SSDA WORKS CONSTRUCTION MANAGEMENT PLAN

D14 Academic Building

Rev	Date	Project
01	October 2018	**CMP for SSDA**
03	12/04/2019	Revised for RTS

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1.0 INTRODUCTION

This CMP has been prepared for the SSDA works for the D14 project. The project involves the construction of a 7 level academic and teaching facility, which will comprise of concrete structure on Ground Floor and Level 1, with Timber Structure from Level 2 to Level 7. The façade generally consists of a curtain wall façade on Levels 2 - 7 and glazed shop fronts and retail will be provided on the lower levels, along with end of trip facilities, study areas and teaching spaces. The works for the SSDA include piles and foundations, suspended structure, façade, services, landscaping, and full integrated fitout for the new D14 Timber building.

The Lendlease construction management processes will provide:

- The works being designed, constructed, commissioned and handed over by a single proven responsible entity; and
- Reduced risk of delivery.

This CMP is related to the works to be done under the SSDA, and contains Lendlease's' overall construction methodology of these works. Demolition of the existing building has been previously addressed in the CMP provided under the REF works. Other works to be undertaken under the REF includes the following:

- Augmentation of existing Site Services including Low Voltage, Gas, Sewer, Stormwater, water, communications and Fire Services;
- Construction of hoardings;
- Inground services to College Road and provision of continued access to Fire Hydrant for emergency services;
- Inground services to Alumni Park.

The following sections set out the methodology for undertaking the construction works, including our processes controls and management of the live interfaces.

The CMP also defines the impacts of the proposed construction activities on areas within the operational University environment. This plan will outline the proposed mitigation strategies to be implemented during the relevant construction activities and outlines contingency measures that will be enacted to eradicate any potential risk to UNSW, students, consumers, staff and the community.

Lendlease's proactive and collaborative approach is underpinned by the following overriding and non-negotiable objectives:

- Maintain business continuity of the University and adjoining facilities and properties;
- To deliver the early works on time to the highest safety and quality standards;
- Communicate in a timely and proactive fashion with all relevant stakeholders, including immediate neighbours and the community regarding how we are planning to undertake interface works;
- Present a positive public perception of the project during the construction works;
- Use experienced and competent subcontractors with appropriate resources to deliver their works in the manner we prescribe;
- Hands on control of subcontractors from experienced Lendlease site supervision; and
- Safe and timely delivery of D14, from a holistic design and construction approach.

See below the four key outcomes from the Lendlease CMP:

2.0 STAGING AND BUSINESS CONTINUITY

2.1 UNIVERSITY OF NSW CAMPUS D14 – ENSURING BUSINESS CONTINUITY

2.1.1 Working Within the Operational University Environment

The Lendlease project team understands the challenging nature of D14 and the constraints of managing a major construction works interface with an operational University environment and the non-negotiable requirement of no disruptions to UNSW Campus 'business continuity'.

2.1.2 Works Areas

Prior to the commencement of the SSDA works, an A Class Hoarding will be in place from the previous demolition works under the REF. Temporary footpaths and the internal haul road through Alumni Park will remain in place. The site accommodation will be placed to the east of the new building footprint, and will accommodate approximately 210 workers and 16 office staff.

The site area will require careful management of site run-off. Erosion and Sediment Control Plan and other site management measures will be installed prior to commencing any civil works as per the Civil design drawings.

2.1.3 Site Establishment:

- Site accommodation will be located within the site boundary to minimise any impact on UNSW;
- Workforce access will be from either Gate 2 or Gate 4, with entrance into site from the east. A swipe card turnstile will be installed to provide secure access to the construction site and worker accommodation. Site accommodation is likely to be a 2-storey facility to house both worker amenities and site offices.

Refer to Figure 1.

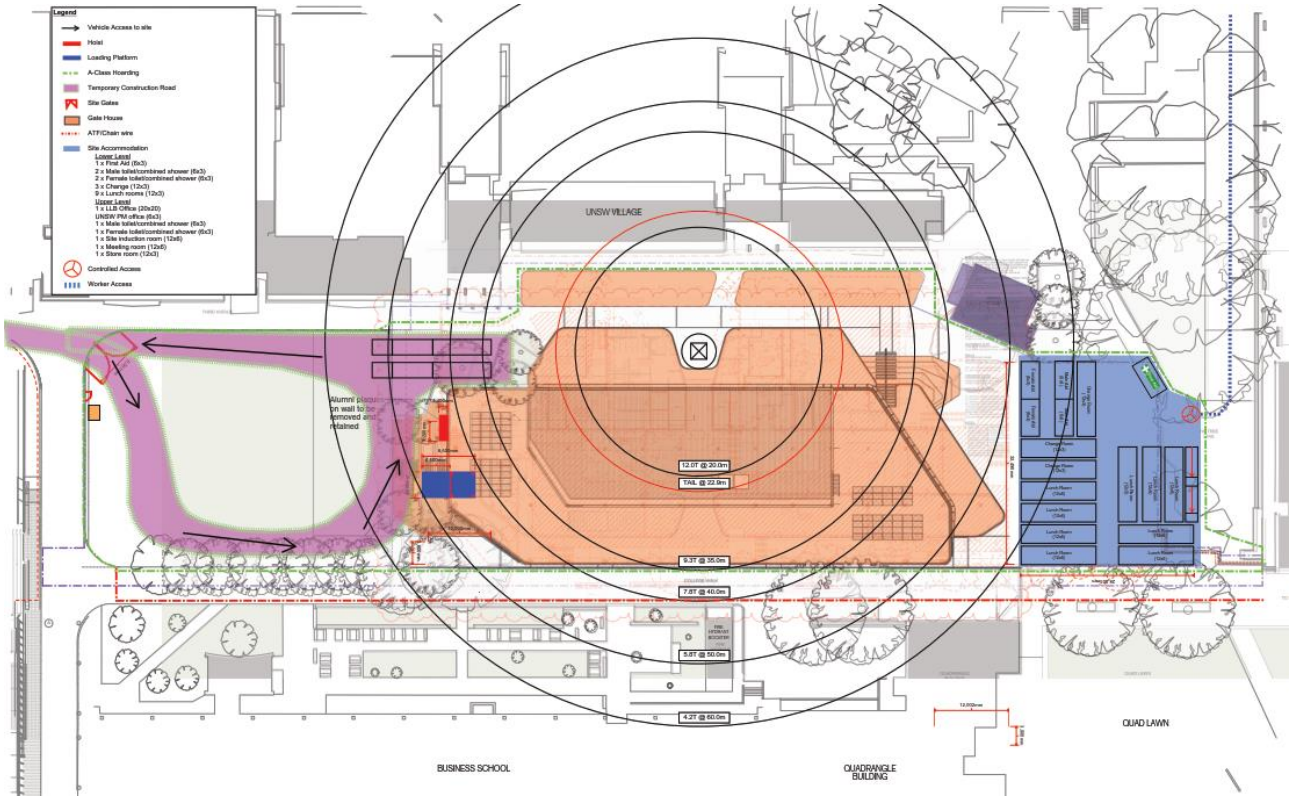

Figure 1 SSDA site setup

Construction Interfaces:

The key issues to consider for construction interfaces include the following:

- Strictly controlling where construction will interface with the University Campus, students, staff & public;
- Ensuring sight lines from the construction are managed so that staff and student privacy in adjacent buildings is maintained;
- Separation of the construction workers from staff, public and students by providing discrete site accommodation and amenities within the construction boundaries; and
- Selection of equipment and low impact construction methods to mitigate noise, dust and vibration impacts does not impacts where possible.
- Regular construction risk assessment using the Interface Strategy principles to identify areas of potential interface that may affect business continuity;
- Undertake a holistic integrated system testing and commissioning process;
- Stakeholder notices / updates.

3.0 RISK AND HAZARD MANAGEMENT

3.1 IDENTIFICATION & MANAGEMENT OF KEY PROJECT RISKS

The main building works for D14 presents a number of challenges that need to be delivered through a planned and structured approach.

The key objective is to cause “zero unplanned disruptions” during delivery of the works.

To achieve this objective Lendlease propose using a risk assessment and mitigation strategy built around identifying the key interface points between the construction site and the surrounding properties. This Interface Strategy will be critical in risk identification and will be used to influence design decisions and dictate construction methodology.

Table 1 provides an assessment of the key interface risks and mitigations associated with the D14 Construction works.

Table 1: Risk Assessment

Risk, Major Issues and Interface Type	Details	Mitigation
Works within public areas - Alterations to site compound fencing	Perimeter hoardings to be adjusted for site entry, gates alterations adjacent to public areas	Utilise spotters and traffic control as required to ensure adequate separate and exclusion zones Use temporary physical barriers to provide exclusion zones where established pedestrian and vehicle routes are changing
Ensure immediate residents and businesses on Campus are well supported through appropriate management and notification of construction activities	Understand the implications of construction staging on the University operational drivers and the potential impacts.	Construction staging to be undertaken in consultation with UNSW to ensure there is a full understanding and acceptance of the proposals: timing/duration, construction impacts, power tools, noise, temporary partitions and access routes etc. All workers will be made aware of their responsibilities towards understanding what constitutes disruptive works and to understand the time frames associated with preparing to carry out any such works.
Working proximity to live labs	Understanding the implications to research and learning environments	Noise, dust and vibration monitoring, proactive notification of disruptive works, and selection of low impact equipment where possible.
Construction Workers access and egress affecting daily University operations and the local road, cyclists and pedestrian network.	Construction works are to cause the least amount of disruption/inconvenience possible for staff, students, road users, cyclists and pedestrians.	Access to and from site will be defined and out of bounds areas clarified for workers. The induction will focus on the amenities planned for within the construction site boundary which include identifying lunch facilities close to site. Nearby food outlets will be identified to minimise the distance workers will need to travel through the campus. Tracking vehicle movement through onsite communication to coordinate vehicular access to site
Interface with to Light Rail Operations	Work in close proximity to energised wires and adjacent work zones	Clear communication and planning protocols to be set-up and managed to ensure a successful project outcome.

