CONSTRUCTION MANAGEMENT PLAN

Lang Walker AO

Medical Research Building – Macarthur

Prepared for: **Walker Corporation**

Development Management: **Walker Corporation**

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Contents

1 EXECUTIVE SUMMARY

The Construction Management Plan (CMP) has been prepared to accompany the proposed Lang Walker AO Medical Research Building – Macarthur Project. The objective of this document is to serve as a point of reference for the Project Team in respect to the execution of this Construction Phase of the Project. It serves to outline the key issues and address the following aspects of the project:

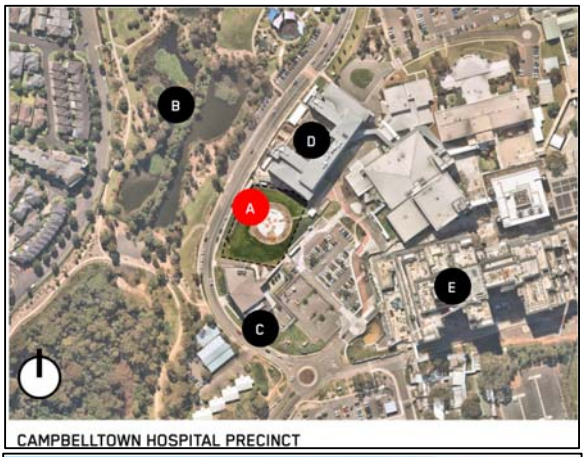
- To ascertain an appropriate construction methodology;
- Outline the consultation and communication process;
- Propose a suitable site setup;
- Outline construction programme;
- The site safety management system requirements;
- The waste management objectives; and
- Present a noise mitigation strategy during construction.

The CMP addresses the following requirements stated in the Environmental Impact Statement (EIS) Deliverables:

- Assess impacts of staging where it is proposed and detail how construction works, and operations would be managed to ensure public safety and amenity on and surrounding the site.
- a description of any proposed construction or operational staging including relevant timing and dependencies.
- details of construction and decommissioning including timing.

2 BACKGROUND

The project described in this report relates to the Lang Walker AO Medical Research Building – Macarthur Project. It is located in 100 Parkside Crescent, Campbelltown (within the Campbelltown Hospital Precinct, Therry Road, Campbelltown).



CAMPBELLTOWN HOSPITAL PRECINCT

A MMRC SITE (EXISTING HELIPAD)

The project involves the construction of the following:

- demolition of existing at-grade helicopter pad;
- site preparation civil works;
- construction of a five-storey medical research facility named Lang Walker AO Medical Research Building – Macarthur;
- link bridges connecting Building to 'Building D' and Macarthur Clinical School (MCS);
- associated site and landscaping works; and
- signage.

3 CONSTRUCTION METHODOLOGY

3.1 Site Establishment

Site establishment protocols will be established and modified as the project evolves over the seven major stages:

- Stage 1: Site Establishment;
- Stage 2: Demolition, Piling and Excavation;
- Stage 3: Structure Construction;
- Stage 4: Façade and Fitout
- Stage 5: External Works, Defects, Testing, Commissioning and Authority Inspections and Approvals

3.2 Access – Vehicular

Vehicular access will be managed via the entry and exit gate along Parkside Crescent. Large material and plant deliveries including steel, concrete, external elements which require delivery by table top truck, semi-trailer, concrete truck etc will be unloaded within the Construction Zone to be established within the northern boundary, along Parkside Crescent. This will also apply to smaller deliveries by utility vehicles. The single entry point will necessitate close monitoring and coordination of vehicular movements to ensure they do not compromise the sequence of activities on site or encumber access for the adjoining properties and existing pedestrian thoroughfares.

The following is a summary of the proposed vehicles that will be utilized by the project in the construction phase.

Works	Timing	Vehicles
Stage 1: Site Establishment	Month 1	Mobile crane Delivery trucks
Stage 2: Demolition and Excavation	Months 1-2	Dump trucks Excavator Grader Compactor
Stage 3: Structure Construction	Months 3-9	Reinforcement trucks Concrete trucks Concrete pump Delivery trucks – formwork, scaffold. steel
Stage 4: Façade and Fitout	Months 9-17	Delivery trucks
Stage 5: Completion	Months 16-18	Delivery trucks
Crane erection/dismantle		Mobile crane Delivery trucks
General	Months 1-18	Traffic control vehicles Small trucks, vans

3.3 Access – Personnel

Personnel access will be through the site gates on the north western corner and north eastern corner of the site.

3.4 Vertical Lifting – Crane

A tower cane with a capacity of a vertical lift of a minimum 40 metres, estimated 10 tonne capacity (TBC) at 35 metres horizontal distance (the estimated maximum distance to access all pints of the building) will be established as per the attached Site Establishment Plan (**Refer Appendix A: Site Establishment Plan**). It is intended that the crane will be installed post completion of excavation and remain in place throughout the construction phase.

The crane will be located in the north eastern corner of the central void. This will ensure that there are limited penetrations to be dealt with post completion and optimise the radius of swing, the distance from the Construction Zone and the adjoining properties.

The crane locations, installation and methodology will be confirmed with an industry specialist and will give considerations to the site layout, weather vane requirements, restrictions and lifting capacity.

3.5 Materials Handling – Delivery and Disposal

Unloading of materials off and on site will be undertaken by tower crane and fork lifts. The movement of large materials will be unloaded by the crane direct to the workface and will be dispatched by crane as necessary. Refer **Appendix A: Site Establishment Plan** for the location of the Parkside Crescent Construction Zone. Storage will be established in the Lower Ground Floor 1 areas as space becomes available with horizontal movement to be undertaken by fork lift or pallet jack. Small material loads will be spread between the crane and hoists for movement within the building. Concrete delivery will be undertaken via trucks parked in the Construction Zone and it is proposed that the concrete pump is established on the same location.

3.6 Loading Platforms

Loading platforms are proposed to be installed at Levels 1 and 2 following the initial stripout of formwork. The loading platforms will be removed following the delivery of the last Joinery/FF&E of the floor.

3.7 Rubbish Removal

Throughout the construction phase, rubbish bins/skips will be provided at strategic positions around the site, and all subcontractors will be required to clear their rubbish as it accumulates. Waste will be collected in bins on the floors and transported down to the LGF by the hoist.

3.8 Hoisting

Vertical access will be provided for personnel and selected materials by man/materials hoists (Alimak or equivalent) to facilitate movements between all floors. It has been initially proposed that the location of the hoist to be at the front of the site, adjacent the building closest to the construction zone. Refer **Appendix A: Site Establishment Plan** for the location of the hoist. Erection of the Hoist will be by use of Tower Crane from the construction zone on Parkside Crescent. Prior to erecting the cars and mast in place, a pit will be required in the location of the hoist, which will be carried out during the detailed excavation.

3.9 Project Hoardings and Site Accommodation

Site fencing will be established along the perimeter of the site. Site sheds and amenities will be established within the site compound (proposed to be at the rear of the site at this stage) and as necessary, additional site office accommodation may be sought in one of the adjacent properties as necessary to supplement the site. Refer **Appendix A: Site Establishment Plan** for the proposed locations of the site fencing and site accommodation. Site sheds and amenities will be relocated to the Lower Ground Floor level as access progressively becomes available.

3.10 Temporary Services

It is envisioned that the hydraulic subcontractor, as part of their main contract scope of works, will provide the necessary labour and materials for the temporary hydraulics. This incudes provision of potable water, sewer, and any general other items such as construction water supply, safety items (eye washes, etc) and stormwater management.

The electrical subcontractor, as part of their main contract scope of works, will provide the necessary labour and materials for the temporary electrics. This includes provision of construction supply (off temporary boards), safety items (access lighting, nurse calls, testing and tagging, etc), security and hoist power.

3.11 Edge Protection

The perimeter of all the buildings (South Wing, East Wing and West Wing) will use scaffolding as edge protection during the construction of the structure and installation of façade elements. Due to the terrain of the site, the scaffolding will be erected following completion of the backfilling of LG2 and LG1 perimeter walls. Refer to **Appendix A: Site Establish** for the proposed Perimeter Edge Protection showing the proposed perimeter edge protection elements during the construction of the buildings. Stretcher stairs will be erected (craneable) to provide access between floors during structure construction and remain operational until fire stairs can be open for use.

4 CONSTRUCTION STAGING

The following staging methodology has been prepared by Walker and CPM following investigation of the existing and proposed design documentation, site inspections of the area surrounding the subject premises and adjacent properties, Council and Utility Authority infrastructure. The staging of the works are described in relation to the following:

- Assess impacts of staging where it is proposed and detail how construction works, and operations would be managed to ensure public safety and amenity on and surrounding the site;
- a description of any proposed construction or operational staging including relevant timing and dependencies; and
- details of construction and decommissioning including timing.

Refer to **Appendix B: High Level Construction Programme** for the indicative timing of proposed construction works.

Refer to **Appendix C: Staging Diagrams** for the indicative proposed operational staging of the works.

4.1 Stage 1: Site Establishment (Month 1)

At site establishment, the whole perimeter of the site exposed to the public will be secured by means of site fencing. Along Parkside Crescent, it is proposed to establish a Construction Zone and also within the site at various locations. The location on Parkside Crescent has been selected for vehicular access to the site for large scale movements during construction as it is the optimal position for key site locations of hoist, crane and the “U-Shape” configuration entry. Subject to review by Council, the zone will provide sufficient space for concrete trucks, concrete pump, semi-trailers, etc. Management of vehicular movements at the entrance to the site will require close coordination between Supplier/ Sub Contractor and the Contractor to ensure the zone is effectively utilised.

The site sheds and amenities will be established within the site compound and will be erected prior to commencement of demolition works. It is currently envisioned that the site accommodation be located at the rear of the site. Site sheds and amenities will be relocated to the LGF level as access progressively becomes available.

The project crane will be established at the completion of bulk and detailed excavation and will facilitate the lifting requirements of the project. Vertical access will be provided for personnel and selected materials by hoists to facilitate movements between all floors.

The table below is a preliminary list of the vehicles, plant and equipment proposed for Stage 1: Site Establishment, subject to confirmation by future contractor/subcontractor:

Stage	Timing	Vehicles/Plant Equipment
Stage 1: Site Establishment	Month 1	Small excavator to create initial access ramp to site
		Delivery trucks
		Mobile crane for lifting of site sheds, demolition and excavation equipment etc
		General powered hand tools
		Materials handling (forklifts etc)

4.2 Stage 2: Demolition and Excavation (Months 1-2)

4.2.1 Demolition

The scope of the project requires minimal demolition works. Demolition will include the following activities:

- Termination of redundant services and make safe;
- Demolition of existing gabion walls; and
- Removal of existing helipad.

