensers. Provide acoustic enclosures for equipment not requiring external airflow.

DISCIPLINE	RISK	MITIGATION MEASURE
Mechanical	Difficulties in accessing services located in ceiling voids above retail and specialty tenancies.	Locate if practical the majority of services in plantrooms adjacent tenancies to avoid disruption to tenants from maintenance activities.
Mechanical	Wind impacting Lobby Relief System Performance.	Detrimental effects of wind on the apartment tower lobby relief systems impacting stair pressurisation and safe egress. This is especially a concern where there are louvres on a single façade.
Hydraulics	Stormwater pump out pits maintenance and flood risks	The area within ceiling void should be allocated for stormwater pipe fall at high level L1 and Ground Floor
Hydraulic	Grease wastewater pump out	Grease generated areas should be located in proximity to grease arrestors.
Fire	Inadequate water supply from street water main	Full capacity dedicated water tank
Building Services	Residential level reticulation	The horizontal coordination of the services reticulation in corridors on typical levels requires careful consideration for connection to apartments. Detailed coordination will be undertaken in the next design phase.

4 BASIS OF DESIGN

The basis of design is provided within each of the proceeding discipline specific sections. The intent of the basis of design is to document the mechanical, electrical, fire protection, hydraulics and vertical transportation building services that have informed the spatial allocation within the DA set of architectural drawings.

Whilst the basis of design for each discipline is not fully resolved at this juncture, the critical drivers for this design phase is definition of services provided and flexibility to allow considered decision making by project stakeholders in the early phase of concept design.

The building services team has worked closely with civil, structural, architectural and client teams throughout this design phase to communicate the basis of design and ensure that the flexibility has considered a coordinated approach to the final set of architectural DA drawings.

4.1 Development Application

The building services team has reviewed previous development approval documentation and subsequently supported architecture, planning, ESD, civil engineering and other project stakeholders by providing information to inform council of design outcomes related to their discipline.

Additionally the building services team has instigated discussions with the following local authorities regarding servicing the development and will continue negotiations throughout the following design phases;

1. Ausgrid
2. Sydney Water
3. Jemena Gas

4.2 Information Received

The following information was received and assessed as part of this brief:

	TITLE & REVISION	RECEIVED FROM	DATE RECEIVED
DRAWINGS	Preliminary for Information	HDR Rice Daubney	03/03, 23/03, 15/04, 22/04, 03/05
DRAWINGS	For Review	HDR Rice Daubney	30/05, 07/06

4.3 Building Services Drawing Register

The building services team has developed a preliminary set of spatial identification drawings to inform the project team of the basis of design for mechanical and electrical services.

The spatial drawings are located in Appendix A of this report and should be read in conjunction with the spatial schedules located within the proceeding discipline specific sections of this report. These drawings are not design drawings and are not to be used for construction. Note the following:

Drawing Description	Revision
Mechanical	
160530 – Eastwood Mechanical Spatials	4
Electrical/Communications	
160429 – Eastwood Electrical Spatials	3
Fire	
Tanks and Pump room shown in architectural drawings	-
Hydraulics	
160609 - Eastwood Hydraulic Spatials	1
Vertical Transportation	
160511 - Eastwood VT Traffic Analysis	2

5 ELECTRICAL SERVICES

5.1 System Description

The following provides a description and the requirements for Electrical Services associated with the various components of the development.

5.2 General Power

- We have allowed for a two transformer Ausgrid chamber substation and a three transformer Ausgrid chamber substation in our preliminary spatials. Network capacity for development to be discussed with Ausgrid.
- Consumers' mains cabling from the new Ausgrid substations to the MSB's in accordance with Ausgrid network standards and other relevant codes and standards.
- Low voltage power distribution, switchboards and meter panels throughout the building.
- Surge protection to MSB.
- Earthing systems throughout.
- Power supply to equipment and control panels e.g. hydraulic pumps, fire control equipment, amenities equipment, access control equipment, etc.
- Metered and unmetered mains and submains cables.
- EMF Shielding to electrical riser cupboards throughout all residential levels. (Requirement to be confirmed by an EMI specialist)
- Underground conduits where required for power, lighting and communications services including trenching.
- Cable supports including trays, catenary cables, ladders, cable ducts and spare conduits for electrical services cabling.
- Sub circuit wiring with accessories to luminaires, power outlets, junction boxes and equipment.
- General power outlets located throughout public areas for cleaning and general servicing.

5.3 General Lighting

General lighting throughout common areas:

- Impact and vandal resistant linear fluorescent/LED within car park and plant areas
- Recessed and surface mounted wall lighting, recessed down lighting to common areas such as lobby, corridors, etc. (to be developed further in conjunction with the Architect)
- Feature lighting to nominated areas by specialist sub consultant
- Security lighting to external areas including pedestrian links, entry/exit points to the building and to residential and service areas, driveway, carparks, public areas (eg the Secret Garden) and potential areas of concealment (eg passageways, alcoves). For additional details please also refer to the CPTED Recommendations report that was prepared for this project.
- Emergency and exit lighting to common spaces.

5.4 Communications Services

The communication services may include the following:

- Telecommunications Campus Distributor (CD), Building Distributor (BD), Floor Distributors (FD's) and Local Distributors (LD's).
- Voice communications cabling infrastructure and distribution via Cat 6A UTP cabling.
- Earthing of communications equipment.
- Dedicated communications and NBN risers within the core.
- Cable containment systems for telecommunications cabling, including cable tray, ladder and conduit installation.
- Cable distribution system for free to air and Pay TV.
- Telecommunications outlets (TO's) as documented.
- Telecommunications outlets for BMS system, Security Panel, Gas Meter, Water Meter and Lifts.
- Spatial provision for the introduction of NBN infrastructure has been allowed for and shall be reviewed as part of the design development process.
- Alternative fibre connected community systems, such as Opticomm or OPENetworks, shall be reviewed as part of the design development process.

5.5 Security Services

- Proximity card access control and security system to apartment building entries, secure areas and lift.
- Long-range RF fob-key or proximity readers (or both incorporated in common fob-key) for car park entries and exits.
- CCTV monitoring of perimeters, ground floor common areas, inside the 'Secret Garden', all entry and exit points (including commercial, residential and emergency egress), throughout carpark including car park entry/exit points and stairwells with digital recording equipment.
- (TBC subject to Client preference and Building Surveyor/Fire Engineer) Stairwells locked on apartment levels and not used for inter-floor traffic. Doors alarmed to detect opening and forcing and to include mortise locks that automatically de-secure on a general fire alarm. At each 2nd level a break glass door release coupled to the electric locking with suitable signage explaining the operation shall be provided to allow escape from the stairwell into the floor lobby.
- Perimeter doors and high risk plant areas alarmed and monitored by the security system to detect unauthorised access and forcing.

For additional details please also refer to the CPTED Recommendations report that was prepared for this project.

5.6 Apartment Services

5.6.1 Power

Apartment switchboards (single phase) to be located within each apartment in an approved location. Final location to suit the apartment fitout and the requirements of the wiring regulations.

Small power throughout the apartments (to suit the final layout). The numbers of GPO's and outlets anticipated as follows:

- 1 No. single GPO for microwave to Kitchen.
- 1 No. Single GPO for dishwasher.
- 2 No. Double GPO's to the kitchen for general use.

- 1 No. single GPO for range hood.
- 1 No. single GPO for electric cooktop.
- Generally 2 No. Double GPO's per bedroom.
- 2 No. Double GPO's to the living room
- 1 No. Double GPO per bathroom
- 1 No. Single GPO per bathroom for ceiling exhaust fan.
- 1 No. Double GPO's per laundry area.
- 1 No. Double GPO per study.
- 1 No. power supply for oven (direct connection).

The general power arrangements shall be coordinated with the Architect's interior design for each apartment.

5.6.2 Lighting

Apartment lighting will be typical throughout utilising LED fixtures

- Typically a switched (non-dimmable) downlight solution within interior spaces
- IP rated surface mounted fittings to soffits or walls on open balconies

The general lighting arrangements shall be coordinated with the Architect's interior design for each apartment.

5.6.3 Communications

- Communications outlets per apartment for voice and data applications. Each apartment shall be provided with capacity for two incoming lines.
- Cable distribution system for free to air and Pay TV. MATV & Pay TV provision includes for 1No. to living room, 1No. to master bedroom each with FTA and Pay TV coaxial sockets and one voice telephone socket.
- Broadband internet to be available to any apartment using ADSL (arranged by the owner or tenant with their preferred ISP).

5.6.4 Security

- Access to individual apartments shall be achieved using traditional mechanical (non-electronic) keying.
- Apartment visitor video intercom (integrated with the building access control system). Visitor access via video intercom and remote door release in the apartment providing access to a remote entry point and then via the lift system to the relevant floor of the apartments.

For additional details please also refer to the CPTED Recommendations report that was prepared for this project.

5.7 Local Authority Investigation

5.7.1 AUSGRID

Initial high level information gathering about the existing network in the area has been undertaken. Formal application for connection has yet to be undertaken and a strategy to limit developer charges across the overall masterplan is required to ensure Arcadis facilitates the best commercial outcome.

We have obtained existing services information as shown below and allowed for their spatial requirements within our preliminary design.

Figure 1: Existing Ausgrid infrastructure

The above has identified that augmentation to the Ausgrid network will be required.

5.7.1.1 Ausgrid substation transformer removal / replacement requirements

- Large pieces of equipment such as the Ausgrid transformers (1.5MVA each, up to 6 tonnes) require a mobile Franna crane (up to 25 tonnes) and a heavy truck for movement to and from the Ausgrid substation. An all-weather access roadway suitable for use by these vehicles is required from the street to the substation. These access routes must have a maximum slope of no greater than 1:12. Attention should be given to the transformer access route, as the maximum slope for a typical mobile crane can be no greater than 1:8.
- Suitable headroom is required along the route of passage of the vehicles and in the equipment handling area and vehicle manoeuvring room, so that operation of the crane is not impeded. The headroom required is no less than 5.0m for structures on a level access route. Where the access route for the crane is on sloping ground and/or where there are humps or dips in the access route, the headroom or structures must be increased as necessary, to compensate for the position of the crane. Ausgrid will require evidence that the transformers can satisfactorily be replaced as part of the approval process.

- To allow the delivery of plant, the width of the access route shall be wide enough to accommodate a large crane or truck and shall be increased on bends and in the manoeuvring area near the substation equipment access gate.
- The above clearance requirements must be achieved after completion of building surface treatments; including cladding of overhead structures and paving of the access route.
- Unimpeded access to all Ausgrid substations must be maintained 24 hours a day, 7 days a week.

5.7.2 NBN

This development is considered by NBN Co. to be a large development (i.e. greater than 100 apartments) therefore NBN rollout, if not imminent, is still likely. In this situation an NBN application must be rejected prior to an application for Telstra services.

Further discussions with NBN Co. are required and a definitive servicing plan for communications needs to be developed in the next design phase.

5.8 Electrical Spatial Schedule

All spatial provisions detailed below are for column free spaces. Where columns are present, spatials will require further detailed development with structural coordination in the next phase to prove adequacy of provisions.

DESCRIPTION	DIMENSIONS	LOCATION	COMMENTS
Site Substation	2 off 3Tx: 8m (W) x 15m (L) & 2Tx: 8m (W) x 12m (L) Each: 3200mm internal ceiling height 1200mm trench below (Subject to confirmation from local Electricity Supply Authority)	Locate 75mm above 1:100yr flood level	The local Supply Authority is Ausgrid. They will likely require 2 chamber substations (3 x 1.5MVA & 2 x 1.5MVA). The preliminary estimated AS/NZS3000 maximum demand for this project is around 7000kVA. See Substation drawing showing typical transformer equipment requirements attached. The high voltage (HV) cabling would enter the substations from Rutledge Street / Trelawney Street based on a HV ring main arrangement subject to Ausgrid confirmation. Basic requirements: Substation will suit Ausgrid equipment and comply with applicable Network Standards and be accordingly fire rated. Located to allow ease of access for transformer removal with the design in accordance with Ausgrid Commercial and Industrial substation requirements. Earthing necessary with earth stakes penetrations into natural ground with accessible pits and copper cabling connections to the substation earthing. Site must have off street vehicle access (15 Tonne minimum) to allow crane truck access for transformer replacement The substation needs to open out to the outside to enable the supply authority to gain clear access. Requires ventilation The project requires registration with Ausgrid to allow a technical designer to be assigned to the project. Structural engineering will be required to co-ordinate the Ausgrid substation design.
Main Switch room	2 off ≥85m² Each: 17m (L) x 5m (W)	Adjacent substation with consideration that all entry points are 75mm above the 1:100yr flood level	Two escape doors required in accordance with AS/NZS3000 Contains: Main switchboard (MSB)

DESCRIPTION	DIMENSIONS	LOCATION	COMMENTS
	Headroom: 3.5m (min)		Power factor correction (PFC) cubicle (allow space for future provision). Basic Requirements: Construction : Fire Rating 120/120/120 Directly accessible from street level by electricity distributor personnel and metering officers. No wet services above and clear of other services (water, gas etc) Location not liable to be affected by floods, fumes, dampness, etc. Requires ventilation
Diesel Generator	2 off 10m (L) x 7.5m (W) internal dimensions Each: Headroom: 3m (min)	Adjacent Main Switchroom	2 x 500kVA. One emergency generator has been provided to support the core building systems and the other diesel standby generator to support the commercial areas. Final details on size, items to be connected and direction of supply to be determined in the next design phase. Basic Requirements: Construction : Fire Rating 120/120/120 Requires ventilation Exhaust extraction, Acoustic treatment (TBC)
Diesel Fuel storage	7000L ≥75m² Headroom: 3m (min)	Adjacent Main Switchroom	A 7000 litre tank will allow the standby generator to run for approximately 24 hours. The storage tank shall be located in a separate space to the Generator Remote fuel filling point should be located adjacent the entry driveway / loading dock.
Main Comms Room (MCR) / NBN Comms Room	2 off Comms: 4.5m x 3.5m NBN: 3m x 2.5m Headroom: 2.8m (min)	Located >2m away from the substation to avoid electromagnetic interference. Location not liable to be affected by floods, fumes, dampness, etc. Locate 75mm above Q100 flood level	A minimum of 8 off 100mm ACMA white conduits (P100) will enter the development and will run to the main telecommunications rooms – 4 off group to each Main Comms Room to provide redundancy. The incoming telecommunications services will connect to the closest multi service telecommunications pit. Houses all communications head end equipment for the building and contains: Telephone cabling. FTA TV cabling and amplifiers/splitters. Pay TV cabling and amplifiers/splitters. Intercom/access control cabling. Fire detection cabling.

DESCRIPTION	DIMENSIONS	LOCATION	COMMENTS
			Building Distributor (BD). Security, CCTV, Radio & Public Address Equipment. Basic Requirements: Construction: As nominated in BCA Cl. D2.7 Recommend no wet services above and clear of other services (water, gas etc) One access door [minimum 1.2m(W)], prefer too not open directly onto trafficable area If MCR is not lined walls, floor and ceiling must be dust sealed. To allow NBN provisioning for the project, spatial allowances have also been allowed for the connection of fibre to the premise (FTP) in accordance with the NBN Co MDU guidelines. Houses all communications head end equipment for the building and contains: NBN Co MDU pathway provisions Basic Requirements: Construction: As nominated in BCA Cl. D2.7 Recommend no wet services above and clear of other services (water, gas etc) One access door [minimum 1.2m(W)], prefer too not open directly onto trafficable area If MCR is not lined walls, floor and ceiling must be dust sealed.
Electrical Riser Space	1.5m (L) x 1.0m (D) [residential& commercial], 3.0m (L) x 1.0m (D) [retail] Clear internal, with full height and full length access 600mm working clearance in front of all switchgear	Vertically aligned located typically on each level of each building centrally Smoke seals required on the doors in accordance with NCC/BCA if located in the fire egress pathway.	Contains: Electricity Retailer NMI authority provisioned meter panels/sub-metering Common area electrical distribution switchboards Tee-off boxes where required Tenant Sub Distribution Board (DB) where required House DB where required Cable Tray risers Basic Requirements: Located on every level. Construction: As nominated in BCA Cl. D2.7. Provide carpet stops to hold doors open. Accessible from common area on every level (lift lobby or corridor).

DESCRIPTION	DIMENSIONS	LOCATION	COMMENTS
Comms Riser Space & NBN Riser	Comms Riser 1.5m(L) x 0.8m (D) [residential& commercial], 3.0m (L) x 1.0m (D) [retail] Clear internal	Full height vertically aligned located on each corridor level centrally typically in accordance with NBN Co MDU pathway provisions. Smoke seals required on the doors in accordance with NCC/BCA if located in the fire egress pathway. Risers away from lift shafts.	Contains: Telephone cabling FTA TV cabling and amplifiers/splitters Pay TV cabling and amplifiers/splitters Intercom/access control cabling Fire detection cabling Access control lift interface module at highest level Security, CCTV etc Basic Requirements: Accessible on every level. Construction: As nominated in BCA Cl. D2.7 2hr fire separation Accessible from common area on each level (corridor) Two access doors If cupboard is not lined walls, floor and ceiling must be dust sealed Recommend no wet services above and clear of other services (water, gas etc)
Apartment Distribution Board	Nominally 600mm (W) x 400mm (H) depending on product installed	Within each apartment within storage cupboards 1600mm AFFL to bottom of DB	To be located in accordance with AS/NZS3000. Cupboard to be built out so Apartment Distribution Board is located at the front in accordance with AS/NZS3000 requirements.
Unit Comms Distribution Unit	600mm (W) x 600mm (H) x 200mm (D)	Within each apartment.	Ideally would be located adjacent or near the Distribution Board within a dedicated cupboard. Compliant with NBN Co MDU guidelines – Optical Network Unit (ONU) - size tba in accordance with NBN Co agreement. Requires access to bring NBN Co fibre from the communications riser.
Unit Smart Home Hub (Discussion required to confirm project requirement)	Dedicated 19” rack	Within each apartment	Integration with Smart Technology (Lighting Control / AV / IP Based Systems / Security, etc) provisioning. Requires access to bring telecommunication services cabling from the communications riser.

6 MECHANICAL SERVICES

6.1 System Description

6.1.1 Car Park Exhaust System

The basement carpark levels for the Eastwood Redevelopment require mechanical ventilation as there is insufficient scope for natural ventilation.

- The carpark ventilation system is to include both supply and exhaust with capacities and distribution in accordance with AS1668.2-2012.
- To limit plant spatial allocations and align with expected carpark use strategy, inline supply and exhaust fans located in plantrooms on each level have been provided. These fans will be variable speed, controlled via carbon monoxide sensors in their respective zones.
- Coordination of supply and extract locations on the podium levels has been undertaken with the architect to ensure the retail and recreational areas have been considered and specifically that exhaust systems have limited to no impact on activities in these locations. The proposed locations of the four major exhaust discharges are the Northeast corner on Rowe Street, above the carpark ramp on the Western boundary, the eastern perimeter on West Parade and the Southern perimeter on Rutledge Street. The proposed major intakes are adjacent the retail atrium behind the Northern and Eastern stairs as well as on West Parade.
- A plenum based system has been specified to reduce the impact of high level ductwork on floor to floor heights, access ways and parking spaces. The proposed arrangement generally utilises exhaust plenums along the Eastern and Western perimeter walls and a number of supply points North to South along Grid 6.
- A minimum clearance zone of 500mm is required where ductwork is shown. Where required, ductwork has been located at the rear of parking spaces to ensure minimal impact on vehicle clearance heights.

6.1.2 HVAC Strategy

The proposed HVAC system utilise centralised water cooled chilled water systems and centralised heating hot water system serving the residential, retail, recreation and commercial spaces. The proposed system is outlined below.

- Chilled water systems are proposed for this development with chiller plantrooms located on Lower Ground Level and cooling towers located on the rooftop of Residential Building D.
- Due to the location of the chiller plantrooms, monorail cranes in conjunction with hoists are required to allow for replacement of chillers, pumps and pipework in future years. These removal passages are to be coordinated with vehicle access ways on ground level to ensure equipment removal is logistically feasible.
- The Major and Mini-Major Supermarkets located on Lower Ground Floor and Ground Floor respectively we understand are to be tenant fitouts, with responsibility falling on the end user to provide the internal services. The chilled water and heating hot water systems will allow sufficient capacity to serve the Supermarket tenancies if acceptable to the tenant, however space for internal plant such as air handling units and fans has not be allowed for in this scope of works. Metered connections will be provided to Supermarket tenancies.
- Retail tenancies on Lower Ground and Ground Floor will be provided with metered chilled water and heating hot water connections. Internal fitouts including air conditioning and kitchen and general exhaust systems are to be by the individual tenant. The intended design is a ducted system with air handling plant located in the ceiling voids or in dedicated plantrooms space permitting.

- The Commercial, Medical and Recreational facilities on Level 1 are to be tenancies fitouts with metered chilled water and heating hot water connections provided to each tenancy.
- The internal apartment systems consist of one or more chilled water fan coil units located in bulkheads and ducted to bedrooms, kitchens and living areas. The quantity and size of which depend on the apartment floor plan which varies across each level. Each apartment will have an energy meter to monitor chilled water and heating hot water usage for billing purposes.
- Apartments will have openable windows to provide NCC requirements for outside air whilst also aligning with the sustainability strategy for the development (BASIX).
- Further detailed coordination with the architect is required to determine ceiling level and bulkhead locations within the typical apartment to support the number of indoor units in the design. With the proposed high ceilings in living and bedroom areas the majority of mechanical plant will be located in bulkheads. A minimum services clearance of 100mm is needed for other services as detailed in the electrical and fire sections.
- Chilled water and heating hot water will be reticulated through service corridors and in ceiling voids throughout the podium levels to a network of risers in each building.
- Corridors and lift lobbies shall be conditioned via in-ceiling fan coil units located above BOH area's or in bulkheads where required. Natural ventilation is being considered as the primary HVAC methodology for corridors and lift lobbies achieved by use of motorised louvre's adjacent the lift shafts. Implementing natural ventilation not only reduces energy consumption and plant space it also achieve an additional green start point for sustainable design.

6.1.3 Exhaust Systems

- Central exhaust systems for apartment bathrooms will not be provided due to spatial limitations. Each individual apartment will be provided with a separate kitchen and bathroom exhaust system discharging to the apartment's balcony.
- Common amenities and back of house areas located on podium levels will be ventilated via exhausts systems discharging at high level above the podiums. Finalised louvre locations are to be determined in the next design phase with particular attention paid to discharge separation distances from adjacent properties, intakes/openings and carpark supply intakes.
- Centralised commercial kitchen exhaust risers to the roof have been provided to serve retail tenancies on Lower Ground Floor, Ground Floor and Level 1. Tenants will be provided with blanked ductwork for future connected to an external discharge. KE fans will be the responsibility of the tenant. Air quality treatment systems are recommended even when discharges are at roof level and will be the responsibility of the retail tenant.
- Generator, substation, switchboard, plant room, fire pump room and refuse room exhaust systems are proposed to be ducted at high level in the associated levels to exhaust louvres on Ground Level. Where practical makeup for these systems is to be via motorised relief louvres in order to maintain each zones fire rating. Where positive pressurisation is required supply systems shall be provided.
- The refuse chute in each apartment tower requires mechanical exhaust from the refuse room in the basement as well as extraction from roof level. The space around these refuse chutes can be used as a riser (provided it is of suitable size) if there is insufficient scope for a separate riser.

6.1.4 Fire Mode Design

The stairwells that rise through the apartment towers are to have smoke control in accordance with AS1668.1-1998 as the heights of the buildings are greater than 25m.

- There are five main fire escape stairs serving the basements areas with fan rooms located Ground Floor. Two fan room's intake from Rowe Street and three from Rutledge Street.

- Consideration is to be given to prevailing wind direction for stair pressurisation and lobby relief systems located on the roof. This is to occur in the next design phase when roof layouts have been completed. Stair pressurisation intakes can be from any direction however it is advisable to intake from the prevailing wind direction to avoid negative pressure influences.
- To support stair pressurisation a lobby relief ventilation system in the form of motorised external louvres has been provided to apartment buildings. The current design allows for a sheltered discharge at the end of the each corridor. If this discharge location is in the prevailing wind direction or provide insufficient area mechanical lobby relief is required.
- The common areas on lower ground floor and ground floor including the atrium, retail and speciality stores are open to the atmosphere and therefore do not require smoke control or pressurisation systems. If the design is altered and these areas increase in size and are enclosed, zone pressurisation will be required in the form of multiple large ceiling mounted supply fans and louvered intakes and relief.
- Smoke control is required in the Major Supermarket based on floor area. Four smoke exhaust risers are required for this system with discharges at roof level to avoid recirculation.