Risk, Major Issues and Interface Type	Details	Mitigation
Disruption of the existing University pedestrian and vehicle access	Entry/exit to site will be manned and managed by Traffic controllers to mitigate disruption to pedestrian and vehicle access. Traffic Management plan to be implemented	The project works will be programmed with a full temporary traffic management system to be established and coordinated with the university stakeholders prior to the commencement of construction. Traffic flow will be assisted and priority given to key university deliveries. In consultation with the UNSW and Randwick City Council, identify proposed construction vehicular traffic movements and routes. Prepare and agree a detailed traffic management plan that will be implemented on the project.
Vehicle parking	The commencement of the construction works for the early and main works contracts will see an influx of subcontractor workforce to the area.	Subcontracts will include the parking restrictions associated with working on the project, clearly noting the requirement for no parking on the campus and the use of public transport. The site induction will actively encourage the construction workers to use public transport to commute to and from the site. The surrounding areas are very restricted with respect to parking with the light rail and other construction work on UNSW campus, as well as Prince of Wales Hospital commencing. There are limited options for offsite parking in the area. It is expected that public transport will be utilised as it will be the easier option, and the construction hours are outside of the peak UNSW patronage usage.
Impact on university operations	Minimizing access or loss of facilities for students and staff during construction.	Review the construction staging with UNSW to ensure there is a full understanding and acceptance of the proposals: timing/duration, construction impacts, power tools, noise, temporary partitions and access routes etc.
Disruption to nearby residential and business properties	Minimizing loss of amenity for nearby residential and business properties during construction.	Noise, dust and vibration monitoring, proactive notification of disruptive works, and selection of low impact equipment where possible for maintenance of public safety.
Environmental Conditions	The site area will require careful management of site run-off.	Erosion and Sediment Control Plan and other site management measures as per the Civil design drawings.
Continued compliance of existing fire zones	Fire zones and egress paths are to be maintained.	Maintain all required egress paths in coordination with the authorities. Undertake works in consultation with the Fire Engineer, Principal Certifying Authority and UNSW.
Unauthorized access to the Construction Site	Prevent unauthorized public access to site	A solid “A” class hoarding wall to be maintained.
Unauthorised access to crane	Prevent unauthorized public access to site and crane area	A solid “A” class hoarding wall to be maintained. Additional anti-climb to be installed at base of Tower crane including additional locks.

A detailed risk analysis and refinement of the associated mitigation strategies will be further progressed during the detailed design phase.

3.2 MANAGING RISKS WITHIN AN OPERATIONAL UNIVERSITY ENVIRONMENT

Lendlease is aware of the challenging nature of the D14 works being located in close proximity to the existing University facilities. The project has critical construction and services interfaces and non-negotiable stakeholder requirements to ensure operational continuity is maintained.

During the detailed design stage Lendlease will work in a collaborative manner with UNSW to develop our stakeholder communication structure and to address all stakeholder requirements and concerns.

Through establishing an open partnership collaboration process, we will develop solutions that have stakeholder buy-in and document an agreed plan to manage construction delivery through to the completion of the works.

The activities below have the potential to significantly impact on the operation of the University, the wider Precinct and neighbours if not managed effectively and communicated proactively with stakeholders:

- Access and traffic management;
- Planning and management of any major shutdowns;
- Minimising and controlling disruptions;
- Protection of existing University assets;
- Maintenance of existing students and staff privacy and security;
- Emergency after-hours call-out;
- Hazardous material identification and removal;
- Coordination with UNSW for key university events or dates;
- Noise, dust and vibration control; and
- Out of hours work.

Lendlease will prepare the following Management Plans to develop clear and concise communication channels for each area of interface works and support the ongoing operation of the University:

- Stakeholder Management Plan;
- Risk Management Plan;
- Disruptive Works Notification Procedure; and
- Environmental, Health and Safety (EH&S) Management Plan.

Our integrated EH&S Management Plan will identify all EH&S risks associated with stakeholders including and not limited to members of the public, University staff, University clients, and workers on site. The sub-plans below will be developed with the collaboration of the relevant stakeholders during the pre-construction phase:

- Traffic and Pedestrian Management Plan;
- Noise and Vibration Management Plan;
- Dust Management Plan;
- Stormwater Management Plan;
- Waste Management Plan;
- Incident Management Plan;
- Emergency Response Plan;

- Hazardous Materials Management Plan; and
- Workplace Relations Management Plan.

3.3 KEY D14 CONSTRUCTION INTERFACE OVERVIEW

3.4 HAZARDOUS MATERIAL

Preliminary Geotechnical reports do not indicate the presence of contaminated soil. Soil classification is noted as General Solid Waste (GSW). Soil testing will be undertaken following the demolition works under the REF, which will further inform the site material conditions including any potential contamination.

When managing hazardous materials and unexpected finds, an unexpected finds policy will be in place.

4.0 DESIGN FINALISATION & SUBCONTRACTOR ENGAGEMENT

4.1 SUBCONTRACTOR PROCUREMENT & ENGAGEMENT

The technical complexity, construction challenges and quality requirements of the D14 project dictate that the selection of the appropriate subcontractors will be critical in meeting the demands of the project. Lendlease will ensure that there is a flexibility and redundancy in the supply chain procurement in the way in which the work activity packages are established from an overarching scope of works and risk management perspective.

4.1.1 Subcontractor Inductions and Pre-Commencement Meetings

Throughout the Schematic Design and detailed design stages Lendlease will hold multiple meetings and briefings with the supply chain for both consultants and subcontractors. This will aid in the selection of the most appropriate preferred tenderers to carry out the works. The nature of the meetings is to ensure that each contractor understands the environment in which the construction works will be carried out and the responsibilities that comes with undertaking such works.

Following award, we will carry out formal pre-commencement meetings prior to executing subcontracts. These meetings will finalise discussions on:

- Working adjacent to residential and business properties, and UNSW Campus facilities;
- Delivery certainty;
- Subcontractor executive required involvement;
- Site access and delivery requirements;
- Trade specific interface and coordination issues from day one; and
- Worker transport, site access and induction detail.

4.2 INDUCTIONS

The Lendlease induction will be specifically tailored to inform workers of their obligations working within a live University environment. The content of the induction will be reviewed with the Client's project team to ensure the strategies imposed by Lendlease are aligned with the requirements of UNSW.

The project induction will train new workers on project specific safety and emergency procedures; however, the key focus will include interface controls, including:

- Working hours
- Traffic Management
- Working in a live environment: The construction methodology has been designed around maintaining business continuity for the university. This is key to a successful project and will be the underlying theme of the induction procedure for every worker on site;
- Access within University Facilities: We will provide clarity regarding no access into university areas. There will be clear 'no-go' zones identified including the travel path;
- Separation of Construction Works from day to day university operations: Access to and from site will be defined and out of bounds areas clarified for workers. The induction will focus on the amenities planned for within the construction site boundary, and have a map identify food outlets close to the site to limit their need to walk extensively through the campus at meal times;
- Disruptive Works Procedure: All workers will be made aware of their responsibilities towards understanding what constitutes disruptive works and understand the timeframes associated with preparing to carry out any such works; and

We will also focus on the unique requirements of each stakeholder within the campus to ensure that the information in the induction is up to date and relevant to the specific work areas on site. An example of the specific requirements and locations are:

- Working Adjacent to the Existing residential spaces: All workers will be made aware of student privacy within the facility. No unauthorised removal of screens erected on scaffold to prevent direct sightline into residences will be permitted;
- Working Adjacent to Local Residential and Business Properties: All workers will be made aware of the need to ensure positive contractor behaviour at the approach and on site, including minimising disruptions to local parking and access; and
- Working within UNSW: minimising disruptions to UNSW vehicle access for students and staff;
- Acknowledging and adherence to requirements authorities i.e site access and consideration around interface with City and South East Light Rail Project.

4.3 APPROVALS AND DESIGN CHANGES

All works will be undertaken in accordance with the approved for construction (AFC) drawings.

A Design Change register will also accompany any further Contractor Documentation submissions to the UNSW during the delivery phase. These are envisaged to occur in monthly intervals or as required.

Any changes that constitute a deviation must go through an approval process. Where required, proposed changes will be submitted prior to implementation and will identify the following:

- The item;
- Area/location;
- Reference of all documents affected by the change;
- The nature of the change;
- The reason for the change (which includes pre-obtained approval by Lendlease and the UNSW for all items affecting the project Brief); and
- The implications, which are to be assessed as a minimum for impact on:
    1. Site health and safety management;
    2. Cost and construction time;
    3. Durability, functionality, aesthetics, maintenance;
    4. Impact on other elements of the works.

Lendlease will add to the register any details of when proposals/implemented changes have been submitted, when a response has been received and status of design documentation updates and or other implications.

The key streams of documentation approval required during this phase are detailed in the below sections.

4.3.1 Services Design

Services design documentation will capture the scope of services including main reticulation strategies and existing services.

5.0 PROCUREMENT

5.1.1 Key Construction Phase Deliverables

The following table provides a list of proposed core deliverables that can be expected at the completion of this phase.

Deliverable	Description
As-built Documentation	Final As-built document
Testing	Completed Systems Integration Test documents for applicable equipment items
Training Manuals	Training Manuals to accompany the training presentation for applicable equipment items

5.1.2 Project Management Activities

Planning, Monitoring and Controlling

During the Construction Phase for the SSDA works, management control and reporting measures will be documented to describe the tools and processes that will be used to monitor the project.

The following key reports and controls will be applied to this project:

Program Control

The following are minimum requirements for inclusion within the Construction Program developed throughout the Construction phase:

- A program that has an accurate Critical Path;
- Regular reporting against the program;
- Program float is regularly analysed and reported on;
- Program is resource levelled; and
- Change control applied on the program, based on agreed tolerances.

