CONSTRUCTION MANAGEMENT PLAN

METHODOLOGY

104-116 REGENT ST, REDFERN

WEE HUR - STUDENT ACCOMODATION

SSDA SUBMISSION

2/12/21

1.1 PROJECT DESCRIPTION

Construction of an 18 storey mixed-use building accommodating ground floor retail premises and 411 bed student housing accommodation with indoor and outdoor communal spaces, on-site bicycle parking and ancillary facilities.

1.2 SITE ESTABLISHMENT

RCC has now built numerous projects within the City of Sydney including two student accommodation buildings within the same precinct, and construction has commenced on Wee Hur's student accommodation developments, 13-23 Gibbons Street Redfern and 90 – 102 Regent Street Redfern. This enables RCC to draw on a wealth of experience regarding site establishment requirements for such projects, including but not limited to:

- Work Zones/Loading Zones/Lifting Zones
- Crane Rights and Approvals (CASA)
- A & B-Class Hoardings
- Road Closures
- Tree Protection
- Traffic Management Requirements

In addition to the above, RCC currently holds a positive relationship with the City of Sydney council via Joshua Faull (Construction Liaison Officer) who provides RCC with advice both during tender and construction. This ensures that our site establishment plans, traffic management strategy and overall methodologies are fully researched and compliant to council requirements.

The following section details our site establishment strategy and other opportunities that may be investigated during construction.

1.2.1 SITE PLAN

It is proposed to obtain authority approval for a workzone on Regent St along with an exclusion / access within the site thru link which separates Wee Hur's 13-23 Gibbons Street and 104 – 116 Regent Steet developments. It also proposed a gate is positioned to enable vehicles to exit via Margaret Street to the south.

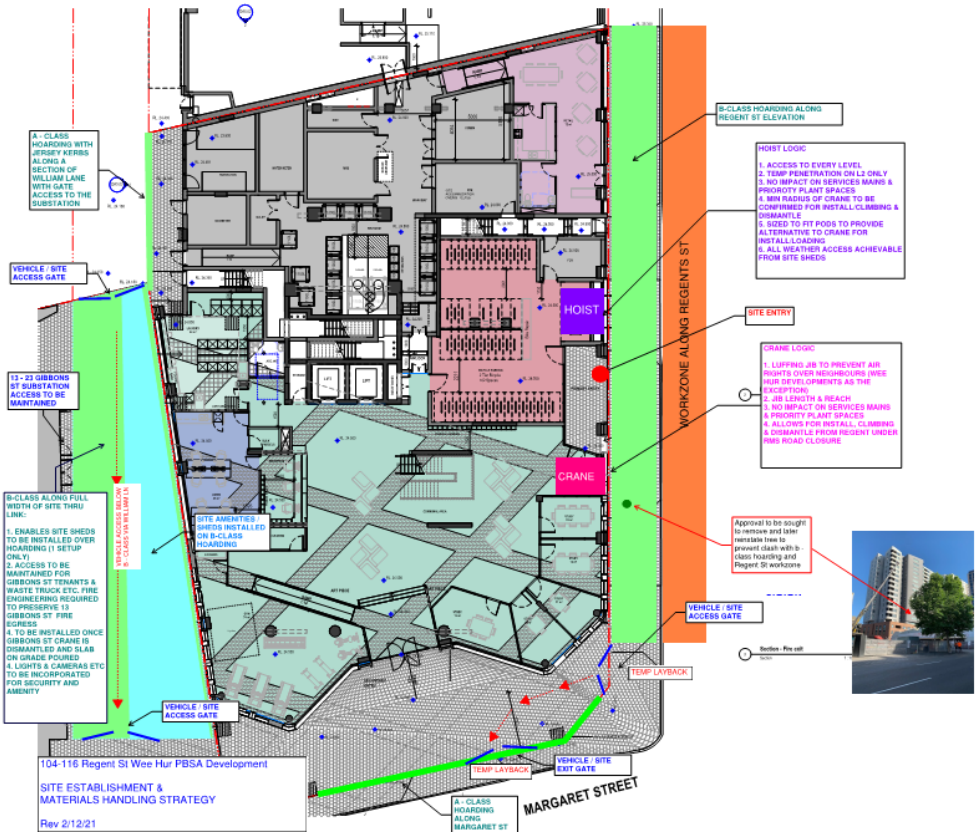


Figure 1.1.1A – This plan can be found in full size within Appendix A

- Work zones will be established in Regent Street with an expected allowance between 7am and 5.30pm based on approvals provided by City of Sydney and RMS on past projects completed by RCC. This zone will be used for the majority of concrete pours and material loading.
- A separate work zone with a B-class hoarding will be positioned within the site thru link which separates 13 – 23 Gibbons St Redfern and 104 – 116 Regent Street Redfern, both Wee Hur Developments. This area will be used to enable site personnel and material access via William Lane to the north, through to Margaret Street to the south. Fire egress points, substation and building access to 13 – 23 Gibbons Street will be maintained by the temporary setup, to be agreed with the Fire Engineer and Private Certifier.

Further details regarding site establishment can be found in the following sections.

1.2.2 SITE HOARDINGS

We understand the importance of a robust site perimeter ensuring both the safety of the public and the security of site. Therefore, we have planned for a B-Class Hoarding along Regent Street and within the site thru link which separates 13 – 23 Gibbons Street and 104 – 116 Regent Street developments. We have also included for an A – class hoarding along Margaret Street.

