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SCEGGS
Preliminary Construction Management Plan

26 November 2018

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1 Introduction

This Preliminary Construction Management Plan has been prepared by Tracey Brunstrom & Hammond (TBH) on behalf of Sandrick Project Directions in support of the Environmental Impact Statement (EIS) for SCEGGS Darlinghurst State Significant Development Application SSD 8993 submitted by Urbis on behalf of SCEGGS Darlinghurst for the redevelopment for the Concept Development and Stage One, at Darlinghurst.

The Works described in this preliminary Construction Management Plan will be carried out by a Head Contractor for each Stage, under the management of Urbis on behalf of SCEGGS. Once the Head Contractor has been appointed, a comprehensive Construction Management Plan will be prepared by the Head Contractor with specific details and strategies for the management of activities on-site.

The Project Manager on behalf of SCEGGS will ensure that the Head Contractor complies with the minimum standards detailed in this Preliminary Construction Management Plan, as well as the requirements of the City of Sydney Council.

1.1 Proposed Works

The EIS seeks development consent for the following works:

The Master Plan for the school is aimed at redeveloping key areas of the SCEGGS campus that are currently underutilised and do not meet the contemporary learning requirements of the school. The Masterplan provides a framework for development of the campus over the next 20 years.

- The Masterplan is also aimed at rationalising the distribution of learning and administration spaces across the campus:
- Consolidate staff and administration centrally and adjacent to the main school entry off Forbes Street
- Consolidate the School's multi-purpose and shared facilities at the centre of the campus
- Retain the Primary School at the southern end of the campus and consolidate the Senior School at the northern end

The Masterplan consists of 3 primary components:

- Wilkinson House Redevelopment
- New Administration Building / Barham Restoration / Revitalised School Entry
- New Multi-Purpose Building

The redevelopment of the campus is aimed at providing improved facilities for the school and there is no proposal to increase student numbers.

The redevelopment of Wilkinson House is proposed to be carried out as the first stage of work in order to address the school's most pressing need for larger flexible learning spaces.

The Master Plan envisages the following works as part of the long term strategy:

- Demolition of:
 - Wilkinson House
 - Library and science building
 - Old gym building
- Partial demolition of Barham Building

- Construction of:
 - Four-storey school building
 - Approximately six-storey multi-purpose building
 - On-site vehicular drop-off and car parking
 - Approximately three-storey administration building.

Construction (and demolition) work planned for the next two years is described as Stage 1, as follows:

- Demolition of Wilkinson House (interior, exterior and basement)
- Lateral excavation of the existing basement
- Construction of a new school building with a maximum height of 15 metres.

1.2 Site Description

The subject site is located within the City of Sydney LGA in the suburb of Darlinghurst. The entire campus has a site area of 13,676m².

The site is bounded to the west by Bourke Street and to the east by Forbes Street, to the north by St Peters Lane and Liverpool Street to the south, however other landowners are included within this rectangular space.

The following diagram indicates the areas owned by SCEGGS and in particular the areas affected by this Master Plan.