The program will provide sufficient task level detail for each phase and package and will track key milestone items and dates. The program will be reported against as part of the standard reporting process.

Regular reviews will be undertaken as the project evolves with re-scheduling and re-sequencing of tasks as required. This will be a working document and will incorporate regular reviews with key subcontractors to ensure the appropriate level of resources is available to meet the project dates. This is particularly pertinent to the commissioning and testing phases.

The program will accommodate slippage and contingency of the forecast dates and key dependencies will be identified that will form the critical path. These items will be actively tracked and managed through the risk and issue process.

6.0 OPERATIONS AND SITE MANAGEMENT

6.1 OVERVIEW

The D14 project will require precise site establishment, staging and operation, to ensure both safety, appropriate security, interface management and productivity are achieved. Lendlease's nominated delivery team has developed this detailed preliminary plan, which is integral to program and construction methodology.

Close attention to detail and the quality of the finished product are paramount, particularly on this multifaceted project. Lendlease believes this focus on quality must be promoted and fostered amongst the workforce on the project. This begins with an efficient site establishment strategy, and clean amenities which will set the standard for a high-quality outcome.

The planning and methodology assessment for the project has identified a number of key stages in the general configuration of the site during construction. This section provides an overview of the overall approach adopted with detailed description of these stages provided below.

6.2 DILAPIDATION SURVEYS AND MONITORING

Prior to commencing works Lendlease will complete an extensive dilapidation survey of existing infrastructure that may be impacted by the works, including covering roads, footpaths, and external areas of existing buildings located adjacent to the construction site. The resulting report will be provided as a pre-commencement record of the existing built works adjacent to the construction areas.

Considering the above the following will be carried out:

- Engagement of an acoustic consultant prior to the construction works to provide detailed advice and practical methodologies in the form of a Construction Noise and Vibration Management Plan (CNVMP) in order to manage the potential noise and vibration issues with the adjacent sensitive receivers. Lendlease has extensive experience in managing these issues on similar sensitive projects and will look to introduce the following measures on this project such as:
  - Adopt and modify the protection strategy for any heritage or significant buildings located adjacent to the site.
- The necessary vibration monitoring to ensure the nominated accepted level stipulated by the SSDA is not breached.
- The CNVMP, will detail the criteria and protocols for vibration and noise protocols to the surrounding properties. Identified sensitive receivers above ground in relation to vibration are:
  - Existing "Core" Facilities;
  - University of New South Wales;
  - Residential Student Accommodation;
  - The adjacent White house building which falls within the heritage conservation area;
  - Existing retailers.

6.3 SITE ESTABLISHMENT

Figure 2 provides the proposed site establishment arrangements for structure works.

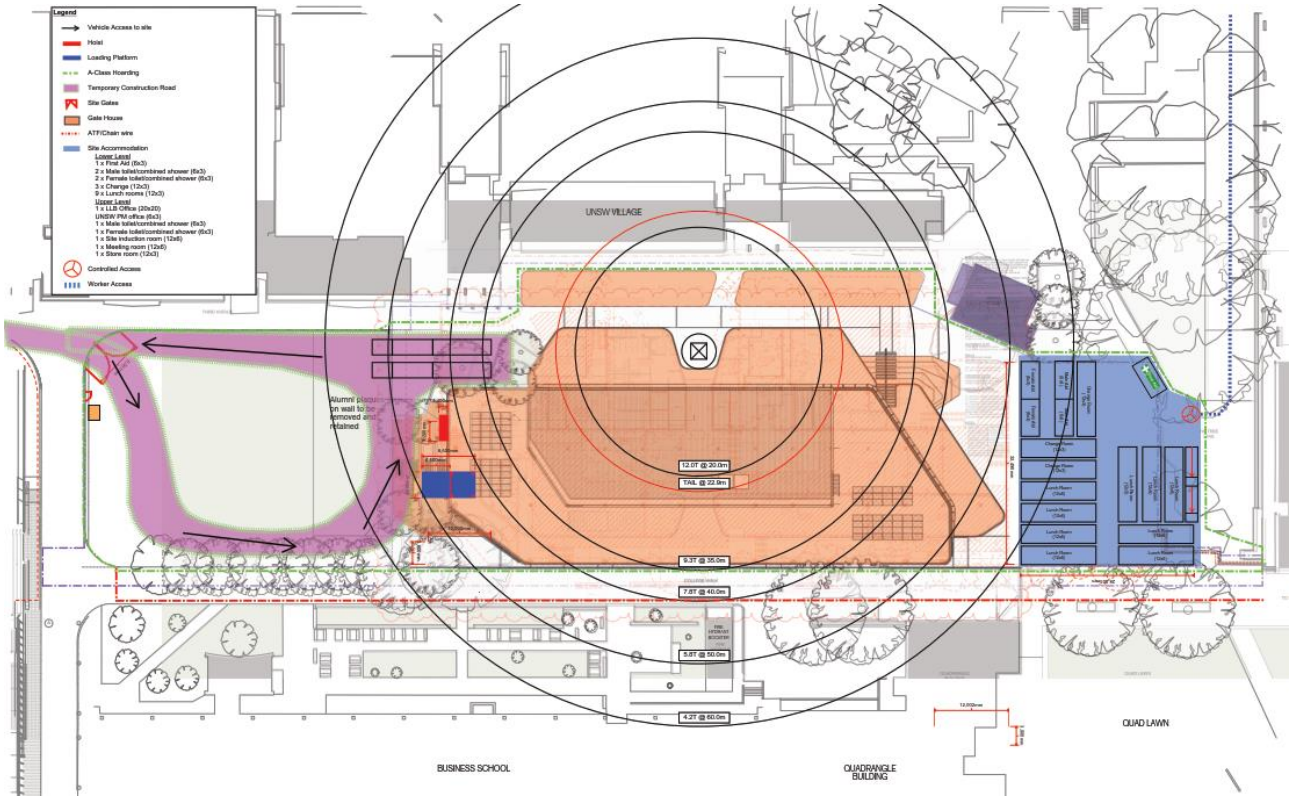

Figure 2 Site Establishment

6.3.1 Hours of Work

The D14 working hours are proposed to be as follows:

Monday to Friday: 7am – 6pm

Saturday: 8am – 5pm

Sunday: No work

In addition to regular working hours, there will be occasional short periods when out of hours works are required for special deliveries, hoarding removal at project completion, and services cutovers. The tower crane installation and removal will likely be undertaken over a weekend, utilising both Saturday and Sunday to minimise impacts on roads and the university.

Lendlease will agree the process with UNSW, Transport for New South Wales (TfNSW), Transport Management Centre (TMC), Roads and Maritime Services (RMS) SCO and Randwick City Council to address the approvals and additional measures required prior to scheduling any out of hour's works. The nature of these works may include dismantle of hoardings, works to footpaths, services connections and other works that interface with the surrounding facilities.

6.3.2 Proposed Site Plan and Site Establishment

During the course of the D14 works, see Figure 2 Site establishment.

This plan highlights the location of the site accommodation, project office, and demonstrates how the site will be accessed by delivery drivers and couriers on a day by day.

6.3.3 Site Access Points, Construction Traffic & Deliveries

One of the keys to the successful delivery of the D14 will be the flow of materials and equipment into and out of the construction site. Planning considers the following:

- The maintenance of pedestrian and traffic flows to the surrounding facilities; and
- The unimpeded continued use of existing vehicular and pedestrian entry and exit points to UNSW campus.

The D14 working hours are proposed to be as follows:

- Monday to Friday: 7am – 6pm
- Saturday: 8am – 5pm
- Sunday: No work

To achieve this, a Construction Traffic and Pedestrian Management Plan has been developed giving specific focus to:

- Pedestrian access and paths of travel: Throughout all activities, compliant pedestrian access will be maintained through constructing a temporary walkway adjacent to Alumni park and road crossings installed while works are being undertaken, this location is detailed below;
- Temporary construction road crossing: Throughout all activities of demolition and construction, a temporary crossing will be constructed through Alumni park linking Third Avenue to create a turning head for efficient vehicular access to site;
- Construction Vehicles: Mitigating impact to the UNSW campus and surrounding roads will be considered along with a detailed analysis of delivery frequency in conjunction with the program and access routes to the site from the various approaches;
- Lendlease will use radio and phone communication to accurately manage vehicle movements on campus, inclusive of live monitoring when arriving to and from site;
- Vehicles will enter and exit High street via UNSW Gate 2
- All swept paths undertaken as per Traffic Management plan and in Figure 3 below; and
- Lendlease will consult with all suppliers to ensure the correct size and weight vehicles are allocated to the project and are cognisant of carriage weight limits.

Figure 3 Swept path Analysis - site circulation loop

6.3.4 Site Security and Gates

The site perimeter will be secure at all times with no unauthorised access permitted. As detailed above the perimeter of the site will be secure with full height plywood A Class hoardings.

Construction worker access to the site will be strictly controlled through our secured gate system. Individuals will require a personalised identity card to gain access to site.

6.3.5 Site Compound & Amenities

Accommodation and amenities for the construction workforce will be provided in demountable site sheds. These site sheds will be erected, relocated and disestablished throughout the redevelopment to cater for fluctuating workforce demand and moving work areas.

Site accommodation locations identified as follows:

- Site Establishment - SSDA works. Depending on availability, these will either be single or double stacked sheds to the Eastern corner of site boundary to cater for 210-person workforce, and 20 site staff. This site accommodation will be completed over 2 stages and increased as the subcontractor workforce increases. Where inadequate exclusions zones can be achieved, the accommodation will be protected by a 10kPa rated hoarding.

All site accommodation will be joined by covered walkways to ensure the workforce and office staff can move around the area and stay dry from any inclement weather.

6.3.6 Pedestrian Access and Circulation Routes

Lendlease have identified the high pedestrian thoroughfare adjacent to the redevelopment and has developed strategies to maintain access throughout each stage of the works to all areas. This includes maintaining access to UNSW residential villages, the adjacent 'Whitehouse', and UNSW Business School. See below the Main Works Pedestrian and Vehicular Circulation Routes (Figure 4), showing the proposed pedestrian and vehicular circulation routes.