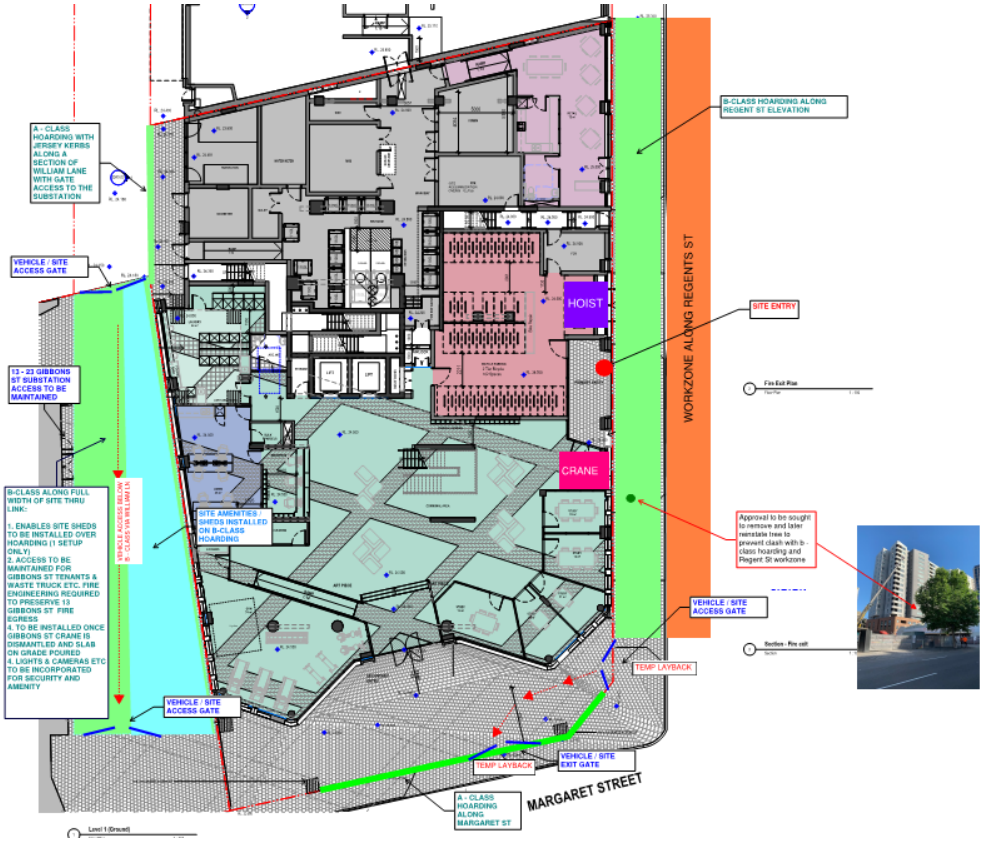


Figure 1.1.2A – Site Hoarding Plan

Subject to council and Principal approval, RCC will co-ordinate the installation of graphics or artwork to the hoarding, however as a standard this will be fully painted and constantly maintained to ensure the presentation of the neat and well-run site.

The B class hoarding along Regent St will be positioned as to maintain all tree protection requirements during the works. This hoarding may also be utilised to house accommodation if/when needed during the course of the works with the installation of stacked shed accommodation.

1.2.3 SITE ACCOMODATION

Site accommodation location will vary throughout the project as more space becomes available on site and worker numbers increase. RCC will ensure that all facilities provided to workers will be fully compliant with current industry codes and practises upheld at all times.

In summary the current proposed site accommodation phases for the project would be as follows:

FOUNDATION PHASE:

In this phase of the project, site accommodation is proposed to the south (adjacent Margaret Street). Its also assumed that once a B-Class hoarding is installed along the Regent Street frontage or the site thru link that stacked sheds will be installed onto of the hoardings to house offices, lunch rooms, change rooms

and amenities. RCC will also investigate options of utilising some shared space with our project team working on Wee Hur's 90-102 Regent Street Project.

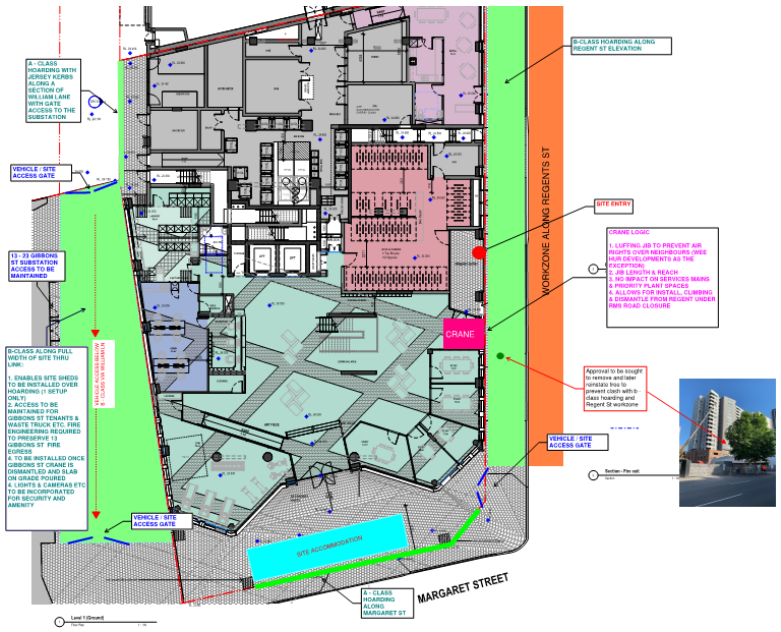


Figure 1.1.3A – Foundation Phase Accommodation

STRUCTURE PHASE:

Once the structure phase begins and the workforce increases RCC will install additional accommodation as needed to maintain compliant accommodation/worker ratios. This will require additional sheds to be installed above the b – class hoarding positioned within the site thru link. Allowance will be made during the initial installations to ensure that the extra sheds are easily and quickly installed and commissioned. The hoarding will be engineered to accept the load of the sheds.

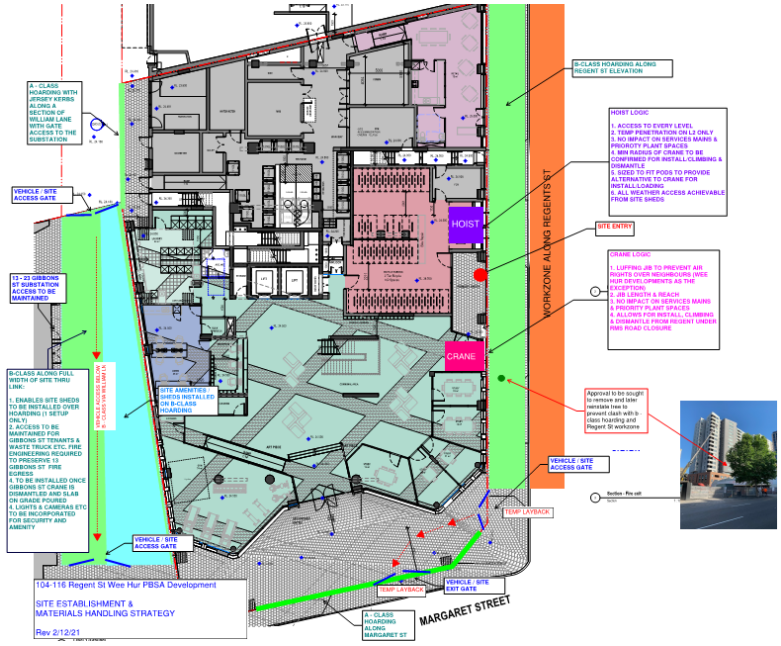


Figure 1.1.3B – Tower Structure/Facade Phase Accommodation

FINAL STRUCTURE AND FINSIHES

Should it be necessary to demobilise the sheds and b – class hoarding over the site thru link, temporary accommodation will be built within the new development, i.e. within storage or bike spaces to be agreed with the Developer. This ensures that the accommodation requirements will comply with regulations as the number of site workers increases. This will allow for the removal of the stacked sheds to the hoardings and the completion of the balance of façade and external works.