6.2 Mechanical Spatial Schedule

6.2.1 Basement Level Ventilation

DESCRIPTION	DIMENSIONS	LOCATION	COMMENTS
Carpark Ventilation Ventilation in accordance with AS 1668.2-2012 is required.	Refer to sketches in Appendix for details of intake and exhaust locations. Culvits required under Basement 4 as shown on the spatial sketches. 6.6m^2 for North Supply 4.1m^2 for South Supply 1.5m^2 for Ramp Supply 5m^2 for South East Supply	Basement 1 Basement 2 Basement 3 Basement 4 Lower GF (Ramp) Ground Floor (Ramp)	Basement carparks require mechanical exhaust and supply. Provision for fan plantrooms on each level with CO controlled variable speed motors to reduce the running costs where reduced traffic flow occurs.
Garbage and Back of House Areas Ventilation in accordance with AS 1668.2-2012.	Fans located at high level within the specific room or in an adjacent area. Garbage chute exhaust fan located on podium levels and roof.	Basements Ground Floor. Roof.	Relief for these spaces is intended to be via louvres to outside or the adjacent carpark.
Switch rooms, generator rooms and substations Will be provided with ventilation 1668.2-2012.	Fans located at high level within the specific room or in the adjacent area. Size dependent on final Substation, Generator and Switchroom locations and specifications.	Lower Ground Floor/ Ground Floor Exhausts to discharge on Rutledge Street and above loading dock.	Supply air to be provided via adjacent carpark or ducted from carpark supply system.

6.2.2 Basement/Podium Emergency Egress

DESCRIPTION	DIMENSIONS	LOCATION	COMMENTS
Stair Pressurization Risers In accordance with AS 1668.1-1998 and the NCC.	North West Stair Riser 1000 x 1000 South West Stair Riser 1000 x 1000 North East Stair Riser 1000 x 1000 South Stair Riser 1000 x 1000 South East Stair Riser 1000 x 1000	Basement 4, Podium Level	Basement and low level stairs to be served from ground floor/level 1. Stair press risers and ductwork to be fire rated.
Stair Pressurization Fans In accordance with AS 1668.1-1998 and the NCC.	Fan plant rooms on GF/L1 adjacent stairs c/w intake from louvered facade. Area required is 5000L x 3000W x 2500H	Ground Floor Level 1	North Risers served from Ground Floor. South Risers served from Level 1. Fan rooms to be fire rated.
Lobby Relief In accordance with AS 1668.1-1998 and the NCC.	Basement relief via carpark ramps and exhaust system. Podium levels open to atmosphere do not require lobby relief.	Basement 4, Podium Level	
Smoke Control In accordance with AS 1668.1-1998 and the NCC.	Smoke exhaust systems required for Lower Ground Floor to Roof. 4 x 1.2m^2 Risers From Supermarket	Lower Ground Floor to Roof	Smoke exhaust risers and ductwork to be fire rated.
Smoke Control Fans In accordance with AS 1668.1-1998 and the NCC.	Smoke exhaust fan rooms located on Roof serving Retail Smoke Control Systems. Area required is 5000L x 3000W x 2500H	Roof	Fan rooms to be fire rated.

6.2.3 Podium Level Ventilation

DESCRIPTION	DIMENSIONS	LOCATION	COMMENTS
Commercial Tenancy Kitchen Exhausts Exhaust in accordance with AS 1668.2-2012.	Centralised kitchen exhaust ducts to be reticulated above ceilings to KE risers. Exact ducts sized based on no. and extent of kitchens to be confirmed in design drawings. Riser to roof. 2 x 1m^2 KE Risers serving Supermarket 2 x 2m^2 KE Risers serving GF Retail 1 x 1m^2 KE Riser serving GF Retail 1 x 1m^2 KE Riser serving Podium	Refer to sketches in the Appendix	Filtration is required to eliminate odours/smoke. Horizontal discharge on podium levels requires UV treatment. KE to discharge 6m from opening/intake. KE ducts are risers to be fire rated.
Toilet Exhausts Ventilation in accordance with AS 1668.2-2012.	Sizes to be based on floor area or the number of fixtures as per AS1668.2-2012.	Toilets exhausts to discharge on podium level	Discharge locations to be coordinated with the architect in the next design phase.

DESCRIPTION	DIMENSIONS	LOCATION	COMMENTS
		6m from opening/intake.	

6.2.4 General Air Conditioning

DESCRIPTION	DIMENSIONS	LOCATION	COMMENTS
CHW and HHW Plant	Major chilled/heating water services are split across three plantrooms. 1 x 250m2 Retail Plantroom on Lower Ground Floor 1 x 175m2 Residential Plantroom on Lower Ground Floor 1 x 125m2 Residential Plantroom on Lower Ground Floor	Lower Ground Floor	Refer to sketches in Appendix for specific dimensions. Ventilation required to AS1668.
Cooling Tower Plant	Condenser water systems are located on the rooftop of Residential Building D. 1 x 215m2 Cooling Tower Plant on Level 10 (Bld D Roof)	Level 10	Cooling tower plant to be open above and sides. 6m from any opening/intake. Refer to sketches in Appendix for specific dimensions.
Air Handling Systems	Exact air handling plant sizes to be detailed in next stage. Minimum 700mm ceiling void required above retail areas.	Condensers (where required) to be located on steel mesh platform in ground floor void.	The majority of the air handling plant will be ducted.
Kiosk Spot Cooling	Underfloor spot cooling is to be provided to Kiosk stalls located in the Retail Atrium. Ductwork sizes to be confirmed based on final Kiosk size and location.	Lower Ground Ceiling Void	Air Handling systems to be located in ceiling void below and ducted through slab. Penetration coordination required.

6.2.5 Apartment Building Spatials

DESCRIPTION	DIMENSIONS	LOCATION	COMMENTS
Air Conditioning	Corridor ceiling space from the CHW/HHW riser to the apartments is required for piping reticulation. 450mm void for fan coil units required.	FCU's above kitchens, laundries, wardrobes, bulkheads, wet areas (space permitting)	FCU's to be ducted to slimline ceiling diffusers so that they are not visible from within the apartments.

DESCRIPTION	DIMENSIONS	LOCATION	COMMENTS
Chilled and Heating Hot Water Risers	CHW and HHW Riser required in all apartments buildings. Building A: 1 by 650 x 400 HHW Riser 1 by 800 x 450 CHW Riser Building B: 2 by 650 x 400 HHW Riser 2 by 800 x 450 CHW Riser Building C: 2 by 650 x 400 HHW Riser 2 by 800 x 450 CHW Riser Building D: 2 by 650 x 400 HHW Riser 2 by 800 x 450 CHW Riser	Risers to be vertically aligned and located in central location along corridor with access via ceiling void to each apartment.	
Condenser Water Risers	CCW Riser required in Building D to Rooftop Cooling Tower Plant. 1 by 1250 x 700 Riser 1 by 1150 x 650 Riser	Risers to be vertically aligned and rise to Cooling Tower Plant on Level 10.	
Stair Pressurization Risers In accordance with AS 1668.1-1998 and the NCC.	Building A: 2 by 1000 x 1000 Risers Building B: 4 by 1000 x 1000 Risers Building C: 4 by 1000 x 1000 Risers Building D: 2 by 1000 x 1000 Risers	Podium Level to Roof	Apartment levels served by Fan Plantrooms located on each respective Roof. Stair press risers and ductwork to be fire rated.
Stair Pressurization Fans In accordance with AS 1668.1-1998 and the NCC.	Fan plant rooms located on respective Roofs. Fan room required for each system. Area required is 5000L x 3000W x 2500H	Building A: Level 8 Building B: Level 6 and 8 Building C: Level 12 and 13 Building D: Level 10 and 12	Intake located away from exhausts, lobby relief and fire hazards. Fan rooms to be fire rated.
Lobby Relief In accordance with AS 1668.1-1998 and the NCC.	Lobby relief via motorised louvres located in apartment building corridors where applicable. 2.75m^2 Louvre per level	Podium Levels to Roof	In the event of insufficient louvre area/location. Fire rated Risers: 1 by 2.5m2 Risers per section

DESCRIPTION	DIMENSIONS	LOCATION	COMMENTS
			Fire rated fan plant area: 5000L x 3000W x 2500H
Toilet and laundry exhausts	Sizes to be based on either floor area or the number of fixtures as per AS1668.2-2012.	Exhaust ductwork to be reticulated in ceiling void/bulkhead to façade grille. Potential option to recess duct in slab above. Exact detail to be investigated in the next design phase.	No allowances have been made for centralised exhaust systems serving multiple apartments.
Kitchen and general exhaust	Sizes to be determined based on final kitchen equipment and client requirements.	Exhaust ductwork to be reticulated in ceiling void/bulkhead to façade grille. Potential option to recess duct in slab above. Exact detail to be investigated in the next design phase.	Apartment kitchens are not considered commercial kitchens requiring dedicated exhausts per the BCA. Recirculation hoods are not recommended. No allowances have been made for centralised exhaust systems serving multiple apartments.

7 FIRE PROTECTION SERVICES

7.1 System Description

The following provides a description and the requirements for Fire Protection Services associated with the various components of the development.

Fire services for these buildings will be provided in accordance with the National Construction Code, relevant Australian Standards, and any future fire safety engineered solution.

Services shall include:

- Combined Sprinkler / Hydrant System
- Smoke Detection and Alarm System
- Smoke Hazard Management System (in coordination with mechanical design)
- Emergency Warning and Intercommunication System
- Portable Fire Extinguishers

7.1.1 Local Authority Investigation

As part of the fire protection local authority investigation, Hyder has spoken to two authorities;

1. Queensland Fire & Rescue Service (QFRS)
2. Gold Coast Council (in coordination with the Civil engineering team)

Gold Coast City Council (GCC): In coordination with the civil and hydraulic engineer, the fire flows for the site were investigated with GCC. Due to infrastructure constraints and future planning, the GCC water engineers have limited the fire flow to the site to 15l/s guaranteed for 2hrs. This has a considerable impact on the development, particularly the size of the fire water storage. Follow requests to increase this fire flow with GCC engineers has resulted in no movement for additional flow. Therefore the current design assumes this stated flow and associated increase in fire water storage.

Queensland Fire and Rescue Service: Hyder instigated a meeting with QFRS to discuss the project. The McKenzie Group and DBI were also in attendance. The main driver was to understand the pumping appliance constraints, highlight fire brigade booster assembly points and other high level fire related aspects for the project. The QFRS representatives were proactive in their discussion and provided the input on the above items to mitigate spatial planning risks moving forward.

7.1.2 Fire Detection and Alarm System

Fire detection will be provided throughout the buildings, with detectors selected to suit the specific hazard of each area to minimise the possibility of false alarms.

The fire detection and alarm system will be design as analogue addressable looped detection system, and will be connected to an approved monitoring company to notify fire brigade in the event of a fire alarm.

Addressable smoke detection will be provided to all common areas of the buildings for smoke hazard management. Standard residential smoke alarms in accordance with class 2 buildings to AS3786 (residential), unless otherwise specified by the fire safety engineer.

An analogue addressable Fire Indicator Panel will be provided in the Fire Control Room at ground level. A Secondary Fire Panel will be provided at the mid-level plant space or as required by the fire engineering report.

A Fire Fan Control Panel (FFCP) will be provided adjacent to the Main Fire Panel and Secondary Fire Panel to allow manual operation of the Fire Fans by the brigade.

Interface will be provided with the following building services systems;

- Emergency warning system for controlled evacuation of building occupants
- Mechanical services system for operation in fire mode and system shut down upon fire alarm
- Combined sprinkler / hydrant system for monitoring of isolation valves, pumps, tanks, and system activation
- Security system for monitoring and release of locked doors in egress path (if required by fire engineering report)
- Integration with incoming natural gas supply
- Optional integration with emergency back-up generator (if required).

7.1.3 Emergency Warning System

An emergency warning system will be provided throughout the buildings to allow controlled evacuation of the buildings during a fire condition, including floor by floor cascading evacuation as determined through detailed fire safety engineering.

Occupant warning speakers will emit a pre-recorded verbal evacuation message and will be located to ensure the required speech intelligibility and sound pressure level can be delivered to all occupied areas.

An Emergency Control Panel will be provided adjacent to the Fire Panel.

Visual Alarms (Strobes) will be provided in areas with high ambient noise level, and to any areas specified for use by hearing impaired occupants.

Warden Intercom Phones (WIP) will be provided to allow direct communication with the fire warden, and Emergency Alarms (EA) will be provided adjacent to required exits.

7.1.4 Combined Sprinkler / Hydrant System

A combined fire sprinkler/hydrant fire system is based on the principles of a common reticulation system serving both sprinklers and hydrants. The system has been chosen for economic reasons as combining sprinklers and hydrants is a cost effective measure. This will be designed to the following design criteria (subject to detailed fire engineering);

- Residential areas - light hazard class LH (residential sprinkler head)
- Retail areas – Ordinary hazard class 3 (OH3)
- Plant areas - ordinary hazard class 1 (OH1)
- Carpark areas - ordinary hazard class 2 (OH2)

Fire Hydrant coverage will be provided throughout the buildings, ensuring all areas of the buildings can be adequately reached with a 30m hose length and 10m nozzle spray from a fire hydrant outlet. Additional hydrants will be provided where adequate coverage cannot be achieved from hydrant outlets in the fire stairs.

An additional fire hydrant is required on each typical floor to provide extended coverage to the western mot units.

Hydrant outlets will have a minimum of 5L/sec flow and 700kPa residual pressure at the two most disadvantaged hydrant outlets, as required for a system utilising on-site booster pumps.

7.1.4.1 Stage 1 System arrangement

A grade 1 water supply will be provided, comprising the following;

- Two 200KL tanks located in the Basement levels serving the building. 15l/s fire connection will be provided for fire tank make up.

- 3 relay booster pumps will be located in basement 1,
- The building will have 4 pressure zones, each of approximately 45m. This strategy has been discussed with QFRS, allowing an increase from 35m to 50m as per AS2118.6 requirement to discuss with local authority having jurisdiction.
- The pipework system will be sectioned into individual vertical pressure zones to ensure efficient system operation can be achieved. Pressure reduction stations will be provided between pressure zones, and will be located within the fire stair riser
- Sprinkler control valves for each level of the building will be provided within the fire stair.

7.1.4.2 Stage 2 System arrangement

A grade 1 water supply will be provided, comprising the following;

- Two 125KL tanks located in the Basement levels serving the building. 15l/s fire connection will be provided for fire tank make up.
- 3 relay booster pumps will be located in basement 1,
- The building will have 3 pressure zones, each of approximately 45m. This strategy has been discussed with QFRS, allowing an increase from 35m to 50m as per AS2118.6 requirement to discuss with local authority having jurisdiction.
- The pipework system will be sectioned into individual vertical pressure zones to ensure efficient system operation can be achieved. Pressure reduction stations will be provided between pressure zones, and will be located within the fire stair riser
- Sprinkler control valves for each level of the building will be provided within the fire stair.

7.1.5 Fire Brigade Booster Assembly

A brigade booster enclosures will be provided at ground level, within sight of the main building entry where possible or as agreed with the fire safety engineer.

The booster assembly for stage 1 will be provided with the following;

- Towns main/storage tank suction connection
- Low level boost connection
- Lower mid-level boost connection
- Upper mid-level boost connection
- High level boost connection

The booster assembly for stage 2 will be provided with the following;

- Towns main/storage tank suction connection
- Low level boost connection
- Mid-level boost connection
- High level boost connection

Final determination of pressure zones and subsequent boost connections will be determined in the next design phase.

7.1.6 Portable Fire Extinguishers

Portable fire extinguishers to suit the relevant risk and associated signage will be provided throughout all areas of the buildings.

Fire blankets will be provided to all kitchen areas and similar risk areas

7.1.7 Fire Control Room

The Fire Control Room is required to;

- Provide an area from which fire-fighting operations or other emergency procedures can be directed or controlled; and
- Contain control panels, telephones, furniture, equipment and the like associated with the required fire services in the building. It must not be used for any purpose other than the control of fire - fighting activities and other measures concerning the occupant safety and security.

7.1.8 Fire Protection Spatial Schedule

DESCRIPTION	DIMENSIONS	LOCATION	COMMENTS
Fire Pump Room	6m x 7m	Basement 2 below the fire tanks	Pump room to be provided with a door opening to fire isolated passage and double outward doors for equipment removal.
Sprinkler Valves	530mm x 300mm At high level	Located in Stairs 1 and 2.	
Hydrant/Sprinkler Booster	6m x 0.9m x 1.8mH	Ground Floor External Street Access.	Fire brigade booster cabinet/cupboard which needs to be located at the front of the building.
Fire Hydrant/Sprinkler Water Storage Tanks.	2 x200kL effective volume each	Basement 1	1 x 1m side access lids. Adjacent to pump room
Fire Hydrant Landing Valves	0.35 x 0.45m	In Fire Isolated Stair	Located within the fire stairs, allowance for 1.0m free zone in front of valve. Supplementary valves may be required to provide 30.0m coverage
Fire Risers	Wet fire 2000mm x 400mm Dry fire 800 x 200 cable riser	From B1 to top of building	

8 HYDRAULIC SERVICES

8.1 General

The following provides a description and the requirements for Hydraulic Services associated with the various components of the development.

The Hydraulic services scope for this building includes the following:

- Stormwater drainage
- Sanitary Plumbing and drainage
- Grease (Trade) wastewater plumbing and drainage
- Domestic Potable and Non-potable water
- Hot and warm water services
- Natural Gas Service
- Fire Hose Reel Service

8.2 Local Authority investigation

8.2.1 Sewer Service

Based on the results of the DBYD from 01/02/2016 and Hydra map dated 21/03/2007 there are following Sydney Water assets in the vicinity of the site which are potentially available for the connection of the new development:

- Ø225 sewer main traversing northern-eastern side of the site parallel to Rowe St and runs to West Parade main. This pipe will require to be modified subject to Sydney Water requirements.
- Ø225 sewer main locates along the northern boundary of the development in Rowe St
- Ø225 sewer main location along the south-west boundary should be further investigated. Additional protection or diversion of the service might be required due to the potential impact on the existing service of the new development, subject to Sydney Water requirements.

Due to the extensive scale of the development several sewer connections will be required to the Sydney Water infrastructure to ensure gravity connection of the buildings.

While some modifications to the existing Sydney Water network may be necessary, it is likely that the existing sewer network would have sufficient capacity to service the proposed development. However, we recommend that a Section 73 Application be lodged with Sydney Water as soon as possible to confirm suitable connection points for the development.

8.2.2 Potable Water

Based on the results of the DBYD there are following Sydney Water assets in the vicinity of the site:

- Ø150mm water main located along the southern boundary of the development in Rutledge Street;
- Ø375mm water main located along the northern boundary of the development in Rowe St.

The preferred connections for potable water and fire services are to the Ø375mm water main subject to Sydney Water approval.

While some upgrades to the existing Sydney Water network may be necessary, it is likely that the existing water network would have sufficient capacity to service the proposed development. However, we recommend that a Section 73 Application is lodged with Sydney Water as soon as possible to confirm suitable connection points for the development.

8.2.3 Gas Service

Based on the results of the DBYD there are following Jemena assets in the vicinity of the site:

- Ø75mm @ 7kPA network gas main located along the northern boundary in Rowe St and western boundary in Trelawney Street.
- Ø75mm @ 210kPA network gas main is available in the southern side of Rutledge Street.

It is likely that the existing Jemena network would have sufficient capacity to service the proposed development, subject to a commercial agreement. An application for the connection to Jemena service will be required to confirm the location and availability for the connection.

8.3 Stormwater Drainage

Roof water drainage will be designed and installed in accordance with the requirements of Australian Standard AS3500.3 Part 3 Stormwater Drainage and the City of Ryde Council.

All rainwater will be collected and discharged based on the following minimum criteria:

- Box Gutters – 1 in 100 year 5 minute storm event
- Eaves Gutters – 1 in 20 year 5 minute storm event

Overflows will be provided to protect the buildings in the event of a system blockage.

Roof water will be collected using gutters, roof sumps and downpipes into rain water storage and OSD tanks. OSD tanks to be provided by civil. The rainwater tanks will be located in the ground floor and Level 1 of the building from where roof water will be utilised for re-use.

Surplus roof water from the storage tanks will be re-directed to discharge to the civil stormwater system.

Stormwater from balconies, grassed areas and plant areas shall discharge via a separate stormwater downpipe system to the civil stormwater system.

Stormwater run-off from all areas will be collected and discharged to civil stormwater system to local council requirements.

It is intended that conventional and syphonic stormwater systems will drain the tower areas, balconies, ground floor, planter boxes and car park. Refer to the civil engineering package for site wide stormwater drainage plan.

Stormwater that cannot be discharged to the external stormwater main by gravity will be collected into a pump out pits under the basement and transferred to the civil stormwater system for further connection to Authority stormwater system.

Duty and stand-by pumps will be provided in each pump out pit. The pits will be located away from car parks for convenient maintenance. Additionally coordination with the structural system design for the basement will also be required.

8.4 Sanitary Plumbing and Drainage

The sanitary drainage system will be designed and installed in accordance with Australian Standard AS3500.2 Part 2 Sanitary Plumbing and Drainage and the requirements of Sydney Water Authority.

The sanitary drainage and ventilation system will be designed as a fully vented modified pipe system to provide flexibility of the drainage installation with special consideration where pressure zones are created at changes of direction, including the piping material used for mechanical durability and thermal movement to serve the proposed development. Stack vents shall extend to roof and be terminated through roof venting to atmosphere.

Stack offsets have been minimised in coordination with the architect, reducing costs and providing a more efficient design across multiple disciplines

Horizontal pipe runs will be installed with sufficient gradients to achieve self-cleansing velocities to avoid potential problems with blockage.

All pipework installed within noise sensitive areas will be acoustically treated.

Sanitary fixtures and tap ware will be selected to meet ESD requirements;

Plant rooms and equipment requiring drainage connections will be incorporated in the hydraulic services design.

A sewage pump out pits will be provided in the basement of the buildings. Sanitary drainage that cannot be discharged to the external sewer main by gravity will be collected into these pits from where a pair of duty and stand-by pumps will lift the sewage to the gravity system for disposal off the building. The pits will be located away from car parks for convenient access and maintenance.

8.5 Grease (Trade) Waste Plumbing and Drainage

Grease Waste provisions to the slow food tenancies, mini-major supermarket and major supermarket will be provided for future flexibility and will gravitate to grease arrestors located at lower ground and basement 1 levels in proximity to commercial kitchen.

A capped 110mm grease waste drainage point will be provided at the rear of each of the tenancies at 150mm above finished floor level.

HDPE piping and fittings shall be installed for the trade waste drainage system.

Heat trace will be installed on long grease waste pipes runs.

The complete grease waste drainage system will conform to the requirements of the Sydney Water Corporation.

8.6 Domestic Potable and Non-Potable Cold Water

The potable water system will be designed and installed in accordance with Australian Standard AS3500.1 Part 1 Water Supply and the requirements of Sydney Water.

Potable water services will be designed for a midrise application. A water storage tank located in the basement 1 plant room will be provided to reduce incoming flow rate, subject to pressure and flow statement and Sydney Water approval for connection to large water main.

A master water meter set complete with backflow prevention devices will be provided for the building and will be located in the level 1 meter room.

In addition to the authority meter, water meters shall be installed to monitor the water use of all major water users. These will include though not be limited to:

- Apartments (meter cupboards on each level)
- Base building amenity areas
- Retail
- Plantrooms, including pool
- Fire services make up
- Rainwater tank top up

As per the BASIX requirements, non-potable water from the rainwater retention tanks will pressurize water via a dual (2) booster pump assemblies to supply landscaping and other uses (subject to ESD requirements).

The cold water risers will be installed within the services ducts. Pressure limiting valves will be installed in the cold water supply to reduce the supply pressure on the lower levels as required.

Backflow prevention devices will be installed in the system in accordance with the Authority's requirements.

Provisional water service in the form of capped off valved connections will be provided to retails for tenancy fitout works and terminated within the tenanted areas for easy extension if required.

8.7 Hot and Warm Water Service

Hot water service will be designed and installed in accordance with the requirements of the local Authority having jurisdiction and Australian Standard AS/NZS3500.4 Part 4 Hot Water Supply Systems.

Gas fire hot water heaters will be installed in the individual for each building roof plantrooms for the generation of domestic hot water. Hot water will be supplied to the amenities on each floor of the building via a re-circulated flow and return piping system. The hot water risers will be installed within services duct at the building amenity core.

Hot water meters will be installed within centralised cupboards in communal area of residential levels to monitor the water use of apartments.