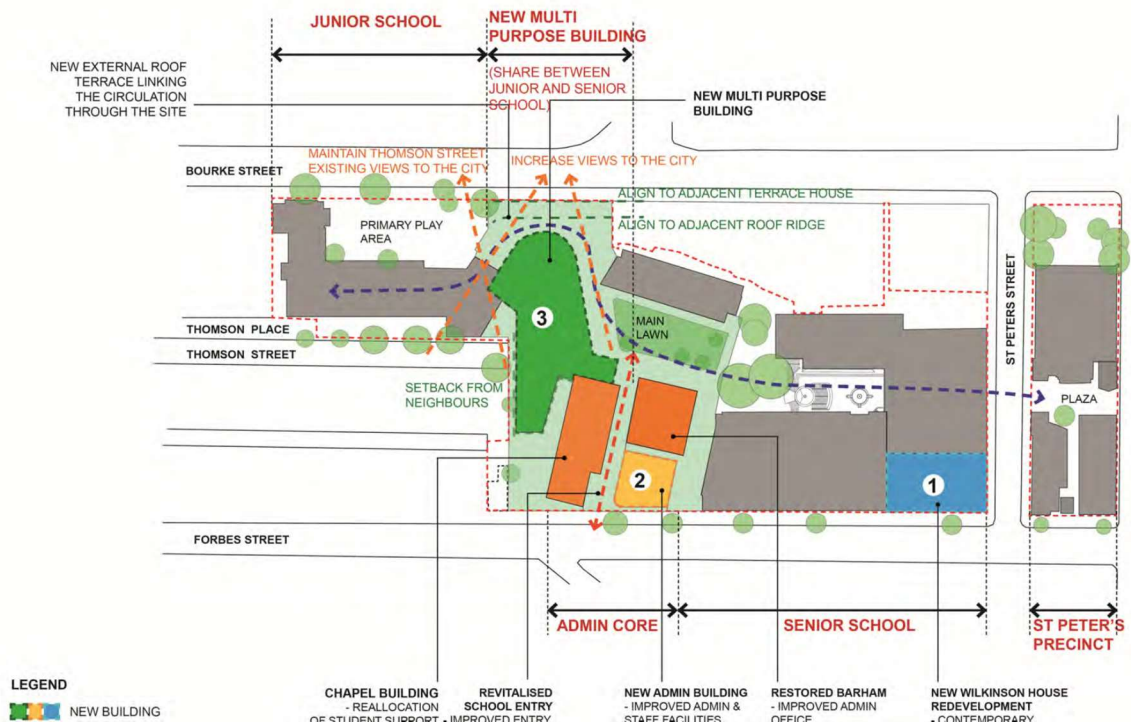


Figure 1 – SCEGGS Darlinghurst site area

2 Site Operations

2.1 Legislative Requirements

The Works will be undertaken in accordance with the following legislative requirements and any others that must be complied with in undertaking the Works as required:

- Work Health and Safety Regulation
- NSW Environmental Protection Agency

2.2 Hours of Operation

The hours of demolition and construction (including the delivery of materials to and from site) will generally take place between 7.30am and 5.30pm Monday to Friday and 7.30am to 3.30pm on Saturday.

This is in accordance with City of Sydney regulations (www.cityofsydney.nsw.gov.au/live/report-local-issues/noise/construction-sites).

There may be a requirement to undertake certain works outside normal construction hours – for instance, large / oversize deliveries, erection and dismantling of cranes. The relevant permissions for these activities would need to be sought by the Contractor.

2.3 Public Safety, Amenity & Site Security

Appropriate hoarding/fencing (as specified in Australian Standards and WorkCover requirements) will be installed to prevent public access and to maintain security to the area of the Works.

Vehicular access/egress gates will be erected as required. These gates will be manned by qualified traffic supervisors at the times of vehicular access and egress to the Site.

In view of the fact that demolition and then construction works will be undertaken while the school is in operation the Head Contractor will be required to develop a Site Safe Operations Plan to also include measures to ensure the safety of staff, students and their carers as they come and go, as well as during the normal operations of the school. These obligations are in addition to public safety, amenity and site security.

The Works will be staged. The scope of Stage 1 deals with the demolition, excavation and then construction of the New Wilkinson House. The first Site Safe Operations Plan will address all of these aspects as they relate to that scope of work.

The Head Contractor will need to comply with their duty under WHS management in accordance with legislative requirements listed in section 2.1 above.

2.4 Neighbour Management

From the commencement of construction until completion of the Works, the Head Contractor will be required to maintain a community liaison officer on the project. This officer will be required to be contactable by both a mobile phone and email and the contact details will be clearly advertised on site hoardings, community updates and the like.

The Head Contractor will be required to maintain a register of complaints and to report on the status of complaints on a monthly basis.

2.5 Dilapidation Studies

The Head Contractor will be required to conduct dilapidation studies before commencement of any demolition or construction works.

2.6 Construction Staging

Construction work is planned to be conducted in three separate tranches.

- Demolition, excavation and Construction for the New Wilkinson House is planned for 2019 and 2020 in time for it to be open for the 2021 school year.
- Demolition, excavation and Construction for the Administration / Barnham House is currently planned for 2025, 2026 and 2027.
- Demolition, excavation and Construction for the Multi-Purpose Building is currently planned for 2035 to 2040.

The Programme Report prepared by TBH includes a preliminary construction programme for the Demolition, excavation and Construction for the New Wilkinson House, which indicates a planned date for commencement of demolition works at the end of the 2019 year, and the commencement of construction in the second quarter of 2020.

2.7 Truck Movements

The Programme Report prepared by TBH also includes an analysis of truck movements for Stage One.

3 Environment & Amenity

The Head Contractor undertaking the Works will be required to submit for review a comprehensive Environmental Management Plan (EMP) to ensure that all elements of the plan meet all statutory requirements. This requirement will be mandated in the contract.

The environmental performance of the Head Contractor will be monitored throughout the Works by the Project Manager. The following specific environmental management principles will be implemented on site:

3.1 Noise & Vibration

All practicable measures will be taken to reduce the noise arising from the Works. Noise from the Site shall not exceed the limits set out in the Interim Construction Noise Guidelines, DECC 2009 (ICNG) and NSW Industrial Noise Policy, EPA 2000. No machine work will occur outside normal working hours unless approval has been given by the consent authority.

The following measures are proposed with reference to the ICNG:

- Use Noise Management Levels (NML's) to identify demolition, excavation and construction noise sources or scenarios that require engineering controls or administrative management;
- Promote clear understanding of ways to identify and minimize noise from construction works;
- Focus on applying all feasible and reasonable work practices to minimize construction noise impacts;
- Provide flexibility in the selection of site-specific and reasonable work practices to minimize noise impacts;
- Encourage construction/ demolition work to be undertaken within approved standard hours where reasonably practicable with noise that is audible to other premises. Approval is required for works undertaken outside standard hours; and
- The use of noise reduction techniques including, but not limited to, barriers, enclosures and silencers shall be employed to ensure compliance with construction and demolition noise criteria.