Demolition of the existing helipad will be undertaken by a qualified demolition and civil contractor and works will not commence until all relevant conditions precedent to start on site are satisfied.

4.2.2 Piling, Excavation and Benching

Once demolition is completed and suitable access is provided for personnel and equipment, excavation will be undertaken to create the new LGF level.

The proposed sequence of bulk excavation is as follows:

1. Construction of high level piles;
2. Bulk excavation and battering to RL75430 (LG2);
3. Slope stabilisation as required;
4. Construction of LG2 slabs and walls;
5. Backfill and benching to RL79430 (LG1);
6. Slope stabilisation as required;
7. Construction of LG1 slabs and walls;
8. Backfill and benching to RL83730 (L00); and
9. Slope stabilisation as required.

Excavation plant and equipment will enter the site via the Construction Zone or lifted into place by a mobile crane. It is anticipated that the excavation works will encounter fill/clay 5-7 metres and rock at 7-10 metres. As such, excavation of the upper soil layers (fill and natural) will be require using conventional earthmoving equipment, such as tracked excavators. Localised service and lift pit excavations will likely require some light to medium ripping assistance or the use of rock hammers for the excavation of medium strength or stronger shale. Materials will be stockpiled within the site and loaded out (if excess) during normal business hours.

4.2.3 Plant, Equipment and Vehicles

The table below is a preliminary list of the vehicles, plant and equipment proposed for Stage 2: Demolition and Excavation, subject to confirmation by future contractor/subcontractor:

Stage	Timing	Vehicles/Plant Equipment
Stage 2: Demolition and Excavation	Months 1-2	Excavator
		Rock hammers (subject to light to medium ripping assistance at 7-10 metres down)
		Skid steer loader
		Mini grader
		Small Compactor
		Piling Rig
		Delivery trucks – reo, etc for piles
		Concrete trucks – for piles
		Concrete pump – for piles
		Materials handling (forklifts etc)
		Jackhammer (for pile trimming etc)

4.3 Stage 3: Structure (Months 3-9)

4.3.1 Structure

Work will commence at the lowest level in the new LG2 level and progressively work upwards in a predetermined sequence that seeks to construct the building in a logical manner for reasons of safety, protection of personnel and adjacent properties etc. The project requires detailed staging of Lower Ground Floor walls and backfilling and benching works up to L00.

Construction of this phase will include the following activities:

- Construction of L00 structure;
- Backfilling to LG1 walls enabling the establishment of scaffolding;
- Suspended slab construction involves construction of 3 pours per level;
- Construction of structural steel for the footbridges to the west (MCS) and east (Building D).

Throughout the period of construction a mobile concrete pump will be temporarily installed in the Parkside Crescent construction zone for each pour. The concrete line will run across the footpath (ramp to be provided to maintain pedestrian access) into the site to complete the below ground structure.

4.3.2 Interface with MCS and Building D

The project requires significant level of coordination with the existing building to the West (MCS) and to the East (Building D) to construct the proposed footbridges. The construction programme currently reflects the following interface points:

- MCS (East)
    - In Month 8, the MCS Building will require localised demolition and scaffolding works in anticipation of the structural steel erection for the footbridge. Weatherproofing works will follow thereafter. Notifications to the relevant stakeholders at 4 weeks, 2 weeks and 1 week prior have been identified.
    - In Months 12-13, the MCS Building will again require coordination to facilitate the completion of the footbridge enclosure and fitout works including the construction of the proposed opening/entry point that links the Building and the MCS.
- Building D (West)
    - In Month 10, Building D will require localised demolition and scaffolding works in anticipation of the structural steel erection for the footbridge. Weatherproofing works will follow thereafter. Notifications to the relevant stakeholders at 4 weeks, 2 weeks and 1 week prior have been identified.
    - In Months 14-15, Building D will again require coordination to facilitate the completion of the footbridge enclosure and fitout works including the construction of the proposed opening/entry point that links the Building and Building D.

4.3.3 Plant, Equipment and Vehicles

The table below is a preliminary list of the vehicles, plant and equipment proposed for Stage 3: Structure, subject to confirmation by future contractor/subcontractor:

Stage	Timing	Vehicles/Plant Equipment
Stage 3: Structure	Months 3-9	Delivery trucks – reo, formwork, etc
		Concrete trucks
		Concrete pump
		Concrete vibrator
		Tower crane
		Welding equipment
		General powered hand tools
		Materials handling (forklifts etc)
		EWP's

4.4 Stage 4: Façade and Fitout (Months 9-17)

4.4.1 Facade

On the basis that a curtain wall façade system is incorporated into the design, it is proposed that the perimeter scaffold will be either modified or removed early to enable the installation of curtain wall panels. Access to remaining façade elements may be undertaken via the perimeter scaffold. The materials can be either delivered through the hoist or the loading platforms. The sequence of this work will be coordinated with the stripping of the relevant floors.

Construction will include the following activities:

- Removal or modification of perimeter scaffold;
- Installation of new structural connections to the perimeter of the new floor slabs to accept points of fixing for new façade; and
- Staged installation of new facades working from the ground up.

4.4.2 Services Rough ins and Builders Works

Services rough-ins and associated builders works to the building will commence in the Lower Ground levels as soon as the floors are sufficiently clear of back propping from the proposed structural works. Closure of the façade will minimise exposure to inclement weather and allow the dry trades, including major installation of major plant and equipment, to follow the wet trades progressively up the building.

4.4.3 Fit out and Finishes

Fit out of the Lower Ground Floor levels will be scheduled as late as possible and commence after substantial completion of the base building works in these areas. This will allow the LGF areas to be used for materials storage during the project and additional site amenities. Notwithstanding this, priority will be given to the critical major plantrooms that are currently on the LG2 West and LG1 East. Fitout of these plantrooms will necessitate coordination of the procurement of long lead time major plant items and the completion of these areas will facilitate an early transition from temporary services to permanent services connections.

The quality and expectations for the installation of fit out to the “front of house” L00 Travel and Welcome Areas necessitate early commencement to ensure installation is executed in accordance with the design. Fit out of the balance of the Research and Seminar Rooms to the balance of the typical floors will be scheduled to follow the dry trades as they are completed.

The services and finishes process will typically commence at the completion of formwork stripping for that level and will consist of:

- Services rough-ins;
- Frame walls and ceilings;
- Services second fix;
- Wall and ceiling linings and floor finishes;

- Joinery and FF&E installations;
- Services fit-off ; and
- Defects, commissioning and training.

4.4.4 Plant, Equipment and Vehicles

The table below is a preliminary list of the vehicles, plant and equipment proposed for Stage 4: Façade and Fitout, subject to confirmation by future contractor/subcontractor:

Stage	Timing	Vehicles/Plant Equipment
Stage 4: Façade and Fitout	Months 9-17	Delivery trucks
		Tower crane
		General powered hand tools
		Materials handling (forklifts etc)
		EWP's
		Angle grinder
		Core drill
		Concrete cutter
		Welding equipment
		Nail gun

4.5 Stage 5: Completion (Months 14-18)

4.5.1 External Works

The external works are envisioned to commence following the removal of perimeter scaffolding to the corresponding areas. There is a level of coordination with the external works and the completion of the footbridges that link the Building to the east (MCS) and to the west (Building D) and these works are planned to commence as early as possible to maximise completion outcomes whilst having considerations for the impact to horizontal construction access at the Ground Floor Plane.

4.5.2 Completion Plan

On completion of the works, the following will be finalised to the extent that the contract and associated defects address the following key deliverables:

- Undertake final defects inspection
- Review and approve handover manuals
- Liaise with the End Users for final acceptance and Handover
- Finalise construction contract and claims
- Review commissioning
- Defects liability period
- Occupation certificate
- Practical completion

Prior to practical completion a contract close-out strategy with the contractor will be established to set milestones for the contractor to complete manuals and allow access for inspections. An Occupation Certificate will also be required prior to Practical Completion.

4.5.3 Defects

A staged defects inspection and rectification process will be implement to ensure delivery of the project with minimal number of defects. The following is a preliminary outline of the defects process:

- Stage 1: Subcontractor defects identification and rectification
- Stage 2: Contractor defects identification and rectification
- Stage 3: Joint Client and Contractor defects identification and rectification

4.5.4 Testing and Commissioning

The testing and commissioning process commences as soon as the individual systems are installed and ready for testing. The completion of the individual systems testing will trigger the integrated systems testing and then ultimately the final witness testing required prior to issue of OC and PC.

The fire systems will be given priority to ensure that relevant authorities such as the Fire Brigade are given ample time to identify critical issues and ensure that the building meets the required conditions precedent to achieving OC and thereafter PC.

4.5.5 Decommissioning and Demobilisation

Prior to project completion, the following will be decommissioned and demobilised from site:

- Hoist (Month 14)
- Scaffolding (Month 14)
- Temporary services following cutover to permanent feed (Months 16-17);
- Loading Platforms (Month 15)
- Tower crane (Month 15)
- Construction Zones and Fencing (Month 18)
- Site Accommodation (Month 18)

4.5.6 Plant, Equipment and Vehicles

The table below is a preliminary list of the vehicles, plant and equipment proposed for Stage 5: External Works and Completion, subject to confirmation by future contractor/subcontractor:

Stage	Timing	Vehicles/Plant Equipment
Stage 5: External Works and Completion	Months 14-19	Delivery trucks
		Tower crane
		General powered hand tools
		Materials handling (forklifts etc)
		EWP's
		Concrete Sawcut for footpaths etc
		Welding equipment
		Blower (soil, mulch etc)

4.6 Working Week

The construction activities are planned to be undertaken under the following working times:

- 6 day week calendar (Monday to Saturday); and
- No work on Sundays and NSW Public Holidays, RDO's and 2 week Christmas shutdown.

4.7 Management Plans

To ensure public safety and amenity on and surrounding the site, all management plans prepared, developed and updated accordingly with respect to construction staging are site specific action plans, and will be kept on site at all times and be available to all staff.