All heated water pipe work to be insulated in accordance with the BCA Part J. A heat trace system shall be provided where required, to ensure any excessive 'dead legs' are kept to a minimum.

Hot/warm water temperatures to the toilets and amenities will be controlled by means of the installation of tempering valves and thermostatic mixing valves in accordance with the statutory requirements.

Hot water service to the retail shops will be a part of the tenancy fitout works.

8.8 Natural Gas Service

Gas service will be designed and installed in accordance with Jemena requirements and Australian Standard AS5601 Gas Installation.

A new gas connection will be provided for the building to the gas main. The location and pressure range connection is a subject to Jemena approval. Gas meter/ regulator will be located in the gas regulator/meter rooms, Level 1.

Low pressure natural gas will be brought into the buildings to supply the apartments (cooktop), mechanical service, hot water plants and retail (kitchens) if required.

Metered gas connections will be provided to retail food tenancies with meter to be provided by the tenant.

Gas meters will be installed within centralised cupboards in communal area of residential levels to monitor the gas use of apartments.

Emergency gas shut off device will be installed in the gas service to isolate the supply during emergency and will be linked to the mechanical system.

A capped gas supply will be reticulated within the new development for possible future connection of food tenants.

8.9 Fire Hose Reel Service

Fire Hose Reel coverage will be provided to basement, podium and non-residential levels. Note that the building code of Australia does not require fire hose reels in residential levels of the tower.

Hose Reels will be provided to ensure all areas of the buildings are reached with a 36m hose and 4m of nozzle spray.

Fire Hose Reels will have a minimum of 0.33L/sec flow at the two most disadvantaged Hose Reels.

8.10 Hydraulic Spatial Schedule

Description	Dimensions	Location	Comments
Authority Water Meter Assembly complete with Containment Protection Device	3.5 x 1.0 x 1.5m(h)	L1 – Rutledge St (subject to Sydney Water approval of connection to main)	Direct key, access from the street Double outward opening doors if in an enclosure
Authority Gas Meter room includes regulator assembly	3.0 x 3.0 x 2.4(h)	GF	Key access from street, location at perimeter wall preferred to achieve natural ventilation.
Potable water pump room	5.0 x 4.0 x 2.5(h)	B1, located adjacent to a buffer tank	Double outward opening doors. Entry from common space.
Potable cold water buffer tank	7.0 x 7.0 x 2 (h)	B1	Provides buffer between water main and pump set is a subject to main pressure and flow results
Non-potable water pump room	3.0 x 2.0 x 2.5(h)	GF and L1, located adjacent to each Rainwater Harvesting Tank	Double outward opening doors. Entry from common space.
Rainwater harvesting tanks	Subject to ESD and BASIX requirements	GF and L1, Directly under each residential building at the perimeter wall to maximize roof rainwater collection.	To be located adjacent to OSD tanks. Gravity overflow to OSD
Storm water pump pits	2 x 2m	In-ground	Strategically located in-ground pump wells located away from parking spaces for maintenance access
Sewage pump out pits	2 x 2m	In-ground	Strategically located in-ground pump wells located away from parking spaces for maintenance access
Grease arrestor rooms	5.0 x 4.0 x 3 (h)	LG for Slow Food and Mini-Major B1 for Major Supermarket	Grease arrestor to collect and treat waste from restaurant/cafés. To be positioned as close as possible to the waste water source at the perimeter wall.
Oil Separator	2.5 x 1.0 x 2.4 (h)	B4	Dedicated for car wash bay
Gas Hot water plants	6.0 x 5.0 Large residential building 3.0 x 4.0 Medium size building	Roof top plantroom	Each plant will be dedicated to each building
Bathroom risers	0.65 x 0.3	At the back of each apartment bathroom	Size determined by different units
Kitchen risers	0.5 x 0.5	At the back of each apartment kitchen	Only where central riser cannot be utilised for whole unit

Description	Dimensions	Location	Comments
Core hydraulic riser	2 no. off 1.0 x 0.75	Around lift core areas	Adjacent to water meter cupboard and within services balcony
Cold water meter cupboard	1.0 x 0.75	Located on every residential floor	Apartment authority water meters to be installed on the wall within the lockable cupboard. Accessible from common space
Hot water and gas meter cupboard	1.0 x 0.75	Located on every residential floor	Apartment authority water meters to be installed on the wall within the lockable cupboard. Accessible from common space
Balcony downpipes	0.10/0.15 dia	Adjacent to balconies or within room duct	All downpipes located within apartment and common areas will require acoustic treatment
Fire Hose Reel Cupboard	0.9 x 0.5m x 2.4m high	Non-residential levels	Located max. 4.0m from a fire exit, supplementary reels may be required to provide 36.0m + 4m spray coverage

9 VERTICAL TRANSPORTATION

The vertical transportation design for the Development Application stage of works, aims to advise the number of lifts required by undertaking traffic analysis and determining the applicable legislation for compliance.

9.1 Project Summary

Project Information	
Building Name	Eastwood Centre, 144-186 Rowe Street Residential Buildings A, BA, BB, CA. CB, DA and DB.
Building Type	Residential Property. Commercial and Retail.
BCA Building Classification	Residential - 2 (TBC by the BCA consultant) Commercial - 5 (TBC by the BCA consultant)
Effective Height of Building	Various Over 25m (For the purpose of this report)
Maximum Lift Travel (approximately)	Building A – 29.70m Building BA – 29.70m Building BB – 32.80m Building CA – 48.30m Building CB – 54.50m Building DA – 38.90 Building DB – 32.70m Commercial – 12.90m Retail Passenger – 11.20m Loading Dock Service Lifts – 3.10m Retail Service Lift – 3.10m
Building Back-Up Generator?	No.
Equipment Summary	Building A - Two single residential passenger lifts Building BA - Two single residential passenger lifts Building BB - Two single residential passenger lifts Building CA - Two single residential passenger lifts Building CB - Two single residential passenger lifts Building DA - Two single residential passenger lifts Building DB - Two single residential passenger lifts Single Commercial Passenger Lift Single Retail Passenger Lift Two Loading Dock Service Lifts Single Retail Service Lift 8 Inclined Moving Walks 4 Escalators

9.2 Traffic Analysis

The vertical transportation study undertaken to date has been founded on the guidelines provided by the Charted Institute of Building Services Engineer (CIBSE) Guide D. This is an Australian and internally recognised basis of design that includes guidelines for the various sectors within the property industry, including residential developments.

Arcadis have undertaken an analysis based on the criteria described below in order to make a recommendation that considers serviceability, spatial allowance and construction cost.

9.2.1 Building Population

The estimation of population in a residential building is based on the number of bedrooms and the occupancy per bedroom. The occupancy rate for different standards of accommodation is provided in the following table:

TYPE	LUXURY	NORMAL	LOW INCOME
Studio	1.0	1.5	2.0
1 bedroom	1.5	1.8	2.0
2 bedroom	2.0	3.0	4.0
3 bedroom	3.0	4.0	6.0

9.2.2 Traffic Scenario and Duration

The commonly used design period for a residential building is the afternoon, 5-minute, two-way traffic condition, which is considered the most demanding traffic period. Two-way is defined as people moving up and down the building simultaneously.

9.2.3 Performance Targets

The design period and two-way handling capacity influences the waiting time and the following table provides the design criteria for residential buildings across the different standards of accommodation;

TYPE	LUXURY	NORMAL	LOW INCOME
AWI Interval (seconds)	45-50	50-60	50-70
Two Way Handling Capacity	8%	6-8%	5-7%

Average Waiting Interval (AWI)

Average Waiting Interval (AWI) is the average time between lift car arrivals at the main lobby level when the lifts are operating at the 5 minute up-peak handing capacity. AWI is considered a measure of the “quality” of the elevator service when a conventional dispatching system is used.

Handling Capacity Handling Capacity is defined as the total number of passengers (expressed as a percentage of the total assumed building population) that a lift system can transport from the main lobby level in a period of 5 minutes during the up-peak period assuming that the elevators cars are not loaded to more than 80% of their rated capacity. Handling capacity is considered a measure of the “quantity” of lifting that the elevator system provides.

9.2.4 Analysis Results

The targeted design criteria for residential buildings used for this analysis is as follow:

1) Building population – Based on the 'Normal' standard.
2) Average Waiting Interval (seconds) – Based on the 'Normal' standard, with a target of 60 seconds.
3) Two-way handling capacity: Based on the 'Normal' standard at 6.5%

Based on these criteria the results, conclusions and discussions for the residential buildings are reported in the following section.

9.2.4.1 Building CB

CRITERIA	TARGETED	OUTCOME
Interval (s)	60 s	40.1 s
Two-way handling capacity	6.5%	6.5%

Conclusion

We conducted analysis on the most demanding building, CB, as a means to establish the worst case service for all the buildings. Our analysis shows that as with most residential buildings there isn't a high-level of demand and consequently the two lifts proposed in all towers will give a very good level of service. Two lift also provides a level of redundancy should one lift be taken out of service.

As the design progress in the following sages, there may be an opportunity to reduce the speed of the lifts, reducing the capital expenditure, whilst still maintaining the performance targets.

9.2.4.2 Commercial Building Discussion

The targeted design criteria for office buildings. used for this analysis is as follow:

1) Building population – Based on 1 person per 12m^2.
2) Average Waiting Interval (seconds) – A target of 30 seconds.
3) Up-Peak handling capacity - A target of 13%

Our analysis shows that a single lift will provide a more than adequate service to these commercial floors, however again it comes down to whether there is redundancy allowed for within the design.

9.2.4.3 Single Retail Lift Discussion

It is difficult to assess retail lifts, as it is difficult to predict the patronage to the shops at any particular time. There are inclined moving walks down to Basement 2, and these will provide the primary access route for shoppers (with or without trolleys).

An issue arises when the travel by the lift is more appealing than walking the distance via the moving walks (with a trolley particularly). The lift will also act as the primary method to return trolleys.

Therefore, we would propose that a second retail passenger lift is considered.

9.3 Design Considerations

9.3.1 Lift Category/Type – Passenger and Service Lifts

In consideration of the building type, overall height, the activity, and number of floors we propose machine room-less lifts (MRL) be employed. This type of lift does not need a machine room as all the equipment is contained within the lift shaft itself. Machine room-less lifts provide the best fit for the development and can be installed and maintained by all major lift contractors.

9.3.2 Furniture Removals

At this stage all the residential passenger lifts are proposed as 1275 Kg (17-Person) capacity lifts with a nominal 1400mm wide by 2000mm deep internal lift car size.

In later stages it may be necessary to consider an option for a larger 1600Kg lift to better facilitate the removal of furniture.

9.4 Compliance

9.4.1 Relevant Acts, Regulations and Standards

The vertical transportation design will consider the following acts, regulations, codes and standards, with the objective of meeting compliance.

9.4.1.1 Acts and Regulations

Area	Standard
Building Legislation	The Building Code Act (1975) The Building Code of Australia (2016)
Health and Safety	Work, Health and Safety Act (2011) Work, Health and Safety Regulations (2014)
Accessibility	Disability Discrimination Act (1992) Disability (Access to Premises – Buildings) Standards (2010) Disability Standards for Accessible Public Transport (2002)

9.4.1.2 Reference of Applicable Standards/Guides

Area	Standard
General Lift Standards	AS 1735.1 (2003) General Requirements AS1735.5 (2015) Escalators and Moving Walks AS 1735.11 (1986) Fire-rated Landing Doors
Construction	AS 4431 (1996) Guidelines for Safe Working on New Lift Installations in New Constructions
Accessibility	AS 1735.12 (1999) Facilities for Persons with Disabilities Disability (Access to Premises – Buildings) Standards (2010) AS 1428.2 (1992) Design for Access and Mobility; Part Two: Enhanced and Additional Requirements – Buildings and Facilities AS 1428.4 (2009) Tactile Ground Surface Indicators
Fire/Emergency	AS 1668.1 (2002) Ventilation and Air-conditioning in Buildings – Fire and Smoke Control AS1670.4 (2015) Fire Detection, Warning and Intercom Systems. AS 2118.1 (2010) Automatic Fire Sprinkler Systems AS1170.4 (2015) Structural Design – Earthquake Actions in Australia
Electrical	AS/NZ 3000 (2012) Electrical Installations (known as the Australian/New Zealand Wiring Rules).

Area	Standard
	AS/NZ 3008 (2011) Electrical Installations – Selection of Cables – Cable sizes for lift installations
Guarding	AS 1657 (2013) - Fixed Platforms, Walkways, Stairways and Ladders – Design, Construction and Installation
Finishes	EN10088-2 (2005) Stainless Steel Finishes AS 1530.4 (2014) Fire-resistance Tests for Elements of Construction
Noise Management	AS 1055.1 (1997) Acoustics - Description and Measurement of Environmental Noise – General Procedures
Glazing in Lift Construction	AS 1288 (2016) Glass in Buildings – Selection and Installation AS/NZS 2208 (1999) - Safety Glazing in Buildings
Ride Quality	ISO 18738-1 (2012) Measurement of Ride Quality – Part 1: Lifts
Sustainability and Environmental	Green Star/NABERS/BASIX (As Applicable)

Note: At the time of writing the best effort has been taken to nominate the latest revision of the publications listed. However, as these publications are being constantly revised, we would state that the intention of the design is to follow the current revision of any code, act, regulation or standard.

9.4.1.3 Building Code of Australia

In the following table, the specific clauses relevant and pertinent to the vertical transportation design, are referenced, considered and concluded:

TITLE/CLAUSE	BCA CLAUSE EXTRACT	COMPLIANCE CONCLUSION
Access for People with a Disability. (Clause D3.1)	Buildings and parts of the building must be accessible as required by table D3.1.	Dependant on the BCA Consultant classification of the building. Not all residential units are accessible from the lift.
Stretcher Facilities (Clause EP3.1 and E3.2)	Stretcher facility to be provided in at least one emergency lift or where passenger lifts are installed to serve any storey above an effective height of 12 m as measured from topmost storey (excluding the topmost storey if it contains only heating, ventilating, lift or other equipment, water tanks or similar service units) to the lowest storey providing direct egress to a road or open space.	All passenger lifts will comply.
Passenger Lifts in an Accessible Building (Clause EP3.4 and E3.6)	Both the limitations of use of certain types of lift and application of features must be adhered to.	All passenger lifts will comply.
Emergency Lift (Clause EP3.2 and E3.4)	At least one emergency lift must be installed in a building with an effective height greater than 25m as measured from topmost storey (excluding the topmost storey if it contains only heating, ventilating, lift or other equipment, water tanks or similar service units) to the lowest storey providing direct egress to a road or open space. An emergency lift may be combined with a passenger lift and must serve those storeys served by the passenger lift so that all storeys of the building served by passenger lifts are served by at least one emergency lift. Where two or more passenger lifts are installed and serve the same storeys at least two emergency lifts must be provided to serve those. Emergency lifts shall be provided with: Electrical main supply shall be controlled and protected independently of all other lifts; Warden Intercom Phones (WIP);	All passenger lifts to comply. Not required on service lifts.

TITLE/CLAUSE	BCA CLAUSE EXTRACT	COMPLIANCE CONCLUSION
	Stretcher facilities (2m deep car) in at least 1 emergency lift.	
Passenger Lifts – Limitations of Use (Clause E3.6)	In an accessible building, every passenger lift must be one of the types identified in Table 3.6a, subject to the limitations on use specified and have accessible features in accordance with Table 3.6b.	All lifts are deemed as Electrical Passenger Lifts and such there are no limitations. All lifts meet the minimum car size requirements. The passenger lifts to be specified to meet the requirements of AS1735.12.
Fire Service Controls (Clause E3.7, E3.9 and E3.10)	Where lifts serve any storey above an effective height of 12 m must be provided with fire service controls.	All passenger lifts to comply; with fire service controls to be specified. Not required on service lifts.
Landings (Clause E3.5)	Access and Egress to and from lift well landings must comply with the deemed-top-satisfy provisions of section D	TBC
Emergency Access Doors in a Single enclosed Lift Shaft (Clause E3.1 Specification Item 6)	Where a lift is installed in a single enclosed lift shaft having a distance between normal landing entrances greater than 12.2 m, emergency access doors must be provided and constructed as follows	Affects all residential passenger lifts. Would propose a car-to-car rescue strategy is implemented by the Lift Contractor to negate the need for emergency access doors. Not possible on Building DB and hence there will be the need for two emergency access doors.

APPENDIX A

BUILDING SERVICES SPATIAL PLANNING DRAWINGS

GENERAL COMMENTS
1. WHAT IS THE ACCESS STRATEGY FOR THE PLANT ROOMS? LOOKS LIKE BLOCKS HAVE JUST BEEN PLACED ON DRAWINGS

2. REFER TO SPATIAL REQUIREMENTS AS PER "EASTWOOD DEVELOPMENT BUILDING SERVICES - RETURN SERVICES BRIEF" DATED 23/2/2016 AND SUBSEQUENT CORRESPONDENCE INCLUDING EMAIL TITLED "RE: Eastwood - Substation location option" DATED 6/4/2016 AND ANY OTHER RELEVANT CORRESPONDENCE

ROOM SIZE NOT ADEQUATE 10M X 7.5M REQUESTED.

CHANGE LABEL TO "1x7000L DIESEL TANK"

SWAP LOCATIONS

PLANT DON'T APPEAR ACCESSIBLE DUE TO THE RAMP - WE NEED SOME CLARITY ON HOW THAT WOULD WORK - REFER TO PREVIOUSLY ISSUED ADVISE INCLUDING FURTHER ADVISE GIVEN ON ACCESS REQUIREMENTS (EMAIL 6/4/2016)

HATCH FEASIBILITY REQUIRES DETAILED DESIGN, INC EQUIPMENT NOMINATIONS AND EQUIPMENT MANOEUVRING ANALYSIS TO PROVE

m2 EQUIVALENT PROVIDED rather than dimensions requested - a workable solution to prove this would need to be checked in design phase. High level checks say this should be ok

OPTION 1

Elec cupboard and comms riser

rooms could be arranged better here to match original requirements

REMOVABLE WALLS REQUIRED

ACCESSABLE SPACE FOR LARGE PLANT REMOVAL AND INSTALLATION?

MSR ABOVE

✔ = SPATIAL ALLOWANCE PROVIDED AS PER ADVISE

✖ = SPACIAL PROVIDED REQUIRES RECTIFICATION

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29/04/2016
Elec Spatial
Review

PRELIMINARY

REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE
01	PRELIMINARY FOR INFORMATION	LK	MVS	04/03/16

NORTH POINT | KEY PLAN

PROJECT MANAGER: NAME
STREET ADDRESS / SUBURB AND POSTCODE
P: 02 0000 0000 F: 02 0000 0000 xx@xxxxxxxx.com.au

CLIENT: YUHU GROUP (AUSTRALIA) Pty. Ltd.
STREET ADDRESS / SUBURB AND POSTCODE
P: 02 0000 0000 F: 02 0000 0000 xx@xxxxxxxx.com.au

ARCHITECTS: RICE DAUBNEY
Level 1, 110 Walker Street, North Sydney NSW 2060, Australia
+61 2 9956 2666 | hdriceadaubney.com | hdrinc.com
The Rice Daubney Group (NSW) P/ L as trustee for The Rice Daubney Trading Trust
ABN 56 880 304 993

PROJECT: EASTWOOD CENTRE
144-186 ROWE STREET
EASTWOOD, NSW, 2122

DRAWING TITLE: LOWER GROUND PLAN

SCALE: 1:250 @ A1 1:500 @ A3
CHECKED:
PROJECT NUMBER: 15R
DRAWING NUMBER: SK32
ISSUE:

ROWE STREET

ROW ALL

NO RISERS OR NODE ROOM SHOWN FOR RETAIL SUPPLIES

NO RISERS OR NODE ROOM SHOWN FOR RETAIL SUPPLIES

GENERAL COMMENTS
1. WHAT IS THE ACCESS STRATEGY FOR THE PLANT ROOMS? LOOKS LIKE BLOCKS HAVE JUST BEEN PLACED ON DRAWINGS

2. REFER TO SPATIAL REQUIREMENTS AS PER "EASTWOOD DEVELOPMENT BUILDING SERVICES - RETURN SERVICES BRIEF" DATED 23/2/2016 AND SUBSEQUENT CORRESPONDENCE INCLUDING EMAIL TITLED "RE: Eastwood - Substation location option" DATED 6/4/2016 AND ANY OTHER RELEVANT CORRESPONDENCE

DO THE LEVEL 1 PLANT ROOMS HAVE SUFFICIENT HEAD CLEARANCE GIVEN RESI LEVELS ABOVE AND DO THE SUBSTATIONS ON BOTH LEVELS ALSO HAVE ACCESS BELOW FOR CABLE TRENCHING WITHOUT IMPEDING OTHER PLANT ON OTHER LEVELS?

DOES THE SUBSTATION HAVE 24/7 ACCESS?

A RISER SOLUTION IS REQUIRED TO THIS BLOCK ALSO
- MATCH REQUIRED SPATIALS FOR APARTMENT RISERS

RISERS ABOVE

NO RISERS OR NODE ROOM SHOWN FOR RETAIL SUPPLIES

Peno above Risers transition from behind lifts to this location to rise

MSR ON GROUND LEVEL IS FAR TOO SMALL TO BE ASSOCIATED WITH A 3 TX SUBSTATION. 17 X 5 REQUESTED - 6.8 X 5.8 PROVIDED... 3 MSB'S WON'T FIT IN THERE!

show doors, truck wont be able to park infront

OPTION 2

✓ = SPATIAL ALLOWANCE PROVIDED AS PER ADVISE

✗ = SPACIAL PROVIDED REQUIRES RECTIFICATION

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Elec Spatial
Review

PRELIMINARY

REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE
01	PRELIMINARY FOR INFORMATION	LK	MVS	04/03/16

NORTH POINT

KEY PLAN

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SUBURB AND POSTCODE
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xx@xxxxxxxx.com.au

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+61 2 9956 2666 | hdricedaubney.com | hdrinc.com
The Rice Daubney Group (NSW) P/L as trustee for The Rice Daubney Trading Trust
ABN 56 880 304 993

PROJECT:
EASTWOOD CENTRE
144-186 ROWE STREET
EASTWOOD, NSW, 2122

DRAWING TITLE: GROUND PLAN - ROWE ST

SCALE: 1:250 @ A1 1:500 @ A3
CHECKED:
PROJECT NUMBER: 15R
DRAWING NUMBER: SK34
ISSUE:

teamwork://AUSNSYD-BIM01/15R Eastwood MASTER

ROWE STREET

ROWE STREET MALL

RUTLEDGE STREET

WEST PARADE

GENERAL COMMENTS
1. WHAT IS THE ACCESS STRATEGY FOR THE PLANT ROOMS? LOOKS LIKE BLOCKS HAVE JUST BEEN PLACED ON DRAWINGS
2. ALL RISERS DONT MATCH REQUIREMENTS

3. REFER TO SPATIAL REQUIREMENTS AS PER "EASTWOOD DEVELOPMENT BUILDING SERVICES - RETURN SERVICES BRIEF" DATED 23/2/2016 AND SUBSEQUENT CORRESPONDENCE INCLUDING EMAIL TITLED "RE: Eastwood - Substation location option" DATED 6/4/2016 AND ANY OTHER RELEVANT CORRESPONDENCE

A RISER SOLUTION IS REQUIRED TO THIS BLOCK ALSO
- MATCH REQUIRED SPATIALS FOR APARTMENT RISERS

RISERS ABOVE

Move risers as shown and relocate door

1. DO THE LEVEL 1 PLANT ROOMS HAVE SUFFICIENT HEAD CLEARANCE GIVEN RESI LEVELS ABOVE AND DO THE SUBSTATIONS ON BOTH LEVELS ALSO HAVE ACCESS BELOW FOR CABLE TRENCHING WITHOUT IMPEDING OTHER PLANT ON OTHER LEVELS?
2. PLANT ARRANGEMENTS NEED FURTHER CONSIDERATION INCLUDING ACCESS FOR INSTALLATION, MAINTENANCE AND REMOVAL

EXHAUST RISER THROUGH THE L1 SUBSTATION ISN'T GOING TO WORK - AUSGRID WILL NEED TO APPROVE, BUT UNLIKELY

SUBSTATION HAS APARTMENTS DIRECTLY ABOVE - EMR SHIELDING WILL NEED TO BE CONSIDERED IE A THICKER THAN USUAL ROOF - SPECIALIST WOULD NEED TO BE ENGAGED TO ADVISE ON THIS

CHECK CLEARANCES IN SECTION - PLEASE PROVIDE

SHOW DOORS

✓ = SPATIAL ALLOWANCE PROVIDED AS PER ADVISE

✗ = SPACIAL PROVIDED REQUIRES RECTIFICATION

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29/04/2016 Elec Spatial **Review**