The benchmarks used to assess vibration impacts due to the construction works are documented in the Acoustic Assessment Report, prepared by Wilkinson Murray. This Acoustic Assessment Report documents recommendations and requirements for mitigation of noise and vibration during construction, and the preparation by the Head Contractor of a Noise & Vibration Management Plan. This report forms part of the SSD application.

The Head Contractor's Noise & Vibration Management Plan will form part of the detailed Construction Management Plan. The following project-specific mitigation measures have been recommended for inclusion in the plan:

- Installation a 2.4 metre plywood hoarding around the construction site;
- Selection of quietest feasible construction equipment;
- Use of jaw crushers in preference to rock-breakers where feasible;
- Localised treatment such as barriers, shrouds, and the like around fixed plant such as pumps, generators, and concrete pumps; and
- Provision of respite periods.

In addition, the following measures should be included in a Noise and Vibration Management Plan.

- Plant Noise Audit – Noise emission levels of all critical items of mobile plant and equipment should be checked for compliance with noise limits appropriate to those items prior to the equipment going into regular service. To this end, testing should be established with the contractor.
- Operator Instruction – Operators should be trained in order to raise their awareness of potential noise problems and to increase their use of techniques to minimise noise emission.
- Equipment Selection – All fixed plant at the work sites should be appropriately selected, and where necessary, fitted with silencers, acoustical enclosures, and other noise attenuation measures in order to ensure that the total noise emission from each work site complies with EPA guidelines.
- Site Noise Planning – Where practical, the layout and positioning of noise-producing plant and activities on each work site should be optimised to minimise noise emission levels.

3.2 Dust

To control dust generation where necessary, water will be sprayed at the source of origin and surrounding areas to prevent airborne dust particles migrating into the surrounding environment. Management of dust prevention is to be developed by the Head Contractor and agreed by the project stakeholders.

Additional precautions that will be implemented during the Works include the covering of all haulage trucks with tarpaulins, and monitoring of weather conditions (including wind). Management and contingency plans will be developed to prevent any foreseeable impacts from dust.

3.3 Odour Control

Odour problems will be minimal for demolition activity on site. All plant and machinery involved in the Works will be regularly serviced and checked for exhaust emissions and catalytic converters.

3.4 Vegetation Protection

The Head Contractor upon appointment will be required to prepare a detailed site-specific Construction Management Plan. This Plan will need to demonstrate the measures that will protect trees and vegetation being retained under the development works.

Vegetation protection should be in accordance with Australian Standard 4970-2009, Protection of Trees on Development Sites. Where branch pruning works are required, works should be carried out in accordance with Australia Standard AS 4373-2007 Pruning of Amenity Trees and the works are to be undertaken by an experienced and qualified arborist.

Recommendations and requirements for vegetation protection are documented in the Arborist Report produced by Bluegum Tree Care and Consultancy and it forms part of the SSD Application.

3.5 Stormwater & Sediment Control

As a minimum, the erosion and sediment controls for the Works shall be designed, installed and maintained in accordance with the requirements of Managing Urban Stormwater: Soils and Construction "The Blue Book" 2004 (4th edition).

Reference should be made to the Masterplan Stormwater and Flood Report produced by TTW as part of the SSD Application for stormwater and sediment control.

The stormwater management of Stage 1 will be separate to Stages 2 and 3. The stormwater collected from the Stage 1 works will be treated by a Stormwater360 Jellyfish filter or equivalent and then flow to the existing OSD tank in the Carpark Building before discharging to St Peter's Lane. The orifice plate in the existing OSD tank needs to be replaced with an orifice of larger diameter. The existing OSD tank with the new orifice plate will reduce site discharge sufficiently to comply with Council's permissible site discharge as set out in the Sydney 2012 DCP.

The Head Contractor will be required to prepare a detailed Stormwater Management Plan which will cover all aspects of stormwater and sediment management and control during construction.

3.6 Archaeological Management

The Historical Archaeological Assessment by Casey & Lowe identifies some areas of significance and recommends certain measures for the protection of archaeological assets.

These include:

- The appointment of a qualified archaeologist to be appointed as excavation director to manage the site's archaeology.
- An archaeological testing and recording program.
- Flexibility in the construction programme to enable remains to be recorded in detail.
- Cataloguing of (any) artefacts recovered during excavation.
- The exposed sections of the pre-1840s government quarry should be recorded by an appropriate consultant prior to any impacts.

3.7 ESD Initiatives

The ESD Report prepared by erbas outlines a number of initiatives for consideration.

The majority of these relate to design however this report should be reviewed and those activities relating to construction should be included in the Detailed EMP to be prepared by the Head Contractor.

4 Traffic Management

A traffic impact assessment has been undertaken by Traffix Group and forms part of the SSD Application.

This assessment examines the planned stages of the Master Plan as well as traffic issues relating to the school when the development has been completed. Chapter 10 of this assessment provides responses to the SEARS and Chapter 11 provides conclusion.