4.7.1 Project Safety Plan

Contractor WHS responsibilities under the Contract and legislation are to be developed following Contractor appointment. Walker will monitor compliance with WHS as defined in the contract and as described. This plan is to provide specific information regarding the management of project-related works and attempts to ensure that a uniform approach to health and safety is adopted. A copy of the plan shall be readily available and subcontractors and clients associated with the project will be made aware of the location of the plan, and that it is available for inspection. This plan may be amended where deficiencies are identified or project works change such that the information contained in the plan is no longer accurate or valid. Those amendments will be authorised by the Contractor.

The Contractor Safety Management System is required to be third party certified to AS/NZS 4801:2001 and regularly audited both internally and externally as part of the on-going maintenance of the system.

A Project Safety Management Plan (PSMP) is to be developed to meet contractual and systemic requirements. The PSMP sets out how the Contractor will manage safety on-site. Generally, the plan embraces:

- The identification of hazards and risks
- The identification of various controls
- An assessment of the risk level both before and after controls
- Emergency Response and Reporting
- Incident Management and Response
- Safe work methods and procedures including applicable Australian Standards
- Safety consultative arrangements including site specific inductions
- Safety in design; and
- Subcontractor management.

The PSMP will include a number of sub plans, such as:

- Demolition Work Plan;
- Demolition phase TMP;
- Project Emergency Response Plan;
- Construction phase TMP;
- Hazardous Building Material Plan.

It is critical that the Contractor adopts a proactive approach to managing safety and drives a positive safety culture throughout the project in conjunction with all project stakeholders. Subcontractors will be required to produce Safe Work Method Statements for Contractor approval prior to commencing works on-site. Individual employees will have undergone a General Construction Industry Induction as well as their own Company's induction prior to undergoing a thorough site induction and being permitted to

commence work on the site. The site induction will include, but not be limited to addressing site conditions and constraints, the site rules (including traffic management), safety and environmental responsibilities, emergency procedures, existing services, responsibilities and required behaviours. The PSMP will be subject to audit and formal audit reports will be prepared that identify any system deficiencies for action by the project team.

4.7.2 Noise, Vibration and Disruption Management

This plan will be developed by the Contractor to address the construction generated noise and vibration that will occur during the project and the measures to mitigate these occurrences.
Noise and vibration generation activities that will occur during construction include the following:

- Use of concrete cutter, circular saws, nail guns;
- Use of excavation equipment, jackhammer, hand tools, welding equipment;
- Crane operations;
- Operation of generators and air compressors;
- Operation of mobile concrete/grout, plant/mixer, concrete pump; and
- Smooth/vibratory drum roller for pavement construction etc.

The following noise mitigation measures will be adopted during site project activities:

- Staging of site works to maximise use of the existing site features/facilities as acoustic barriers where possible;
- Noise and vibration awareness training for all site staff including subcontractors as part of general site induction and tool-box talk activities;
- Strict adherence to approved works times;
- Works will be scheduled, where practical, to avoid simultaneous noisy activities occurring on site;
- Vehicles will not be left turned on or idling at the site for longer than minimum amount of time required to complete the site activities. In addition, machines/equipment used intermittently during construction activities (i.e. cranes, excavators, bobcats, lifting equipment, etc) will be shut down, as practicably achievable, in the period between works activities rather than allowed to idle;
- The duration of noise-intensive works will be minimised through a regular review of the program and construction methodologies during project team meetings; and
- Piling works will be undertaken using non-percussive methods where achievable given the subsurface conditions.

Regular and effective plant/equipment maintenance will be completed and documented throughout the project period and documentation will be maintained on site demonstrating completion of maintenance logs and associated checklists in order to ensure all machinery is in good working order and use does not generate excess noise/vibration.
Plant, equipment and vehicles will not be operated in the event that excessive noise is produced at start up as a result of maintenance being required. All plant, machinery and works vehicles will have an efficient muffler design in accordance with the manufacturer's specifications. The mufflers will be well maintained and regularly tested with the results documented in the maintenance logs.
Care will be taken by site personnel to ensure materials will not be dropped from a height either onto or from vehicles or from the roof, overhead bridge or other raised location.
Radio/music audible in areas external to the building/vehicles will not be permitted on site. Where monitoring of site conditions and activities indicates the potential or actual occurrence of excessive noise at nearby sensitive receptors, the effectiveness of installation of temporary shielding options, including portable noise walls in the form of timber hoarding, compressed fibre board panels, steel sheeting etc (with no gaps between panels) will be evaluated prior to ongoing noise generation activities.

The quietest suitable plant reasonably available will be selected for each works activity. This will include review of documentation provided by manufacturers, suppliers, hire companies in relation to equipment prior to delivery to site.
Where noise/vibration levels at the sensitive receiver/receptor location exceed the nominated goals, the relevant noise source will be identified and any additional feasible and reasonable measures available will be implemented to either reduce noise emissions or reduce the impact on receptors. This may include:

- Evaluation of the works activity and subsequent use of alternative methodologies and/or equipment;
- Installation of equipment silencing devices such as shrouding, industrial silences fitted to exhaust systems etc; and
- Installation of temporary sound barriers/ shielding. This may comprise shielding of plant/equipment in the vicinity of non-mobile equipment where this is the source, or alternatively shielding at the site boundaries where the noise source is mobile (i.e., pavement removal equipment, or the source activity based). The intent of shielding/barrier installation is to block the line of site and so the noise transmission pathway between the receiver and the source. The effectiveness of the attenuation measures will also be dependent upon the ability of the shielding to reduce noise levels. As such, appropriate materials will be installed to achieve suitable noise reduction levels.

A non-conformance resulting from the receipt of a complaint and/or the recording of 2 successive excess noise criteria may result in the following corrective actions being implemented by the project site staff:

- An evaluation of the non-conformance to improve management strategies to prevent recurrence;
- Address complaint and respond to complainant with proposed mitigation measures;
- Undertake additional training of the site staff in respect to implementation of mitigation measures for the management of noise and vibration; and
- Notification of relevant government authorities, if required.

4.7.3 Site Safety Management

This plan will be developed by the Contractor to demonstrate the commitment of the project to Occupational Health & Safety (WHS). The plan is required to identify the scope of work to be undertaken, the hazards associated with the work and the risk assessment processes and risk control measures to be used in the execution of the plan.
The objectives of the Site Safety Plan include the following:

- Maintain lost time injury reporting and review positive performance indicators;
- Report all incidents and near misses and develop corrective action plans;
- Conduct Senior Management and WHS Group reviews;
- Develop required WHS resources;
- Formalise regular senior management reviews of WHS systems and implement relevant improvements;
- Continually develop WHS systems, policies, procedures and WHS Plans to comply with statutory requirements and industry best practice;
- Maintain an Audit Programme to comply with system's requirements;
- Ensure all corrective actions and Non-Conformances are closed out;
- Meet or exceed the requirements of AS 4801 certification and Federal Safety Commission accreditation;
- Adopt a zero tolerance safety philosophy;
- Provide Safety Awareness and other appropriate WHS training;

- Continue to implement ongoing induction procedures on all projects;
- Hold regular Consultative Committee meetings, maintain minutes and record actions;
- Issue Safety Alerts to all staff and other stakeholders according to requirements;
- Conduct weekly toolbox talks on site; and
- Maintain a data base of all toolbox talks.

The plan requires that the project ensure that the key responsibilities are addressed by the Contractor to attain the above objectives.
A statement of responsibilities by the Contractor will identify who will be responsible for the following:

- Undertake audits to ensure appropriate implementation of the WHS Plan occurs;
- Coordinate WHS training;
- Establish, implement and maintain procedures for controlling all relevant documents and data required;
- Implement WHS matters in construction design and planning;
- Make all reasonable endeavours to ensure that the WHS management system is established, implemented and maintained on the project;
- Monitor and constantly review risk management to the site;
- Ensure all Work Method Statements have been received on site prior to the commencement of work;
- Review all Work Method Statements for their accuracy and relevance;
- Review any safety incidents and where applicable prepare relevant incident reports, notifications and preventative actions;
- Maintain the management of safety on site, including the set-up of regular site safety inspections by a nominated WHS committee;
- Administer the issue of Safety Non-Conformance Notices to companies or individuals not adhering to relevant safety standards;
- Make all reasonable endeavours to ensure safe work procedures and job safety analysis requirements are enforced;
- Correct improper work practices;
- Maintain good housekeeping practices;
- Communicate, negotiate and listen effectively;
- Review follow-up on non-compliant items from hazard inspections;
- Monitor safety performance; and
- Review incident reports and investigations.

In addition, the plan will specifically address the following:

- WHS training – identification of WHS training needs of all personnel, induction training, refresher training, attendance of WHS committee personnel at consultation training etc;
- Incident management – identifies who will be available during and outside normal working hours to prevent, prepare for, respond to and recover from illness/ injury and incidents;
- Site safety rules – As a minimum will include induction and safety training, PPE, Site access and security, emergency procedures, illness and injury, protection of personnel and the public, work at elevated areas, safe working, hazardous materials and dangerous goods etc; and
- Safe Work Method Statements – All activities assessed as having WHS risks require a SWMS to be prepared and implemented.

4.7.4 Waste Management

This plan will be developed by the Contractor to address the creation, disposal and minimization of waste created by the construction of the project.
The objectives of the Waste Management Plan include the following:

- Address the waste management requirements for the project;
- Waste minimisation from demolition and construction activities; and
- Increase economic feasibility of the project through effective waste separation, recycling and re-use measures.