PRELIMINARY

REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE
01	PRELIMINARY FOR INFORMATION	LK	MVS	04/03/16

PROJECT MANAGER: NAME
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The Rice Daubney Group (NSW) P/L as trustee for The Rice Daubney Trading Trust
ABN 56 880 304 993

PROJECT: EASTWOOD CENTRE
144-186 ROWE STREET
EASTWOOD, NSW, 2122

DRAWING TITLE: LEVEL 1 - RUTLEDGE ST

SCALE: 1:250 @ A1 1:500 @ A3
CHECKED:
PROJECT NUMBER: 15R
DRAWING NUMBER: SK07
ISSUE:

teamwork://AUSNSYD-BIM01/15R Eastwood MASTER

STREET

THE A

ROWE STREET MALL

RUTLEDGE STREET

GENERAL COMMENTS
1. ALL RISERS DONT MATCH REQUIREMENTS

2. REFER TO SPATIAL REQUIREMENTS AS PER "EASTWOOD DEVELOPMENT BUILDING SERVICES - RETURN SERVICES BRIEF" DATED 23/2/2016 AND SUBSEQUENT CORRESPONDENCE INCLUDING EMAIL TITLED "RE: Eastwood - Substation location option" DATED 6/4/2016 AND ANY OTHER RELEVANT CORRESPONDENCE

A RISER SOLUTION IS REQUIRED TO THIS BLOCK ALSO
- MATCH REQUIRED SPATIALS FOR APARTMENT RISERS

Elec & comms riser cupboards

✔ = SPATIAL ALLOWANCE PROVIDED AS PER ADVISE

✖ = SPACIAL PROVIDED REQUIRES RECTIFICATION

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29/04/2016
Elec Spatial

Review 1 2 3 4

PRELIMINARY

REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE
REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE

NORTH POINT

KEY PLAN

PROJECT MANAGER
NAME
STREET ADDRESS
SUBURB AND POSTCODE
P: 02 0000 0000
F: 02 0000 0000
xx@xxxxxxxx.com.au

CLIENT
YUHU GROUP (AUSTRALIA) Pty. Ltd.
STREET ADDRESS
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ARCHITECTS
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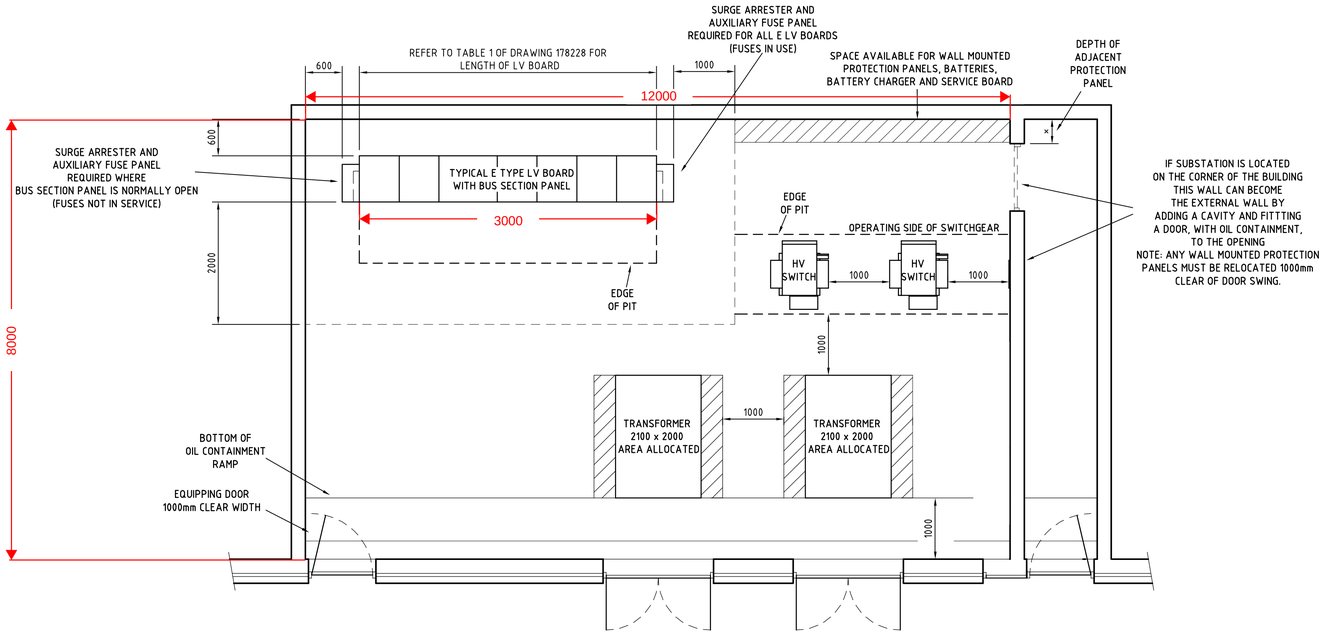
ABN 56 880 304 993

PROJECT:
EASTWOOD CENTRE
144-186 ROWE STREET
EASTWOOD, NSW, 2122

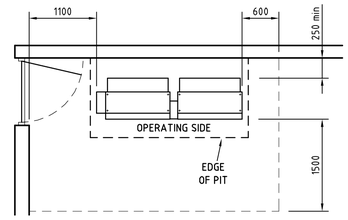
DRAWING TITLE:
LEVEL 2

SCALE: 1:250 @ A1 1:500 @ A3
CHECKED:
PROJECT NUMBER: 15R
DRAWING NUMBER: SK08
ISSUE:

teamwork://AUSNSYD-BIM01/15R Eastwood MASTER



TYPICAL TWO TRANSFORMER SUBSTATION

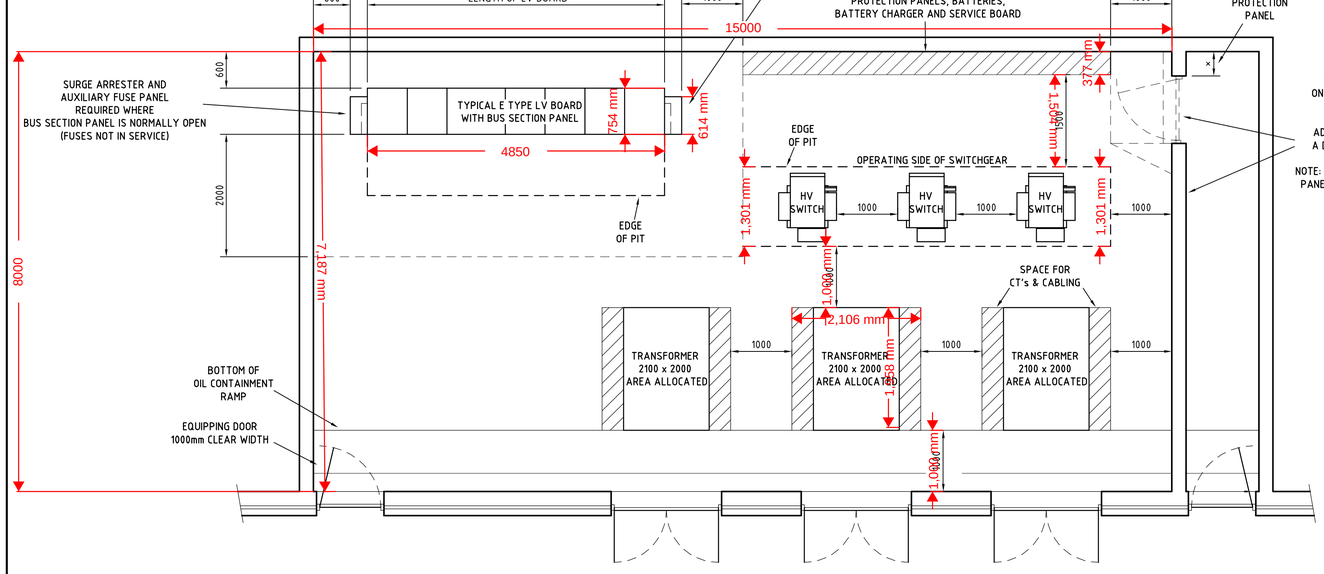


FUSED STRIP TYPE LV BOARD FOR TWO TRANSFORMER SUBSTATIONS

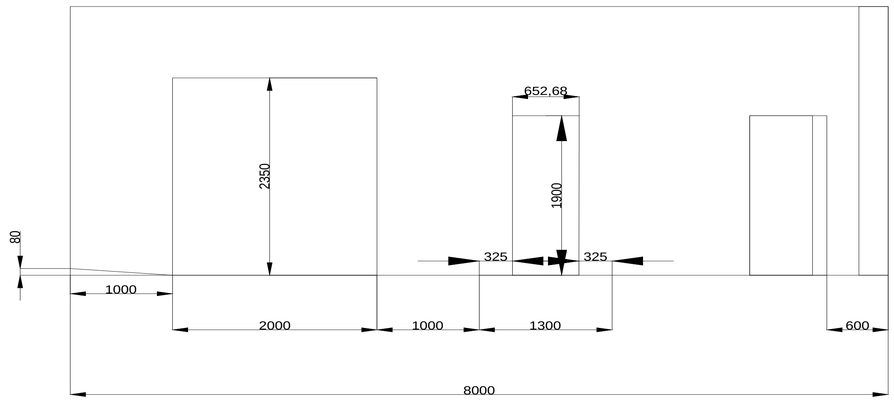
REFER NOTE 4

NOTES

1. THIS DRAWING IS INTENDED TO ILLUSTRATE MINIMUM CLEARANCES REQUIRED FOR CHAMBER TYPE DISTRIBUTION SUBSTATIONS TO MEET THE REQUIREMENTS OF THE RELEVANT NETWORK STANDARDS OF AUSGRID.
2. THE FOOTPRINT OF THE EQUIPMENT AS SHOWN IS THAT PURCHASED BY AUSGRID AT THE TIME OF PUBLICATION OF THIS DRAWING.
3. THE LAYOUT AND ARRANGEMENTS SHOWN ARE TYPICAL AND ARE SHOWN TO ILLUSTRATE CLEARANCES ONLY. ITEMS ASSOCIATED WITH SITE SPECIFIC REQUIREMENTS SUCH AS LV BOARD ARRANGEMENT, PROVISIONS FOR CABLING IN PITS AND FLOOR CHASES, CONDUIT ENTRIES FROM THE STREET OR CUSTOMER SUPPLIES HAVE NOT BEEN SHOWN AS THEY EFFECT OVERALL CHAMBER SIZE.
4. THE LAYOUTS SHOW TYPICAL THREE TRANSFORMER SUBSTATIONS WHICH ALWAYS REQUIRE AN E TYPE LV BOARD IRRESPECTIVE OF TRANSFORMER CAPACITY. SUBURBAN THREE TRANSFORMER SUBSTATIONS REQUIRED A BUS SECTION PANEL WHICH IS OPERATED NORMALLY CLOSED WHILST SYDNEY CBD SUBSTATIONS DO NOT REQUIRE A BUS SECTION PANEL.
   SINGLE AND TWO TRANSFORMER SUBSTATIONS WITH TRANSFORMERS OF 1500kVA REQUIRE AN E TYPE LV BOARD WITH NO BUS SECTION PANEL.
   SINGLE AND TWO TRANSFORMER SUBSTATIONS WITH TRANSFORMERS UNDER 1500kVA CAN UTILISE A FUSE STRIP TYPE LV BOARD. HOWEVER TWO TRANSFORMER SUBSTATIONS UTILISING A FUSE STRIP TYPE LV BOARD WILL ALWAYS HAVE A NORMALLY OPEN BUS SECTION PANEL. AN E TYPE LV BOARD IS TO USED IF THE NORMALLY OPEN BUS SECTION PANEL IS NOT ACCEPTABLE.
   IF THE SUBSTATION IS DESIGNED FOR AN ULTIMATE THREE TRANSFORMER ARRANGEMENT AN E TYPE LV BOARD MUST ALWAYS BE USED.



TYPICAL THREE TRANSFORMER SUBSTATION



Issue	Description	Date

100mm on Original

Client

Status: **PRELIMINARY**
NOT TO BE USED FOR CONSTRUCTION

Scale		Current Issue Signatures	
		Drawn Author	
Original Size	A1	Designed Designer	
Height Datum	DATUM	Checked Checker	
Grid	Grid	Approved Approver	

Filename:

Project: EASTWOOD DEVELOPMENT

Title: TYPICAL SUBSTATION ARRANGEMENTS

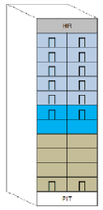
ARCADIS
Level 7, 199 Grey St
South Brisbane, QLD 4101
Australia
ABN 76 104 485 289

Tel: +61 (0)7 3337 0000
Fax: +61 (0)7 3337 0050
www.arcadis.com

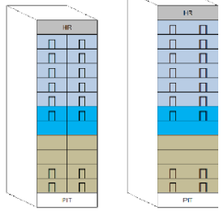
Drawing No.	Project No.	Issue
—	—	

Date Plotted: 4/02/2016 8:08:26 AM

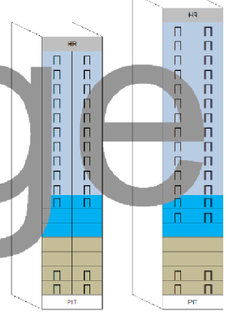
#	Floor	Function	Level (m)	Flr to Flr (m)	Building A Beds Studio	1 Bed	2 Bed	3 Bed	Population
12	6	Plant	Roof						
11	5	Residential	32.20	3.10		7	4		25
10	4	Residential	29.10	3.10		7	4		25
9	3	Residential	26.00	3.10		7	4		25
8	2	Residential	22.90	3.10		7	4		25
7	1	Amenities	19.80	3.10		7	4		25
6	Ground	Lobby	15.60	4.20					
5	Lower Ground	Retail	12.50	3.10					
4	B1	Parking	10.00	2.50					
3	B2	Parking	7.50	2.50					
2	B3	Parking	5.00	2.50					
1	B4	Parking	2.50	2.50					
Totals					0	35	20	0	123



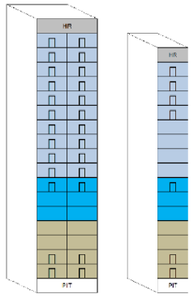
Floor	Floor	Function	Level (m)	Flr to Flr (m)	Building BA Beds Studio	1 Bed	2 Bed	3 Bed	Population	Building BB Beds Studio	1 Bed	2 Bed	3 Bed	Population
13	7	Plant	Roof											
12	6	Residential	35.30	3.10							3	5		20
11	5	Residential	32.20	3.10		2	6		22		2	9		31
10	4	Residential	29.10	3.10		2	6		22		2	9		31
9	3	Residential	26.00	3.10		2	6		22		2	9		31
8	2	Residential	22.90	3.10		2	6		22		2	9		31
7	1	Amenities	19.80	3.10		2	6		22		3	8		29
6	Ground	Lobby	15.60	4.20										
5	Lower Ground	Retail	12.50	3.10										
4	B1	Parking	10.00	2.50										
3	B2	Parking	7.50	2.50										
2	B3	Parking	5.00	2.50										
1	B4	Parking	2.50	2.50										
Totals					0	10	30	0	108	0	14	49	0	172



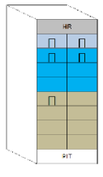
#	Floor	Function	Level (m)	Flr to Flr (m)	Building CA Beds Studio	1 Bed	2 Bed	3 Bed	Population	Building CB Beds Studio	1 Bed	2 Bed	3 Bed	Population
20	14	Plant	Roof											
19	13	Residential	57.00	3.10							5	1		12
18	12	Residential	53.90	3.10							5	1	4	28
17	11	Residential	50.80	3.10		2	4		16		6	4		23
16	10	Residential	47.70	3.10		2	4	3	28		6	4		23
15	9	Residential	44.60	3.10		2	6		22		6	4		23
14	8	Residential	41.50	3.10		2	6		22		4	6		25
13	7	Residential	38.40	3.10		2	6		22		4	6		25
12	6	Residential	35.30	3.10		2	6		22		4	6		25
11	5	Residential	32.20	3.10		2	6		22		4	6		25
10	4	Residential	29.10	3.10		2	6		22		4	6		25
9	3	Residential	26.00	3.10		2	6		22		4	6		25
8	2	Residential	22.90	3.10		2	6		22		4	6		25
7	1	Lobby	18.70	4.20										
6	Ground	Lobby	15.60	3.10										
5	Lower Ground	Retail	12.50	3.10										
4	B1	Parking	10.00	2.50										
3	B2	Parking	7.50	2.50										
2	B3	Parking	5.00	2.50										
1	B4	Parking	2.50	2.50										
Totals					0	20	56	3	216	0	56	56	4	285



#	Floor	Function	Level (m)	Flr to Flr (m)	Building DA Beds Studio	1 Bed	2 Bed	3 Bed	Population	Building DB Beds Studio	1 Bed	2 Bed	3 Bed	Population
18	12	Plant	Roof											
17	11	Residential	41.40	3.10		2	4	2	24					
16	10	Residential	38.30	3.10		2	4	2	24					
15	9	Residential	35.20	3.10		1	5	2	25			2		6
14	8	Residential	32.10	3.10		1	5	2	25			3		9
13	7	Residential	29.00	3.10		1	5	2	25			4		12
12	6	Residential	25.90	3.10		2	4	2	24					
11	5	Residential	22.80	3.10		2	4	2	24					
10	4	Residential	19.70	3.10		1	6	2	28					
9	3	Residential	16.60	3.10		1	6	2	28					
8	2	Residential	13.50	3.10		2	4		16					
7	1	Lobby	9.30	4.20										
6	Ground	Lobby	6.20	3.10										
5	Lower Ground	Retail	12.50	3.10										
4	B1	Parking	10.00	2.50										
3	B2	Parking	7.50	2.50										
2	B3	Parking	5.00	2.50										
1	B4	Parking	2.50	2.50										
Totals					0	13	43	16	240	0	0	9	0	27



Floor	Floor	Function	Level (m)	Flr to Flr (m)	Commercial NLA	Population
9	3	Plant	Roof			
8	2	Commercial	22.90	3.10	531.00	44
7	1	Lobby	19.80	3.10	593.00	49
6	Ground	Lobby	15.60	4.20		
5	Lower Ground	Retail	12.50	3.10		
4	B1	Parking	10.00	2.50		
3	B2	Parking	7.50	2.50		
2	B3	Parking	5.00	2.50		
1	B4	Parking	2.50	2.50		
Totals					1124	94



	BUILDING A PASSENGER LIFTS		BUILDING BA PASSENGER LIFTS		BUILDING BB PASSENGER LIFTS		BUILDING CA PASSENGER LIFTS		BUILDING CB PASSENGER LIFTS	
Lift Number	1	2	1	2	1	2	1	2	1	2
Emergency Lift	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Stretcher Compliance	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Details/Specification										
Arrangement	Grouped		Group		Group		Group		Group	
Product Type	MRL		MRL		MRL		MRL		MRL	
Capacity	1275 Kg		1275Kg		1275Kg		1275 Kg		1275 Kg	
Speed	1.75 m/s		1.75 m/s		1.75 m/s		2.5 m/s		2.5 m/s	
Control	Duplex - Group Collective		Duplex - Group Collective		Duplex - Group Collective		Duplex - Group Collective		Duplex - Group Collective	
Travel	29.70		29.70		32.80		46.30		54.50	
Traffic Analysis Results										
Variables									Target	Actual
Traffic Scenario									Two Way	Two Way
AWI									60 s	44.0 secs
ATT									60 s	34.2 secs
AWT									40 s	26.5 secs
HC%									8.5%	8.5%
CF%									< 80%	16%

	BUILDING DA PASSENGER LIFTS		BUILDING DB PASSENGER LIFTS		COMMERCIAL PASSENGER LIFTS	
Lift Number	1	2	1	2	1	2
Emergency Lift	✔	✔	✔	✔	✔	✔
Stretcher Compliance	✔	✔	✔	✔	✔	✔
Equipment Summary						
Group	Group		Group		Group	
Type	MRL		MRL		MRL	
Capacity	1275Kg		1275Kg		1275Kg	
Speed	1.75 m/s		1.75 m/s		1.6 m/s	
Control	Duplex - Group Collective		Duplex - Group Collective		Duplex - Group Collective	
Travel	38.90		32.70		12.90	
Traffic Analysis Results						
Variables						
Type						
AWI						
ATT						
AWT						
HC%						
CF%						

Notes:

1. All lift shaft dimensions, are internal per lift shaft (excluding interconnecting structure or trimmer beams) and can be accommodated by the majority of major lift contractors. Some variation in spatial requirements can be expected subject to the selected contractor.
2. Apartment and bedroom numbers have been sourced from HDR Rice Daubney drawings, Issue 5 dated 16/04/201.
3. The population numbers are derived partially from CIBSE for Residential buildings.
4. In line with the requirements of a "Normal" residential building we have targeted a "Handling Capacity" of 6.5% of the buildings total theoretical population and an "Average Waiting Interval" (AWI) of between 60 seconds during two-way traffic peaks.
5. Traffic Analysis terms and definitions:

Handling Capacity (HC%) (Percentage) – is the total number of passengers that an elevator system can transport in a period of five minutes during a certain traffic condition (Up-peak, Two Way or Down Peak) with a specified car loading; expressed as a percentage of the total building population.

Average Waiting Interval (AWI) (Seconds) – is the period between successive car arrivals at the main entry/egress floor with cars loaded to any value.

Average Waiting Time (AWT) (Seconds)– is the average period of time from when a passenger either registers a landing call, or joins a queue, until the responding lift begins to open its doors at the boarding floor.

Capacity Factor by Area (CF%) (Percentage) – is the number of passengers, as a percentage of the actual lift capacity. Is used to set the maximum car loading percentage as means of a comfort target.

Average Time To Transit (ATT) (Seconds) – is the average period of time from when a responding lift begins to open its doors at the boarding floor until the doors begin to open again at the destination floor.

Average Time To Destination (ATTD) (Seconds) – is the average period of time from when a passenger either registers a landing call, or joins a queue, until the responding lift begins to open its doors at the boarding floor

LEGEND

- Level Served
- Front & Rear Landing Entrance
- Rear Entrance Only
- Transfer Floor
- Blind Shaft
- Plant
- Entry Floors
- Pit Access Door

REV	BY	APPD	DATE	DESCRIPTION	Status
0	MR		09.01.16	Initial Issue	For Comment
1	MR		30.03.16	Revised to New Unit Mix	For Comment
2	MR		10.05.16	Revised to Architects Drawings	DA Issue

Project Reference	11-1601-37
Client	YUHU GROUP
Project	EASTWOOD CENTRE 144-186 ROWE STREET
Drawing	Traffic Analysis
Drawing Number	VT- 11-1601-37.01 REV 2

PRELIMINARY

REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE
00	FOR REVIEW	LK	MVS	27/05/16

EASTWOOD BASEMENT SPATIALS: UNDER BASEMENT 4 CULVIT

Eastwood Redevelopment, Eastwood, NSW

ARCADIS Design & Consultancy for natural and built assets

Mechanical Services - Spatial Planning

Prepared: ND Date: 30/05/2016 Project Number: AA009093

CLIENT
YUHU GROUP (AUSTRALIA) Pty. Ltd.

STREET ADDRESS
SUBURB AND POSTCODE

ARCHITECTS
RICE DAUBNEY
Level 1, 110 Walker Street, North Sydney NSW 2060, Australia
+61 2 9956 2666 | hdrricedaubney.com | hdrinc.com
The Rice Daubney Group (NSW) P/L as trustee for The Rice Daubney Trading Trust
ABN 56 880 304 993

P: 02 0000 0000
F: 02 0000 0000
xx@xxxxxxxx.com.au

PROJECT:
EASTWOOD CENTRE
144-186 ROWE STREET
EASTWOOD, NSW, 2122

DRAWING TITLE:
BASEMENT 4

SCALE: 1:250 @ A1 1:500 @ A3
CHECKED: MVS
PROJECT NUMBER: 15R
DRAWING NUMBER: DA 1104
ISSUE: 00

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

8,700 17,400 8,700 4,450 8,700 8,700 8,700 8,700 8,700 8,700 8,700 8,700 8,700 8,700 8,700 8,700 8,700 8,700 8,700

A B C E H I J K L

8,700 8,700 8,700 8,700 8,700 17,400 8,700 8,700

NORTH SUPPLY RISER
58,300 L/s INTAKING ON GF/L1.
MINIMUM 8m2 INTERNAL CLEAR
AREA AIRTIGHT RISER.