Chapter 9 of the assessment is specific to Construction Traffic Management. It covers the following requirements:

- Working hours
- The delivery and installation of temporary demountable buildings
- Demolition stage
- Bulk excavation
- Construction of the structure and building envelope
- Fitout of the internal services and finishes

As part of its Construction Management Plan the Head Contractor will be required to submit a Construction Traffic Management Plan for approval prior to commencement of the works. This plan will be required to take address the requirements set out in the Traffic Impact Assessment, and include management plans relating to vehicles and equipment.

The Head Contractor's Construction Management Plan will also be required to cover the following.

4.1 Construction Vehicles, Plant and Equipment

During construction, the following vehicles & equipment may be used:

- bulldozers, backhoes and excavators;
- heavy rigid trucks;
- mobile cranes;
- Tower cranes (requiring erection by mobile cranes in the adjacent street)
- concrete delivery trucks;
- concrete pumps;
- man and material hoists;
- scissor and boom lifts, and
- forklift trucks.

4.2 Truck Routes

Section 9.6 of the Traffic Impact Assessment identifies truck routes to be used during the construction phase.

The truck routes utilised for the construction of the development would utilise the arterial road network where possible. The proposed truck routes are recommended so that all vehicles could access and egress the site in a forward direction.

A copy of those routes would be provided to all drivers prior to attending the site and all trucks serving the site will do so via the proposed route only. The proposed truck routes are presented in Figure 8 and Figure 9 of the Assessment, and the routes are summarised.

4.3 Construction Entries & Exits

Particular attention will be required in the Traffic Management Plan to entry and exit points, as required in the Traffic Management Plan.

Pedestrians will be diverted and controlled by traffic controllers as necessary. The Traffic Management Plan will require that all pedestrian activity associated with the school will be directed to allocated areas away from construction entries and exits.

4.4 Pedestrian Protection

Temporary hoardings appropriate to the interaction between pedestrians and construction works (as per WorkCover requirements and Australian Standards) will be constructed to prevent unauthorised access to the Site.

Pedestrians will be diverted and controlled by traffic controllers as necessary. They will control pedestrians as well as vehicles. Authorised personnel will be directed through the B-class hoarding along the street frontages.

5 Waste & Materials Reuse

5.1 Storage of Dangerous Goods

Dangerous goods (such as petrol, diesel, oxy-acetylene, oils, glues etc) will be stored in a lockable compound with sufficient ventilation in accordance with relevant codes of practice and standards. Material safety data sheets on all of these flammable and potentially harmful liquids will be provided by the Head Contractor undertaking the Works.

5.2 Waste Management & Recycling Principles

Demolition and removal of in-ground services will be required on site.

Where possible any material generated from the Works will be recycled apart from selected soft demolition materials and hazardous materials such as asbestos, lead-based paints, phenols and polychlorinated biphenyls (PCB). The Head Contractor will be required to achieve compliance with the EPA guidelines.

The following measures are adopted to encourage the management and reduction of waste to minimize the loss of natural resources and landfill space:

- Emphasise the importance of recycling and waste reduction;
- Encourage the use of recycled materials where it is reasonably practical;
- Minimise the use of packaging materials and recycle packaging materials where possible;
- Waste concrete to be sent to a concrete recycling plant where possible;
- Separate removed native vegetation from general construction waste, mulched and stockpiled for re-use; and
- Non-recyclable general waste will be disposed at an approved waste disposal facility.

References should be made to the City of Sydney Council's waste management guidelines.

5.3 Waste Management Strategy

A Waste Management Strategy has been produced by Foresight Environmental as part of the SSD Application. The report addresses the following requirements for the construction and demolition phase:

- An estimate of waste during construction
- Waste management strategy, including
 - Avoid and reduce
 - Reuse
 - Recycling
 - Disposal
- Waste Management systems

- Onsite and offsite
 - For demolition, and for construction
- Waste storage and collection
- Site waste control and management
- Hazardous wastes
- Contracts and purchasing
- Training and education
- Waste facilities

6 Services Disconnection

In general terms the following principles will be adopted when disconnecting services:

- Services impacts on the existing temporary school facilities will be done with full coordination, development and input with the client and its relevant stakeholders and will only proceed with approval via a Disruption Notice process;
- Impacts on the existing temporary school will be kept to a minimum, which may, on occasion, result in 'out of hours work. At all times, safety will be paramount and student/staff/visitor safety, access and security maintained;
- If the Head Contractor proposes to carry out 'out of hours' work, the Head Contractor must provide details of the time and frequency of such work. No work will occur outside normal working hours unless approval has been given by the consent authority. It is anticipated that such work will be kept to a minimum;
- All Service authorities will be consulted prior to the Works commencing to ascertain lead times and correct termination locations;
- All termination works will be undertaken in accordance with design engineers' specifications and instructions;
- All termination works will be undertaken by suitably licensed contractors, and;
- Any termination works that impact on adjoining owners will be notified and will be undertaken out of hours to minimise impact.