The existing site structure is to be partially demolished with waste materials sent either to landfill reused or recycled.
Demolition waste will be the biggest contributor to the total waste tonnage of the project.
The provision of waste skips or bins at the site will be made for Cardboard, timber, metal, soft plastic, polystyrene, insulation, concrete, glass and bricks.
Note that recyclables may be combined in a skip bin, however evidence will be provided that the waste contractor will separate these materials off-site. The project is likely to generate significant quantities of all materials stated above.
A waste classification of the soils to be excavated will be provided prior to excavation. The method of soil reuse will depend on the contractor employed for the excavation, and the need for reuse of VENM material will be specified for the excavation contract.
Waste collection during construction is subject to the staged nature of construction and the use of known quantities of uncontaminated materials. Major recyclables to be recovered in construction are likely to consist of off cuts, discards and unnecessary volumes of materials such as glass, piping, timber, steel, flooring, tiles and plasterboard. Significant waste is also expected from construction packaging.
The main goal in construction will be to reduce the total volume of waste produced, which will be achieved by effective materials procurement, management and supply. Project managers, engineers, builders and subcontractors will play a key role in achieving on-site waste reduction targets on a day-to-day basis.
The following waste management measures will be undertaken during construction:

- Disposal of waste that cannot be recovered, reused or recycled and requires land filling is to be safely recovered and disposed to licensed landfills;
- All documentation of materials disposed, landfill receipts, contracts, waste plans, etc. will be retained and maintained to meet the data collection requirements of this project. Appropriate storage arrangements to guard against product degradation or damage from weathering or moisture are to be established;
- Prefabricated materials such as frames and trusses are to be purchased where possible;
- Materials are to be delivered by suppliers only when needed. This reduces the opportunity for waste through error or change in estimate, permits on-site measurement rather than from drawings and provides for any modifications that the client may request;
- Packaging is to be minimised for building supply materials;
- Arrangements are to be made with recycling contractors to provide clearly marked bins for material separation. Must ensure that sub-contractors are aware of the placement of the bins and their responsibility to separate materials; and
- Litter management will be implemented on site to address air borne litter and litter entering the storm water system.

As well as updating and fulfilling the requirements of the Plan, specific requirements for consideration include:

- If under any circumstances any material becomes contaminated so as to deem it unfit for recycling due to the practice of the contractor, the contractor will be liable for the cost of landfill for this material;
- The contractor must provide notification of any asbestos or hazardous waste that is uncovered during the strip out works. A time frame for the removal of this waste should also be provided;
- Any contractor being used for recycling on this project must provide a facility/service license or similar certification within two weeks of tender and prior to proceeding with any site works.
- Contractors held responsible if known hazardous waste is mixed with recyclables (e.g. lead contaminated concrete disposed with concrete to be recycled);

- The contractor will be liable for any material that is unjustifiably 'dumped' or not dealt with as per the recycling schedule outlined in this report; and
- Any penalties received from recyclers for the contamination of recycling bins or skip will be the responsibility of the contractor. This charge will attract a penalty to be outlined in the contract documents.

4.7.5 Environmental Management

This plan will be developed by the Contractor to address the environmental issues that will occur during construction and will define the project scope, supporting documents and contacts including Council, Environmental Agency and emergency services.
The objective of the plan is to identify the occurrences of activities that will, and may, occur during construction and the measures to mitigate these occurrences in accordance with the provisions of the Development Consent, Construction Certificate and relevant legislation.
Environmental issues and controls that will occur during construction include the following:

- Noise and dust control (refer previous comments on this item);
- Storm water and sediment control;
- Waste disposal, reduction and recycling (refer previous comment on this item);
- Management of hazardous and dangerous materials;
- Return of excess materials, cleaning of site and paths of delivery and exit;
- Other environmentally related issues; and
- Regular review, audit and reporting.

4.7.6 Traffic Management

While no long term road closures are envisaged, short term closures will be required in order to deliver the tower crane, site sheds etc. The requirement for road closures will be the discussed with Council and relevant authorities and will be the subject of progressive applications throughout the course of the project.
A traffic management plan will be prepared and include the following:

- There will be no on street loading or unloading and all deliveries will be retained within the Construction Zone or site;
- Due to the location of the site, proximity to the public domain and interface with pedestrians, loading and unloading will also be restricted to specific times of day to minimise the potential for congestion;
- Strict monitoring and coordination of all vehicles entering/ exiting the site will be maintained;
- Separation of deliveries between the Construction Zone and other points of site entry;
- Allocation of specific delivery and collection times – after hours deliveries to be utilised;
- Consolidation of deliveries where possible; and
- Provision of suitable facilities at the exits to minimise site generated material/ grime on roads and adjacent paths.

5 PROJECT PROGRAMME

Refer to **Appendix B: High Level Construction Programme** for the indicative timing of proposed construction works.

5.1 Durations and Completion Dates

The following table provides an overview of the construction duration for the project:

Practical Completion (NETT)	16 months
Contingency	2 months
Practical Completion (GROSS)	18 months

5.2 Project Contingency

The construction programme incorporates contingency allowance and has been allocated to account for key construction contingency including:

- Inclement weather; and
- General Builders risk.

5.3 Critical Path

The critical path passes through the following for each project:

- Commencement of works on site;
- Site establishment;
- Demolition, piling and bulk excavation works;
- Construction of structure up to LG2;
- Construction of East Building structure from LG1 to Roof;
- Construction of façade enclosures;
- Fitout of East Building;
- Final defects, testing and commissioning; and
- Receipt of Certificate of Occupation.

6 Appendix A: Site Establishment Plan

WORK ZONE

SITE FENCE

SITE CRANE

HOIST

SCAFFOLD

SITE ENTRY

SITE SHEDS

STRETCHER STAIRS

INDICATIVE SITE ESTABLISHMENT PLAN - LG2

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GENERAL ARRANGEMENT PLAN - LEVEL LOWER GROUND 02

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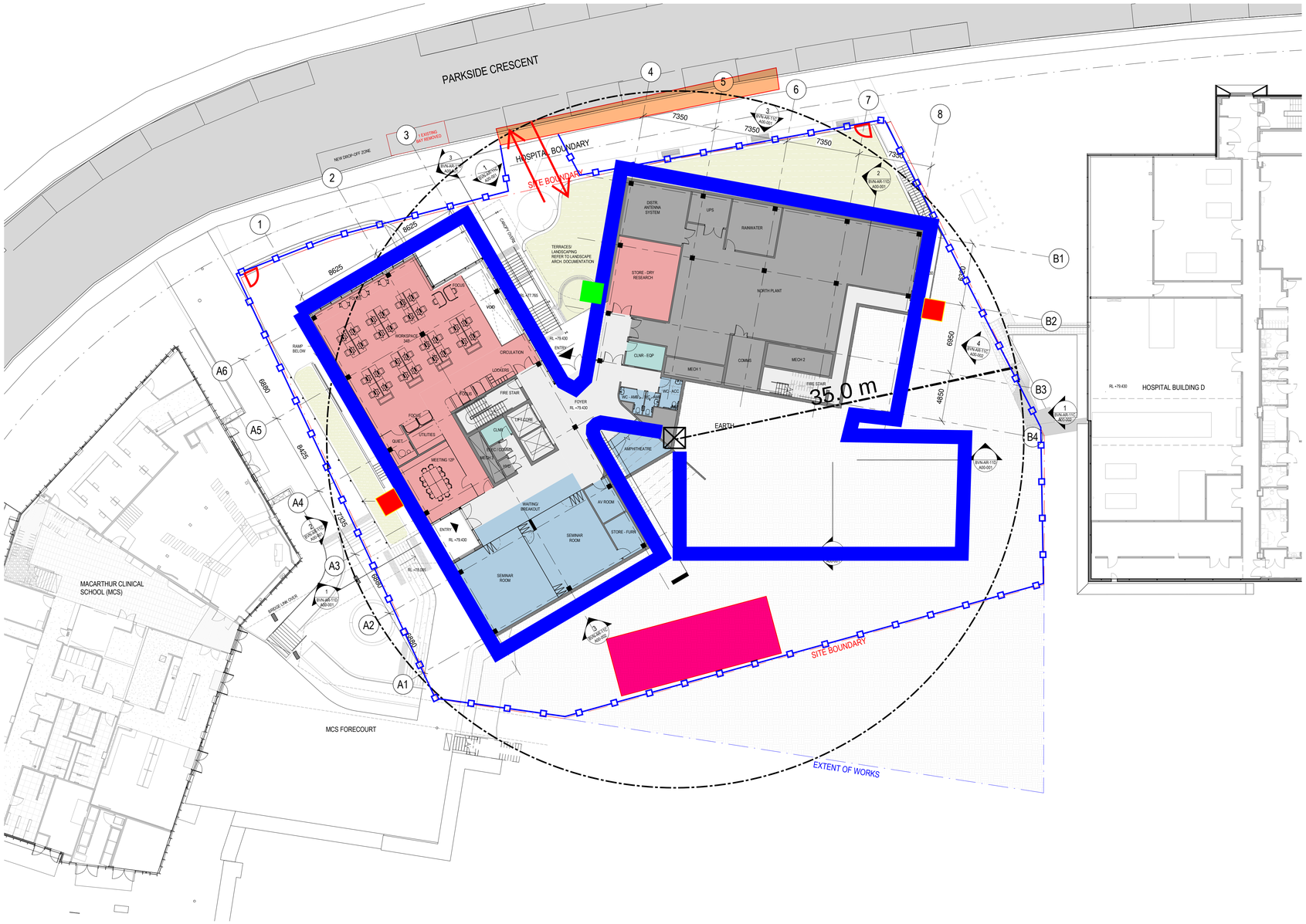