1m2 STAIR
PRESS RISER.

MIN. 800mm WIDE FULL
HEIGHT INTERNAL CLEAR
AIRTIGHT PLENUM c/w
ACCESS TO FAN.

N-S

RESIDENTIAL CARPARK
303 CARSPACES - INCLUDING 6 ACCESSIBLE CARSPACES AND
8 SMALL CARSPACES

RAMP 1:6 - EXIT RESIDENTAIL
UP TO GROUND
54.050

STORAGE

RES GARBAGE BUILDING BA
A: 12.31 m2

RES LIFT

51.200 51.350 1:12

1m2 STAIR
PRESS RISER.

ROWE STREET ROWE STREET MALL
TRELAWNEY STREET WEST PARADE
RUTLEDGE STREET
AA BA BB DA DB CA CB

KEY PLAN

NORTH SUPPLY RISER 1
17,000 L/s FROM B4.
MINIMUM 3m2 INTERNAL
CLEAR AIRTIGHT RISER.

MIN. 1000mm WIDE FULL
HEIGHT INTERNAL CLEAR
AIRTIGHT PLENUM
(14,500 L/s)

AIR PLENUM EXHAUST

CULVIT UNDER BASEMENT 4

MIN. 800mm WIDE FULL
HEIGHT INTERNAL CLEAR
AIRTIGHT PLENUM c/w
ACCESS TO FAN.

RES LIFT
RES LIFT
RES GARBAGE BUILDING BB
A: 18.18 m2

EXHAUST AIR PLENUM

NORTH SUPPLY RISER 2
22,300 L/s FROM B4.
MINIMUM 3.8m2 INTERNAL
CLEAR AIRTIGHT RISER.

MIN. 1200mm WIDE
FULL HEIGHT
INTERNAL CLEAR
AIRTIGHT PLENUM
(17,300 L/s)

MIN. 7500x3000mm
FULL HEIGHT
AIRTIGHT FAN ROOM

MIN. 7500x3000mm
FULL HEIGHT
AIRTIGHT FAN ROOM

MECH EXHAUST
FAN ROOM
A: 29.22 m2

EXHAUST
FAN

NW-E

NORTHWEST EXHAUST RISER
38,500 L/s.
MINIMUM 5.2m2 INTERNAL
CLEAR AREA AIRTIGHT RISER.

SOUTHWEST SUPPLY RISER 1
15,000 L/s FROM B4. MINIMUM
3m2 INTERNAL CLEAR
AIRTIGHT RISER.

SMALL CAR

MIN. 800mm WIDE FULL
HEIGHT INTERNAL CLEAR
AIRTIGHT PLENUM c/w
ACCESS TO FAN.

SOUTHWEST SUPPLY RISER
38,650 L/s INTAKING ON GF/L1.
MINIMUM 5.5m2 INTERAL CLEAR
AREA AIRTIGHT RISER.

SOUTHEAST EXHAUST RISER 3
29,400 L/s DOWN TO B4. MINIMUM
4.2m2 INTERNAL CLEAR AIRTIGHT
RISER.

MIN. 1800mm WIDE FULL
HEIGHT INTERNAL CLEAR
AIRTIGHT PLENUM c/w
SEPARATOR IN CENTRE AND
ACCESS TO FAN.

SOUTHWEST SUPPLY RISER 2
4200 L/s FROM B4. MINIMUM
1m2 INTERNAL CLEAR
AIRTIGHT RISER.

SW-S

AIR PLENUM EXHAUST

RES LIFT

BUILDING DA GARBAGE
A: 14.40 m2

MIN. 800mm WIDE FULL
HEIGHT INTERNAL CLEAR
AIRTIGHT PLENUM c/w
ACCESS TO FAN.

MIN. 800mm WIDE FULL
HEIGHT AIRTIGHT PLENUM c/w
ACCESS TO FAN.

1m2 STAIR
PRESS RISER.

GARBAGE
A: 15.78 m2

RES LIFT

CULVIT UNDER BASEMENT 4

DUCTWORK AT
HIGH LEVEL.

SMALL CAR

RES BIN LIFT

SE-E

MIN. 800mm WIDE FULL
HEIGHT AIRTIGHT PLENUM c/w
ACCESS TO FAN.

SOUTHWEST SUPPLY RISER 3
7500 L/s FROM B4. MINIMUM
1.4m2 INTERNAL CLEAR
AIRTIGHT RISER.

SOUTHEAST EXHAUST RISER 1
58,300 L/s DISCHARGING ON RUTLEDGE
STREET. MINIMUM 8.3m2 INTERNAL CLEAR
AREA AIRTIGHT RISER.

MIN. 1800mm WIDE FULL HEIGHT
INTERNAL CLEAR AIRTIGHT
PLENUM c/w SEPARATOR IN
CENTRE AND ACCESS TO FAN.

SOUTHEAST EXHAUST RISER 2
30,000 L/s DISCHARGING ON RUTLEDGE
STREET. MINIMUM 4.3m2 INTERNAL CLEAR
AREA AIRTIGHT RISER.

STORAGE

EXHAUST AIR PLENUM

MECH EXHAUST FAN ROOM
A: 27.72 m2

EXHAUST FAN

NE-E

NORTHEAST EXHAUST RISER
52,500 L/s DISCHARGING
ABOVE RAMP. MINIMUM 7m2
INTERNAL CLEAR AREA
AIRTIGHT RISER.

1m2 STAIR
PRESS RISER.

53.600 52.760 52.310 51.470 51.200

STAIRS

RES LIFT
RES LIFT

BUILDING CB GARBAGE
A: 13.20 m2

SUPPLY AIR PLENUM

MIN. 800mm WIDE FULL
HEIGHT INTERNAL CLEAR
AIRTIGHT PLENUM
SERVING RAMP.

SE-S

SOUTHEAST SUPPLY RISER
38,000L/s INTAKING FROM WEST
PARADE. MINIMUM 5m2 INTERNAL
CLEAR AREA AIRTIGHT RISER.

1m2 STAIR
PRESS RISER.

PRELIMINARY

REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE
00	FOR REVIEW	LK	MVS	27/05/16

EASTWOOD BASEMENT SPATIALS: BASEMENT 4

Eastwood Redevelopment, Eastwood, NSW

Mechanical Services - Spatial Planning

Prepared: ND Date: 30/05/2016 Project Number: AA009093

ARCADIS Design & Consultancy for natural and built assets

CLIENT: YUHU GROUP (AUSTRALIA) Pty. Ltd.

STREET ADDRESS
SUBURB AND POSTCODE

ARCHITECTS: HDR RICE DAUBNEY

Level 1, 110 Walker Street, North Sydney NSW 2060, Australia
+61 2 9956 2666 | hdricedaubney.com | hdrinc.com
The Rice Daubney Group (NSW) P/L as trustee for The Rice Daubney Trading Trust
ABN 56 880 304 993

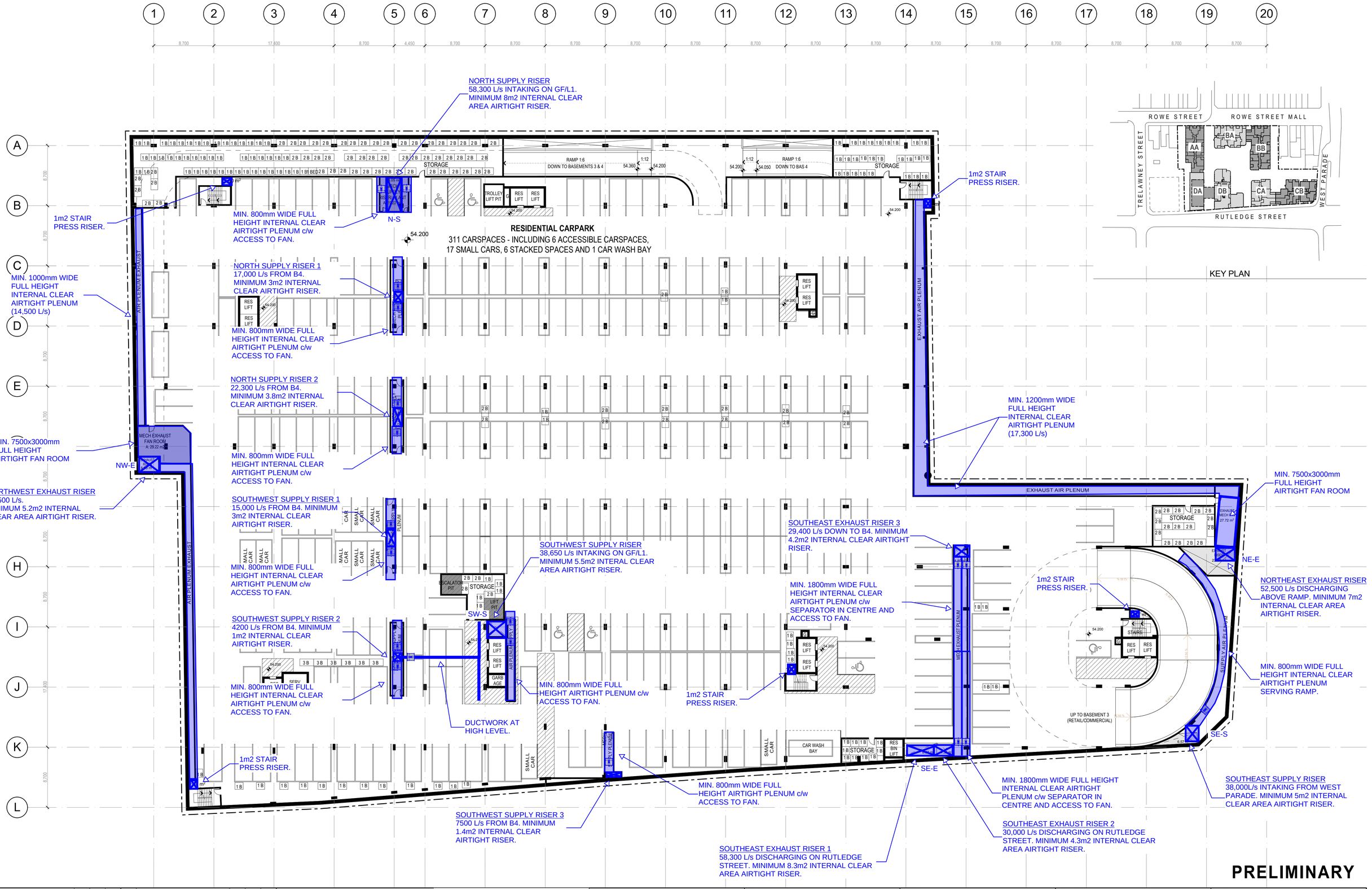
P: 02 0000 0000
F: 02 0000 0000
xx@xxxxxxxx.com.au

PROJECT: EASTWOOD CENTRE
144-186 ROWE STREET
EASTWOOD, NSW, 2122

DRAWING TITLE: BASEMENT 4

SCALE: 1:250 @ A1 1:500 @ A3
CHECKED: MVS
PROJECT NUMBER: 15R
DRAWING NUMBER: DA 1104
ISSUE: 00

teamwork:\\AUSNSYD-BIM01\15R Eastwood MASTER



PRELIMINARY

REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE
00	FOR REVIEW	LK	MVS	27/05/16

EASTWOOD BASEMENT SPATIALS: BASEMENT 3

Eastwood Redevelopment, Eastwood, NSW

Mechanical Services - Spatial Planning

Prepared: ND Date: 30/05/2016 Project Number: AA009093

CLIENT: YUHU GROUP (AUSTRALIA) Pty. Ltd.

STREET ADDRESS
SUBURB AND POSTCODE

ARCHITECTS: RICE DAUBNEY

Level 1, 110 Walker Street, North Sydney NSW 2060, Australia
+61 2 9956 2666 | hdricedaubney.com | hdrinc.com
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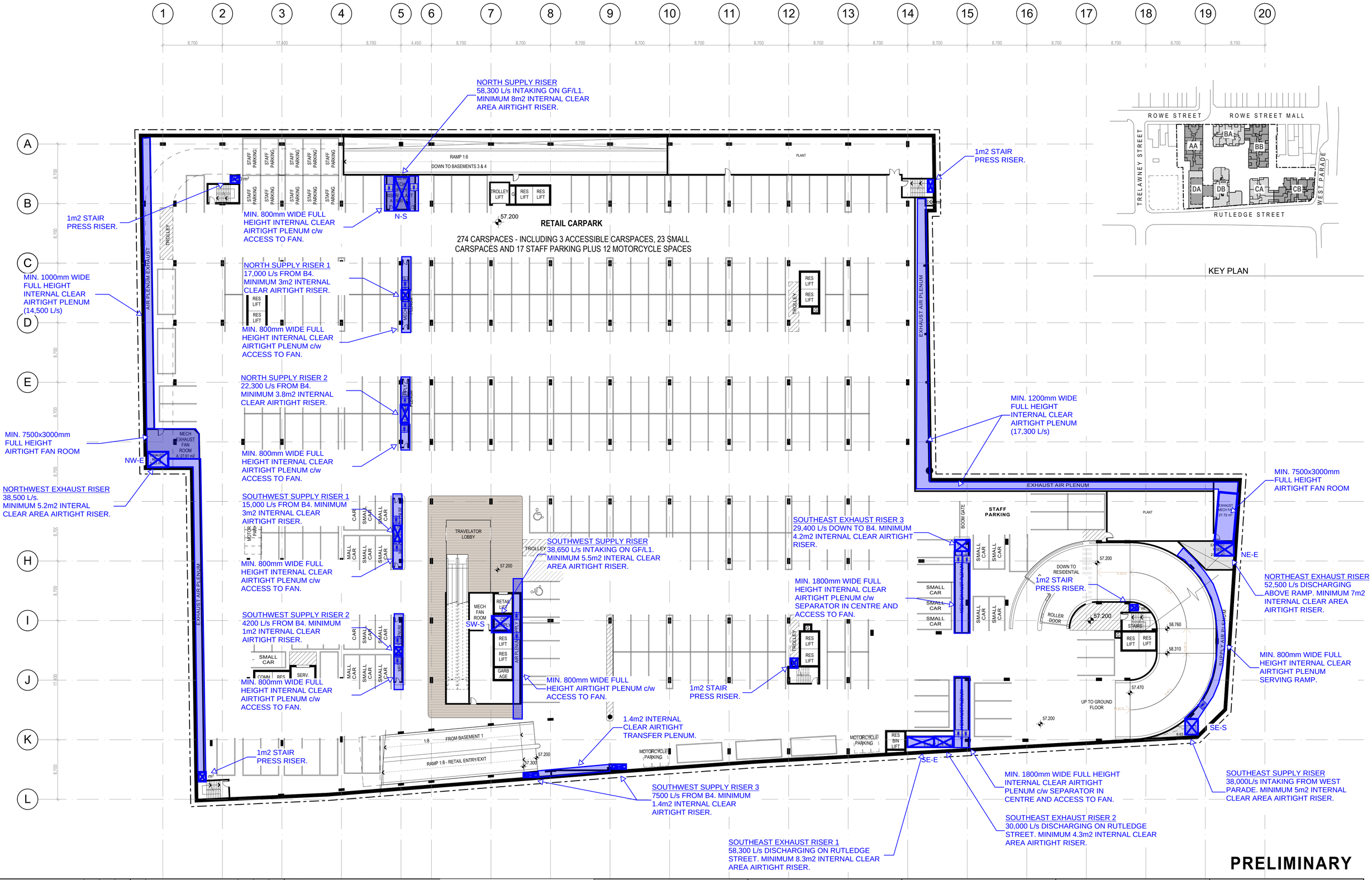
P: 02 0000 0000
F: 02 0000 0000
xx@xxxxxxxx.com.au

PROJECT: EASTWOOD CENTRE
144-186 ROWE STREET
EASTWOOD, NSW, 2122

DRAWING TITLE: BASEMENT 3

SCALE: 1:250 @ A1 1:500 @ A3
CHECKED: MVS
PROJECT NUMBER: 15R
DRAWING NUMBER: DA 1103
ISSUE: 00

teamwork://AUSNSYD-BIM01/15R Eastwood MASTER



REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE
00	FOR REVIEW	LK	MVS	27/05/16

EASTWOOD BASEMENT SPATIALS: BASEMENT 2

Eastwood Redevelopment, Eastwood, NSW

Mechanical Services - Spatial Planning

Prepared: ND Date: 30/05/2016 Project Number: AA009093

CLIENT: YUHU GROUP (AUSTRALIA) Pty. Ltd.

STREET ADDRESS
SUBURB AND POSTCODE

ARCHITECTS
HDR RICE DAUBNEY
Level 1, 110 Walker Street, North Sydney NSW 2060, Australia
+61 2 9956 2666 | hdricedaubney.com | hdrinc.com
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ABN 56 880 304 993
P: 02 0000 0000
F: 02 0000 0000
xx@xxxxxxxx.com.au

PROJECT: EASTWOOD CENTRE
144-186 ROWE STREET
EASTWOOD, NSW, 2122

DRAWING TITLE: BASEMENT 2

SCALE: 1:250 @ A1 1:500 @ A3
CHECKED: MVS
PROJECT NUMBER: 15R
DRAWING NUMBER: DA 1102
ISSUE: 00

NORTH SUPPLY RISER
58,300 L/s INTAKING ON GF/L1.
MINIMUM 8m2 INTERNAL CLEAR AREA AIRTIGHT RISER.

1m2 STAIR PRESS RISER.

1m2 STAIR PRESS RISER.

MIN. 5000x5000mm FULL HEIGHT AIRTIGHT FAN ROOM c/w FAN ACCESS AND 5.5m2 LOUVRE TO

ARPARK

262 CARS
24 S
: CARSPACES , 29 SMALL CARSPACES AND
IKE SPACES AND 21 BICYCLE SPACES

RESI RAMP.

MIN. 1000mm WIDE FULL HEIGHT INTERNAL CLEAR AIRTIGHT PLENUM (14,500 L/s)

NORTH SUPPLY RISER 1
17,000 L/s FROM B4.
MINIMUM 3m2 INTERNAL CLEAR AIRTIGHT RISER.

MIN. 800mm WIDE FULL HEIGHT INTERNAL CLEAR AIRTIGHT PLENUM c/w ACCESS TO FAN.

NORTH SUPPLY RISER 2
22,300 L/s FROM B4.
MINIMUM 3.8m2 INTERNAL CLEAR AIRTIGHT RISER.

MIN. 800mm WIDE FULL HEIGHT INTERNAL CLEAR AIRTIGHT PLENUM c/w ACCESS TO FAN.

MIN. 7500x3000mm FULL HEIGHT AIRTIGHT FAN ROOM

NW-E

NORTHWEST EXHAUST RISER
38,500 L/s.
MINIMUM 5.2m2 INTERAL CLEAR AREA AIRTIGHT RISER.

SOUTHWEST SUPPLY RISER 1
15,000 L/s FROM B4. MINIMUM 3m2 INTERNAL CLEAR AIRTIGHT RISER.

MIN. 800mm WIDE FULL HEIGHT INTERNAL CLEAR AIRTIGHT PLENUM c/w ACCESS TO FAN.

SOUTHWEST SUPPLY RISER 2
4200 L/s FROM B4. MINIMUM 1m2 INTERNAL CLEAR AIRTIGHT RISER.

MIN. 800mm WIDE FULL HEIGHT INTERNAL CLEAR AIRTIGHT PLENUM c/w ACCESS TO FAN.

SOUTHWEST SUPPLY RISER
38,650 L/s INTAKING ON GF/L1.
MINIMUM 5.5m2 INTERNAL CLEAR AREA AIRTIGHT RISER.

SW-S

MIN. 800mm WIDE FULL HEIGHT AIRTIGHT PLENUM c/w ACCESS TO FAN.

1m2 STAIR PRESS RISER.

SOUTHEAST EXHAUST RISER 3
29,400 L/s DOWN TO B4. MINIMUM 4.2m2 INTERNAL CLEAR AIRTIGHT RISER.

MIN. 1800mm WIDE FULL HEIGHT INTERNAL CLEAR AIRTIGHT PLENUM c/w SEPARATOR IN CENTRE AND ACCESS TO FAN.

1m2 STAIR PRESS RISER.

MIN. 1200mm WIDE FULL HEIGHT INTERNAL CLEAR AIRTIGHT PLENUM (17,300 L/s)

MIN. 7500x3000mm FULL HEIGHT AIRTIGHT FAN ROOM

NE-E

NORTHEAST EXHAUST RISER
52,500 L/s DISCHARGING ABOVE RAMP. MINIMUM 7m2 INTERNAL CLEAR AREA AIRTIGHT RISER.

MIN. 800mm WIDE FULL HEIGHT INTERNAL CLEAR AIRTIGHT PLENUM SERVING RAMP.

SE-S

SOUTHEAST SUPPLY RISER
38,000L/s INTAKING FROM WEST PARADE. MINIMUM 5m2 INTERNAL CLEAR AREA AIRTIGHT RISER.

RETAIL RAMP EXHAUST RISER
4800 L/s FROM GF TO B1 PLENUM.
MINIMUM 1m2 INTERNAL CLEAR AREA AIRTIGHT RISER.

SOUTHWEST SUPPLY RISER 3
7500 L/s FROM B4. MINIMUM 1.4m2 INTERNAL CLEAR AIRTIGHT RISER.

SE-E

SOUTHEAST EXHAUST RISER 1
58,300 L/s DISCHARGING ON RUTLEDGE STREET. MINIMUM 8.3m2 INTERNAL CLEAR AREA AIRTIGHT RISER.

MIN. 1800mm WIDE FULL HEIGHT INTERNAL CLEAR AIRTIGHT PLENUM c/w SEPARATOR IN CENTRE AND ACCESS TO FAN.

SOUTHEAST EXHAUST RISER 2
30,000 L/s DISCHARGING ON RUTLEDGE STREET. MINIMUM 4.3m2 INTERNAL CLEAR AREA AIRTIGHT RISER.

ROWE STREET
ROWE STREET MALL
TRELAWNEY STREET
WEST PARADE
RUTLEDGE STREET
AA BA BB DA DB CA CB

KEY PLAN

PRELIMINARY

REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE
00	FOR REVIEW	LK	MVS	27/05/16

EASTWOOD BASEMENT SPATIALS: BASEMENT 1

Eastwood Redevelopment, Eastwood, NSW

ARCADIS Design & Consultancy for natural and built assets

Mechanical Services - Spatial Planning

Prepared: ND Date: 30/05/2016 Project Number: AA009093

CLIENT: YUHU GROUP (AUSTRALIA) Pty. Ltd.

STREET ADDRESS
SUBURB AND POSTCODE

ARCHITECTS: HDR RICE DAUBNEY

Level 1, 110 Walker Street, North Sydney NSW 2060, Australia
+61 2 9956 2666 | hdricedaubney.com | hdrinc.com
The Rice Daubney Group (NSW) P/L as trustee for The Rice Daubney Trading Trust
ABN 56 880 304 993

P: 02 0000 0000
F: 02 0000 0000
xx@xxxxxxxx.com.au

PROJECT: EASTWOOD CENTRE
144-186 ROWE STREET
EASTWOOD, NSW, 2122

DRAWING TITLE: BASEMENT 1

SCALE: 1:250 @ A1 1:500 @ A3
CHECKED: MVS
PROJECT NUMBER: 15R
DRAWING NUMBER: DA 1101
ISSUE: 00

teamwork://AUSNSYD-BIM01/15R Eastwood MASTER

MIN. 5000x3000mm FULL HEIGHT AIRTIGHT FAN ROOM c/w ACCESS AND 4m2 LOUVRE TO RAMP.

RESI RAMP EXHAUST RISER
5,800 L/s DISCHARGING ON ROWE STREET.
MINIMUM 0.85m2 INTERNAL CLEAR AREA AIRTIGHT RISER.

NORTH SUPPLY RISER
58,300 L/s INTAKING ON GF/L1.
MINIMUM 8m2 INTERNAL CLEAR AREA AIRTIGHT RISER.

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT

1m2 STAIR PRESS RISER.

40m2 INTAKE LOUVRE. ADJACENT STAIRS.

1m2 STAIR PRESS RISER.

LOADING DOCK EXHAUST RISER 1
4,500 L/s TO LOWER GROUND.
MINIMUM 1m2 INTERNAL CLEAR AREA AIRTIGHT RISER. DUCTING AT HIGH LEVEL.

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET KITCHEN EXHAUST SHAFT.

1400x550mm DUCT AT HIGH LEVEL IN LOADING AREA AND ABOVE GENERATOR/CHILLER PLANTRROOMS.