OPPORTUNITY

Utilise spaces for accommodation within Wee Hur's, 90-102 Regent St Development which may require creating separable portions to suit.

COVID-19 COMPLIANCE

RCC would like to note that as a company we are ensuring all sites are fully Covid-19 compliant and we have several strategies in place to combat this issue.

As a result, we can confirm that we have allowed for Covid-19 compliance across the entire site within this site establishment planning and methodology and the assumption that this will remain relevant at the time of construction.

RCC will continue to comply with NSW Health Guidelines with respect to Covid.

1.2.4 MATERIALS HANDLING AND VERTICAL MOVEMENT

RCC strongly believe that one of the keys to a successful construction phase is directly related to efficient and well considered materials handling and vertical movement planning.

With this in mind, we have ensured the inclusion of several materials handling options and pathways to allow the job to progress in most circumstances. These include:

- Twin Hoist for man and materials
- Luffing Tower Crane for large material movement and façade install
- Multiple materials drop off zones and paths
- Multiple storage areas for materials

The proposed building footprint occupies a large portion of the site and hence locations for material movements must consider locations which minimise any program impacts to structure/façade/fitout. As such RCC have reviewed the building layout and viewed current No-Go zones with regards to placement of material hoist & the tower crane. This has led to preferred options for material movements that will be further developed and refined prior to any site commencement in consultation with relevant subcontractors and consultants.

Proposed general materials pathways and movement zones can be found in extract from site plans below:

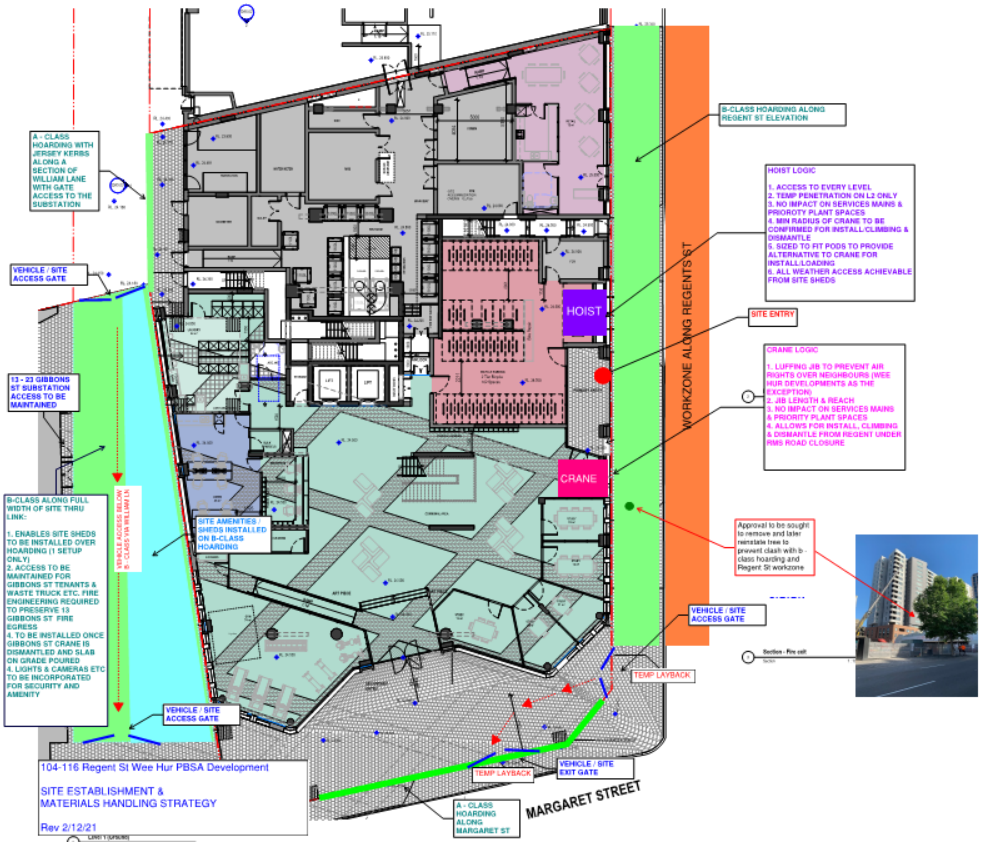


Figure 1.1.4A – Materials Handling Zones

As illustrated above, these proposed zones maximise both the use of possible council work zones as well as the site itself, allowing for multiple drop off zones on a number of work faces. Further investigation may be completed prior to commencing works to find efficiency gains with regards to material movements.

1.2.4.1 SITE STORAGE

As with all tight sites within the City of Sydney, storage of materials can be an issue and often affects the efficiency of site when deliveries are delayed or cannot be readily installed on the day of arrival to site.

Therefore, the ability to find areas on site for the safe and neat storage of materials can greatly enhance the project's success and eliminates delay risk. These areas should also have ready access to vertical movements options to enable said materials to be moved to the required floors quickly and efficiently.