WORK ZONE
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INDICATIVE SITE ESTABLISHMENT PLAN - LG1

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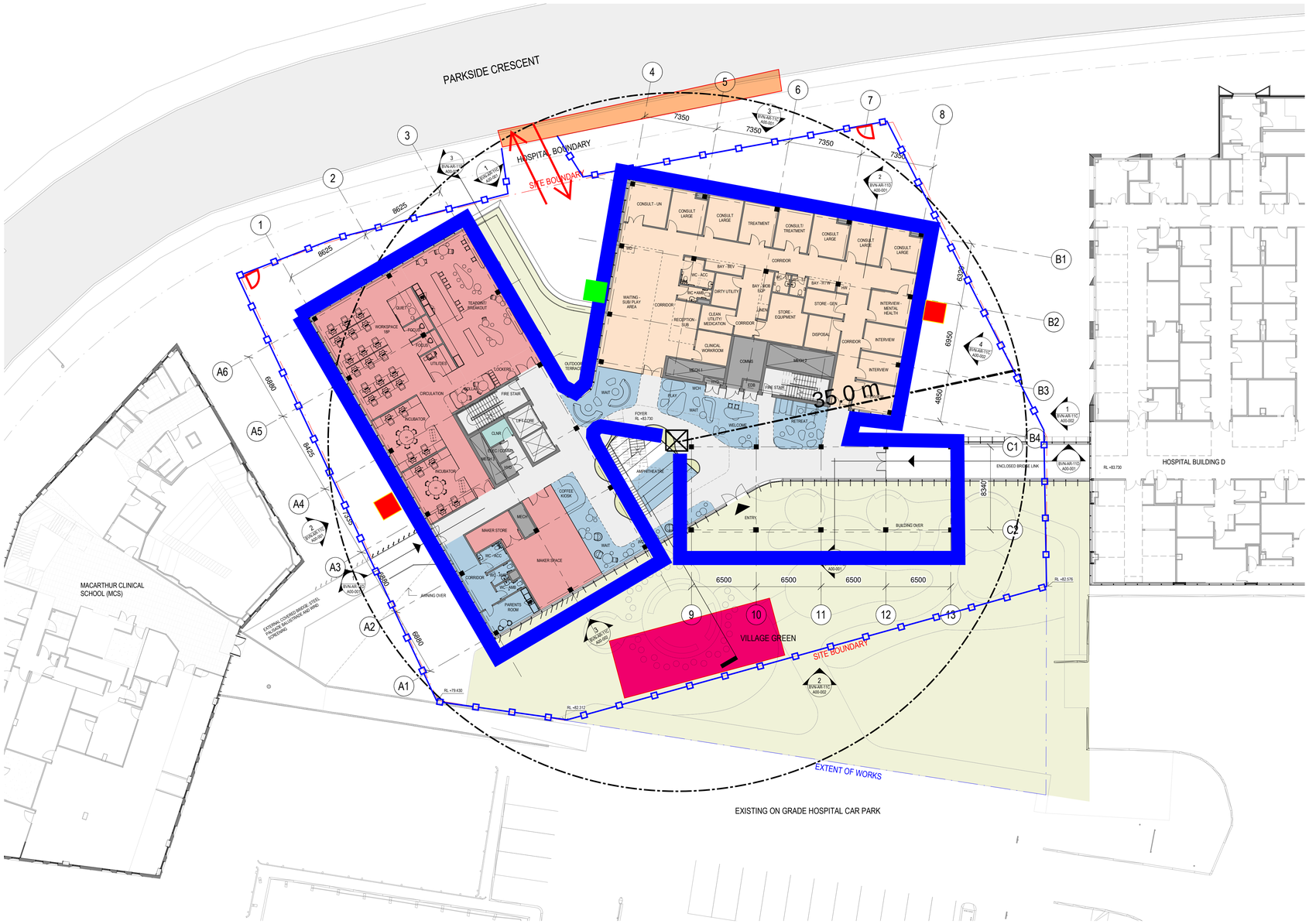

INDICATIVE SITE ESTABLISHMENT PLAN - L00

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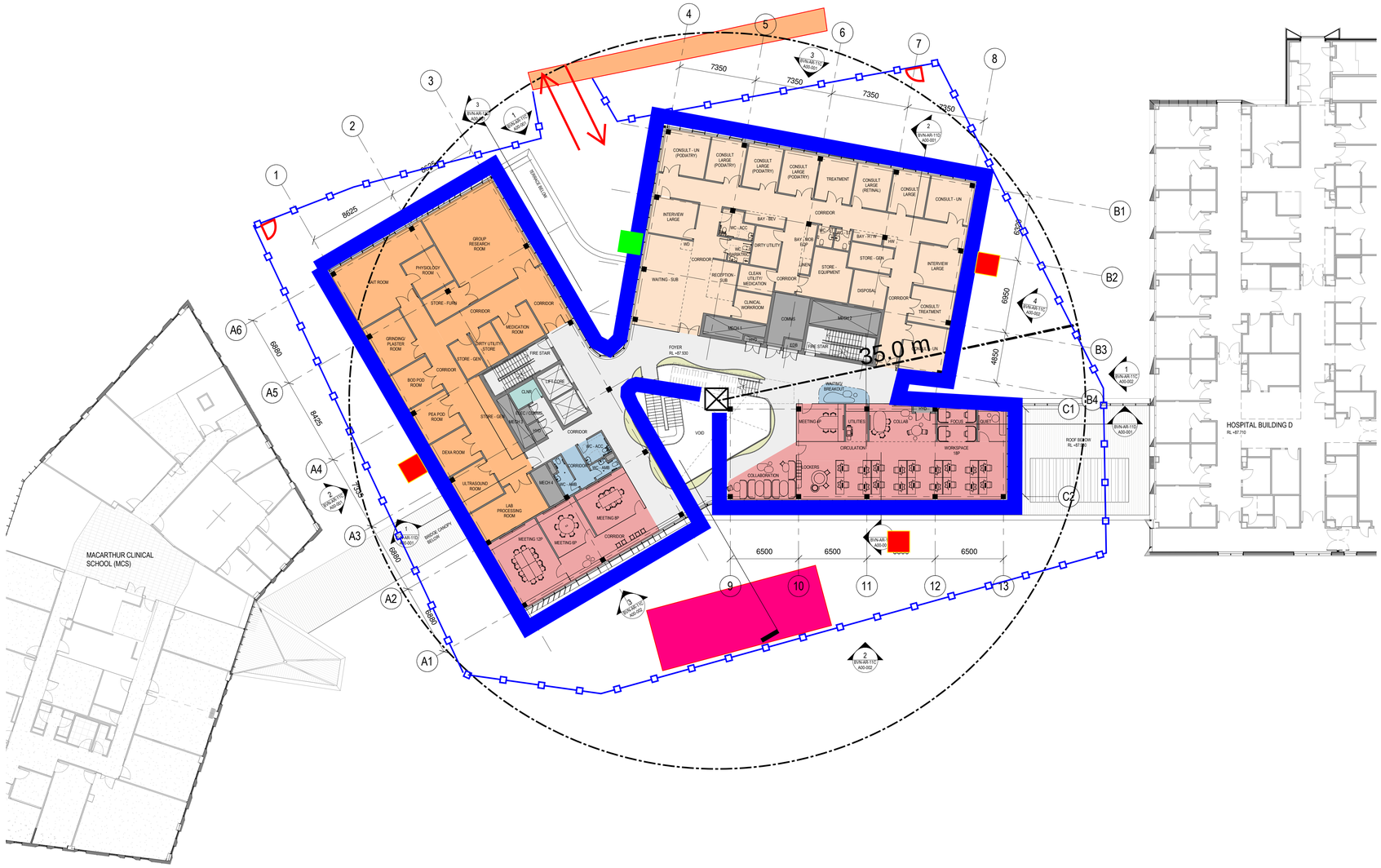

INDICATIVE SITE ESTABLISHMENT PLAN - L01

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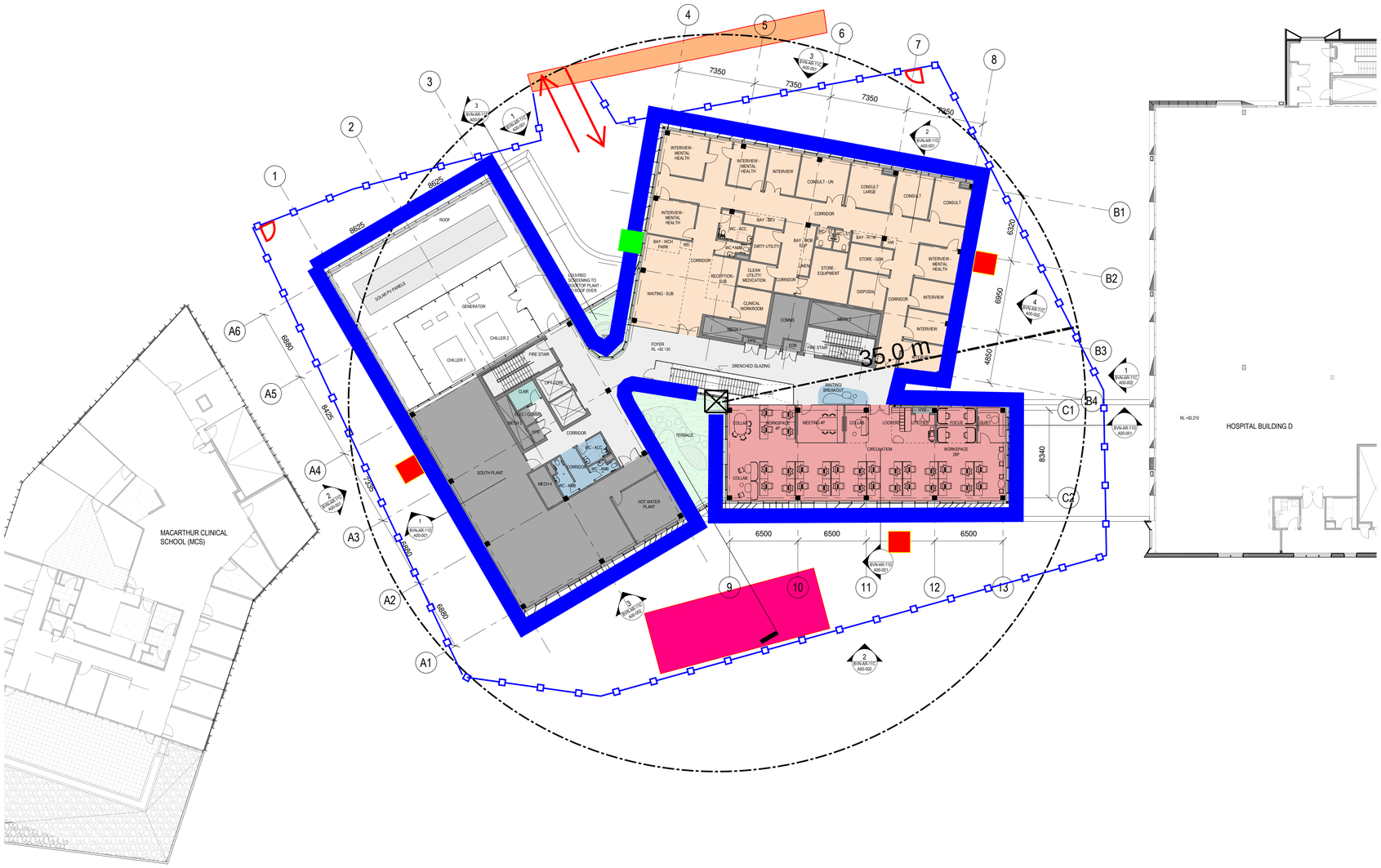