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT

CHW AND HHW PLANT ROOM #3
MINIMUM 5000mm CLEAR INTERNAL HEIGHT THROUGHOUT. ACCESS FOR MAINTENANCE AND PLANT REMOVAL REQUIRED

6.5m2 INTERAL CLEAR AREA AIRTIGHT TRANSFER PLENUM.

CHW AND HHW PLANT ROOM #2
MINIMUM 5000mm CLEAR INTERNAL HEIGHT THROUGHOUT. ACCESS FOR MAINTENANCE AND PLANT REMOVAL REQUIRED.

CHW AND HHW PLANT ROOM #1
MINIMUM 5000mm CLEAR INTERNAL HEIGHT THROUGHOUT. ACCESS FOR MAINTENANCE AND PLANT REMOVAL REQUIRED

NW-E

NORTHWEST EXHAUST RISER
38,500 L/s.
MINIMUM 5.2m2 INTERAL CLEAR AREA AIRTIGHT RISER.

MIN. 1500mm WIDE FULL HEIGHT INTERNAL CLEAR AIRTIGHT PLENUM (23,000 L/s)

NE-E

1m2 STAIR PRESS RISER.

NORTHEAST EXHAUST RISER
52,500 L/s DISCHARGING ABOVE RAMP. MINIMUM 7m2 INTERNAL CLEAR AREA AIRTIGHT RISER.

SOUTHWEST SUPPLY RISER
38,650 L/s INTAKING ON GF/L1.
MINIMUM 5.5m2 INTERNAL CLEAR AREA AIRTIGHT RISER.

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET KITCHEN EXHAUST SHAFT.

SW-S

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT

1m2 STAIR PRESS RISER.

MIN. 800mm WIDE FULL HEIGHT INTERNAL CLEAR AIRTIGHT PLENUM SERVING RAMP.

RETAIL RAMP EXHAUST RISER
4800 L/s FROM GF TO B1 PLENUM.
MINIMUM 1m2 INTERNAL CLEAR AREA AIRTIGHT RISER.

SR-S RISER

SOUTHEAST SUPPLY RISER
38,000L/s INTAKING FROM WEST PARADE. MINIMUM 5m2 INTERNAL CLEAR AREA AIRTIGHT RISER.

MIN. 5000x3000mm FULL HEIGHT AIRTIGHT STAIR PRESS FAN ROOM c/w ACCESS.

1m2 STAIR PRESS RISER.

MIN. 7500x3000mm FULL HEIGHT AIRTIGHT FAN ROOM

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT.

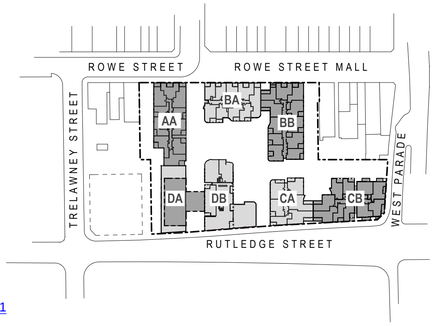
MIN. 1500mm WIDE FULL HEIGHT INTERNAL CLEAR AIRTIGHT PLENUM (23,000 L/s)

SE-E

SOUTHRAMP SUPPLY RISER
2,800 L/s INTAKING ON RUTLEDGE STREET. MINIMUM 0.5m2 INTERNAL CLEAR AREA AIRTIGHT RISER. DUCTING AT HIGH LEVEL.

SOUTHEAST EXHAUST RISER 1
58,300 L/s DISCHARGING ON RUTLEDGE STREET. MINIMUM 8.3m2 INTERNAL CLEAR AREA AIRTIGHT RISER.

SOUTHEAST EXHAUST RISER 2
30,000 L/s DISCHARGING ON RUTLEDGE STREET. MINIMUM 4.3m2 INTERNAL CLEAR AREA AIRTIGHT RISER.



KEY PLAN

PRELIMINARY

REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE
00	FOR REVIEW	JR	MVS	27/05/16

EASTWOOD BASEMENT SPATIALS: LOWER GROUND

Eastwood Redevelopment, Eastwood, NSW

Mechanical Services - Spatial Planning

Prepared: ND Date: 30/05/2016 Project Number: AA009093

CLIENT: YUHU GROUP (AUSTRALIA) Pty. Ltd.

STREET ADDRESS
SUBURB AND POSTCODE

ARCHITECTS: HDR RICE DAUBNEY

Level 1, 110 Walker Street, North Sydney NSW 2060, Australia
+61 2 9956 2666 | hdricedaubney.com | hdrinc.com
The Rice Daubney Group (NSW) P/L as trustee for The Rice Daubney Trading Trust
ABN 56 880 304 993

P: 02 0000 0000
F: 02 0000 0000
xx@xxxxxxxx.com.au

PROJECT: EASTWOOD CENTRE
144-186 ROWE STREET
EASTWOOD, NSW, 2122

DRAWING TITLE: LOWER GROUND PLAN

SCALE: 1:250 @ A1 1:500 @ A3
CHECKED: MVS
PROJECT NUMBER: 15R
DRAWING NUMBER: DA 1100
ISSUE: 00

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

A B C D E F G H I K L

ROWE STREET

ROWE STREET MALL

4m2 EXHAUST LOUVRE. 6m FROM ADJACENT PROPERTY, OPENABLE WINDOW/DOOR AND THE LIKE.

RESI RAMP EXHAUST RISER 5,800 L/s DISCHARGING ON ROWE STREET. MINIMUM 0.85m2 INTERNAL CLEAR AREA AIRTIGHT RISER.

4.5m2 INTAKE LOUVRE. MIN 3m FROM PROPERTY BOUNDARY.

MIN.1500x3000mm FULL HEIGHT FIRE RATED AIRTIGHT FAN ROOM

1m2 STAIR PRESS RISER.

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT

MIN. 5000x3000mm FULL HEIGHT FIRE RATED AIRTIGHT FAN ROOM.

4.5m2 INTAKE LOUVRE. MIN 3m FROM PROPERTY BOUNDARY.

MIN. 2.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED FOOD TENANCY KITCHEN EXHAUST SHAFT.

1m2 STAIR PRESS RISER.

MIN. 2.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED FOOD TENANCY KITCHEN EXHAUST SHAFT.

LOADING DOCK EXHAUST RISER 1 4,500 L/s TO LOWER GROUND. MINIMUM 1m2 INTERNAL CLEAR AREA AIRTIGHT RISER. DUCTING AT HIGH LEVEL.

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET KITCHEN EXHAUST SHAFT.

DUCTWORK AND FAN AT HIGH LEVEL IN LOADING DOCK.

NORTHWEST EXHAUST RISER 38,500 L/s. MINIMUM 5.2m2 INTERNAL CLEAR AREA AIRTIGHT RISER.

SPOT COOLING TO KIOSK BY UNDERSLAB DUCTWORK. FCU'S IN CEILING VOID ABOVE SUPERMARKET. RISERS INTO STALLS.

25.7m2 EXHAUST LOUVRE. 6m FROM ADJACENT PROPERTY, OPENABLE WINDOW/DOOR AND THE LIKE.

SOUTHWEST SUPPLY RISER 38,650 L/s INTAKING ON GF/L1. MINIMUM 5.5m2 INTERNAL CLEAR AREA AIRTIGHT RISER.

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED MINI MAJOR KITCHEN EXHAUST SHAFT.

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET KITCHEN EXHAUST SHAFT.

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT.

1m2 STAIR PRESS RISER.

1m2 STAIR PRESS RISER.

NORTHEAST EXHAUST RISER 52,500 L/s DISCHARGING ABOVE RAMP. MINIMUM 7m2 INTERNAL CLEAR AREA AIRTIGHT RISER.

MIN. 800mm WIDE FULL HEIGHT INTERNAL CLEAR AIRTIGHT PLENUM SERVING RAMP.

RETAIL RAMP EXHAUST RISER 4800 L/s FROM GF TO B1 PLENUM. MINIMUM 1m2 INTERNAL CLEAR AREA AIRTIGHT RISER.

SOUTHRAMP SUPPLY RISER 2,800 L/s INTAKING ON RUTLEDGE STREET. MINIMUM 0.5m2 INTERNAL CLEAR AREA AIRTIGHT RISER. DUCTING AT HIGH LEVEL.

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT

DUCTWORK AND FAN AT HIGH LEVEL IN LOADING DOCK.

MIN. 5000x3000mm FULL HEIGHT AIRTIGHT FAN ROOM c/w ACCESS AND 3.5m2 LOUVRE TO RAMP.

SOUTHEAST EXHAUST RISER 1 58,300 L/s DISCHARGING ON RUTLEDGE STREET. MINIMUM 7.8m2 INTERNAL CLEAR AREA AIRTIGHT RISER.

SOUTHEAST EXHAUST RISER 2 30,000 L/s DISCHARGING ON RUTLEDGE STREET. MINIMUM 4.3m2 INTERNAL CLEAR AREA AIRTIGHT RISER.

SOUTHEAST SUPPLY RISER 38,000L/s INTAKING FROM WEST PARADE. MINIMUM 5m2 INTERNAL CLEAR AREA AIRTIGHT RISER.

1m2 STAIR PRESS RISER.

ROWE STREET
ROWE STREET MALL
TRELAWNEY STREET
WEST PARADE
RUTLEDGE STREET

PRELIMINARY

REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE
00	FOR REVIEW	JR	MVS	27/05/16

EASTWOOD BASEMENT SPATIALS: GROUND FLOOR

Eastwood Redevelopment, Eastwood, NSW

ARCADIS Design & Consultancy for natural and built assets

Mechanical Services - Spatial Planning

Prepared: ND Date: 30/05/2016 Project Number: AA009093

CLIENT: YUHU GROUP (AUSTRALIA) Pty. Ltd.

STREET ADDRESS
SUBURB AND POSTCODE

ARCHITECTS: HDR RICE DAUBNEY

Level 1, 110 Walker Street, North Sydney NSW 2060, Australia
+61 2 9956 2666 | hdricedaubney.com | hdrinc.com
The Rice Daubney Group (NSW) P/L as trustee for The Rice Daubney Trading Trust
ABN 56 880 304 993

P: 02 0000 0000
F: 02 0000 0000
xx@xxxxxxxx.com.au

PROJECT: EASTWOOD CENTRE
144-186 ROWE STREET
EASTWOOD, NSW, 2122

DRAWING TITLE: GROUND PLAN - ROWE ST

SCALE: 1:250 @ A1 1:500 @ A3
CHECKED: MVS
PROJECT NUMBER: 15R
DRAWING NUMBER: DA 1201
ISSUE: 00

teamwork://AUSNSYD-BIM01/15R Eastwood MASTER

ROWE STREET

ROWE STREET MALL

RUTLEDGE STREET

WEST PARADE

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT

650x400 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

800x450 CLEAR INTERNAL CHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

MIN. 2.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED FOOD TENANCY KITCHEN EXHAUST SHAFT.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET KITCHEN EXHAUST SHAFT.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT

650x400 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

800x450 CLEAR INTERNAL CHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

650x400 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

800x450 CLEAR INTERNAL CHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

450x250 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

800x450 CLEAR INTERNAL CHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

700x400 CLEAR INTERNAL CHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

650x400 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

1250x700 CLEAR INTERNAL CCW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

1150x650 CLEAR INTERNAL CCW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

26m2 INTAKE LOUVRE. BEHIND ESCALATOR OVER GROUND FLOORS.

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED MINI MAJOR KITCHEN EXHAUST SHAFT.

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED MINI MAJOR KITCHEN EXHAUST SHAFT.

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET KITCHEN EXHAUST SHAFT.

1m2 STAIR PRESS RISER.

RISER FROM ABOVE.

RISER FROM ABOVE.

RISER FROM ABOVE.

RISER FROM ABOVE.

RISER FROM ABOVE.

1m2 STAIR PRESS RISER.

4.5m2 INTAKE LOUVRE. MIN 3m FROM PROPERTY BOUNDARY.

MIN.1500x3000mm FULL HEIGHT FIRE RATED AIRTIGHT FAN ROOM

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

650x400 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

800x450 CLEAR INTERNAL CHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

SUPERMARKET REFRIGERATION ENCLOSURE - SHOWN INDICATIVELY
15000 L x 8000 W x 2400 H CLEAR INTERNAL ENCLOSURE WITH PLANT WITHIN. BASED ON WOOLWORTHS STANDARD DRAWING AM36

35m2 EXHAUST LOUVRE. 6m FROM ADJACENT PROPERTY, OPENABLE WINDOW/DOOR AND DOCK ENTRANCE.

MIN.1.5m2 AIRTIGHT TRANSFER PLENUM OR DUCT IN CEILING VOID.

MIN.1500x3000mm FULL HEIGHT FIRE RATED AIRTIGHT FAN ROOM

4.5m2 INTAKE LOUVRE. MIN 3m FROM PROPERTY BOUNDARY.

MINI MAJOR REFRIGERATION ENCLOSURE - SHOWN INDICATIVELY
7500 L x 8000 W x 2400 H CLEAR INTERNAL ENCLOSURE WITH PLANT WITHIN. BASED ON WOOLWORTHS STANDARD DRAWING AM36 - HALF SIZE

SPECIALTY MEZZANINE A: 54.81 m2

PUBLIC PARK 'THE SECRET GARDEN' 20.20m x 40.40m

COMM SUITE 1A A: 417.86 m2

COMM SUITE 1B A: 163.21 m2

AMENITIES A: 43.52 m2

COMMERCIAL LOBBY A: 38.21 m2

MINI-MAJOR YUM-CHA A: 583.15 m2

PHARMACY A: 300.03 m2

MEDICAL CENTRE A: 687.31 m2

POOL SERVICE AREA A: 150.86 m2

RES. LOBBY A: 99.03 m2

RES. LOBBY A: 28.76 m2

2 x TRANSFORMER SUBSTATION A: 100.38 m2

COMMERCIAL A: 75.97 m2

GYM A: 348.30 m2

BOOSTER A: 4.81 m2

BIKE PARKING

TERRACE

KEY PLAN

ROWE STREET | ROWE STREET MALL | TRELAWNEY STREET | WEST PARADE | RUTLEDGE STREET

AA | BA | BB | DA | DB | CA | CB

PRELIMINARY

REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE
00	FOR REVIEW	JR	MVS	27/05/16

EASTWOOD BASEMENT SPATIALS: LEVEL 1

Eastwood Redevelopment, Eastwood, NSW

ARCADIS Design & Consultancy for natural and built assets

Mechanical Services - Spatial Planning

Prepared: ND Date: 30/05/2016 Project Number: AA009093

CLIENT: YUHU GROUP (AUSTRALIA) Pty. Ltd.

STREET ADDRESS
SUBURB AND POSTCODE

ARCHITECTS: HDR RICE DAUBNEY

Level 1, 110 Walker Street, North Sydney NSW 2060, Australia
+61 2 9956 2666 | hdricedaubney.com | hdrinc.com
The Rice Daubney Group (NSW) P/L as trustee for The Rice Daubney Trading Trust
ABN 56 880 304 993

P: 02 0000 0000
F: 02 0000 0000
xx@xxxxxxxx.com.au

PROJECT: EASTWOOD CENTRE
144-186 ROWE STREET
EASTWOOD, NSW, 2122

DRAWING TITLE: LEVEL 1 - RUTLEDGE ST

SCALE: 1:250 @ A1 1:500 @ A3
CHECKED: MVS
PROJECT NUMBER: 15R
DRAWING NUMBER: DA 1301
ISSUE: 00

ROWE STREET

ROWE STREET MALL

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT

650x400 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

800x450 CLEAR INTERNAL CHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

MIN. 2.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED FOOD TENANCY KITCHEN EXHAUST SHAFT.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET KITCHEN EXHAUST SHAFT.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT

650x400 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

800x450 CLEAR INTERNAL CHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

450x250 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

800x450 CLEAR INTERNAL CHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

700x400 CLEAR INTERNAL CHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

650x400 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

1250x700 CLEAR INTERNAL CCW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

1150x650 CLEAR INTERNAL CCW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED MINI MAJOR KITCHEN EXHAUST SHAFT.

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT.

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED MINI MAJOR KITCHEN EXHAUST SHAFT.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT.

35m2 EXHAUST LOUVRE. 6m FROM ADJACENT PROPERTY, OPENABLE WINDOW/DOOR AND DOCK ENTRANCE.

RISER FROM ABOVE.

RISER FROM ABOVE.

RISER FROM ABOVE.

RISER FROM ABOVE.

RISER FROM ABOVE.

2 OFF MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

KEY PLAN

ROWE STREET

ROWE STREET MALL

TRELAWNEY STREET

WEST PARADE

RUTLEDGE STREET

AA BA BB DA DB CA CB

WEST PARADE

G E STREET

0 1 2 3 4 5

PRELIMINARY

REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE
00	FOR REVIEW	PL	MVS	27/05/16

EASTWOOD BASEMENT SPATIALS: LEVEL 2

Eastwood Redevelopment, Eastwood, NSW

ARCADIS Design & Consultancy for natural and built assets

Mechanical Services - Spatial Planning

Prepared: ND Date: 30/05/2016 Project Number: AA009093

CLIENT: YUHU GROUP (AUSTRALIA) Pty. Ltd.

STREET ADDRESS
SUBURB AND POSTCODE

ARCHITECTS: HDR RICE DAUBNEY

Level 1, 110 Walker Street, North Sydney NSW 2060, Australia
+61 2 9956 2666 | hdricedaubney.com | hdrinc.com
The Rice Daubney Group (NSW) P/L as trustee for The Rice Daubney Trading Trust
ABN 56 880 304 993

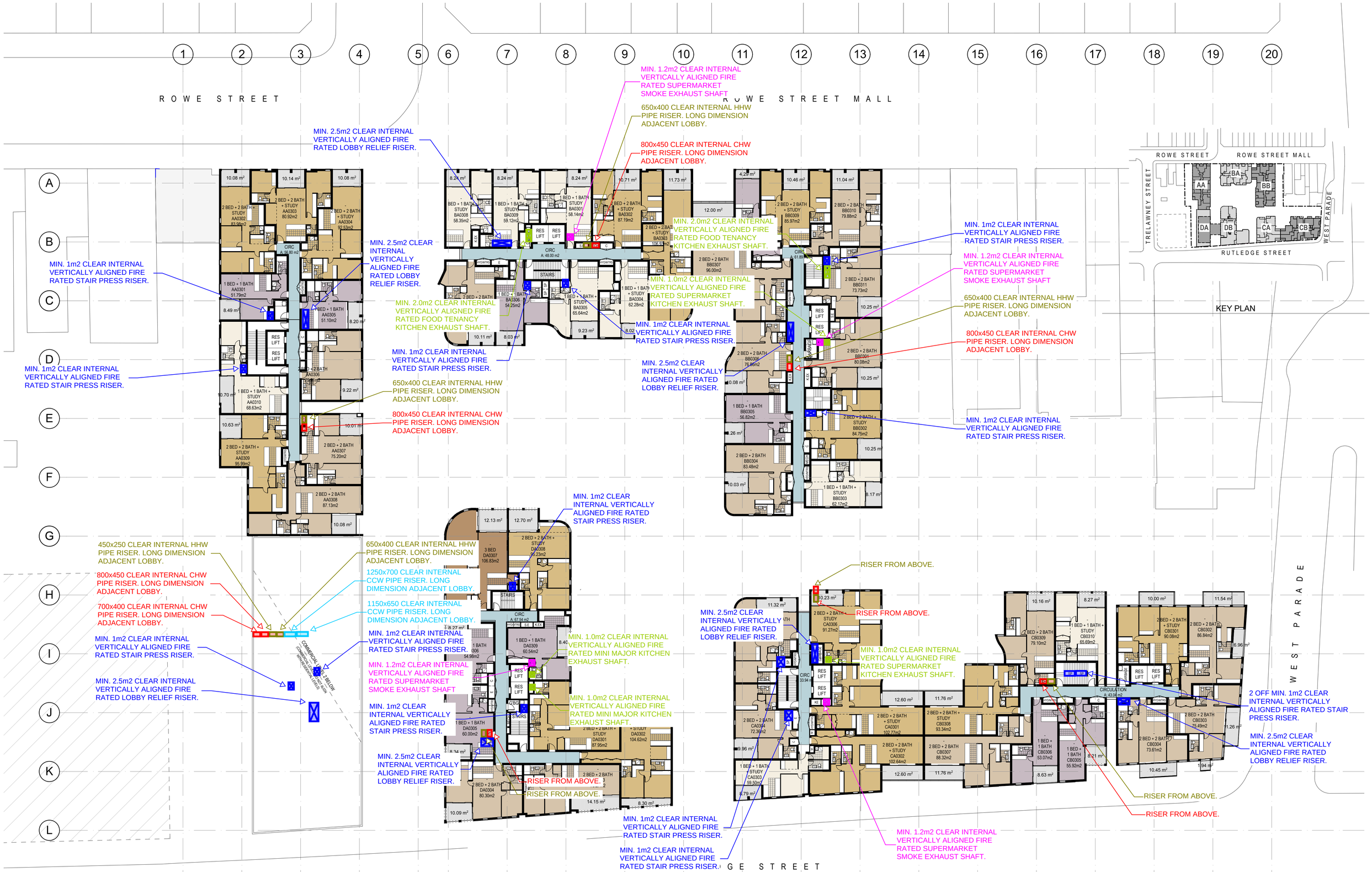
P: 02 0000 0000
F: 02 0000 0000
xx@xxxxxxxx.com.au

PROJECT: EASTWOOD CENTRE
144-186 ROWE STREET
EASTWOOD, NSW, 2122

DRAWING TITLE: LEVEL 2

SCALE: 1:250 @ A1 1:500 @ A3
CHECKED: MVS
PROJECT NUMBER: 15R
DRAWING NUMBER: DA 1302
ISSUE: 00

teamwork://AUSNSYD-BIM01/15R Eastwood MASTER



PRELIMINARY

REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE
00	FOR REVIEW	PL	MVS	27/05/16

EASTWOOD BASEMENT SPATIALS: LEVEL 3

Eastwood Redevelopment, Eastwood, NSW — ARCADIS Design & Consultancy for natural and built assets

Mechanical Services - Spatial Planning

Prepared: ND Date: 30/05/2016 Project Number: AA009093

CLIENT: YUHU GROUP (AUSTRALIA) Pty. Ltd.

STREET ADDRESS
SUBURB AND POSTCODE

ARCHITECTS: HDR RICE DAUBNEY

Level 1, 110 Walker Street, North Sydney NSW 2060, Australia
+61 2 9956 2666 | hdricedaubney.com | hdrinc.com
The Rice Daubney Group (NSW) P/L as trustee for The Rice Daubney Trading Trust
ABN 56 880 304 993

P: 02 0000 0000
F: 02 0000 0000
xx@xxxxxxxx.com.au

PROJECT: EASTWOOD CENTRE
144-186 ROWE STREET
EASTWOOD, NSW, 2122

DRAWING TITLE: LEVEL 3

SCALE: 1:250 @ A1 1:500 @ A3
CHECKED: MVS
PROJECT NUMBER: 15R
DRAWING NUMBER: DA 1303
ISSUE: 00

teamwork:\\AUSNSYD-BIM01\15R Eastwood MASTER

ROWE STREET

ROWE STREET MALL

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT

650x400 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

800x450 CLEAR INTERNAL CHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

MIN. 2.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED FOOD TENANCY KITCHEN EXHAUST SHAFT.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET KITCHEN EXHAUST SHAFT.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT

650x400 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

800x450 CLEAR INTERNAL CHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

650x400 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

800x450 CLEAR INTERNAL CHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

450x250 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

800x450 CLEAR INTERNAL CHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

700x400 CLEAR INTERNAL CHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

650x400 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

1250x700 CLEAR INTERNAL CCW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

1150x650 CLEAR INTERNAL CCW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED MINI MAJOR KITCHEN EXHAUST SHAFT.

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED MINI MAJOR KITCHEN EXHAUST SHAFT.

RISER FROM ABOVE.

RISER FROM ABOVE.

RISER FROM ABOVE.

RISER FROM ABOVE.

RISER FROM ABOVE.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT.

2 OFF MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

WEST PARADE

G E STREET

KEY PLAN

ROWE STREET

ROWE STREET MALL

TRELAWNEY STREET

WEST PARADE

RUTLEDGE STREET

AA BA BB DA DB CA CB

PRELIMINARY

REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE
00	FOR REVIEW	PL	MVS	27/05/16

EASTWOOD BASEMENT SPATIALS: LEVEL 4

Eastwood Redevelopment, Eastwood, NSW

ARCADIS Design & Consultancy for natural and built assets

Mechanical Services - Spatial Planning

Prepared: ND Date: 30/05/2016 Project Number: AA009093

CLIENT: YUHU GROUP (AUSTRALIA) Pty. Ltd.