Lendlease note that all boundaries are still accessible by pedestrians, and a local diversion will be in place adjacent to Alumni park to ensure their safety and welfare at all times.

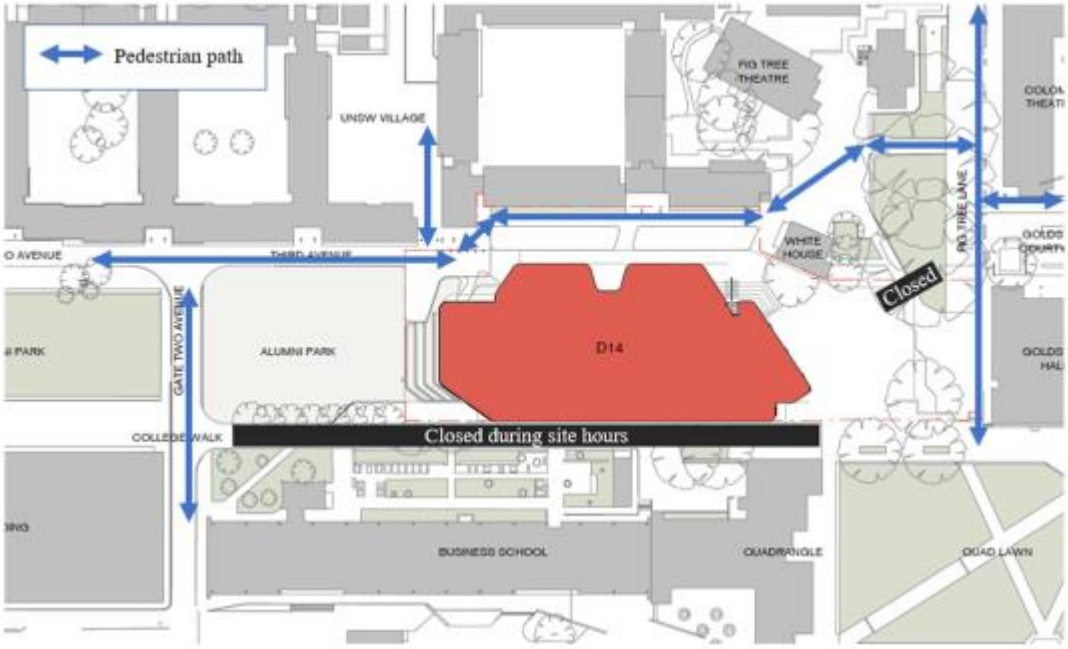

Figure 4 Construction works and Pedestrian interfaces

Construction phases will be staged in consideration for the provision of pedestrian access paths. For details of each stage and indicative durations please refer to section 3.5 of Construction, Pedestrian & Traffic Management Plan by Arup.

6.3.7 Worker Transportation and Parking

First and foremost, Lendlease would encourage workers that are coming to site would be to use public transport to reduce the number of light vehicles on the road and to ease congestion around the UNSW Campus & Randwick Precinct.

With the site in close proximity to Anzac Parade & Randwick Campus Hospital, there are a number of bus lines which run from main stations in the Sydney city region to around the site.

- 891 - Central Station to High St;
- 339 - Central Station on Foveaux St just East of Elizabeth St;
- 372 - Central Station to Belmore Rd;
- 373 - Museum Station to Belmore Rd;
- 374 - Central Station to Alison Rd;
- 376 - Museum Station to Belmore Rd;
- 377 - Museum Station;
- 304 - Central Station to Barker St;
- Metrobus 10 (M10) – Leichhardt to Maroubra Junction via Anzac Parade;
- Metrobus 50 (M50) – Drummoyne to Coogee via the City, Anzac Parade and High Street;
- 370 - Leichardt to Coogee via Anzac Parade and High Street;
- 400 - Burwood to Bondi Junction via; and

- High Street

Key Considerations for Traffic and Material Movements

- City and South East Light Rail Project (CSELR) – light rail is currently under construction with planned construction completed in 2019 and light rail operational in 2020. CSELR will impact vehicular access to site along both Anzac Parade & High Street.
- Royal Randwick events;
- UNSW E6 & E8 Construction works;
- Randwick Campus Redevelopment;
- University of New South Wales timetable; and
- Randwick residential community.

6.3.8 Construction Worker Support

Lendlease see that the health and wellbeing of our construction workers is paramount and provide our construction workforce on site with a more comfortable environment, and support healthier minds in the workplace. Initiatives Lendlease provide onsite include:

- Quit smoking support;
- Bupa Healthy Options;
- Healthy living courses; and
- Mates in Construction (MIC) - mental health support.

6.3.9 Site Evacuation / Major Incidence Response / Emergency Procedures

Lendlease will implement the Emergency Evacuation Plan and Crisis Management Plan to deal with any major incident or emergency situation

6.3.10 Waste Management

Rubbish bins will be provided to all work areas and will be regularly removed to the central skip bin location by the subcontractors for collection and transport from site to the waste recycle facility.

Bins will be moved via the person and forklift.

Waste will be separated at the approved waste management centre. Auditable records will be kept of quantities of all materials both recycled and disposed landfill. Records will be monitored to ensure Lendlease internal recycling targets are achieved or exceeded. This information will be collected and reported in compliance with our Environmental Management Plan and its Waste Management and Recycling Sub-Plan over the duration of the project.

To ensure the D14 project meets its sustainability targets, waste management reports will show monthly and cumulative performance.

Based on previous timber projects such as the K5 timber building in Brisbane, Qld, the construction waste generation is estimated to be 341,998kg.

6.3.11 Materials Handling

A detailed cranage analysis has been undertaken to determine the type, size, position and quantity of cranes required for the most efficient material handling solution for the project. Through this exercise the following selection criteria were applied to all crane positions:

- Coverage for the site;

- Ability to service plantroom areas;
- Capacity for heaviest lifts;
- Minimal disruption to site roads and traffic flow;
- Minimal disruption to internal fitout;
- Ability to service all stages of project from chosen location;
- Redundancy in coverage to account for breakdown or emergency;
- Access to erect and dismantle of cranes.

A hammer head J280 tower crane or similar has been selected for the project. The tower crane will be used for concrete structure and timber install, loading the floors for façade, and plant and equipment installation. The location of the Tower crane is to the north of the building footprint, and will be founded on an external footing or frame. The tower crane may be installed and removed over a weekend including Sunday, and will utilise College Road, third avenue and alumni park. If required, High street will be utilised, with appropriate permits put in place.

The tower crane location provides the best coverage, is within the site boundary and outside the building footprint, provides crane hook coverage to the core area, the floor plate, material laydown area and the loading zone on the western elevation. This crane has been sized for major lifts such as, CLT members, and cooling towers.

Refer to the figure below.

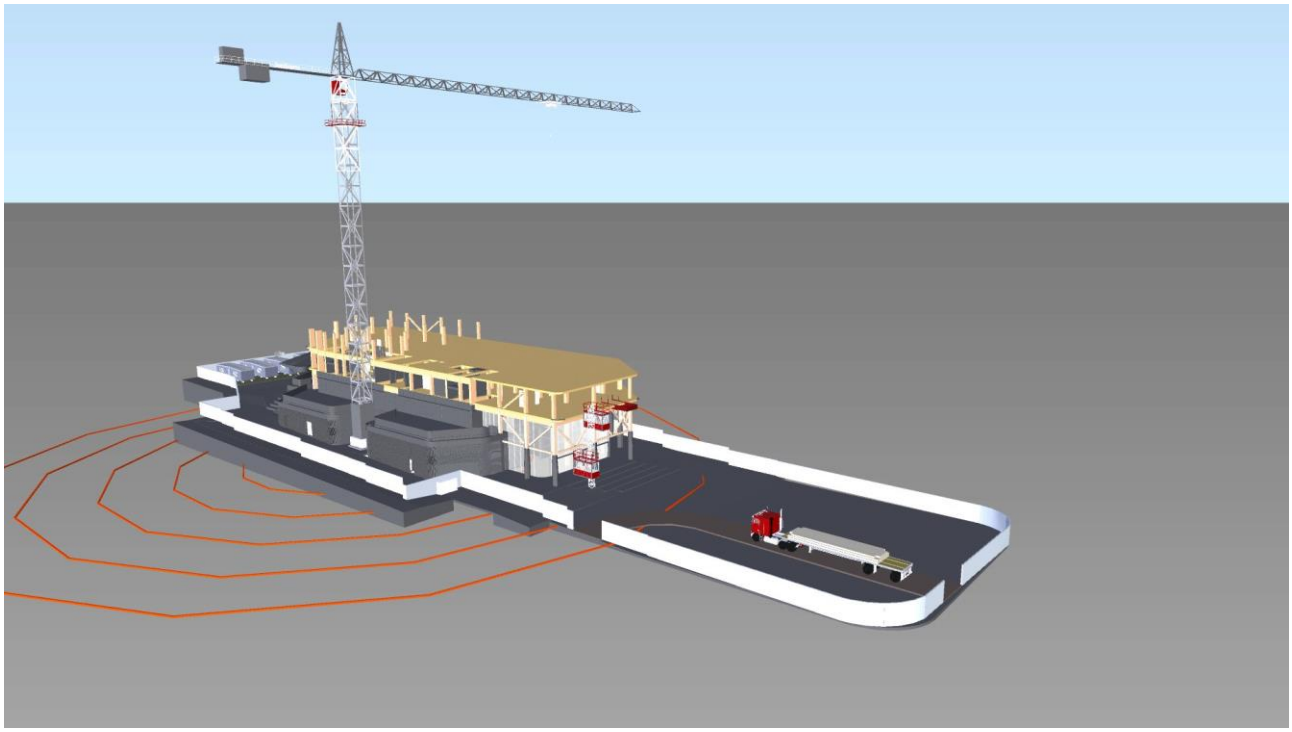

Figure 5 Tower crane and hoist locations

Moving materials and workers up and down the structure will be by person and material hoist/s.