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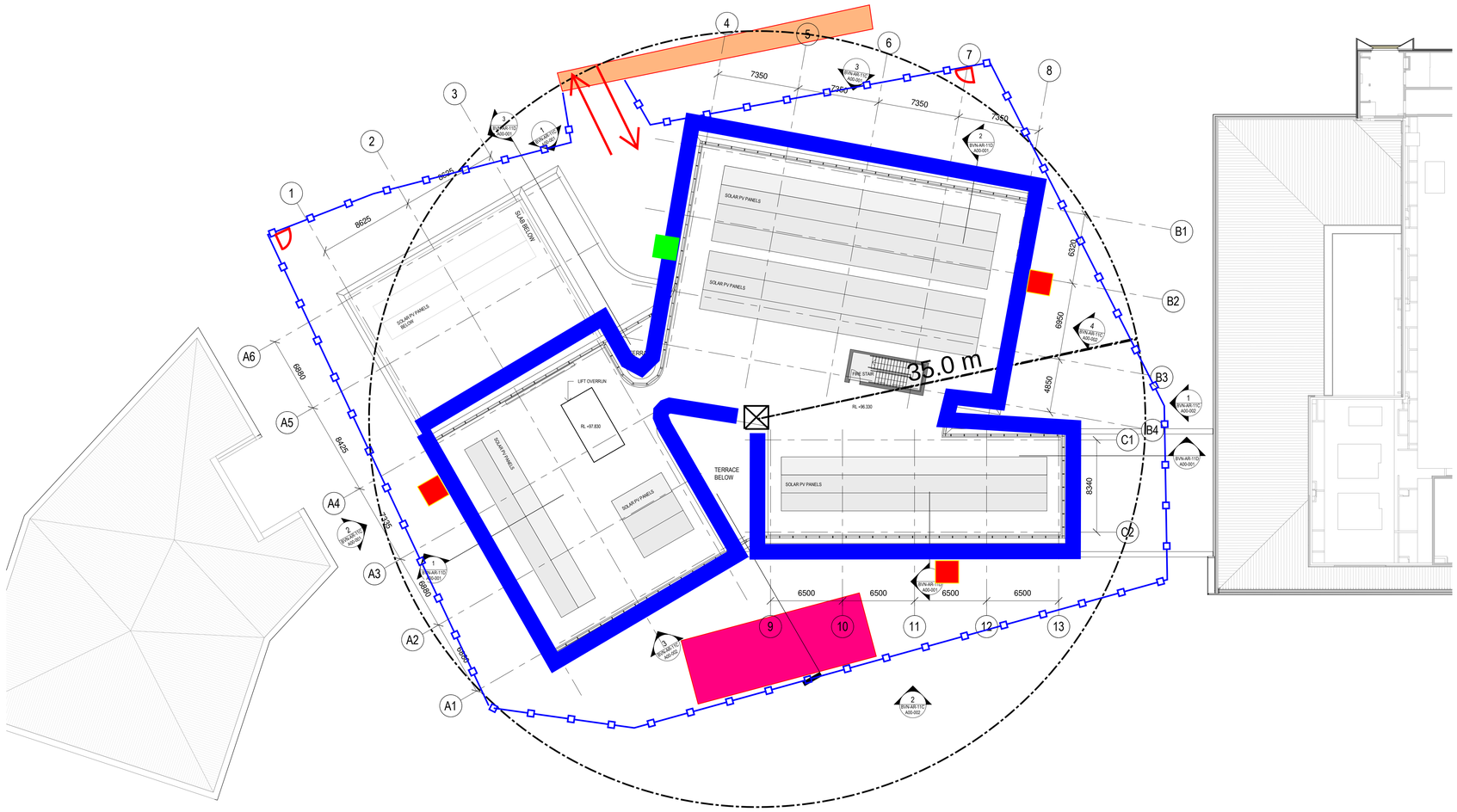

INDICATIVE SITE ESTABLISHMENT PLAN - ROOF

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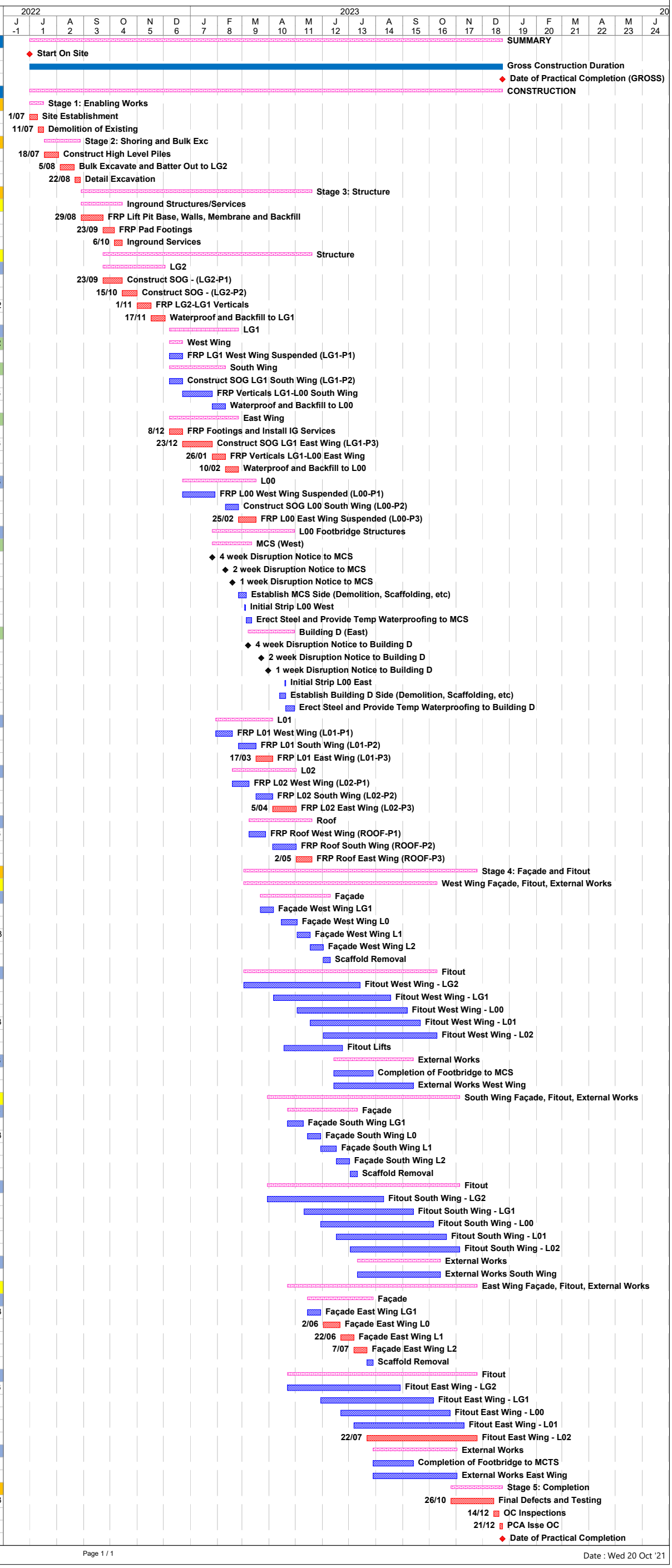
7 Appendix B: High Level Construction Programme