SCEGGS Darlinghurst Masterplan and Wilkinson House Redevelopment

Programme Report

2 November 2018

1 Introduction

As requested, TBH has completed a Programme “SCEGGS Darlinghurst – Masterplan & Stage 1 Wilkinson House Redevelopment SSDA Programme”. This programme has been produced for:

- establishing the overall construction duration for Wilkinson House;
- as the basis for a truck movement histogram submitted as part of the SSDA application for the project; and
- as an indication of the likely construction timing for future development stages.

The programme proposes of start of onsite construction works for Wilkinson House on 30 April 2020. The programmed gross completion date is 22 July 2021.

This report sets out assumptions and key details in preparing this Programme.

The programme for subsequent stages is based on likely timing as indicated by the Project Manager, and is subject to further refinement as the design for these stages is developed.

The programme is attached at Appendix A.

2 Documents

The Wilkinson House programme has been based on the following SCEGGS drawings, documents and sources of information:

- SSDA - Master Plan Consultants Brief
- SSDA – Master Plan, Architectural Design Report and Statement of Heritage Impact
- Wilkinson House Preliminary Structural Drawings, Options study & Services Return Brief
- Master Plan Key Dates (Email)
- Record of Master Plan Consultants Meeting No 6 (Enclosed with Master Plan DA Programme – Preliminary Issue 6a dated 5th October 2018)

3 Assumptions and Key Details – Wilkinson House

3.1 Working Days / Hours

The Programme is based on a 5.5-day working week with NSW public holidays, industry RDO's and a two-week Christmas shutdown.

This is in accordance with City of Sydney regulations (www.cityofsydney.nsw.gov.au/live/report-local-issues/noise/construction-sites) which states:

"All potentially noisy work in the city centre must be carried out between 7am and 7pm on weekdays and 7am and 5pm on Saturdays.

Construction in all other parts of the local area must take place between 7.30am and 5.30pm Monday to Friday and 7.30am to 3.30pm on Saturday".

There may be a requirement to undertake certain works outside normal construction hours – for instance, large / oversize deliveries, erection and dismantling of cranes. The relevant permissions for these activities would need to be sought by the Contractor.

3.2 Development Application

The Master Plan DA Submission is expected to happen in December 2018 as shown in the Preliminary Issue Programme 6a dated 05 October 2018.

3.3 Temporary Learning Areas Establishment

The programme allows for delivery and installation of 9x temporary demountable functional learning areas to be installed with 8 of those in the centenary sports hall, prior to the demolition of existing Stage 1 Wilkinson House building.

3.4 Demolition

The existing Wilkinson House is a 4-storey (Basement, Ground, Level 1 and 2) building with external brickwork and concrete frame structure.

The programme allows 15 Weeks for demolition of this building with 3 Weeks for Hazmat removal and 12 Weeks for demolition works.

The programme allows for all-round scaffolding / edge protection around the Wilkinson House building, protected walkways for Peter Street and Forbes Street with B-Class hoarding over the protected walkway for site offices.

3.5 Bulk Excavation

For bulk excavation, the programme considers the following:

- 300 CuM of rock (disposal off site).
- Underpinning of existing foundations if earth adjacent to those foundations is excavated.

The programme allows a provisional duration of 24 days to these activities. This duration will need to be reviewed following further geotechnical investigation and design development.

3.6 Structure & Building Envelope

The basement floor slab is a slab on ground and the suspended floor slabs are post tensioned slabs with a typical construction cycle of 9 days per floor. The programme assumes a floor to floor window glazing system (not a curtain wall system).

3.7 Material Handling

We have assumed a tower crane within the floor area. The tower crane is dismantled only after the erection of roof structure works and loading of bulk materials to the floors. The programme allows for an 8-week duration to complete remaining works after removal of tower crane which includes casting slab infills and closing out the internal services & finishes in the affected areas.

3.8 Internal Services & Finishes

The programme typically allows for a duration of 9 weeks for services and finishes in the learning areas of each floor. We have assumed that during the defects rectification and sign-off periods, any FFE to be re-used will be relocated from the demountable back into the new Wilkinson House.

3.9 Delay Allowances

The programme provides the following delay allowances:

- Inclement weather allowance of 12.5% of onsite duration.
- 10% of onsite duration for other risks.

3.10 Truck Movements

A truck movement histogram for the Wilkinson House redevelopment has been generated based on the nett construction programme. The histogram, and calculations supporting it, are attached at Appendix B.

End of Report.