We have identified the areas on the following extract from the site plan that can be easily allocated to materials storage that will not hold up the timely finishing of any early components:

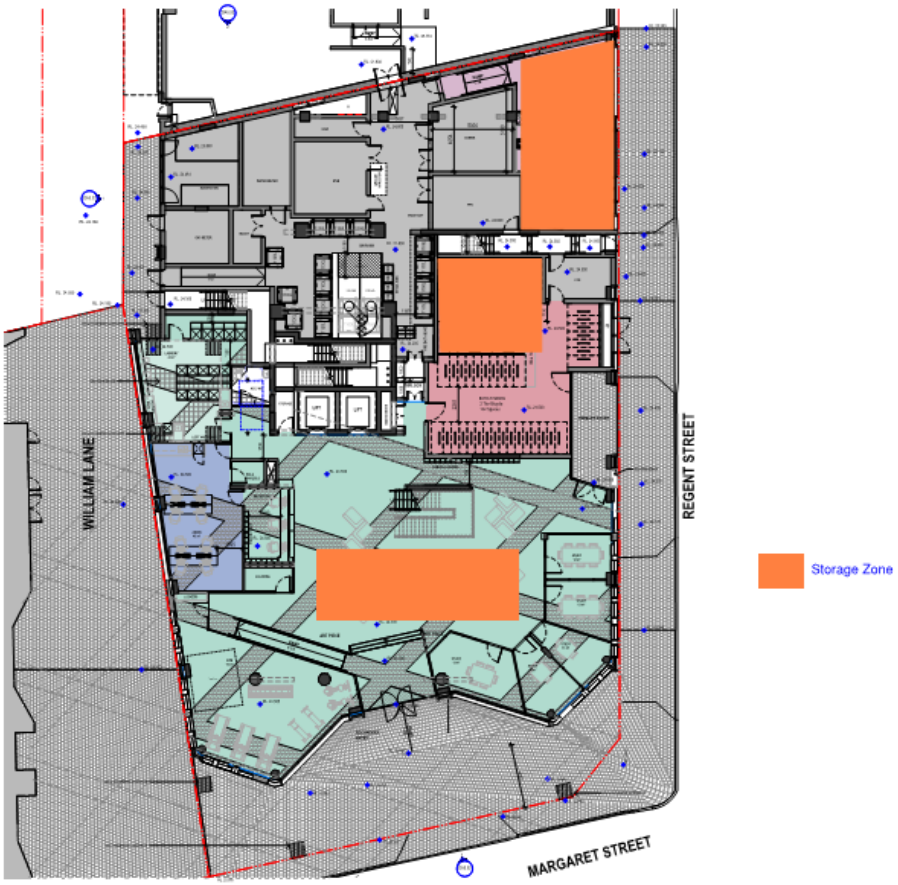


Figure 1.2.4.1A Site Storage Zones

1.2.4.2 CONCRETE PUMPING STRATEGY

Due the extremities of the building footprint it's expected that concrete pumping will need to be conducted via the work zone on Regent St. The project will have a mix of pumping strategies pending the stage of the project. During early works (piling and basement) it's anticipated that mobile concrete boom trucks will be utilised to place concrete and then transition to a static line or tower boom for the tower structure.

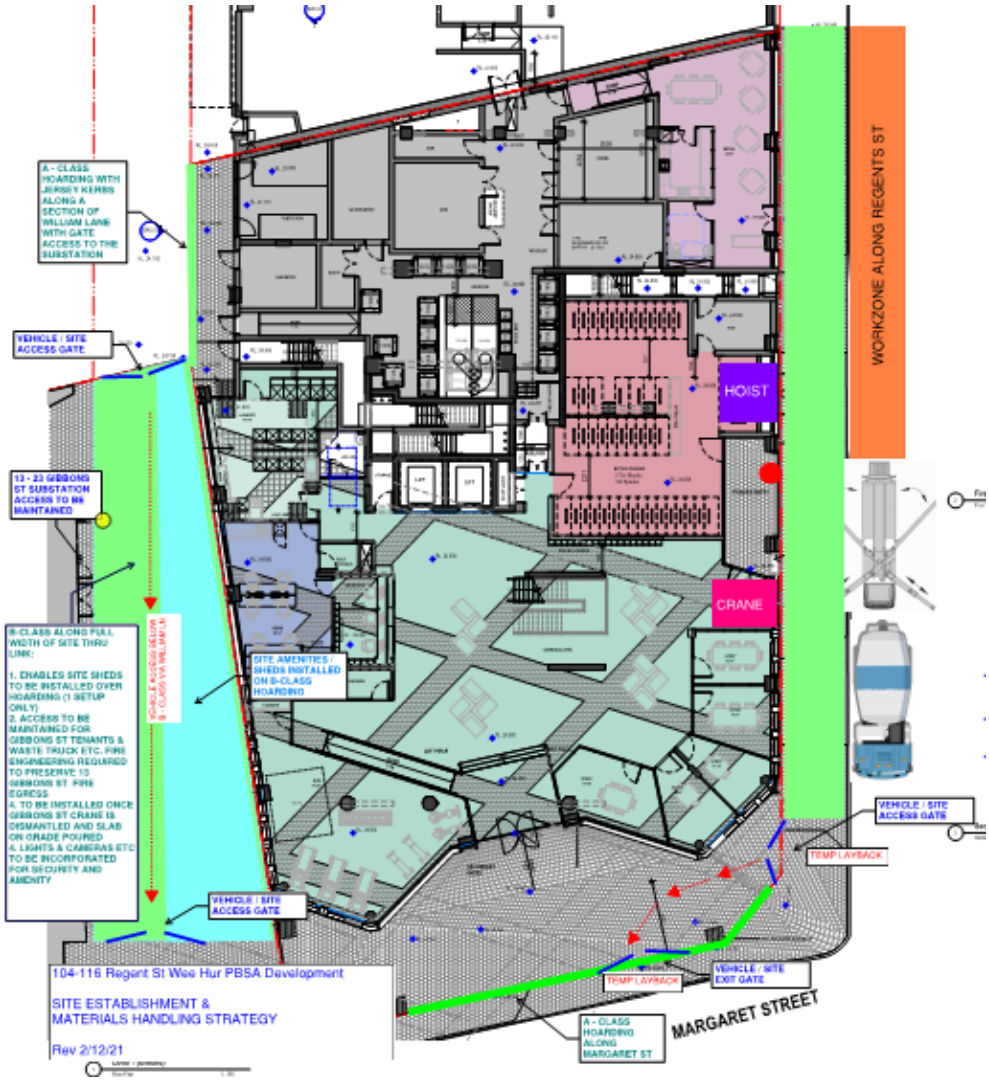


Figure 1.2.4.2A Concrete Pumping Plan

It is anticipated most pours will be via single truck feed with an approximate rate of pumping per hour based on supply at 30-35m3/hr. This supply rate has been used to help to determine realistic concrete pour breaks and cycles for the project.