STREET ADDRESS
SUBURB AND POSTCODE

ARCHITECTS: HDR RICE DAUBNEY

Level 1, 110 Walker Street, North Sydney NSW 2060, Australia
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The Rice Daubney Group (NSW) P/L as trustee for The Rice Daubney Trading Trust
ABN 56 880 304 993

P: 02 0000 0000
F: 02 0000 0000
xx@xxxxxxxx.com.au

PROJECT: EASTWOOD CENTRE
144-186 ROWE STREET
EASTWOOD, NSW, 2122

DRAWING TITLE: LEVEL 4

SCALE: 1:250 @ A1 1:500 @ A3
CHECKED: MVS
PROJECT NUMBER: 15R
DRAWING NUMBER: DA 1304
ISSUE: 00

teamwork://AUSNSYD-BIM01/15R Eastwood MASTER

ROWE STREET

ROWE STREET MALL

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT

650x400 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

800x450 CLEAR INTERNAL CHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

MIN. 2.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED FOOD TENANCY KITCHEN EXHAUST SHAFT.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET KITCHEN EXHAUST SHAFT.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT

650x400 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

800x450 CLEAR INTERNAL CHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

650x400 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

800x450 CLEAR INTERNAL CHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

450x250 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

800x450 CLEAR INTERNAL CHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

700x400 CLEAR INTERNAL CHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

650x400 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

1250x700 CLEAR INTERNAL CCW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

1150x650 CLEAR INTERNAL CCW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED MINI MAJOR KITCHEN EXHAUST SHAFT.

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED MINI MAJOR KITCHEN EXHAUST SHAFT.

RISER FROM ABOVE.

RISER FROM ABOVE.

RISER FROM ABOVE.

RISER FROM ABOVE.

RISER FROM ABOVE.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET KITCHEN EXHAUST SHAFT.

2 OFF MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT.

G E STREET

WEST PARADE

ROWE STREET

ROWE STREET MALL

TRELAWNEY STREET

WEST PARADE

RUTLEDGE STREET

KEY PLAN

PRELIMINARY

REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE
00	FOR REVIEW	PL	MVS	27/05/16

EASTWOOD BASEMENT SPATIALS: LEVEL 5

Eastwood Redevelopment, Eastwood, NSW ARCADIS Design & Consultancy for natural and built assets

Mechanical Services - Spatial Planning

Prepared: ND Date: 30/05/2016 Project Number: AA009093

CLIENT: YUHU GROUP (AUSTRALIA) Pty. Ltd.

STREET ADDRESS
SUBURB AND POSTCODE

ARCHITECTS: HDR RICE DAUBNEY

Level 1, 110 Walker Street, North Sydney NSW 2060, Australia
+61 2 9956 2666 | hdricedaubney.com | hdrinc.com
The Rice Daubney Group (NSW) P/L as trustee for The Rice Daubney Trading Trust
ABN 56 880 304 993

P: 02 0000 0000
F: 02 0000 0000
xx@xxxxxxxx.com.au

PROJECT: EASTWOOD CENTRE
144-186 ROWE STREET
EASTWOOD, NSW, 2122

DRAWING TITLE: LEVEL 5

SCALE: 1:250 @ A1 1:500 @ A3
CHECKED: MVS
PROJECT NUMBER: 15R
DRAWING NUMBER: DA 1305
ISSUE: 00

teamwork://AUSNSYD-BIM01/15R Eastwood MASTER

ROWE STREET

WE STREET MALL

MIN. 5000x3000mm FULL HEIGHT FIRE RATED AIRTIGHT FAN ROOM.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT

650x400 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

800x450 CLEAR INTERNAL CHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

MIN. 2.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED FOOD TENANCY KITCHEN EXHAUST SHAFT.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET KITCHEN EXHAUST SHAFT.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

MIN. 5000x5000mm FULL HEIGHT FIRE RATED AIRTIGHT FAN ROOM.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT

650x400 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

800x450 CLEAR INTERNAL CHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

650x400 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

800x450 CLEAR INTERNAL CHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

450x250 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

800x450 CLEAR INTERNAL CHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

700x400 CLEAR INTERNAL CHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

650x400 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

1250x700 CLEAR INTERNAL CCW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

1150x650 CLEAR INTERNAL CCW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

RISER FROM ABOVE.

RISER FROM ABOVE.

RISER FROM ABOVE.

RISER FROM ABOVE.

RISER FROM ABOVE.

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED MINI MAJOR KITCHEN EXHAUST SHAFT.

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED MINI MAJOR KITCHEN EXHAUST SHAFT.

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET KITCHEN EXHAUST SHAFT.

2 OFF MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT.

KEY PLAN

ROWE STREET

ROWE STREET MALL

TRELAWNEY STREET

WEST PARADE

RUTLEDGE STREET

AA BA BB DA DB CA CB

WEST PARADE

RUTLEDGE STREET

PRELIMINARY

REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE
00	FOR REVIEW	PL	MVS	27/05/16

EASTWOOD BASEMENT SPATIALS: LEVEL 6

Eastwood Redevelopment, Eastwood, NSW

ARCADIS Design & Consultancy for natural and built assets

Mechanical Services - Spatial Planning

Prepared: ND Date: 30/05/2016 Project Number: AA009093

CLIENT: YUHU GROUP (AUSTRALIA) Pty. Ltd.

STREET ADDRESS
SUBURB AND POSTCODE

ARCHITECTS: HDR RICE DAUBNEY

Level 1, 110 Walker Street, North Sydney NSW 2060, Australia
+61 2 9956 2666 | hdricedaubney.com | hdrinc.com
The Rice Daubney Group (NSW) P/L as trustee for The Rice Daubney Trading Trust
ABN 56 880 304 993

P: 02 0000 0000
F: 02 0000 0000
xx@xxxxxxxx.com.au

PROJECT: EASTWOOD CENTRE
144-186 ROWE STREET
EASTWOOD, NSW, 2122

DRAWING TITLE: LEVEL 6

SCALE: 1:250 @ A1 1:500 @ A3
CHECKED: MVS
PROJECT NUMBER: 15R
DRAWING NUMBER: DA 1306
ISSUE: 00

teamwork://AUSNSYD-BIM01/15R Eastwood MASTER

ROWE STREET

ROWE STREET MALL

WEST PARADE

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

650x400 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

800x450 CLEAR INTERNAL CHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

MIN. 2.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED FOOD TENANCY KITCHEN EXHAUST SHAFT.

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET KITCHEN EXHAUST SHAFT.

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT

450x250 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

1250x700 CLEAR INTERNAL CCW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

1150x650 CLEAR INTERNAL CCW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

700x400 CLEAR INTERNAL CHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

RISER FROM ABOVE.

KEY PLAN

TRELAWNEY STREET

RUTLEDGE STREET

PRELIMINARY

REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE
00	FOR REVIEW	PL	MVS	27/05/16

EASTWOOD BASEMENT SPATIALS: LEVEL 7

Eastwood Redevelopment, Eastwood, NSW

ARCADIS Design & Consultancy for natural and built assets

Mechanical Services - Spatial Planning

Prepared: ND Date: 30/05/2016 Project Number: AA009093

CLIENT: YUHU GROUP (AUSTRALIA) Pty. Ltd.

STREET ADDRESS
SUBURB AND POSTCODE

ARCHITECTS: HDR RICE DAUBNEY

Level 1, 110 Walker Street, North Sydney NSW 2060, Australia
+61 2 9956 2666 | hdricedaubney.com | hdrinc.com
The Rice Daubney Group (NSW) P/L as trustee for The Rice Daubney Trading Trust
ABN 56 880 304 993

P: 02 0000 0000
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xx@xxxxxxxx.com.au

PROJECT: EASTWOOD CENTRE
144-186 ROWE STREET
EASTWOOD, NSW, 2122

DRAWING TITLE: LEVEL 7

SCALE: 1:250 @ A1 1:500 @ A3
CHECKED: MVS
PROJECT NUMBER: 15R
DRAWING NUMBER: DA 1307
ISSUE: 00

teamwork://AUSNSYD-BIM01/15R Eastwood MASTER

ROWE STREET

ROWE STREET MALL

WEST PARADE

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 5000x3000mm FULL HEIGHT FIRE RATED AIRTIGHT FAN ROOM.

MIN. 5000x3000mm FULL HEIGHT FIRE RATED AIRTIGHT FAN ROOM.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

MIN. 2.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED FOOD TENANCY KITCHEN EXHAUST SHAFT.

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET KITCHEN EXHAUST SHAFT.

MIN. 5000x3000mm FULL HEIGHT FIRE RATED AIRTIGHT FAN ROOM.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 5000x3000mm FULL HEIGHT FIRE RATED AIRTIGHT FAN ROOM.

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT

650x400 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

800x450 CLEAR INTERNAL CHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 5000x3000mm FULL HEIGHT FIRE RATED AIRTIGHT FAN ROOM.

KEY PLAN

ROWE STREET

ROWE STREET MALL

TRELAWNEY STREET

WEST PARADE

RUTLEDGE STREET

AA BA BB DA DB CA CB

450x250 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

650x400 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

1250x700 CLEAR INTERNAL CCW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

1150x650 CLEAR INTERNAL CCW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED MINI MAJOR KITCHEN EXHAUST SHAFT.

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED MINI MAJOR KITCHEN EXHAUST SHAFT.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

RISER FROM ABOVE.

RISER FROM ABOVE.

RISER FROM ABOVE.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

RISER FROM ABOVE.

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET KITCHEN EXHAUST SHAFT.

2 OFF MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

RISER FROM ABOVE.

RISER FROM ABOVE.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT.

PRELIMINARY

REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE
00	FOR REVIEW	PL	MVS	27/05/16

EASTWOOD BASEMENT SPATIALS: LEVEL 8

Eastwood Redevelopment, Eastwood, NSW

Mechanical Services - Spatial Planning

Prepared: ND Date: 30/05/2016 Project Number: AA009093

ARCADIS Design & Consultancy for natural and built assets

CLIENT: YUHU GROUP (AUSTRALIA) Pty. Ltd.

STREET ADDRESS
SUBURB and POSTCODE

ARCHITECTS: RICE DAUBNEY
Level 1, 110 Walker Street, North Sydney NSW 2060, Australia
+61 2 9956 2666 | hdriceadubney.com | hdrinc.com
The Rice Daubney Group (NSW) P/L as trustee for The Rice Daubney Trading Trust
ABN 56 880 304 993
P: 02 0000 0000
F: 02 0000 0000
xx@xxxxxxxx.com.au

PROJECT: EASTWOOD CENTRE
144-186 ROWE STREET
EASTWOOD, NSW, 2122

DRAWING TITLE: LEVEL 8

SCALE: 1:250 @ A1 1:500 @ A3
CHECKED: MVS
PROJECT NUMBER: 15R
DRAWING NUMBER: DA 1308
ISSUE: 00

teamwork://AUSNSYD-BIM01/15R Eastwood MASTER

ROWE STREET

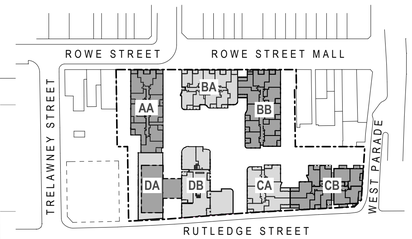
ROWE STREET MALL

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

A B C D E F G H I J K L

WEST PARADE

KEY PLAN



450x250 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

650x400 CLEAR INTERNAL HHW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

1250x700 CLEAR INTERNAL CCW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

1150x650 CLEAR INTERNAL CCW PIPE RISER. LONG DIMENSION ADJACENT LOBBY.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED MINI MAJOR KITCHEN EXHAUST SHAFT.

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED MINI MAJOR KITCHEN EXHAUST SHAFT.

RISER FROM ABOVE.

RISER FROM ABOVE.

RISER FROM ABOVE.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

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2 OFF MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 2.5m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED LOBBY RELIEF RISER.

RISER FROM ABOVE.

RISER FROM ABOVE.

RISER FROM ABOVE.

PRELIMINARY

REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE
00	FOR REVIEW	PL	MVS	27/05/16

EASTWOOD BASEMENT SPATIALS: LEVEL 9

Eastwood Redevelopment, Eastwood, NSW

Mechanical Services - Spatial Planning

Prepared: ND Date: 30/05/2016 Project Number: AA009093

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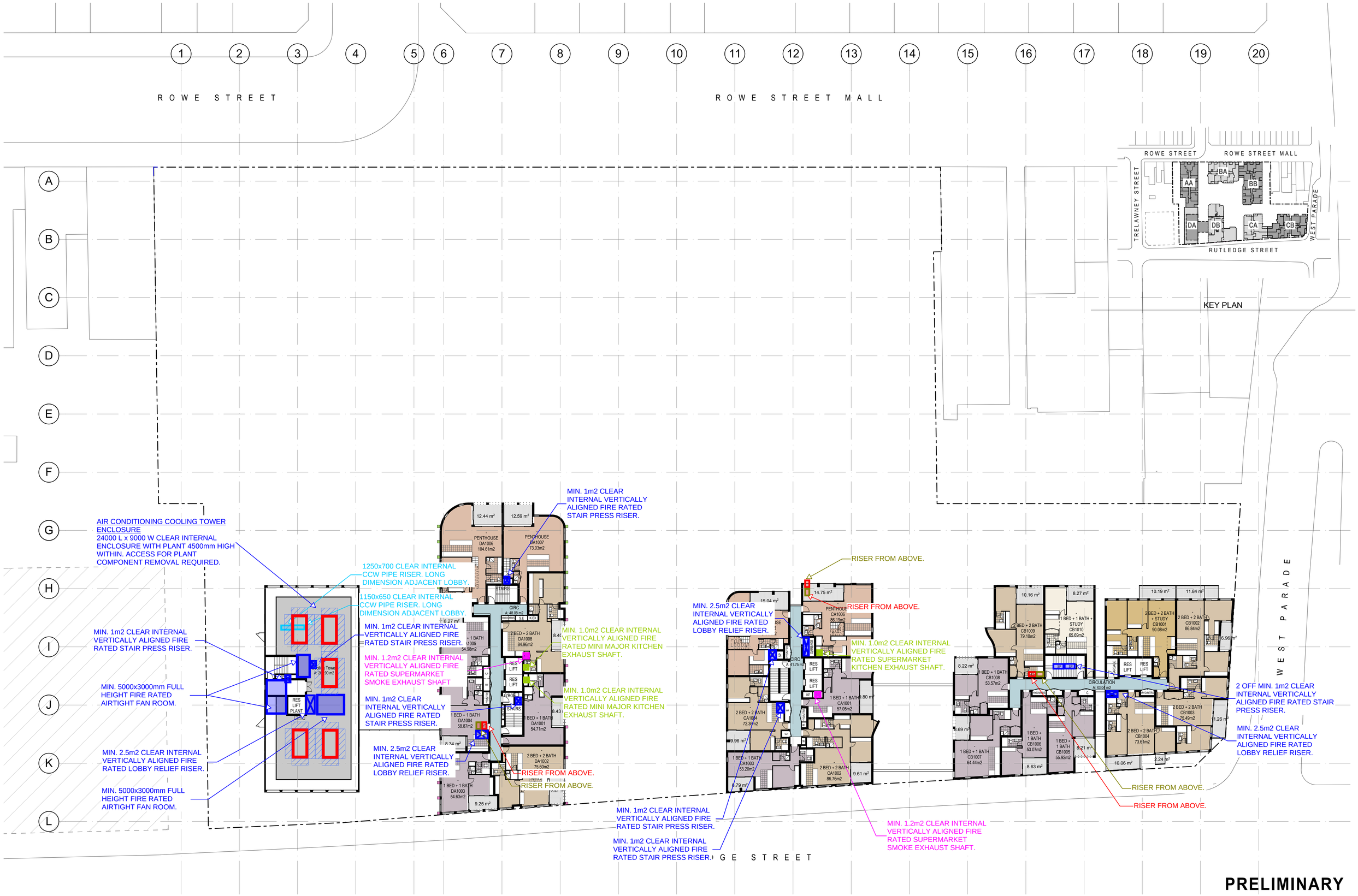
144-186 ROWE STREET
EASTWOOD, NSW, 2122

DRAWING TITLE: LEVEL 9

SCALE: 1:250 @ A1 1:500 @ A3
CHECKED: MVS
PROJECT NUMBER: 15R
DRAWING NUMBER: DA 1309
ISSUE: 00

teamwork://AUSNSYD-BIM01/15R Eastwood MASTER



PRELIMINARY

REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE
00	FOR REVIEW	PL	MVS	27/05/16

EASTWOOD BASEMENT SPATIALS: LEVEL 10

Eastwood Redevelopment, Eastwood, NSW

ARCADIS Design & Consultancy for natural and built assets

Mechanical Services - Spatial Planning

Prepared: ND Date: 30/05/2016 Project Number: AA009093

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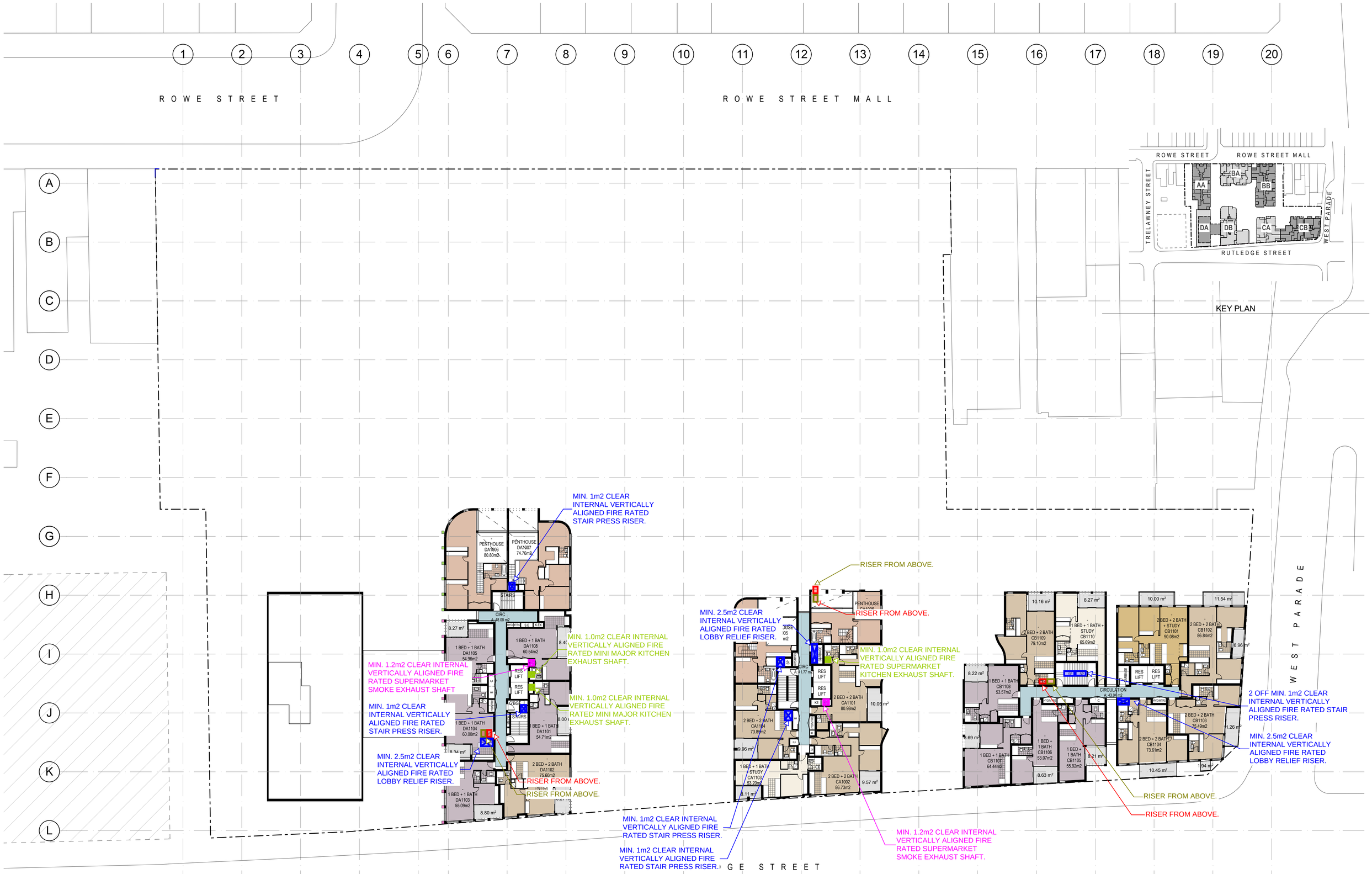
EASTWOOD CENTRE
144-186 ROWE STREET
EASTWOOD, NSW, 2122

DRAWING TITLE:
LEVEL 10

SCALE: 1:250 @ A1 1:500 @ A3
CHECKED: MVS
PROJECT NUMBER: 15R
DRAWING NUMBER: DA 1310
ISSUE: 00



PRELIMINARY

REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE
00	FOR REVIEW	PL	MVS	27/05/16

EASTWOOD BASEMENT SPATIALS: LEVEL 11

Eastwood Redevelopment, Eastwood, NSW

Mechanical Services - Spatial Planning

Prepared: ND Date: 30/05/2016 Project Number: AA009093

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PROJECT:
EASTWOOD CENTRE
144-186 ROWE STREET
EASTWOOD, NSW, 2122

DRAWING TITLE:
LEVEL 11

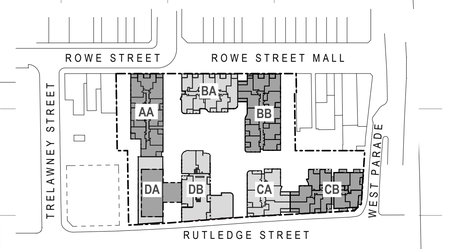
SCALE: 1:250 @ A1 1:500 @ A3
CHECKED: MVS
PROJECT NUMBER: 15R
DRAWING NUMBER: DA 1311
ISSUE: 00

ROWE STREET

ROWE STREET MALL

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

A B C D E F G H I J K L



KEY PLAN

MIN. 1m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED STAIR PRESS RISER.

MIN. 5000x3000mm FULL HEIGHT FIRE RATED AIRTIGHT FAN ROOM.

MIN. 1.2m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED SUPERMARKET SMOKE EXHAUST SHAFT

MIN. 1.0m2 CLEAR INTERNAL VERTICALLY ALIGNED FIRE RATED MINI MAJOR KITCHEN EXHAUST SHAFT.

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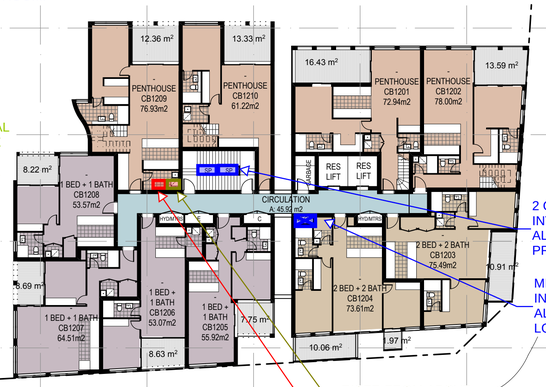
G E S T R E E T



RISER FROM ABOVE.

RISER FROM ABOVE.