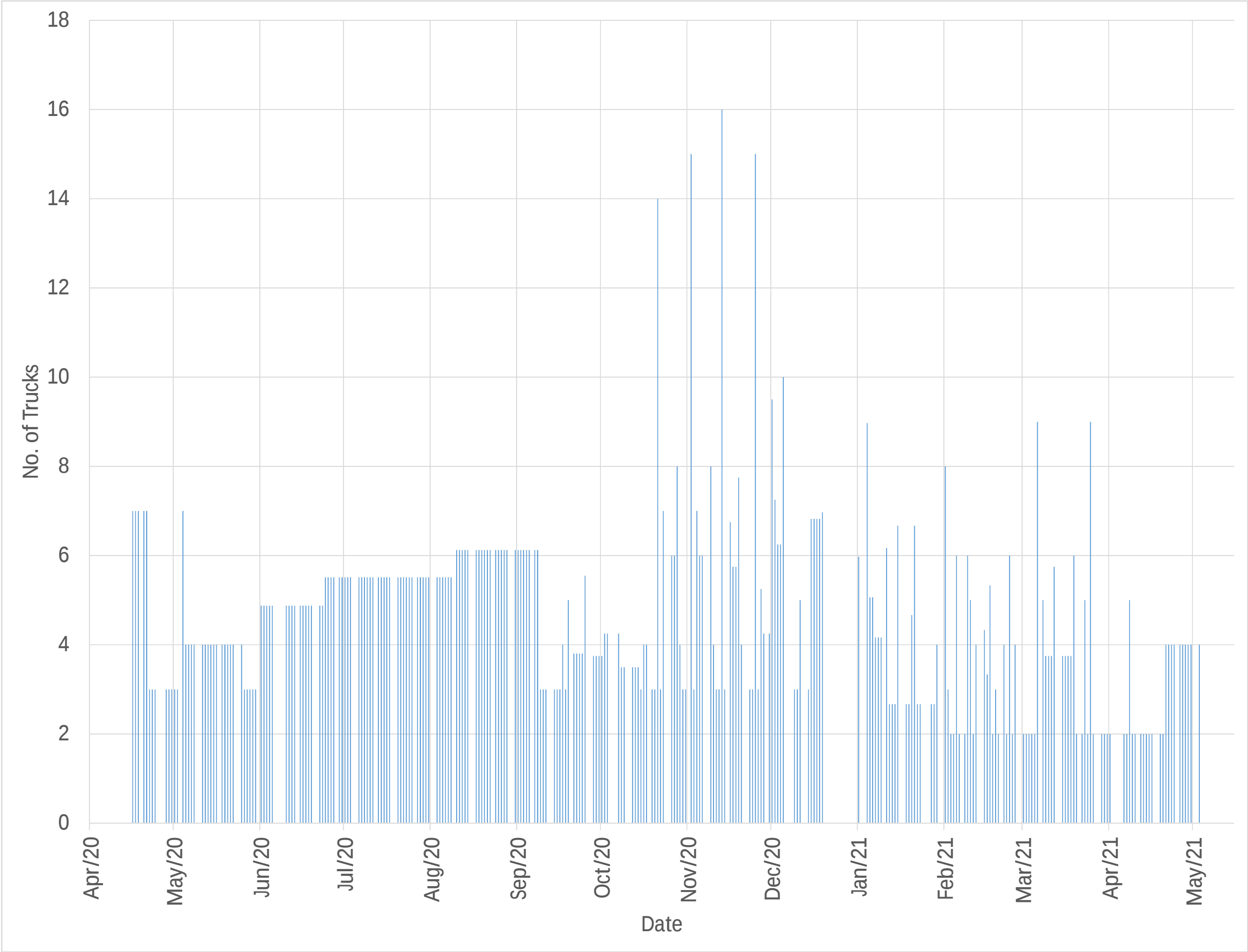
Appendix A – Programme

D	Task Name	Duration	Start	Finish	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
0	SCEGGS Darlinghurst - MasterPlan and Stage 1 Wilkinson House Redevelopment - SSDA Program	6306 days?	Tue 4 Feb '20	Sat 30 Jun '40																							
1	Wilkinson House	398 days	Tue 4 Feb '20	Thu 22 Jul '21																							
2	KEY MILESTONES	398 days	Tue 4 Feb '20	Thu 22 Jul '21																							
17																											
18	OFFSITE ACTIVITIES	135 days	Tue 4 Feb '20	Thu 13 Aug '20																							
52																											
53	ONSITE CONSTRUCTION	343 days	Thu 16 Apr '2	Thu 22 Jul '21																							
54	TEMPORARY DEMOUNTABLES	11 days	Thu 16 Apr '2	Thu 30 Apr '20																							
59	SITE ESTABLISHMENT	13 days	Thu 30 Apr '2	Sat 16 May '20																							
66	DEMOLITION WORKS	69 days	Tue 12 May '2	Sat 8 Aug '20																							
74	MATERIAL HANDLING	108 days	Mon 14 Sep '2	Wed 17 Feb '21																							
81	WILKINSON HOUSE CONSTRUCTION	255 days	Mon 10 Aug '2	Thu 22 Jul '21																							
82	EARTHWORKS & SUBSTRUCTURE	50 days	Mon 10 Aug '2	Wed 14 Oct '20																							
92	FRP BASEMENT - SLAB ON GROUND	6 days	Thu 15 Oct '2	Wed 21 Oct '20																							
98	STRUCTURE WORKS	46 days	Thu 22 Oct '2	Mon 4 Jan '21																							
139	FLOOR STRIPPING SEQUENCE	21 days	Tue 1 Dec '20	Mon 11 Jan '21																							
144	BUILDING ENVELOPE	41 days	Sat 5 Dec '20	Fri 12 Feb '21																							
164	EXTERNAL FAÇADE	26 days	Mon 15 Feb '21	Thu 18 Mar '21																							
170	LIFT INSTALLATION	56 days	Mon 18 Jan '21	Wed 31 Mar '21																							
175	INTERNAL SERVICES AND FINISHES	75 days	Mon 4 Jan '21	Tue 13 Apr '21																							
236	WORKS AFTER REMOVAL OF TOWER CRANE	41 days	Thu 18 Feb '21	Tue 13 Apr '21																							
241	EXTERNAL WORKS	18 days	Fri 19 Mar '21	Tue 13 Apr '21																							
246	CLOSING OUT AND HANDINGOVER	79 days	Wed 14 Apr '21	Thu 22 Jul '21																							
255	Administration / Barham House - Design, DA, Construction (Indicative Timing)	781 days?	Wed 1 Jan '21	Wed 30 Jun '27																							
256	Multipurpose Building - Design, DA, Construction (Indicative Timing)	1722 days?	Mon 1 Jan '21	Sat 30 Jun '40																							