1.2.4.3 HOISTS

Drawing from our vast construction experience in mid-rise buildings, for this project we have chosen to include a twin hoist to provide man and materials access to the project. The location of the hoist has been considered based on a number of factors including:

- Hoist location in relation to the most typical floors of the project (avoid the need for platform/landing extensions)
- Location that will have minimal impact on structure/program for any slab infills after removal
- Location that will work with the Façade of the building to allow for easy façade infills once hoist removal occurs

- Proximity to material storage at lower levels to allow for easy transition from street to upper floors
- Sized accordingly based on POD bathrooms (noting typical POD assumed at 1300w x 1900l x 2600h (Based on Gibbons Street Project)

RCC believes the hoist location proposed currently provides the best solution for the overall project based on the selection criteria outlined above. This location means a void being formed in the L2 slab in the external alfresco area off which infill and completion works would not fall on the program critical path once the hoist is removed. Final location will be determined closer to the project commencement and will be made based on all available information at the time. Consultation with the structural engineer will also be completed to ensure that the location can be achieved without negative impacts on the current overall building structure.

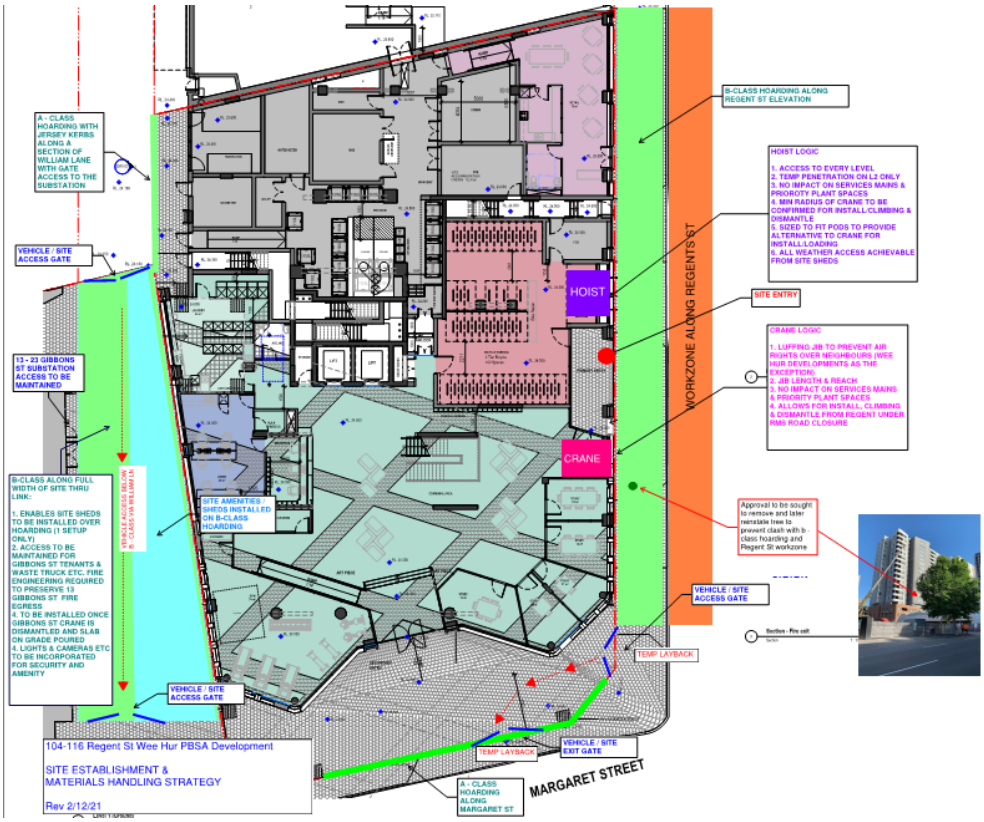


Figure 1.2.4.3A Hoist Plan

The twin hoist has also been co-ordinated with the window wall façade system. This will allow for facade infills once the builder's lifts are in place and the hoists can be removed.

In addition, the hoist selection ensures man and material movement can happen concurrently, including sufficient sizing to fit the pods. From past projects we have learnt the value of ensuring Pods can fit into the materials hoist which means that the Pods installation is not reliant on the tower crane and the Pods can still be moved into position even on days where the crane is winded off. RCC have allowed for a hoist to fit a Pod of 1300w x 1900l x 2600h based on those designed for 13-26 Gibbon Street.

Furthermore, the larger hoists allows for vertical loading of other large items such as formwork, plasterboard, window frames, joinery and fit-out components during inclement weather.

1.2.4.4 CRANE

Crane location, type and capacity is critical to ensuring adequate and efficient material movement on any project. This being the case the crane proposal has considered the following factors:

- Façade type (precast façade with panel lifts of up to 11.5t
- Coverage of multiple work zones for lifting
- Air rights from neighbouring properties (if required)
- Crane location to minimise structure impact once removed (e.g. limit infills to slabs)
- Crane ties and ability to tie back to structure with minimal impact

Based on the above, RCC have concluded that the following:

- Crane placed external to the main building envelope to avoid multiple infills
- Leading option under consideration is to position the tower crane on Regent Street elevation
- Located to allow for lifting from Regent Street and from site thru link
- Ability to lift heaviest precast panel and furthest reach. 10t at 40m boom (based on precast panels to the façade) – Precast subcontractors are reviewing the current details with the aim to break panels to a max of 11-12t whilst keeping façade intent.
- Luffing crane which may prevent air right approvals
- Expected crane max RL 134 AHD at min radius in service.
- Location to allow for ease of erection and dismantle (consideration of the setup requirements for the recovery crane)

Safe lifting factors and capacity of the crane will be considered during design development of the façade and major plant etc – heaviest elements to be lifted typically.