W E S T P A R A D E

PRELIMINARY

REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE
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EASTWOOD BASEMENT SPATIALS: LEVEL 12

Eastwood Redevelopment, Eastwood, NSW

Mechanical Services - Spatial Planning

Prepared: ND Date: 30/05/2016 Project Number: AA009093

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P: 02 0000 0000
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EASTWOOD CENTRE
144-186 ROWE STREET
EASTWOOD, NSW, 2122

DRAWING TITLE:
LEVEL 12

SCALE: 1:250 @ A1 1:500 @ A3
CHECKED: MVS
PROJECT NUMBER: 15R
DRAWING NUMBER: DA 1312
ISSUE: 00

PRELIMINARY

REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE
00	FOR REVIEW	PL	MVS	27/05/16

EASTWOOD BASEMENT SPATIALS: LEVEL 13

Eastwood Redevelopment, Eastwood, NSW

Mechanical Services - Spatial Planning

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EASTWOOD CENTRE
144-186 ROWE STREET
EASTWOOD, NSW, 2122

DRAWING TITLE:
LEVEL 13

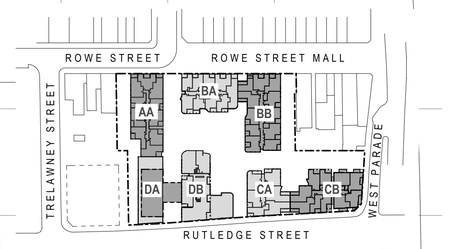
SCALE: 1:250 @ A1 1:500 @ A3
CHECKED: MVS
PROJECT NUMBER: 15R
DRAWING NUMBER: DA 1313
ISSUE: 00

ROWE STREET

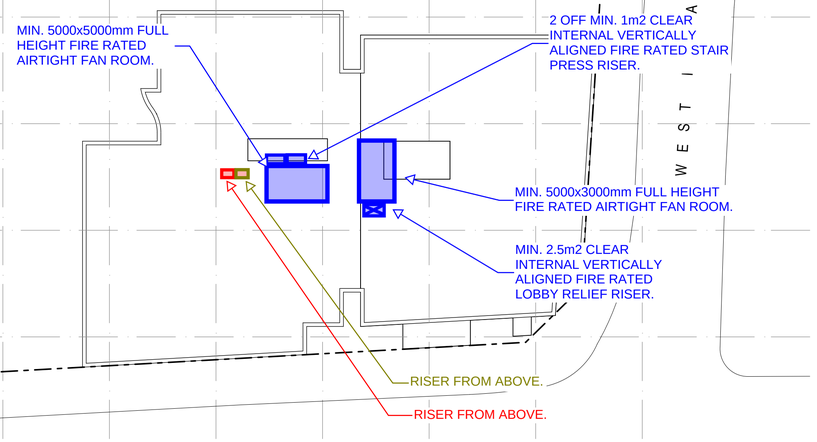
ROWE STREET MALL

RUTLEDGE STREET

WEST I ARADE



KEY PLAN



PRELIMINARY

REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE	REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE

EASTWOOD BASEMENT SPATIALS: LEVEL 14

Eastwood Redevelopment, Eastwood, NSW

Mechanical Services - Spatial Planning

Prepared: ND Date: 30/05/2016 Project Number: AA009093

CLIENT
YUHU GROUP (AUSTRALIA) Pty. Ltd.

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PROJECT:
EASTWOOD CENTRE
144-186 ROWE STREET
EASTWOOD, NSW, 2122

DRAWING TITLE:
ROOF LEVEL

SCALE: 1:250 @ A1 1:500 @ A3
CHECKED:
PROJECT NUMBER: 15R
DRAWING NUMBER: DA 1401
ISSUE:

In-ground sewer and stormwater pump out pits. Final location TBC based on the proximity to final layout of wet areas (typical)

RESIDENTIAL CARPARK
303 CARSPACES - INCLUDING 6 ACCESSIBLE CARSPACES AND 8 SMALL CARSPACES

ROWE STREET
ROWE STREET MALL
TRELAWNEY STREET
WEST PARADE
RUTLEDGE STREET
AA
BA
BB
DA
DB
CA
CB

KEY PLAN

Above ground Oil Separator

ARCADIS Design & Consultancy for natural and built assets
10/06/2016
Hyd Spatial
Review

PRELIMINARY

REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE
00	FOR REVIEW	LK	MVS	27/05/16

NORTH POINT

KEY PLAN

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PROJECT:
EASTWOOD CENTRE
144-186 ROWE STREET
EASTWOOD, NSW, 2122

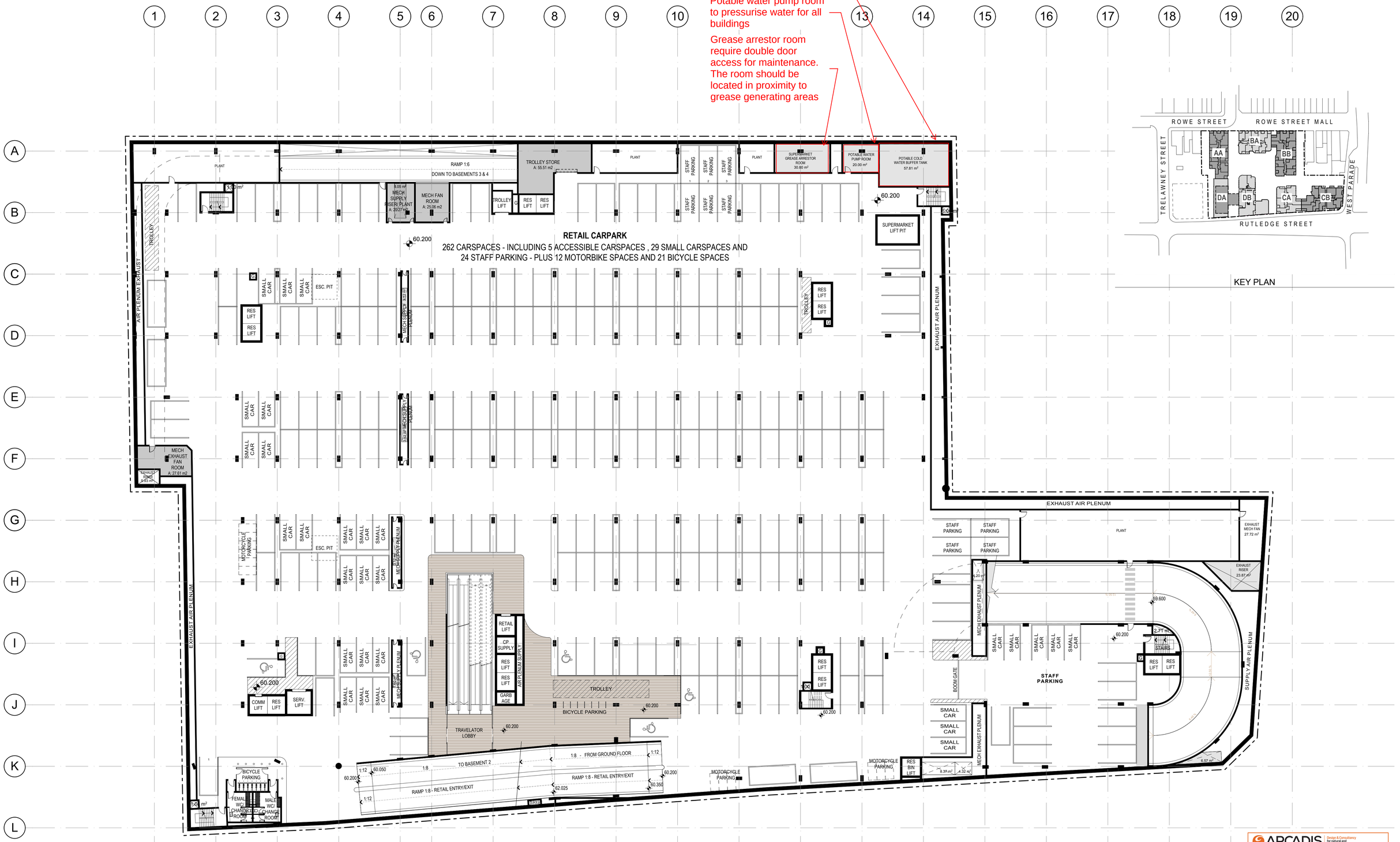
DRAWING TITLE:
BASEMENT 4

SCALE: 1:250 @ A1 1:500 @ A3
CHECKED: MVS
PROJECT NUMBER: 15R
DRAWING NUMBER: DA 1104
ISSUE: 00

100kL Potable water tank

Potable water pump room to pressurise water for all buildings

Grease arrestor room require double door access for maintenance. The room should be located in proximity to grease generating areas



KEY PLAN

ARCADIS Design & Consultancy for natural and built assets

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Review

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PROJECT:
EASTWOOD CENTRE
144-186 ROWE STREET
EASTWOOD, NSW, 2122

DRAWING TITLE:
BASEMENT 1

SCALE: 1:250 @ A1 1:500 @ A3
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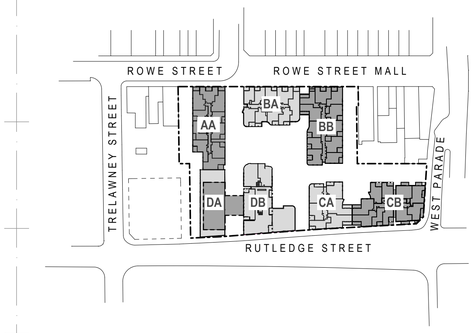
PROJECT NUMBER: 15R
DRAWING NUMBER: DA 1101
ISSUE: 00

Grease arrestor room require double door access for maintenance. The room should be located in proximity to grease generating areas



KEY PLAN

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PROJECT:
EASTWOOD CENTRE
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DRAWING TITLE:
LOWER GROUND PLAN

SCALE: 1:250 @ A1 1:500 @ A3
CHECKED: MVS
PROJECT NUMBER: 15R
DRAWING NUMBER: DA 1100
ISSUE: 00

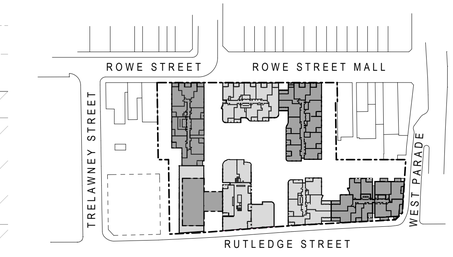
Rainwater tank plantroom

Rainwater tank with 2 x 1m x 1m access lids from above.

ROWE STREET

ROWE STREET MALL

SPECIALTY A: 96.67 m2
SPECIALTY A: 121.88 m2
PLANT
RAINWATER TANK 7.39 m x 3.8m H V= 28m³
OSD TANK above ramp 24.06 m² x 2.8m H Volume= 70m³
SPECIALTY A: 242.38 m2
RAMP 1:5.6 - RESIDENTIAL EXIT DOWN TO BASEMENTS 3 & 4
RES LIFT
RES LIFT
RES. LOBBY A: 20.45 m2
SPECIALTY A: 114.61 m2
SPECIALTY A: 128.94 m2
HATCH
EXHAUST PLENUM
SPECIALTY A: 117.49 m2
SPECIALTY A: 114.43 m2
RAMP 1:8 - RETAIL ENTRY/EXIT
LIFT PIT
COMM LIFT
RES LIFT
SERV. LIFT
COMMS 1
NBN 1
LANDSCAPED TERRACE
SLOW FOOD A: 155.37 m2
RES. LOBBY A: 34.09 m2
RES LIFT
RES LIFT
SLOW FOOD A: 98.48 m2
SLOW FOOD A: 119.32 m2
SLOW FOOD A: 116.64 m2
SLOW FOOD A: 130.15 m2
SLOW FOOD A: 121.76 m2
KIOSK A: 15.00 m2
KIOSK A: 15.00 m2
KIOSK A: 15.00 m2
KIOSK A: 15.00 m2
SPECIALTY A: 54.21 m2
SPECIALTY A: 60.25 m2
RETAIL LIFT
CP SUPPLY
RES LIFT
RES LIFT
MINI-MAJOR SUPERMARKET A: 1,472.44 m2
MINI-MAJOR BACK OF HOUSE
AMENITIES
ACC.
CLNR
MALE
FEMALE
PARENTS
TRAVELATOR LANDING
SERVICE CORRIDOR
SLOW FOOD A: 149.80 m2
SLOW FOOD A: 207.93 m2
SLOW FOOD A: 132.50 m2
RETAIL STORAGE A: 32.52 m2
SERV. LIFT
SERV. LIFT
SUPERMARKET LOADING
RES. LOBBY A: 64.22 m2
RES LIFT
RES LIFT
FAST FOOD A: 151.29 m2
COMPACTOR
FAST FOOD A: 101.61 m2
FAST FOOD A: 73.14 m2
R 11.000 R 9.500
TURNTABLE
SERVICE CORRIDOR
RAMP STRUCTURE TO BE REMOVED
EXISTING LEVELS TO BE CONFIRMED
NEW TRANSITION RAMP TO NEIGHBOUR
6.25% (1:16) 10m
HATCH
12.5% (1:8) 10m
11.25% (1:886) 10m
5% (1:20) 14.5m - 19m AV WHEELBASE
SLAB OVER
3 x TRANSFORMER SUBSTATION
MAIN SWITCH ROOM A: 106.49 m2
EXHAUST RISER
SUPPLY AIR PLENUM
MECH FAN ROOM A: 20.03 m2
RESI BULKY GOODS STORE A: 25.91 m2
RES LIFT
RES LIFT
RESI LOADING
RETAIL & COMM BINS
RESIDENTIAL BINS
400KL FIRE SERVICE TANK A: 171.92 m2
TANK AT HIGH LEVEL OVER RAMP
MED. WASTE
RES BIN LIFT
WEST PARADE



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KEY PLAN

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DRAWING TITLE:
GROUND PLAN - ROWE ST

SCALE: 1:250 @ A1 1:500 @ A3
CHECKED: MVS
PROJECT NUMBER: 15R
DRAWING NUMBER: DA 1201
ISSUE: 00

teamwork://AUSNSYD-BIM01/15R Eastwood MASTER

ROWE STREET

ROWE STREET MALL

WEST PARADE

RUTLEDGE STREET

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

A B C D E F G H I J K L

SPECIALITY MEZZANINE A: 54.81 m2

PRIVATE OPEN SPACE 74.200

2 BED + 2 BATH + STUDY AA0102 83.98m2

2 BED + 2 BATH + STUDY AA0103 80.92m2

2 BED + 2 BATH + STUDY AA0104 92.53m2

CIRC A: 56.80 m2

1 BED + 1 BATH AA0101 51.70m2

1 BED + 1 BATH AA0105 51.10m2

2 BED + 2 BATH AA0106

1 BED + 1 BATH + STUDY AA0110 68.63m2

2 BED + 2 BATH + STUDY AA0109 95.99m2

2 BED + 2 BATH AA0107 75.20m2

2 BED + 2 BATH AA0108 87.13m2

RES LIFT

STAIRS

COMM SUITE 1A A: 417.86 m2

MALE FEMALE

RES LOBBY A: 15.80 m2 74.950

COMM LIFT

AMENITIES A: 43.92 m2

COMMERCIAL LOBBY A: 38.21 m2 74.950

COMM SUITE 1B A: 163.21 m2 74.950

LANDSCAPED TERRACE

BIKE PARKING

1 BED + 1 BATH BA0108 59.08m2

1 BED + 1 BATH + STUDY BA0109 59.85m2

1 BED + 1 BATH + STUDY BA0101 58.24m2

2 BED + 2 BATH + STUDY BA0102 87.19m2

2 BED + 2 BATH + STUDY BA0103 108.74m2

2 BED + 2 BATH BA0107 76.05m2

1 BED + 1 BATH BA0106 54.25m2

1 BED + 1 BATH + STUDY BA0105 65.64m2

1 BED + 1 BATH + STUDY BA0104 62.28m2

SHOWERS

PUBLIC PARK 'THE SECRET GARDEN' 20.20m x 40.40m 75.700

75.700

74.650

RETAIL LOBBY

SUPPLY AIR PLENUM

RETAIL LIFT

RES. LOBBY A: 28.76 m2

POOL SERVICE AREA A: 150.86 m2

MINI-MAJOR YUM-CHA A: 583.15 m2

PHARMACY A: 300.03 m2

1 BED + 1 BATH BB0108 65.55m2

1 BED + 1 BATH + STUDY BB0109 61.24m2

2 BED + 2 BATH BB0110 79.88m2

1 BED + 1 BATH BB0107 59.04m2

2 BED + 2 BATH BB0111 73.73m2

2 BED + 2 BATH BB0106 76.86m2

2 BED + 2 BATH BB0101 80.08m2

1 BED + 1 BATH BB0105 56.82m2

2 BED + 2 BATH + STUDY BB0102 84.75m2

2 BED + 2 BATH BB0104 83.48m2

1 BED + 1 BATH + STUDY BB0103 62.17m2

GARBAGE

RES. LOBBY A: 99.03 m2

MEDICAL CENTRE A: 687.31 m2

BOOSTER A: 4.81 m2

PLANT

RAINWATER TANK

Rainwater tank plantroom

Rainwater tank with 2 x 1m x 1m access lids from above.

BUILDING ABOVE

1:8 RAMP 72.860

1:8 RAMP

OSD TANK 55.35 m³ x2.6m height V=145m³

EXHAUST RISER 71.630

72.050

GAS METERS

WATER METERS

NBN 2

COMMS 2

MAIN SWITCH ROOM A: 108.11 m2

RAINWATER TANK 16.45 m³ x2.6m height V=~42.77m³

PUMP ROOM 3.67m²

FIRE CONTROL A: 13.50 m2

2 x TRANSFORMER SUBSTATION A: 100.38 m2

COMMERCIAL A: 75.97 m2

RES. LOBBY A: 51.29 m2

GYM A: 348.30 m2

73.700

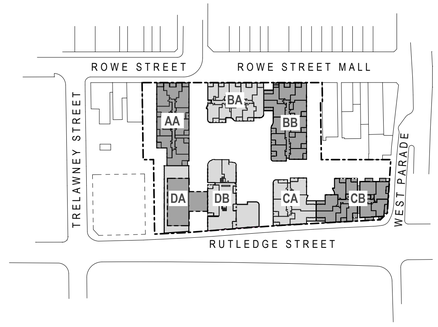
Gas meter/ regulator room. Grilled door to be provided for natural ventilation

Authority master meter

Rainwater tank with 2 x 1m x 1m side access lids.

Rainwater tank plantroom

KEY PLAN



ARCADIS Design & Consultancy for natural and built assets

10/06/2016 Hyd Spatial **Review**

PRELIMINARY

REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE
00	FOR REVIEW	JR	MVS	27/05/16

NORTH POINT

KEY PLAN

CLIENT
YUHU GROUP (AUSTRALIA) Pty. Ltd.

STREET ADDRESS
SUBURB AND POSTCODE

ARCHITECTS
RICE DAUBNEY
Level 1, 110 Walker Street, North Sydney NSW 2060, Australia
+61 2 9956 2666 | hdricedaubney.com | hdrinc.com
The Rice Daubney Group (NSW) P/L as trustee for The Rice Daubney Trading Trust
ABN 56 880 304 993
P: 02 0000 0000
F: 02 0000 0000
xx@xxxxxxxx.com.au

PROJECT:
EASTWOOD CENTRE
144-186 ROWE STREET
EASTWOOD, NSW, 2122

DRAWING TITLE:
LEVEL 1 - RUTLEDGE ST

SCALE: 1:250 @ A1 1:500 @ A3
CHECKED: MVS
PROJECT NUMBER: 15R
DRAWING NUMBER: DA 1301
ISSUE: 00

teamwork:\\AUSNSYD-BIM01\15R Eastwood MASTER

ROWE STREET

ROWE STREET MALL

WEST PARADE

RUTLEDGE STREET

Bathroom and kitchen areas should be provided with hydraulic risers (typical)

Core hydraulic risers with double doors

Core hydraulic risers with double doors

Core hydraulic risers with double doors

Core hydraulic risers with double doors

Core hydraulic risers with double doors

Core hydraulic risers with double doors

Core hydraulic risers with double doors

Core hydraulic risers with double doors

KEY PLAN

ROWE STREET

ROWE STREET MALL

TRELAWNEY STREET

WEST PARADE

RUTLEDGE STREET

ARCADIS Design & Consultancy for natural and built assets

10/06/2016
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Review

0 1 2 3 4 5

PRELIMINARY

REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE
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NORTH POINT

KEY PLAN

CLIENT
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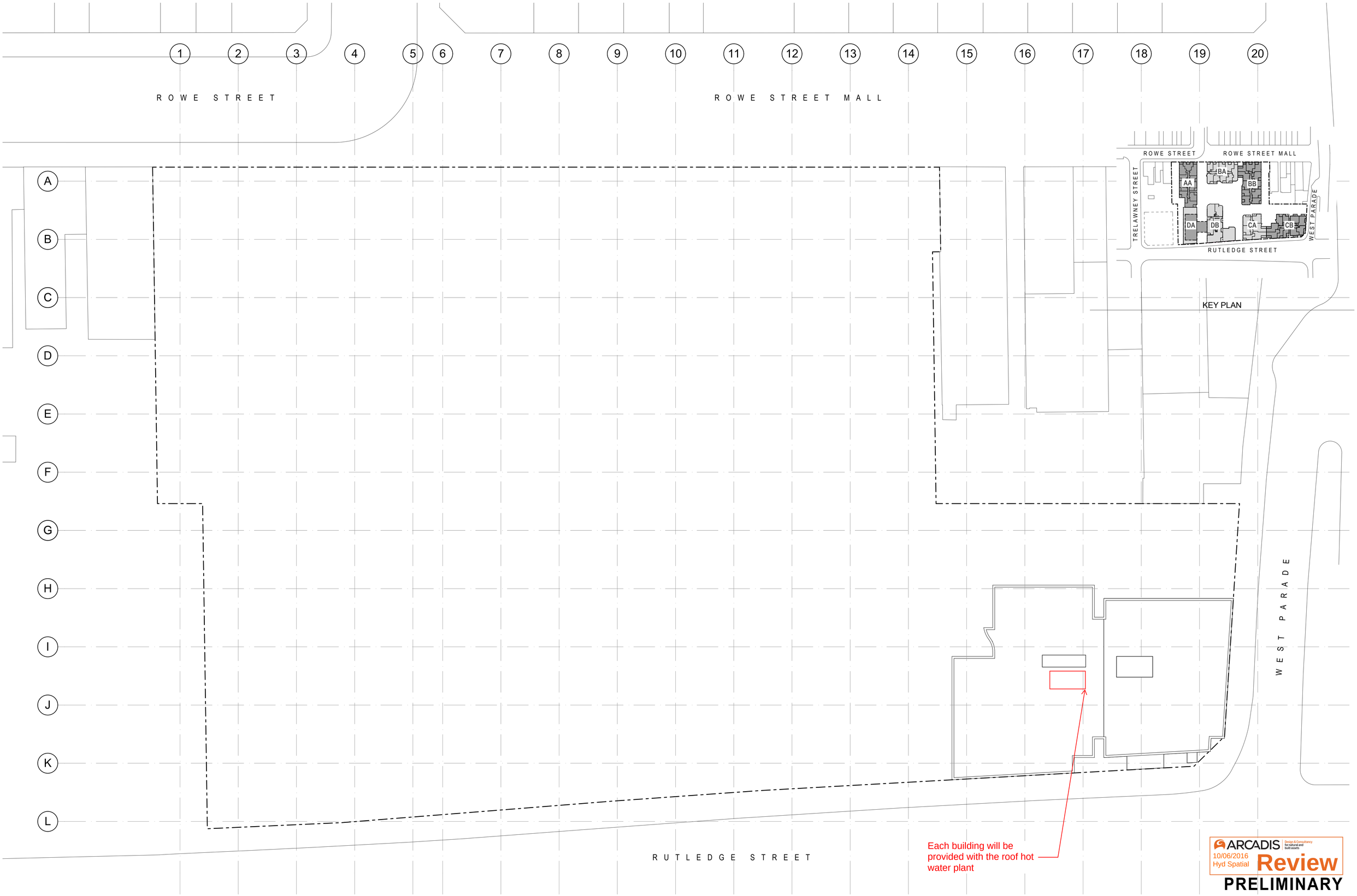
xx@xxxxxxxx.com.au

PROJECT:
EASTWOOD CENTRE
144-186 ROWE STREET
EASTWOOD, NSW, 2122

DRAWING TITLE:
LEVEL 2

SCALE: 1:250 @ A1 1:500 @ A3
CHECKED: MVS
PROJECT NUMBER: 15R
DRAWING NUMBER: DA 1302
ISSUE: 00

teamwork://AUSNSYD-BIM01/15R Eastwood MASTER



ARCADIS Design & Consultancy for natural and built assets

10/06/2016
Hyd Spatial

Review

PRELIMINARY

REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE	REV	DESCRIPTION OF CHANGE	DRAWN	CHECK	DATE

NORTH POINT

KEY PLAN

CLIENT
YUHU GROUP (AUSTRALIA) Pty. Ltd.

STREET ADDRESS
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P: 02 0000 0000
F: 02 0000 0000
xx@xxxxxxxx.com.au

ARCHITECTS
HDR | RICE DAUBNEY

Level 1, 110 Walker Street, North Sydney NSW 2060, Australia
+61 2 9956 2666 | hdricedaubney.com | hdrinc.com
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ABN 56 880 304 993

PROJECT:
EASTWOOD CENTRE
144-186 ROWE STREET
EASTWOOD, NSW, 2122

DRAWING TITLE:
ROOF LEVEL

SCALE: 1:250 @ A1 1:500 @ A3
CHECKED:

PROJECT NUMBER: 15R
DRAWING NUMBER: DA 1401
ISSUE:

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