An Alimak 14/24 man and material hoist or similar (as used on other CLT projects) will be installed to the west of the building to ensure that the workforce can traverse between floors efficiently and safely. These hoist/s will be used to load materials for the internal fitout works to ensure the tower crane is free to lift critical path items such as structure and façade.

Careful consideration has been given to the quantity and location of the hoists to provide adequate vertical transportation to each level of the building. The location is also positioned outside of amenities and plantroom spaces to ensure that the long build time areas can proceed without being impacted by the hoist position. The hoist will be progressively removed once the temporary fitout and commissioning of the internal builder's lifts are completed.

The existing Alumni park to the west of the building will be utilised for materials handling and storage, particularly for the timber and CLT structure. A significant amount of space is required to sort the material to ensure the piece install is smooth and efficient. A mobile crane will be utilised in the area to sort and arrange material, as well as assist in prefabricating, ensuring that the tower crane can focus solely on installation.

The site will utilise a forklift or telehandler to assist with unloading, general materials handling, and bins.

6.3.12 Perimeter Protection

Scaffolding will be required for the Mezzanine and Level 1 Concrete decks, and local areas with difficult access and where exclusions zones cannot be implemented due to proximity of workers or public. The proposed scaffolding system would be 3 board scaffold with 2 board hop up to service the decks.

During the timber structure install, handrail is installed prior to lifting the slab pieces. Vertical Nets coupled with physical barriers such as WorkRight fencing will be implemented on each floor plate edge for edge protection throughout the works until façade has been installed. Perimeter protection is in place prior to any horizontal structure lift.

During working hours College road will be closed via gates at the East and West to ensure that adequate exclusion zones are in place during lifting etc. As there is an existing sprinkler booster valve room on College road to service the adjacent Business School building, there will be a need to ensure access is available in the event of an emergency. Coordinated access will also be required for deliveries to the existing loading dock. Traffic control will be utilised on these occasions.

6.3.13 Temporary Works

At various stages of the construction life cycle protection decks, proprietary A & B Class Hoardings or bespoke engineered items and other temporary works such as Props will be required. These items will be carefully planned and scrutinised. Lendlease experience shows such temporary works are usually associated with high risk activities and will need to be fully engineered, certified and EH&S compliant.

6.4 ENVIRONMENTAL PROTECTION

The site area will require careful management of site run-off. Perimeter protections installed during the initial Works phase will be reviewed on site during the works. Lendlease will carry out daily site inspections and ad-hoc inspections in response to changes in environmental conditions. These inspections will focus on protective measures for all site boundaries, access roads and stormwater pits.

These daily inspections will enable any issues to be identified and corrected immediately, resulting in no impact on the environment, local community and public ways.

The primary areas requiring specific environmental controls will be:

- Managing site surface water run-off;
- Disposal of any retained stormwater;
- Protective measures during removal of hazardous materials;
- Monitoring and mitigation of dust, vibration and noise;
- Managed storage of hazardous construction materials;
- Dedicated wash down facilities; and
- Monitoring water table during groundworks.

6.4.1 Noise, dust and vibration

Monitoring for noise emissions, vibration and air quality during the redevelopment works is necessary to maintain the health and well-being of people who are involved in the works and of those within the surrounding buildings.

During the demolition of D14, there will be some noise, dust and vibration. To manage the impact on the community, the majority of the construction activities will be carried out during the day.

The proposed equipment for the piling and structure works for D14 include but not limited to truck and trailers, excavators, bull dozers, concrete pumps, angle grinders, hammers, drills, and hydraulic pumps.

Lendlease will implement the CNVMP outlining the controls to be implement on the site. The CNVMP will confirm strategies that will be implemented to minimise disturbance to sensitive receivers in accordance with regulatory requirements.

In addition, vibration sensitive equipment must also be protected during the works, particularly where operating in close proximity to operational facilities. Lendlease have identified particular noisy works, in particular those which directly interface with existing buildings where strategies will be implemented to minimise disturbance to nearby stakeholders.

Generally, the following controls will be implemented to ensure that noise and vibration related issues are controlled, addressed and resolved in accordance with regulatory requirements:

- Employees will receive training which will enable them to recognise areas where noise levels are likely to exceed 75dBA;
- Additional noise assessment of the site will be undertaken prior to or at the commencement of works on site with ongoing monitoring in strategic locations determined through consultation with UNSW during the construction period;
- As the work environment changes, additional assessments may be conducted, the timing of which will be determined in consultation between the site management, Site Safety Committee and the UNSW;
- Implementing acoustic mufflers to impact driven equipment;
- Introduce engineering controls within the methodology, such as acoustic panels to surround concrete pumps for attenuation;
- Managing works within the approved site working hours;
- Warning signs shall be erected in areas where 75dBA is exceeded; and
- Where additional personnel protection equipment is required, the areas shall be identified by signage. The appropriate noise protection devices are to be issued to the effected personnel.

Noise emissions will be managed in accordance with the regulatory requirements and Lendlease management procedures and the noise and vibration plan, complying with the following:

- National Code of Practice for Noise;
- Management and Protection of Hearing at Work [NOHSC:2009];
- AS/NZS 1269.0:2005: Occupational noise management – Series of several Standards;
- AS 2012.2: Acoustics - Measurement of airborne noise emitted by earth-moving machinery and agricultural tractors - Stationary test condition - Operator's position;
- AS 3781: Acoustics – Noise labelling of machinery and equipment;
- NSW Noise Policy for Industry 2017;
- NSW Department of Environment and Climate Change (DECC) "Interim Construction Noise Guideline" (ICNG), 2009;
- NSW Department of Environment and Conservation (DEC) "Assessing Vibration: A Technical Guideline", 2006;

- Australian Standard “AS 1055 : Acoustics – Description and Measurement of Environment Noise”, 1997;
- Australian Standard “AS 2670.2 : Evaluation of human exposure to whole-body vibration – Part 2: Continuous and shock-induced vibration in buildings (1 to 80 Hz)”, 1990;
- Protection of the Environment Operations Act 1997;
- NSW EPA Road Noise Policy (RNP), 2011.

6.4.2 Air Quality Management

Objectives for the project are to implement appropriate controls to suppress dust and other suspended particles in accordance with legislation and risk management requirements minimising the generation of dust on the site and potential emission issues relating to plant and equipment.

The Air Quality Management (AQM) Plan is included within the project EH&S Management Plan and our strategy for air quality management includes:

- Clear definition of trafficable and material storage areas to prevent unnecessary vehicle movement into other areas;
- Use of water cart to dampen work areas and exposed soils to prevent the emission of excessive dust;
- Installation of a wheel shaker grid and/or wash down facilities at the vehicle egress point during excavation works;
- Ensuring trucks transporting materials to and from the site use covers to prevent windblown dust or spillage;
- Ensuring truck tailgate locking mechanisms are operational and in use;
- Periodic inspection of surrounding roads to ensure no construction contamination and initiation of road sweeping if required;
- Careful selection of materials for temporary road surfacing;
- Subcontractors to maintain equipment / machinery to ensure exhaust emissions comply with relevant legislation and guidelines;
- All waste material to be sorted, collected and removed from site (for recycling where possible); and
- Air quality monitoring;

7.0 CONSTRUCTION PROGRAM METHODOLOGY

7.1 CONSTRUCTION STAGING

7.1.1 Construction Staging Overview

The Lendlease project team fully appreciate the disruption and change the D14 project will bring to UNSW operations and understand the challenges UNSW will have in communicating the staging sequences and the program of the works to the staff and public. The better the stakeholders and public understand the timing and reasoning of the staging of the works, the more comfortable they will be with the temporary inconveniences.

Our construction program and methodology includes a set of staging plans covering the works phases.

The staging plans include:

- All site establishment items;
- Changed or modified egress paths;
- Pedestrian and vehicle circulation route changes;
- Temporary signage requirements;
- Upcoming changes to works areas including approximated program dates; and
- Projected completion and handover areas.

The D14 working hours are proposed to be as follows:

- Monday to Friday: 7am – 6pm
- Saturday: 8am – 5pm
- Sunday: No work

7.2 CONSTRUCTION MANAGEMENT SEQUENCING

7.2.1 Bulk and detailed excavation, piling and inground services

The first site activity will be the bulk excavation, followed by piling works, detailed excavation, and inground services. As there is no basement in the new building, the bulk excavation quantities will be relatively small with the works completed in the first few months. Two piling rigs will be utilised for the foundations, working systematically in a spiral formation commencing at the core, including tower crane piling to efficiently complete the works. During these works, there will be archaeological monitoring and an unexpected finds policy will be in place.

On completion of the piling works, detailed excavation and inground services will commence. Any excavated materials will leave site via College Road and through Gate 2.

All vehicle movements in and out of site will be in a forward direction. Speed limits will be strictly enforced, and covered in the project site induction, with a focus on the live environment within the UNSW community.

The LLB Traffic Management plan is to be adhered to at all times.

Figure 6 Substructure works & Piling works

Whilst these works are being undertaken, site accommodation and amenities will be increased to the east of D14 to accommodate the increased workforce. The site accommodation location is shown below. Depending on availability, these may be single or double stacked, and incorporate a 10kPA hoarding for overhead protection if required.