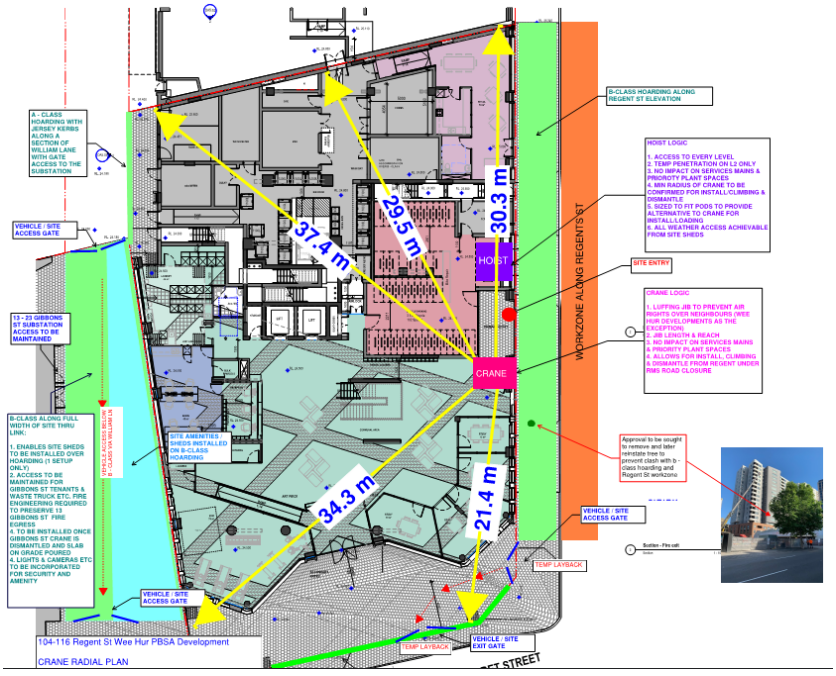


Figure 1.2.4.4A Crane Radius Plan

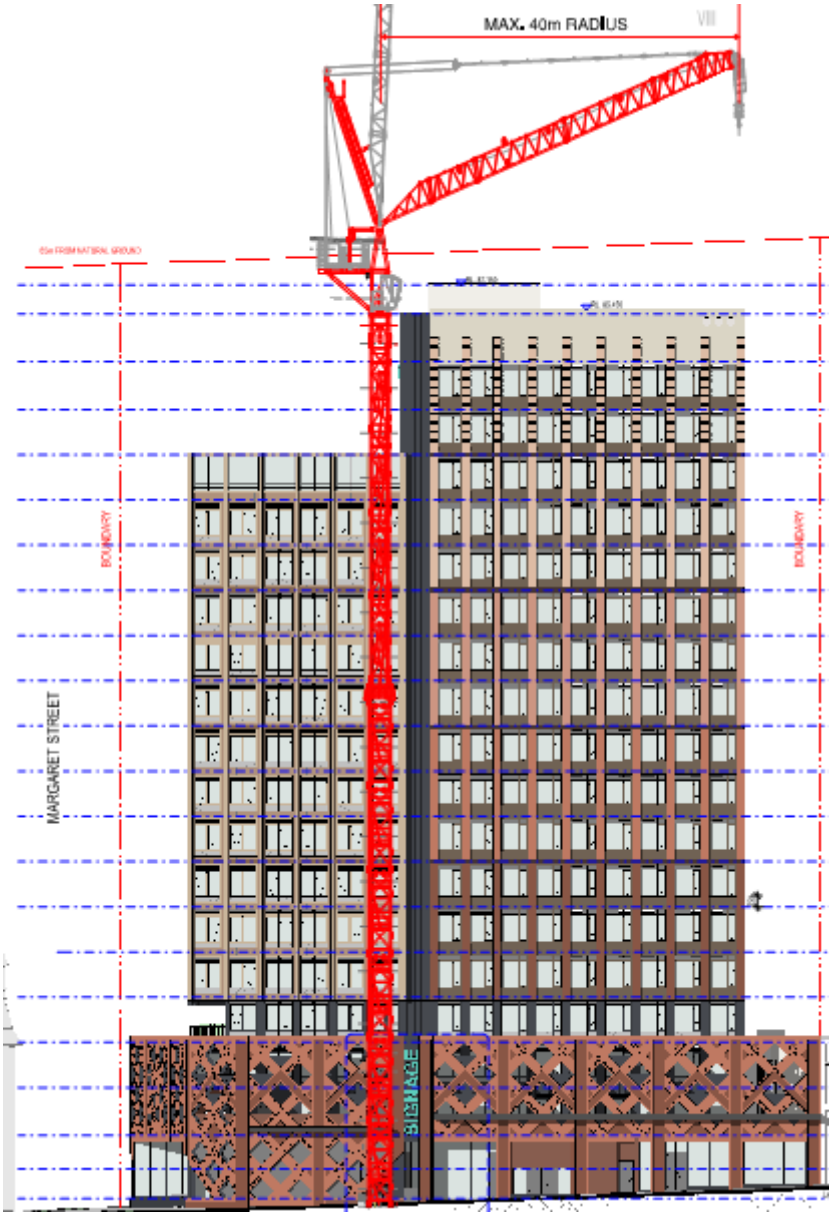


Figure 1.2.4.4B Crane Elevation

The location of the crane and luffing style ensures that in the weather-vaning position the crane will not impede the neighbouring properties.

As noted in the information above the height of the crane will exceed the limits allowable and will be subject to CASA approval. RCC have gained approval for luffing cranes to a similar height on the recently commenced 13-23 Gibbons Street Project. Based on approval being granted in the past we don't foresee any issues with the current crane selection.

1.2.5 CONSTRUCTION CONSIDERATIONS

Prior to works commencing, there are several items that need to be considered, especially during high impact periods such as demolition and piling.

These considerations are even more applicable to this particular project, being that we are working directly above the Sydney Metro rail corridor, as well as working alongside an active and soon-to-be active residential zone.

The following outlines our construction process for managing Noise, Vibration and Protection of Neighbouring property. More detailed information on surrounding community engagement can be found toward the end of the project methodology.

1.2.5.1 NOISE, DUST AND VIBRATION MANAGEMENT

Upon award RCC will compile and implement our Environmental Management Plan (EMP), which as well as other environmental controls, will analyse the risk and mitigation strategies for Noise, Dust and Vibration. As this project will also encompass the demolition works to the site, RCC will ensure that appropriate measures are in place to meet all requirements to ensure the demolition phase of the project is completed in a timely manner.

This EMP will be closely aligned with the details set out in both the impact assessment report and tunnel Vibration Management Plan compiled by Acoustic logic and forming part of the approval for the project.

Items that will be assessed and included in the plan as well as proposed mitigation measures are outlined as follows:

NOISE CONTROL AND MONITORING

The following items outline the key control measures which will be applied during the construction phase to assist with noise reduction.

- Utilise lessons learnt from recent projects in the City of Sydney and Redfern specifically
- Noisy works programmed in consultation with all parties and communicated with neighbours
- Operation of plant and equipment limited to occur within the approved hours.
- Enforce respite periods to be agreed with neighbouring properties prior to works commencing and if required.
- Operators, construction workers, subcontractors and supervisors will be provided with training to minimise noise impacts on the neighbouring properties.
- Notifications of particularly noisy works will be undertaken prior to any planned works commencing.
- Regular servicing of plant and equipment.
- All complaints in relation to noise will be monitored and recorded.
- An onsite person to be identified as the contact point in the event of noise complaints with contact details provided within the Construction Management Plan.
- Noise monitoring equipment established on site to determine breach of any specified maximum decibel levels

- If after hours works are required, the works will be planned in accordance with a Notice of Disruption (NOD) procedure, as well as notifying surrounding neighbours (if applicable).