This programme follows a 5.5 day working week with NSW public holidays, Industry RDOs and a 2 Week Christmas Shutdown established as non-working days.

Appendix B – Truck Histogram and Calculations

SCEGGS Darlingtonhurst - Stage 1 Wilkinson House Redevelopment
SSDA Programme - Truck Movement Histogram (Nett Programme)





Decant									
Unique ID	Task Name	Duration	Start	Finish	No. of Demountables			No. of trucks (2 trucks per demountable)	Modelling
288	Deliver & Install Modular Constructed Demountable Learning Areas / Snag & Clean	5 days	16-Apr-20	21-Apr-20	10			20	Distribute
Demolition									
Unique ID	Task Name	Duration	Start	Finish	Volume (m3)	Weight (t)		No. of trucks (12t/truck)	
26	Remove External Brickwork	16 days	1-Jun-20	23-Jun-20	176.2656	352.53		30	Distribute
20	Carry out Building Demolition / Clear Debris	37 days	24-Jun-20	8-Aug-20	462.6	1110.24		93	Distribute
18	Remove Hazmat Material / Asbestos (Provisional Duration - TBC as per actuals)	6 days	18-May-20	25-May-20				6	Distribute
Excavation									
Unique ID	Task Name	Duration	Start	Finish	Volume (m3)	Weight (t) (2t/m3)		No. of trucks (12t/truck)	
27	Excavate to Bulk Excavation Level (Including Rock Excavtion - Provisional Duration / TBC as per actuals)	24 days	10-Aug-20	8-Sep-20	450	900		75	Distribute
Scaffolding (assumed to be all erected prior to demolition)									
Unique ID	Task Name	Duration	Start	Finish	Perimeter (m)	Weight Tonnes (24x12x1=7t)		No. of Trucks (5t/truck)	
13	Erect B-Class Hoardings / Scaffolding & Edge Protection / Secure Public Walkways		4-May-20	16-May-20	86	36		11	Distribute
Erect B Class Horardings									
Unique ID	Task Name	Duration	Start	Finish				No. of trucks	
13	Erect B-Class Hoardings / Scaffolding & Edge Protection / Secure Public Walkways		4-May-20	16-May-20				3	Start
Tower Crane			Start	Finish					
311	FRP Base		14-Sep-20	19-Sep-20				1	Finish
309	Erect & Commission Tower Crane		21-Sep-20	25-Sep-20				4	Distribute
308	Tower crane Operation - Start		25-Sep-20	25-Sep-20					
307	Tower crane Operation - Finish		12-Feb-21	12-Feb-21					
306	Dismantle Crane		15-Feb-21	17-Feb-21				4	Distribute
Substructure/Lift			Start	Finish					
34	FRP - Pad Footings / Membrane Waterproof Sides / backfill		25-Sep-20	7-Oct-20		24 Cum Concrete; Reo and form		6	Distribute
31	Lift Pit - Detail Excavate / Blinding / Membrane Water Proof for Slab		14-Sep-20	17-Sep-20				1	Finish
32	Lift Pit - FRP Base Slab		18-Sep-20	19-Sep-20				1	Finish
33	Lift Pit - FRP Walls up to Basement Floor / Membrane Waterproof Walls / Backfill		21-Sep-20	25-Sep-20				1	Finish
35	Install UG Services / Prepare Subgrade / Membrane Proofing		2-Oct-20	14-Oct-20				4	Distribute
79	Lift Installation Works		2-Feb-21	23-Mar-21				1	Start
Formwork (plys)									
Unique ID	Task Name	Duration	Start	Finish	Area (m2)	Weight Tonnes (15% factor x 23kg/m2 ply)		No. of trucks	
256	GF Formwork	4 days	23-Oct-20	28-Oct-20	332	3.05		1	Start
274	L1 Formwork	4 days	4-Nov-20	9-Nov-20	354	3.25		1	Start
262	L2 Formwork	4 days	16-Nov-20	19-Nov-20	311	2.86		1	Start