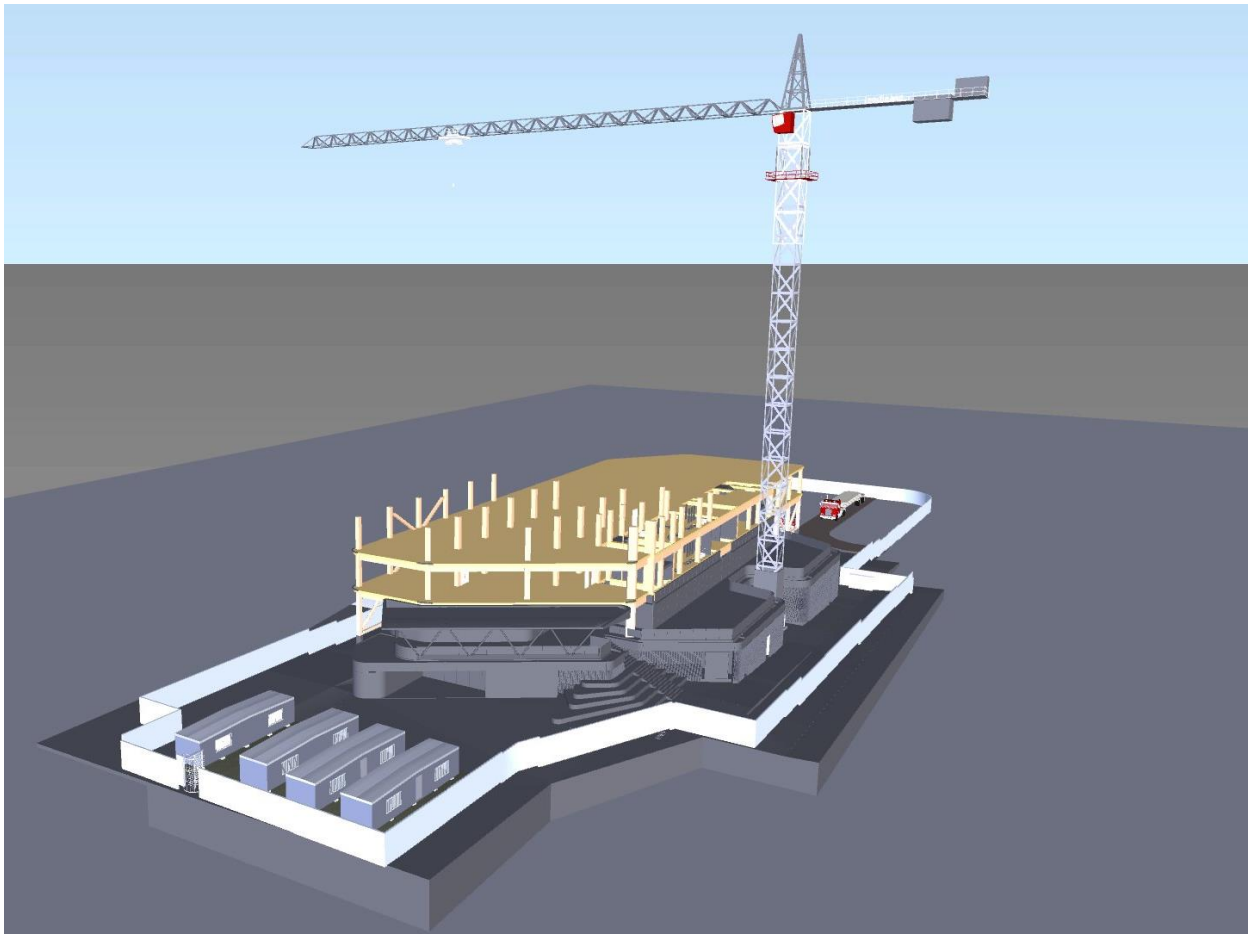

Figure 7 Site Accommodation location

7.2.2 Slab on Ground

The ground floor concrete slab will be will be poured in multiple stages, and carried out with the use of a mobile concrete pump located to the west in Alumni Park on to the South on College Walk. The ground level will be poured progressively working from the Western to Eastern sections on site. Concrete trucks will follow the typical construction route to the mobile pump. Trucks will be monitored via to ensure no vehicles backup on campus.

7.2.3 Mezzanine and Level 1 Slab

The mezzanine plantroom and level 1 slab will be constructed as a concrete structure. Scaffolding will be installed as access and edge protection for both decks. The scaffolding will have a stretcher stair, and be wrapped with Chainwire and mesh. All mesh will have the appropriate fire properties. On completion of the pours, handrail will be installed and the scaffolding dropped prior to commencing the following timber levels. During all works alongside College Road, the road will be isolated from general use via fencing and gates to ensure exclusion zones are in place. Traffic control will be used for emergency access to the hydrant if required, and dock deliveries will be coordinated with the surrounding buildings.

7.2.4 Structure

The structure above Level 1 will be constructed using CLT, the advantage of this approach is that the core structure is prefabricated and then progressively members are lifted into position and connected via friction joints (further strengthened by installation of long screws from sides) as a 'jigsaw' approach.

The structure will be constructed using a tower crane, mobile cranes, and hand tools and mixes. The noise and vibration impacts will be minimal during this time. During all works alongside College Road, the road will be isolated from general use via fencing and gates to ensure exclusion zones are in place. Traffic control will be used for emergency access to the hydrant if required, and dock deliveries will be coordinated with the surrounding buildings.

Through development of detailed design resolution during Schedumatic Design and detailed design planning phase, the floors will be planned in sequence with pre-fabricated elements being lifted from the materials handling area and lifted into position. Temporary propping will be used for vertical columns and horizontal members, with K-bracing system being adopted to provide additional lateral support and reduce the extent of temporary supports during construction.

Lendlease will provide perimeter edge protection as structure progresses. As detailed below, WorkRight fences will be installed prior to lifting to ensure the perimeter is fully encapsulated. Once the following deck is installed, webbing will be installed between the handrail and the next slab to ensure materials on each floor are captured. Refer to the figures below.

Figure 8 Perimeter protection methodology for illustration.

Figure 9 Edge protection

7.2.5 Facade

The façade for new D14 will be a curtain wall system from Level 2-7, and glazed shop from for the Ground to Level 1 level.

Installation of the panels will be via the traditional and proven technique namely, the panels will be delivered to site and lifted to the loading platform on the corresponding level by the tower crane. The loading platforms will be located to the west side of the building. During all works alongside College Road, the road will be isolated from general use via fencing and gates to ensure exclusion zones are in place. Traffic control will be used for emergency access to the hydrant if required, and dock deliveries will be coordinated with the surrounding buildings.

The panels are then hooked into a Maeda crane positioned above the panel location, launched from behind WorkRight fencing and lowered to position as shown below.

Figure 10 Curtain Wall Façade Installation methodology

7.2.6 Waterproofing Systems

The integrity of the waterproofing systems both in temporary applications and in final roof areas is critical to the short and long-term success of the project.

There are temporary solutions required to terrace roof areas and temporary membrane across all slab penetrations within the building to allow dry trades to commence on the lower levels at the earliest opportunity.

It is critical that the membrane works are installed correctly and efficiently as the quality of the installation ensures the long-term durability of the membrane is not compromised. The formula in achieving the required outcome is threefold:

- Selecting the best suited type of product for the specific waterproofing application;
- Integrating workable termination and joint details into the architectural and subcontractor design elements such as façade components and services penetrations;
- Competent product installation, QA and protection to the completed membranes;
- Waterproofing details are a specialist trade and a peer review of the architect details through our Lendlease internal design resource (CIDD) will be initiated, prior to commencing these works; and
- Adopting lessons learnt from other CLT projects regarding the application of waterproofing prior to commencing these works.

7.2.7 Sequencing - Building Services

The Building Services installation through to commissioning of all systems for the complete project is critical for the overall successful delivery of the whole project. As such the detailed design, installation, testing and commissioning of each of the building services installations will be undertaken by specialist subcontractors. To also ensure the requirements of the project are adhered to the individual service installation will also be reviewed and approved by the Services Consultants.

These services consultants will be involved in all stages of the project from initial design reviews, workshop drawing review approval through to final witness testing of the installed systems.

Due to the technical complexity, construction challenges, ESD and quality requirements of the D14 project, the selection of the right subcontractor and supply chain will be absolutely critical. To this point, Lendlease will only engage tier one and 2 construct services subcontractors with proven ability to provide the expertise, experience, knowledge, resources, and skills necessary in their specialised fields to meet the complex requirements of the project.

The building services discipline subcontractors will become integral members of our team, and will include but not be limited to:

- Mechanical Services
- Electrical Services
- Security Services
- Communication Services
- Hydraulic Services
- Dry and Wet Fire Services
- Vertical Transportation
- Building Management System

Within the main works, the services installation will be carried out over a number of stages and across numerous work faces, all under the guidance of the specialist subcontractors' supervision and our Project Managers, Services Engineer and Services Supervision Foreperson. Services rough-in will commence once structure is completed and floor areas become available.

A man and materials hoist will be installed once the structure reaches Level 2, and will be used to feed services and fitout material to each floor as they become available to ensure the tower crane focuses on critical path activities such as structure and facade. The hoist will be installed to the west of site, close to the material delivery area for efficiency. Large materials that are unable to fit in the lift will be lifted by the tower crane to the loading platforms, which will also be installed to the western site of the building. Lifting to Levels 1 and 7 will be directly to the terrace.