Further to these control measures, RCC can review with Wee Hur the use of mechanical controls such as Acoustic Baffles applied to hoardings or other structures should any consistent complaints become an issue however this is not foreseen if the above is successfully carried out.

DUST CONTROL AND MONITORING

The following items outline the key control measures which will be applied during the construction phase to assist with dust management.

- Utilise lessons learnt from recent projects within the City of Sydney and Redfern.
- Ensure shade cloth and silt fencing on site perimeter fencing is well maintained and replaced regularly (as required)
- Provision of hose taps and mist spray points to the perimeter fencing and waste management zone to provide water for dust control
- Jet water spraying during piling and excavation works (as required)
- Watchmen on hoses wetting down excavation zones and wetting trucks soil loads before leaving site
- Utilise water carts for dust management on roads (as required)
- Construct hardstands in high traffic areas of primary loading and materials handling zones (already in place within existing carpark for the most part of the materials handling zones)
- Regularly street sweep internal roads during remote works (as required)

Example of dust control during demolition phase

VIBRATION CONTROL, MONITORING AND SYDNEY METRO

Care must be exercised during the works to control vibration to surrounding buildings, assets/infrastructure, and neighbouring properties. In addition to this, extra measures will be required by Council and Sydney Metro Trains to monitor the Sydney Metro tunnel which is sitting below the proposed project.

The following items outline the key standard control measures RCC will apply during the construction phase to mitigate vibration impacts:

- Real time vibration monitoring (commencing during demolition) will be undertaken to monitor vibration in the immediate vicinity to minimise potential human discomfort and potential structural damage in and around the existing buildings.
- Providing notice to stakeholders of planned high-level vibration events and works outside of the approved hours of construction.
- Undertaking dilapidation surveys of the adjoining areas that potentially may be impacted by vibration creating activities prior to construction commencing.
- Conducting regular checks of equipment or when an individual plant item is identified as producing higher than average vibration levels, to limit deterioration.
- Monitoring and recording all complaints in relation to vibration.
- Compliance with Sydney Metro conditions and recommendations of the approved Metro Tunnel Vibration Management Plan

The real time vibration monitoring will allow RCC to directly monitor and manage all works onsite. The vibration monitors will be set to send text messages to the Site Manager and Supervisors communicating that the vibration criteria set by the Acoustic consultant is reaching its upper limit, enabling works to be stopped, reassessed and commenced utilising alternate methodology and/or timing before any issues arise.

To satisfy Sydney Metro requirements, RCC will introduce vibration monitors at the base of the piling zone:

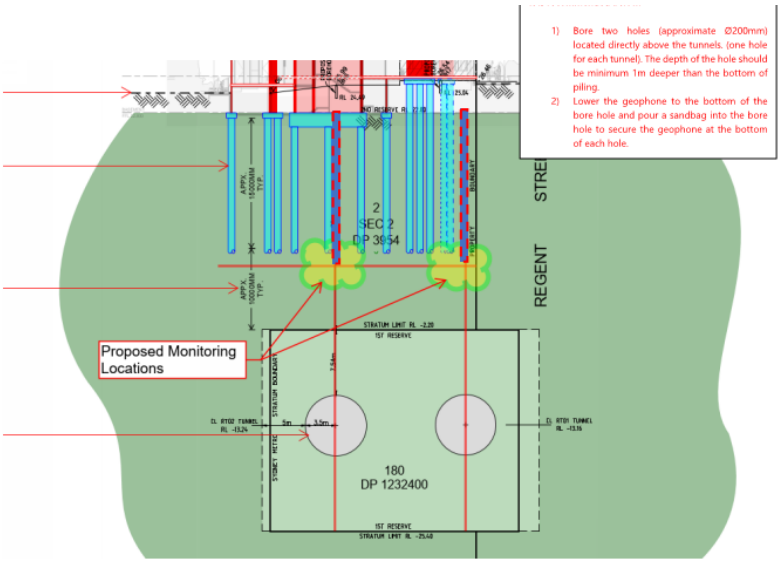


Figure 4 – Section View of Proposed Monitoring Locations

Figure 1.1.5.1A Piling Vibration Section

1.2.5.2 PROTECTION OF NEIGHBOURING PROPERTIES AND INFRASTRUCTURE

The buildings and surrounding council assets neighbouring the 104-116 Regent Street site shall be inspected at project start up and a detailed Dilapidation Report produced by an external specialist in line with all requirements set-out in the final

SSD approval conditions. This report will provide a photographic record of the condition of existing elements prior to commencing works.