Lang Walker AO Medical Research Building – Macarthur

High Level Programme

ID	Task Name	Duration	Start	Finish
1	**SUMMARY**	**378 days**	**Fri 1 Jul '22**	**Sat 23 Dec '23**
2	Start On Site	0 days	Fri 1 Jul '22	Fri 1 Jul '22
3	Gross Construction Duration	378 days	Fri 1 Jul '22	Sat 23 Dec '23
6	Date of Practical Completion (GROSS)	0 days	Sat 23 Dec '23	Sat 23 Dec '23
7	**CONSTRUCTION**	**378 days**	**Fri 1 Jul '22**	**Sat 23 Dec '23**
8	**Stage 1: Enabling Works**	**12 days**	**Fri 1 Jul '22**	**Sat 16 Jul '22**
9	Site Establishment	6 days	Fri 1 Jul '22	Sat 9 Jul '22
10	Demolition of Existing	6 days	Mon 11 Jul '22	Sat 16 Jul '22
11	**Stage 2: Shoring and Bulk Exc**	**30 days**	**Mon 18 Jul '22**	**Sat 27 Aug '22**
12	Construct High Level Piles	12 days	Mon 18 Jul '22	Tue 2 Aug '22
13	Bulk Excavate and Batter Out to LG2	12 days	Fri 5 Aug '22	Sat 20 Aug '22
14	Detail Excavation	6 days	Mon 22 Aug '22	Sat 27 Aug '22
15	**Stage 3: Structure**	**174 days**	**Mon 29 Aug '22**	**Fri 19 May '23**
16	**Inground Structures/Services**	**30 days**	**Mon 29 Aug '22**	**Fri 14 Oct '22**
17	FRP Lift Pit Base, Walls, Membrane and Backfill	18 days	Mon 29 Aug '22	Thu 22 Sep '22
18	FRP Pad Footings	6 days	Fri 23 Sep '22	Wed 5 Oct '22
19	Inground Services	6 days	Thu 6 Oct '22	Fri 14 Oct '22
20	**Structure**	**156 days**	**Fri 23 Sep '22**	**Fri 19 May '23**
21	**LG2**	**48 days**	**Fri 23 Sep '22**	**Fri 2 Dec '22**
22	Construct SOG - (LG2-P1)	12 days	Fri 23 Sep '22	Fri 14 Oct '22
23	Construct SOG - (LG2-P2)	12 days	Sat 15 Oct '22	Mon 31 Oct '22
24	FRP LG2-LG1 Verticals	12 days	Tue 1 Nov '22	Wed 16 Nov '22
25	Waterproof and Backfill to LG1	12 days	Thu 17 Nov '22	Fri 2 Dec '22
26	**LG1**	**48 days**	**Thu 8 Dec '22**	**Fri 24 Feb '23**
27	**West Wing**	**12 days**	**Thu 8 Dec '22**	**Thu 22 Dec '22**
28	FRP LG1 West Wing Suspended (LG1-P1)	12 days	Thu 8 Dec '22	Thu 22 Dec '22
29	**South Wing**	**36 days**	**Thu 8 Dec '22**	**Thu 9 Feb '23**
30	Construct SOG LG1 South Wing (LG1-P2)	12 days	Thu 8 Dec '22	Thu 22 Dec '22
31	FRP Verticals LG1-L00 South Wing	12 days	Fri 23 Dec '22	Wed 25 Jan '23
32	Waterproof and Backfill to L00	12 days	Thu 26 Jan '23	Thu 9 Feb '23
33	**East Wing**	**48 days**	**Thu 8 Dec '22**	**Fri 24 Feb '23**
34	FRP Footings and Install IG Services	12 days	Thu 8 Dec '22	Thu 22 Dec '22
35	Construct SOG LG1 East Wing (LG1-P3)	12 days	Fri 23 Dec '22	Wed 25 Jan '23
36	FRP Verticals LG1-L00 East Wing	12 days	Thu 26 Jan '23	Thu 9 Feb '23
37	Waterproof and Backfill to L00	12 days	Fri 10 Feb '23	Fri 24 Feb '23
38	**L00**	**51 days**	**Fri 23 Dec '22**	**Thu 16 Mar '23**
39	FRP L00 West Wing Suspended (L00-P1)	15 days	Fri 23 Dec '22	Sat 28 Jan '23
40	Construct SOG L00 South Wing (L00-P2)	12 days	Fri 10 Feb '23	Fri 24 Feb '23
41	FRP L00 East Wing Suspended (L00-P3)	15 days	Sat 25 Feb '23	Thu 16 Mar '23
42	**L00 Footbridge Structures**	**68 days**	**Thu 26 Jan '23**	**Sat 29 Apr '23**
43	**MCS (West)**	**36 days**	**Thu 26 Jan '23**	**Sat 11 Mar '23**
44	4 week Disruption Notice to MCS	0 days	Thu 26 Jan '23	Thu 26 Jan '23
45	2 week Disruption Notice to MCS	0 days	Fri 10 Feb '23	Fri 10 Feb '23
46	1 week Disruption Notice to MCS	0 days	Sat 18 Feb '23	Sat 18 Feb '23
47	Establish MCS Side (Demolition, Scaffolding, etc)	6 days	Sat 25 Feb '23	Mon 6 Mar '23
48	Initial Strip L00 West	1 day	Sat 4 Mar '23	Sat 4 Mar '23
49	Erect Steel and Provide Temp Waterproofing to MCS	6 days	Mon 6 Mar '23	Sat 11 Mar '23
50	**Building D (East)**	**36 days**	**Wed 8 Mar '23**	**Sat 29 Apr '23**
51	4 week Disruption Notice to Building D	0 days	Wed 8 Mar '23	Wed 8 Mar '23
52	2 week Disruption Notice to Building D	0 days	Thu 23 Mar '23	Thu 23 Mar '23
53	1 week Disruption Notice to Building D	0 days	Fri 31 Mar '23	Fri 31 Mar '23
54	Initial Strip L00 East	1 day	Wed 19 Apr '23	Wed 19 Apr '23
55	Establish Building D Side (Demolition, Scaffolding, etc)	6 days	Thu 13 Apr '23	Thu 20 Apr '23
56	Erect Steel and Provide Temp Waterproofing to Building	6 days	Thu 20 Apr '23	Sat 29 Apr '23
57	**L01**	**51 days**	**Mon 30 Jan '23**	**Tue 4 Apr '23**
58	FRP L01 West Wing (L01-P1)	15 days	Mon 30 Jan '23	Fri 17 Feb '23
59	FRP L01 South Wing (L01-P2)	15 days	Sat 25 Feb '23	Thu 16 Mar '23
60	FRP L01 East Wing (L01-P3)	15 days	Fri 17 Mar '23	Tue 4 Apr '23
61	**L02**	**51 days**	**Sat 18 Feb '23**	**Mon 1 May '23**
62	FRP L02 West Wing (L02-P1)	15 days	Sat 18 Feb '23	Wed 8 Mar '23
63	FRP L02 South Wing (L02-P2)	15 days	Fri 17 Mar '23	Tue 4 Apr '23
64	FRP L02 East Wing (L02-P3)	15 days	Wed 5 Apr '23	Mon 1 May '23
65	**Roof**	**51 days**	**Thu 9 Mar '23**	**Fri 19 May '23**
66	FRP Roof West Wing (ROOF-P1)	15 days	Thu 9 Mar '23	Mon 27 Mar '23
67	FRP Roof South Wing (ROOF-P2)	15 days	Wed 5 Apr '23	Mon 1 May '23
68	FRP Roof East Wing (ROOF-P3)	15 days	Tue 2 May '23	Fri 19 May '23
69	**Stage 4: Façade and Fitout**	**198 days**	**Fri 3 Mar '23**	**Fri 24 Nov '23**
70	**West Wing Façade, Fitout, External Works**	**162 days**	**Fri 3 Mar '23**	**Mon 9 Oct '23**
71	**Façade**	**57 days**	**Wed 22 Mar '23**	**Fri 9 Jun '23**
72	Façade West Wing LG1	12 days	Wed 22 Mar '23	Wed 5 Apr '23
73	Façade West Wing L0	12 days	Sat 15 Apr '23	Tue 2 May '23
74	Façade West Wing L1	12 days	Wed 3 May '23	Wed 17 May '23
75	Façade West Wing L2	12 days	Thu 18 May '23	Thu 1 Jun '23
76	Scaffold Removal	6 days	Fri 2 Jun '23	Fri 9 Jun '23
77	**Fitout**	**162 days**	**Fri 3 Mar '23**	**Mon 9 Oct '23**
78	Fitout West Wing - LG2	96 days	Fri 3 Mar '23	Thu 13 Jul '23
79	Fitout West Wing - LG1	96 days	Thu 6 Apr '23	Thu 17 Aug '23
80	Fitout West Wing - L00	96 days	Wed 3 May '23	Tue 5 Sep '23
81	Fitout West Wing - L01	96 days	Thu 18 May '23	Wed 20 Sep '23
82	Fitout West Wing - L02	96 days	Fri 2 Jun '23	Mon 9 Oct '23
83	Fitout Lifts	48 days	Tue 18 Apr '23	Fri 23 Jun '23
84	**External Works**	**72 days**	**Wed 14 Jun '23**	**Tue 12 Sep '23**
85	Completion of Footbridge to MCS	36 days	Wed 14 Jun '23	Fri 28 Jul '23
86	External Works West Wing	72 days	Wed 14 Jun '23	Tue 12 Sep '23
87	**South Wing Façade, Fitout, External Works**	**162 days**	**Thu 30 Mar '23**	**Sat 4 Nov '23**
88	**Façade**	**57 days**	**Sat 22 Apr '23**	**Mon 10 Jul '23**
89	Façade South Wing LG1	12 days	Sat 22 Apr '23	Tue 9 May '23
90	Façade South Wing L0	12 days	Mon 15 May '23	Mon 29 May '23
91	Façade South Wing L1	12 days	Tue 30 May '23	Fri 16 Jun '23
92	Façade South Wing L2	12 days	Sat 17 Jun '23	Sat 1 Jul '23
93	Scaffold Removal	6 days	Mon 3 Jul '23	Mon 10 Jul '23
94	**Fitout**	**162 days**	**Thu 30 Mar '23**	**Sat 4 Nov '23**
95	Fitout South Wing - LG2	96 days	Thu 30 Mar '23	Wed 9 Aug '23
96	Fitout South Wing - LG1	96 days	Thu 11 May '23	Tue 12 Sep '23
97	Fitout South Wing - L00	96 days	Tue 30 May '23	Thu 5 Oct '23
98	Fitout South Wing - L01	96 days	Sat 17 Jun '23	Fri 20 Oct '23
99	Fitout South Wing - L02	96 days	Mon 3 Jul '23	Sat 4 Nov '23
100	**External Works**	**72 days**	**Tue 11 Jul '23**	**Fri 13 Oct '23**
101	External Works South Wing	72 days	Tue 11 Jul '23	Fri 13 Oct '23
102	**East Wing Façade, Fitout, External Works**	**162 days**	**Sat 22 Apr '23**	**Fri 24 Nov '23**
103	**Façade**	**57 days**	**Mon 15 May '23**	**Fri 28 Jul '23**
104	Façade East Wing LG1	12 days	Mon 15 May '23	Mon 29 May '23
105	Façade East Wing L0	12 days	Fri 2 Jun '23	Tue 20 Jun '23
106	Façade East Wing L1	12 days	Thu 22 Jun '23	Thu 6 Jul '23
107	Façade East Wing L2	12 days	Fri 7 Jul '23	Fri 21 Jul '23
108	Scaffold Removal	6 days	Sat 22 Jul '23	Fri 28 Jul '23
109	**Fitout**	**162 days**	**Sat 22 Apr '23**	**Fri 24 Nov '23**
110	Fitout East Wing - LG2	96 days	Sat 22 Apr '23	Mon 28 Aug '23
111	Fitout East Wing - LG1	96 days	Tue 30 May '23	Thu 5 Oct '23
112	Fitout East Wing - L00	96 days	Thu 22 Jun '23	Tue 24 Oct '23
113	Fitout East Wing - L01	96 days	Fri 7 Jul '23	Thu 9 Nov '23
114	Fitout East Wing - L02	96 days	Sat 22 Jul '23	Fri 24 Nov '23
115	**External Works**	**72 days**	**Sat 29 Jul '23**	**Wed 1 Nov '23**
116	Completion of Footbridge to MCTS	36 days	Sat 29 Jul '23	Tue 12 Sep '23
117	External Works East Wing	72 days	Sat 29 Jul '23	Wed 1 Nov '23
118	**Stage 5: Completion**	**44 days**	**Thu 26 Oct '23**	**Sat 23 Dec '23**
119	Final Defects and Testing	36 days	Thu 26 Oct '23	Wed 13 Dec '23
120	OC Inspections	5 days	Thu 14 Dec '23	Tue 19 Dec '23
121	PCA Isse OC	3 days	Thu 21 Dec '23	Sat 23 Dec '23
122	Date of Practical Completion	0 days	Sat 23 Dec '23	Sat 23 Dec '23

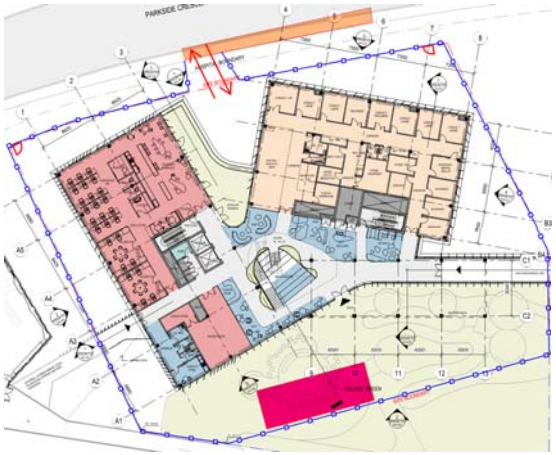


Date : Wed 20 Oct '21

8 Appendix C: Staging Diagrams

LG2
- Establishment of fencing
- Establishment of workzone at Parkside Crescent
- Establish site accommodation