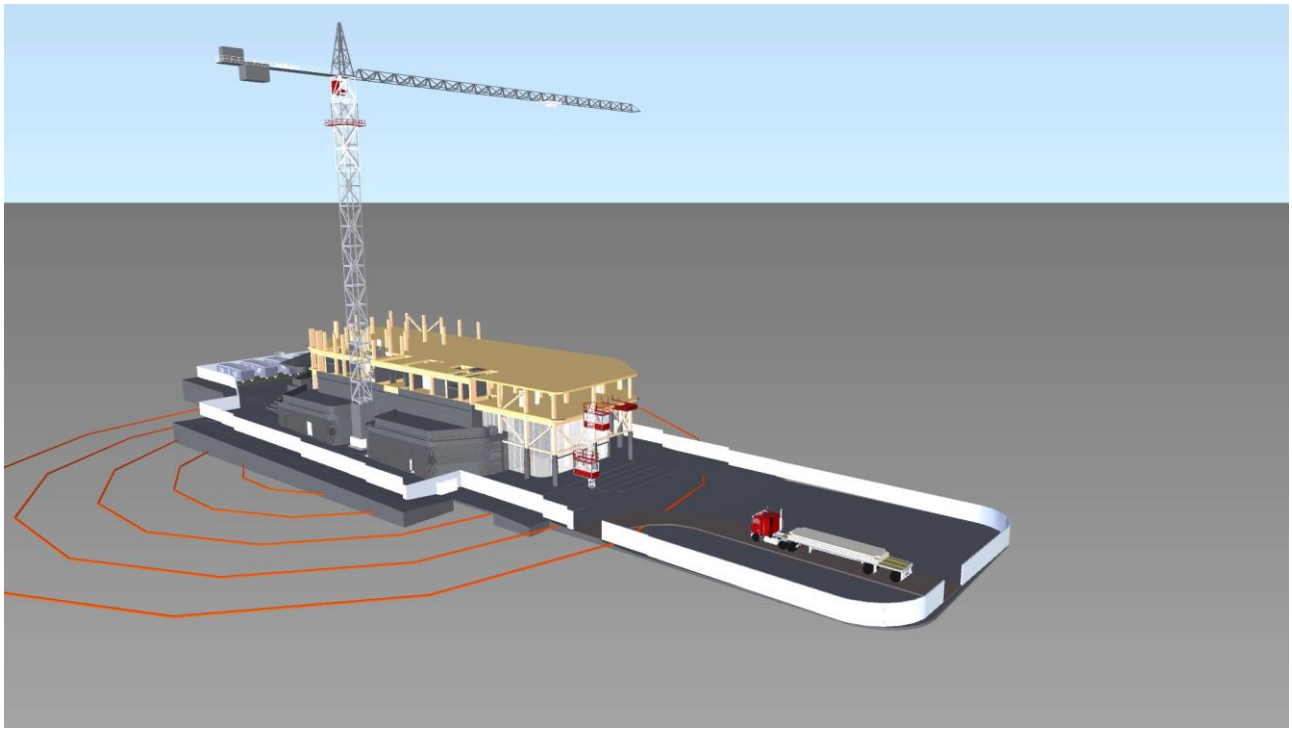

Figure 11 Man and Materials hoist and loading bays

The trade sequence will follow through as indicated in the construction program on a trade-by-trade, area by area and level-by-level basis. The installation of main plant, vertical services risers and lift installation works will be completed in parallel with the works on each floor.

Areas requiring particular attention will be those associated with the services infrastructure, risers, plant rooms, LV switch rooms, fire control rooms, etc. These main services rooms will be prioritised for completion of the building works to allow for the individual services subcontractors to commence their detailed installations. Early access to these critical services rooms will allow for the commencement of pre-commissioning and testing works prior to the final individual system commissioning.

Lendlease will also ensure that deliveries are minimised and optimised on site to reduce the amount of truck movements in and around the University campus. To reduce the amount of deliveries related to the services installation Lendlease propose to maximise the amount of prefabrication opportunities of all services installation. This will include business as usual prefabricated main services risers and also where the opportunity exists, individual services risers and pre-fabricated plantroom to reduce site movements and to also have a factory grade quality with all major services components.

The main challenge initially with the services works will be the accurate coordinated rough-in installation. The installers will benefit from fully coordinated construction documentation generated through the digital engineering / co-ordination process. Individual services to each area must be completed and pre-tested prior to proceeding to the next area.

Services fit-off will follow once the sequence of internal fit-out works has progressed. The challenge at this point in the project will be to ensure work sequences are maintained and clearly defined including adequate resourcing so that final testing and commissioning periods are not compromised

Externally all utility incoming service connections, in particular permanent power, water, gas and communications connections will be completed on program to ensure commissioning and testing can commence as scheduled. The envisaged utility connections are detailed below.

The plant and equipment to be installed on the D14 project will be of high quality and supplied by recognised and reputable manufacturers in the industry; leaders in providing the highest quality solutions. Careful

consideration will be given to the sustainability and energy efficiently requirements of the equipment to ensure the ESD requirements are achieved.

Plant and equipment will also be installed to achieve ease of access for maintenance in accordance with best practice and EH&S guidelines, thus ensuring safety of all facility, operations and service personnel.

7.2.8 Sequencing - Internal Works – Integrated Fit Out and Finishes

Lendlease's current construction program considers the fitout for the building.

The base build fitout sequence will be undertaken as follows:

- High level services rough-in and riser rough-in
- Façade completion
- Full height wall framing
- Rough-in of services in wall
- Hold Point inspection and sign offs prior to second side wall sheeting
- Wall sheeting (Post Façade Completion)
- Wet area fitout inclusive of all vanities, and FFE and items
- Specialist finishes to core wall where applicable
- Access floor installation
- Services fit-off and part commissioning
- Painting
- Builders clean
- Final Commissioning

7.2.9 Sequencing - Landscaping and handover

During the final stages of fitout and commissioning, the external landscaping works will be completed. Site will begin demobilisation at this time so that all accommodation, hoardings and the like are removed for handover. Relocation into the new building will be after receipt of the Occupancy Certificate and Practical completion has been achieved.

8.0 COMBINED TRAFFIC AND PEDESTRIAN MANAGEMENT

8.1 TRAFFIC MANAGEMENT AND CONTROL

One of the keys to the successful delivery of the project will be managing the flow of materials and equipment into and out of the construction site whilst maintaining business continuity for UNSW. UNSW has limited parking facilities in place and the importance of minimising parking numbers throughout the redevelopment works.

It is imperative that planning considers and successfully manages the maintenance of pedestrian, traffic flow and parking to the surrounding buildings and roads.

To do this Lendlease will be adopting a number of key traffic management strategies to minimise and mitigate D14 project's effects on UNSW:

- Lendlease along with the Traffic Consultant will detail a specific Traffic Control Plans which will detail the management of pedestrian, vehicular construction and operational traffic at each stage of works;
- Understanding existing parking provision, demand currently onsite, identifying temporary and construction parking replacement options on and offsite to mitigate potential parking shortfalls during the redevelopment; and
- Encouraging staff, consultants and subcontractors to adopt a Green Travel Plan for this project with use of public transport to and from site.
- Lendlease will install a temporary construction road alongside Alumni Park, including pedestrian crossings where footpath leads to a road crossing

8.2 TRAFFIC MANAGEMENT AND CONTROL

Traffic management and control will be established and monitored closely for the duration of the project. Traffic control will ensure that materials and deliveries will not block off roadways and will streamline the truck movements in and off the project. Traffic control will be located at each construction gate to ensure fluid vehicle movement.

Specific construction traffic considerations

- Where required, Lendlease will relocate the existing footpath to allow students to walk alongside Alumni Park as shown below;
- Prior to concrete pours Lendlease will coordinate with all traffic entities listed above to ensure the concrete trucks can arrive and turn around on site in a timely and successfully manor;
- Where required for exclusion zones, College Road will be segregated from pedestrians and public vehicles, however temporary access will be maintained for access to the fire hydrant as required;
- Deliveries to the loading dock for surrounding buildings will need to be done via alternative arrangements during works that impact College Road; and
- Continual communications will be maintained with UNSW regarding Traffic Management and Control planning and implementation at all times.

8.3 CONSTRUCTION ACCESS & CIRCULATION ROUTES

The following marked up street overlays shows the various ways delivery drivers will be accessing the D14 SSDA works. Careful consideration has been given to all these options to ensure there are no impacts to the daily Operations of UNSW, and the surrounding businesses and residents

Lendlease through consultation with TfNSW, TMC, SCO, RMS and RCC will facilitate a left in approach this traffic pathway is represented in the following Figure 12 below.

The departure routes from the site will be facilitated through Anzac Parade Northern and Southern routes, being from High Street. All the approach and departure traffic manoeuvres will be completed when the road network allows and in accordance with RMS and RCC conditions. These described departure routes are shown in Figure 12 below.

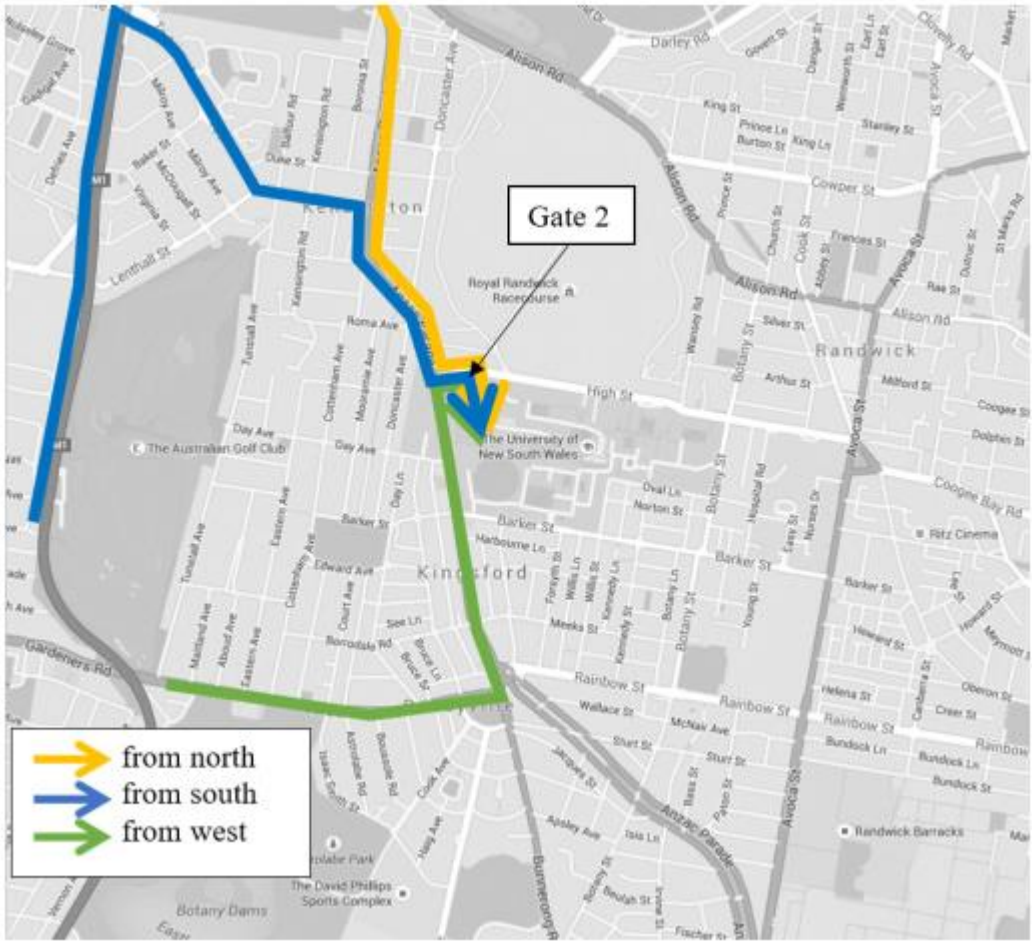

Figure 12 Proposed Truck Haulage Routes

Lendlease will engage closely with TfNSW to discuss and resolve any specific site access requirements interfacing with the City and South East Light Rail Project