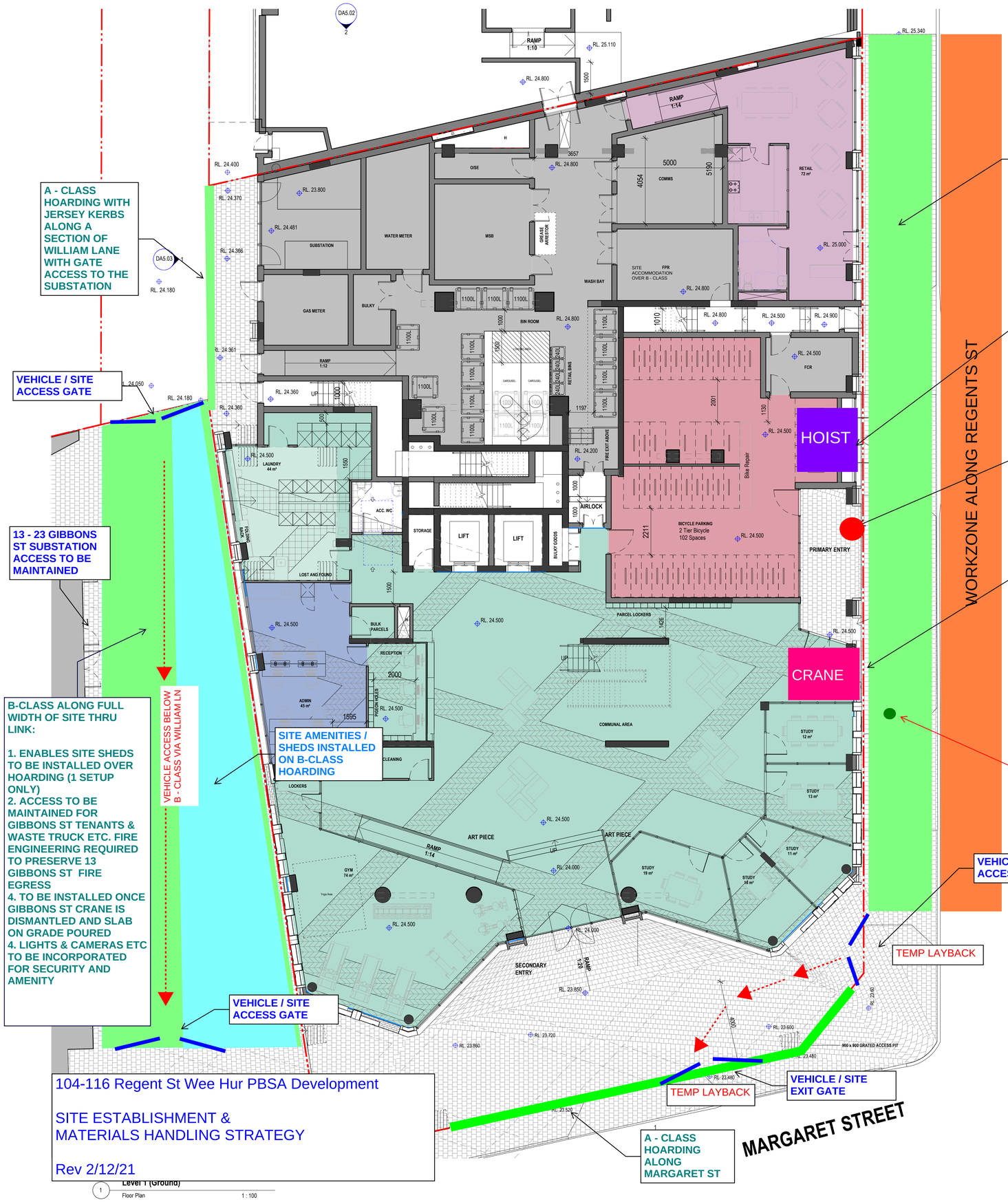
The report will be issued to Wee Hur, Council and any other stakeholders for their records. At the end of the project and/or works the existing elements recorded in the Dilapidation Report will be reviewed for any change on condition by the nominated representatives from Wee Hur and RCC. Any discrepancies will be noted, and an appropriate course of action determined and completed.

Protection measures that we propose to use are as follows:

- All site works to be kept within site hoarding/ project zones
    - Where works are to occur outside of site (such as deliveries in work zones or service connections), RCC will ensure localised condition surveys are undertaken and then any discrepancies repaired
- Hoarding and protection measures constantly checked, evaluated and repaired if deemed inadequate
- Careful adherence to consultant guidelines regarding sensitive works that are likely to cause damage, such as
    - Piling causing vibration close to other buildings
    - Trenching for services (Expected at various frontage to the site pending final authority designs)
    - Heavy vehicle set-ups such as mobile cranes and boom pumps to be set up on solid and assessed/approved grounding only
- Limiting vehicle weights that could cause damages to driveways and council roadways

RCC's policy is to be careful and vigilant of all surrounding neighbours, property and assets at all times and we believe the above measures and strict management of these measures will result in a damage free environment at the time of project completion.

APPENDIX A – SITE ESTABLISHMENT LAYOUT & MATERIALS HANDLING PLAN



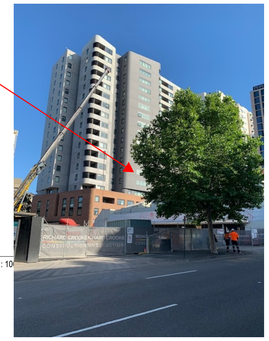
104-116 Regent St Wee Hur PBSA Development

SITE ESTABLISHMENT & MATERIALS HANDLING STRATEGY

Rev 2/12/21

1 Level 1 (Ground) Floor Plan 1 : 100

3 Section - Fire exit Section 1 : 10



NOT FOR CONSTRUCTION

General Notes:

1. All drawings to be read in conjunction with all consultants and sub-contractors documentation and reports.
2. All works to conform with the National Construction Code of Australia and Australian Standards.
3. Check all dimension on site and notify Antoniades Architects of any discrepancies.
4. Refer A20 Series for specifications, materials and products schedule for full code description.

Legend:

- Property Boundary
- Setbacks
- Overhead
- Hidden
- RL 0.00 — **Level Marker (Plan)**
- RL 0.00 — **Level Marker (Elevation)**
- RL 0.00 — **Level Marker (Spot)**
- Number / Name / Area — **Room Tag**: Room Number, Room Name, Room Area
- ABC01 — **Material Tag**: See Material Board for code reference

Hatches

- Existing Elements (Projection)
- Existing Elements (Cut)
- Demolished Elements (Projection)
- Demolished Elements (Cut)
- Zone for Service Penetration
- Earth
- Concrete
- Water feature
- Tile
- Carpet
- Timber Floors
- Grass
- Gravel/Stone
- Brickwork
- Metal Sheet

Abbreviations

RL	Relative Level (AHD)
FFL	Finished Floor Level
AFFL	Above FFL
TOW	Top Of Wall Level
TOR	Top of Ridge Level
P	Storage Cupboard
R	Wardrobe
S	Full Height Pantry Cupboard

REV	DESCRIPTION	BY	DATE
A	Issued for information		29.10.2021
B	Issued for coordination		25.11.2021

PROJECT PHASE

DEVELOPMENT APPLICATION

STATUS

PRELIMINARY

PROJECT NO.
20009DA

PROJECT
REGENT STREET

ADDRESS
104-116 REGENT STREET

CLIENT
WEE HUR

SCALE: As indicated@A1

NORTH

0m 2 4 5m
Scale 1:100

DRAWING SERIES

DRAWING TITLE
Entry Level

DRAWING NO.	REVISION	DRW:
DA3.02	**B**	**ZD**
		CHK: **AA**

ANTONIADES ARCHITECTS

www.antoniades.com.au
ACN 129 731 559

Nominated Architect: Andreas Antoniades
NSW Registration 7954