LG1
- Establishment of fencing
- Establishment of workzone at Parkside Crescent
- Establish site accommodation



L00
- Establishment of fencing
- Establishment of workzone at Parkside Crescent
- Establish site accommodation

L01
- Nil

L02
- Nil

Roof
- Nil

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CLIENT: WESTERN SYDNEY UNIVERSITY

PROJECT: Lang Walker AO Medical Research Building – Macarthur

DATE: OCT 2021

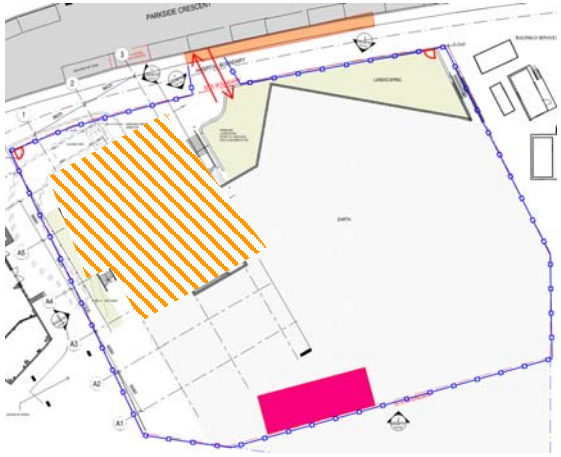
TITLE: STAGE 1 (MONTH 1)
SITE ESTABLISHMENT

DWG No.

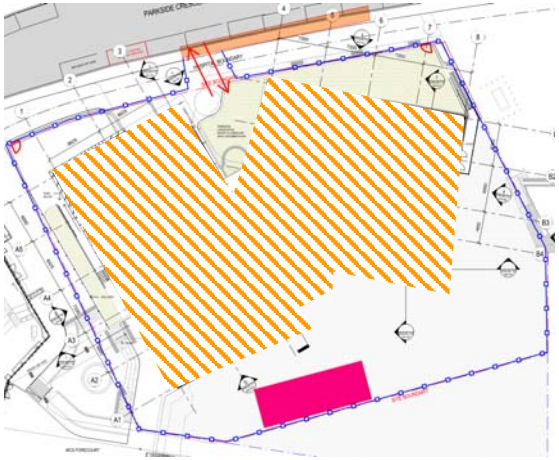
Sheet No. 1 of 5

SIZE

REV REV 1



LG2
- Demolition of existing helipad
- Demolition of gabion wall
- Site clearing
- Excavation and battering out



LG1
- Demolition of existing helipad
- Demolition of gabion wall
- Site clearing
- Excavation and battering out

L00
- Nil

L01
- Nil

L02
- Nil

Roof
- Nil

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PROJECT: Lang Walker AO Medical Research Building – Macarthur

DATE: OCT 2021

TITLE: STAGE 2 (MONTHS 1-2)
DEMOLITION AND EXCAVATION

DWG No.

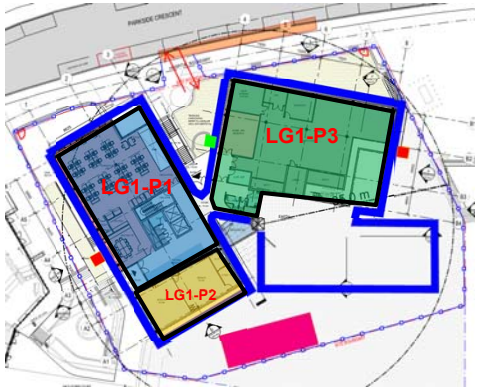
Sheet No. 2 of 5

SIZE

REV: REV 1

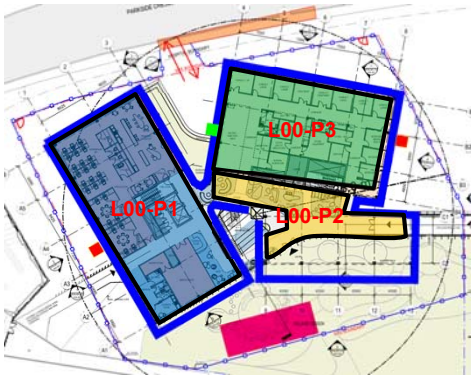
LG2

- Establish tower crane
- Construct LG2 structure



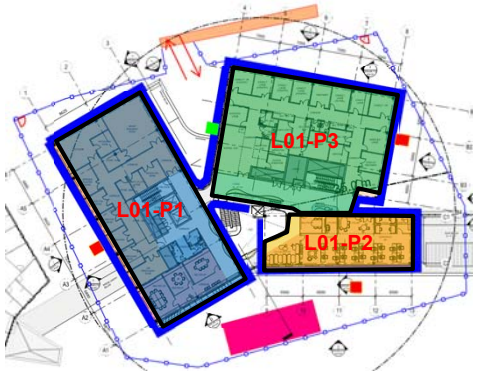
LG1

- Establish scaffolding
- Construct LG1 structure



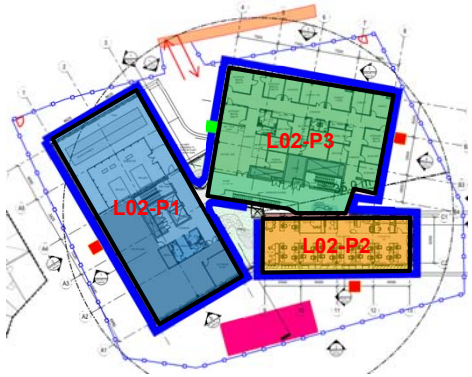
L00

- Establish scaffolding
- Construct L00 structure inc footbridge structures
- Establish hoist



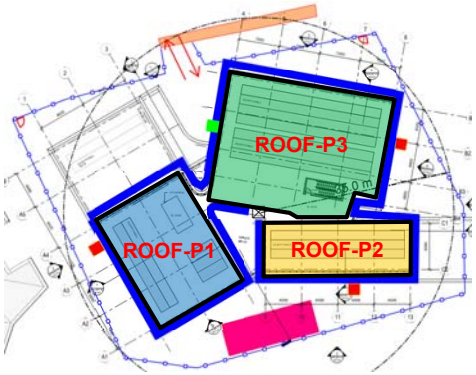
L01

- Establish scaffolding
- Construct L01 structure



L02

- Establish scaffolding
- Construct L02 structure



Roof

- Establish scaffolding
- Construct Roof structure

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PROJECT
Lang Walker AO Medical Research Building – Macarthur

DATE OCT 2021

TITLE
STAGE 3 (MONTHS 3-9)
STRUCTURE

DWG No.

Sheet No. 3 of 5

SIZE

REV REV 1

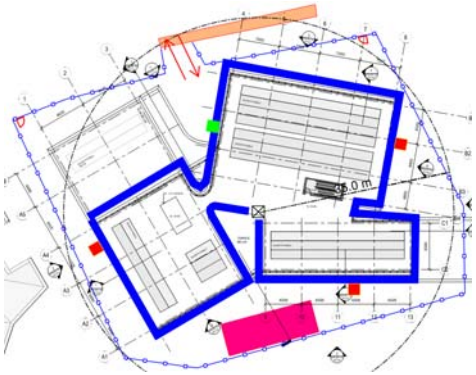
LG2
- Façade and fitout LG2 Plantrooms

LG1
- Scaffold adjustment/removal
- Façade and fitout LG1 Plantrooms, Seminar, Logistics

L00
- Scaffold adjustment/removal
- Façade and fitout L00 Research, Clinical, Waiting

L01
- Scaffold adjustment/removal
- Façade and fitout L01 Research, Clinical, Assessment

L02
- Scaffold adjustment/removal
- Façade and fitout L02 Plant, Clinical, Research, Terrace



Roof
- Roof finishes

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PROJECT
Lang Walker AO Medical Research Building – Macarthur

DATE OCT 2021

TITLE
STAGE 4 (MONTHS 9-17)
FAÇADE AND FITOUT

DWG No.

Sheet No. 4 of 5

SIZE

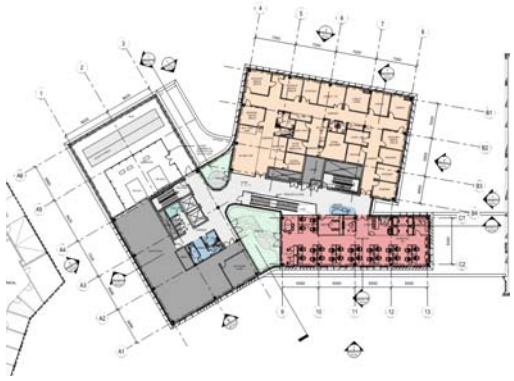
REV REV 1

LG2
- Crane removed
- Site sheds removed
- External works
- Defects, testing and commissioning

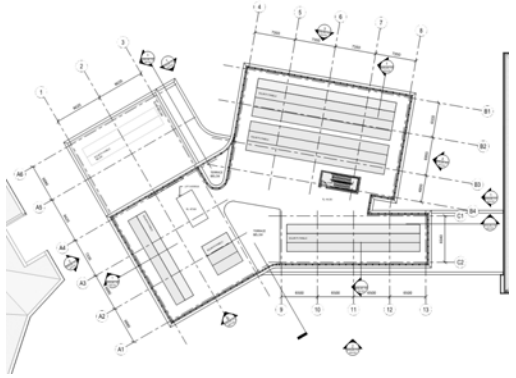
LG1
- Crane removed
- Hoist removed
- Scaffolding removed
- External works
- Defects, testing and commissioning

L00
- Scaffolding removed
- Completion of footbridge to MCS
- Completion of footbridge to Building D
- External works
- Defects, testing and commissioning

L01
- Crane removed
- Hoist removed
- Scaffolding removed
- Defects, testing and commissioning



L02
- Crane removed
- Hoist removed
- Scaffolding removed
- Defects, testing and commissioning



Roof
- Crane removed and infills completed

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PROJECT: Lang Walker AO Medical Research Building – Macarthur

DATE: OCT 2021

TITLE: STAGE 5 (MONTHS 14-18) COMPLETION

DWG No.

Sheet No. 5 of 5

SIZE

REV: REV 1