9.0 STAKEHOLDER MANAGEMENT

9.1 CONSULTING AND COMMUNICATING

Lendlease's approach to managing stakeholder consultation and communication for SSDA works for the D14 Project is to create a strategic framework which enables a consistent and transparent guide to engaging stakeholders who are either interested or impacted by the works.

Lendlease manages stakeholder interests and expectations through early and ongoing engagement. Every member of the Lendlease Project Team is responsible for appropriate and effective stakeholder interactions. The key principles which underpin our proposed approach are:

- Establish and maintain open and transparent communication channels with all key stakeholders to ensure they are accurately informed about the project;
- Tailor communications to provide the right information, to the right people at the right time;
- Ensure a proactive, rather than reactive approach to all potential stakeholder related issues and engagement; and
- Respect, involve and engage stakeholders to ensure their needs are recognised and considered at all stages of the project.

The Lendlease Stakeholder Management and Communications Plan supports the implementation of this CMP. The Plan outlines key stakeholder groups who are directly or indirectly impacted by works and their respective levels of interest in the project. Key stakeholder groups include:

- Client;
- End Users;
- UNSW Operations / Facilities Management;
- UNSW interest groups;
- UNSW site neighbours;
- Transport;
- Local community;
- UNSW retailers;
- Government Departments and Agencies; and
- Authorities / Service Providers / Utilities.

10.0 AUTHORITIES

10.1 LEGISLATIVE REQUIREMENTS

The works will be undertaken in accordance with Legislative Requirements including but not limited to:

- National Construction Code 2017 comprising the Building Code of Australia;
- Protection of the Environment Operations Act 1997 and Regulations;
- Environmentally Hazardous Materials Act 1985;
- Protection of the Environment Administration Act 1991 and Regulations;
- Work, Health & Safety Act 2017 and relevant codes of practice and standards;
- Australian Standard 2601-2001: Demolition of Structures;
- Environmental Planning and Assessment Act 1979;
- Heritage Act 1997;
- Local Government Act 1993; and
- National Parks and Wildlife Act 1974.

10.2 STATUTORY PLANNING APPROVAL AND CONSTRUCTION CERTIFICATE

Our Design Manager - Building and Authorities will lead this process working closely with the PCA (Principal Certifier) and with the UNSW Team. The SSDA approval will identify generic and specific deliverables required from UNSW for the Construction Certificate. Lendlease will coordinate this process to ensure there is a clear and coordinated program to submit all Construction Certificate requirements to the PCA so that no program delays arise.

10.3 UTILITY PROVIDER AND ASSOCIATED EXTERNAL APPROVALS

At various stages external approvals of components of the works will be required. This will include:

- Randwick City Council (water, sewer, traffic);
- Jemena (gas);
- Ausgrid (or local electricity provider);
- NSW Fire and Rescue;
- Roads and Maritime Services;
- Communication providers; and
- Other relevant utility providers.

Our approach with these authorities will differ dependent on the respective requirements, however fundamentally we will seek:

- Prior coordination with UNSW to ensure all approaches are aligned and coordinated;
- Early contact to mitigate potential delays and identify potential issues; and
- Establish common contacts that can provide continuity of service on the project

11.0 UNSW INTERFACE MANAGEMENT

11.1 WORKING IN AN OPERATIONAL UNIVERSITY ENVIRONMENT

The successful delivery of the D14 Project will depend on detailed pre-planning involving all stakeholders, and the provision of clear and concise communication for each area of interface, so as to allow the ongoing operation of the University.

To meet these requirements the Lendlease Project team proposed a three-tiered approach:

- A robust Stakeholder Management and Communication Plan;
- Operational level construction interface management group with an established meeting schedule; and
- Strict implementation of the Disruptive Works Notice (DWN) procedure.

11.2 DISRUPTIVE WORKS NOTICE PROCESS

11.2.1 Process and Inclusions

Lendlease will use a formal Disruptive Works Notice (DWN) process to be developed with UNSW to advise of every potential disruption to pedestrian and/or vehicular access, building services, and of significant noise, dust and vibration events.
Lendlease would follow the below process for each specific notice prior to undertaking any disruptive works:

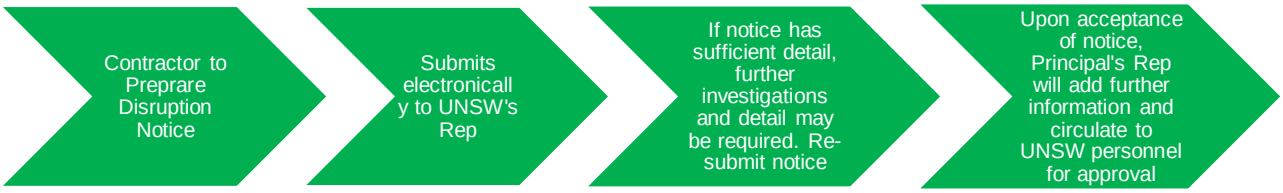

Figure 13 DWN Process

The DWN process must address the following:

- Obtaining the agreement of UNSW as to acceptable noise levels and durations within Authority requirements and of the times for undertaking noisy works;
- Devising demolition and construction methodologies which will minimise the impact of noise, dust and vibration;
- Using live noise levels to help plan and manage construction activities;
- Maintaining noise levels below agreed limits and durations;
- When requested, provide noise monitoring; and
- Disruption Notices need to clearly state any service disruptions, departments affected and the duration of the disruption.

11.2.2 Disruptive Works Notice Format

Lendlease understand the challenging nature of the D14 works located in close proximity to a complex live university environment. All construction works that interface with existing university facilities will require meticulous planning to ensure that operational continuity is maintained at all times.

During the demolition works, Disruptive Works notifications are managed via a paper based template through email or Aconex systems.

Our aim for the D14 Project is ‘Zero Unplanned Disruptions’.

Each Disruptive Work notification will also be provided in a printable detailed form with images and attachments for UNSW to distribute to all affected users. Further, when a Disruptive Work is approved or rejected by UNSW, an automated email notification can be sent to a customisable distribution list to ensure all relevant parties are kept informed of Disruptive Works planning.

The site will be secure and will automatically maintain versions of all active and completed Disruptive Works for auditing and reporting purposes.

The DWN platform will be used in conjunction with the weekly CIG meetings that review all short and medium-term interface works between the UNSW campus and the construction.

Once a Disruptive Works activity has been agreed to proceed using the online DWN platform, a copy of the DWN form will be printed in Microsoft Word and submitted to the UNSW through Aconex for permanent record and any further distribution.

The content of DWN form will include:

- Title, number & date of submission;
- Description of the task to be undertaken;
- Highlight whether services will or will not be disrupted;
- Detail of works, who will undertake the works and durations (date & times);
- Details of the planned disturbance e.g. noise, impact of access;
- Plan and or sections of the area;
- Out of hours work requirements;
- Risk assessment and mitigation strategies;
- Authority notifications if required;
- Required services isolations and impacts;
- Lendlease sign off;
- Impacted Area Manager sign off; and
- UNSW Project Manager approval.

11.3 COORDINATION OF SERVICES SHUTDOWNS AND RECONNECTIONS

Lendlease understand that it is imperative that key building services be uninterrupted when constructing within a live environment and we have developed a process to ensure that there is no unplanned disruption to key services.

No services affecting the project will be shut down without the prior written permission of the Principal via the Disruptive Works Notice procedure. All services will be treated with lock-out / tag-out procedures. For all services requiring modification as part of our scope of works, the Lendlease team will ensure that approval is obtained prior to commencement.

Any modifications affecting other sectors of the live operating university will be agreed with UNSW prior to the works to ensure the timing is acceptable. Services shut downs and cutovers will be programmed to occur at appropriate times to address all risks associated with the activity.

In accordance with the Disruptive Works Notice process, the following steps will also be engaged for all shutdowns and cutovers:

Step 1: 2 weeks' notice is provided to advice on shutdowns and cutovers along with appropriate risk analysis and proposed mitigation procedures.

Step 2: Discuss in weekly CIG coordination meeting with UNSW and review responses from all stakeholders on timing / duration and agree what actions need to be addressed and closed out.

Step 3: 1 week prior to shutdown / cutover, confirm with UNSW the procedure and work methodology.

Step 4: 1 day prior, confirm works are still proceeding.

Permits are to be completed prior to the commencement of all service shutdowns or cutovers. In addition, permits are to be completed for de-energisation and energisation of live services noting that two points of isolation are required as part of Lendlease's Global Minimum Requirements for safety before any works occur on live services.

The Lendlease Permit Controller will be appointed by the Lendlease Project Manager and will be the central controller of all services related permits.