268	L3 Formwork	4 days	27-Nov-20	1-Dec-20	150	1.38		1	Start
Formwork (support)									
Unique ID	Task Name	Duration	Start	Finish	Tower Crane Lifts at 6 SqM / Lift	5 Lifts Per Truck		No. of trucks	
256	GF Formwork	4 days	23-Oct-20	28-Oct-20	55	12		12	Distribute
274	L1 Formwork	4 days	4-Nov-20	9-Nov-20	59	12		12	Distribute
262	L2 Formwork	4 days	16-Nov-20	19-Nov-20	52	11		11	Distribute
268	L3 Formwork	4 days	27-Nov-20	1-Dec-20	25	5		5	Distribute
Reinforcement									
Unique ID	Task Name	Duration	Start	Finish	Area (m2)	Weight Tonnes (SOG: 0.120t/m3, Sus Slab: 0.03t/m3)		No. of trucks	
245	SOG Bottom Reo	2 days	16-Oct-20	17-Oct-20	300	3.24		1	Start
248	SOG Top Reo	2 days	17-Oct-20	19-Oct-20		3.24		1	Start
257	GF Bottom Reo	2 days	28-Oct-20	29-Oct-20	332	1.20		1	Start
259	GF Top Reo	2 days	29-Oct-20	30-Oct-20		1.20		1	Start
275	L1 Bottom Reo	2 days	9-Nov-20	10-Nov-20	354	1.27		1	Start
277	L1 Top Reo	2 days	10-Nov-20	11-Nov-20		1.27		1	Start
263	L2 Bottom Reo	2 days	19-Nov-20	20-Nov-20	311	1.12		1	Start
265	L2 Top Reo	2 days	20-Nov-20	23-Nov-20		1.12		1	Start
269	L3 Bottom Reo	2 days	1-Dec-20	2-Dec-20	150	0.54		1	Start
271	L3 Top Reo	2 days	2-Dec-20	3-Dec-20		0.54		1	Start
Post Tensioning									
Unique ID	Task Name	Duration	Start	Finish	Area (m2)	Weight Tonnes (PT: 0.025t/m3)		No. of trucks	
258	GF PT	2 days	28-Oct-20	29-Oct-20	332	1.99		1	Start
276	L1 PT	2 days	9-Nov-20	10-Nov-20	354	2.12		1	Start
264	L2 PT	2 days	19-Nov-20	20-Nov-20	311	1.87		1	Start
270	L3 PT	2 days	1-Dec-20	2-Dec-20	150	0.90		1	Start
Concrete									
Unique ID	Task Name	Duration	Start	Finish	Area(m2)	Volume (m3) (20% for beams/drops)		No. of trucks (6m3/truck)	
244	SOG Pour	1 day	21-Oct-20	21-Oct-20	300	65		11	Distribute
261	GF Pour	1 day	2-Nov-20	2-Nov-20	332	72		12	Distribute
279	L1 Pour	1 day	13-Nov-20	13-Nov-20	354	76		13	Distribute
267	L2 Pour	1 day	25-Nov-20	25-Nov-20	311	67		12	Distribute
273	L3 Pour	1 day	5-Dec-20	5-Dec-20	150	32		6	Distribute
46	FRP Columns and Walls upto Roof	3 days	9-Dec-20	11-Dec-20				2	Finish
47	FRP Level Shafts Lid Slabs at Roof Level	7 days	14-Dec-20	4-Jan-21				1	Finish
Strip Formwork									
Unique ID	Task Name	Duration	Start	Finish	Area (m2)			No. of trucks	
59	Basement Floor - Strip (u/s GF Slab)	4 days	1-Dec-20	4-Dec-20	332			13	Distribute
60	Ground Floor - Strip (u/s L1F Slab)	4 days	15-Dec-20	18-Dec-20	354			13	Distribute
61	Level 1 Floor - Strip (u/s L2F Slab)	4 days	19-Dec-20	6-Jan-21	311			12	Distribute
62	Level 2 Floor - Strip (u/s L3F Slab)	4 days	7-Jan-21	11-Jan-21	150			6	Distribute
Drop Scaffold and makegood									
Unique ID	Task Name	Duration	Start	Finish	Area (m2)			No. of trucks	
72	Defects Inspection & Rectification / Progressively Bringdown Scaffolding	8 days	9-Mar-21	18-Mar-21				14	Distribute
Building Envelope									
Unique ID	Task Name	Duration	Start	Finish	Area (m2)	No. of Panes	Weight Tonnes (30kg/m2 for windows)	No. of trucks	
9	BUILDING ENVELOPE	41 days	5-Dec-20	12-Feb-21					
							Truss - 25 Kg / M2		
65	Install Roof Truss / Structural Framing	18 days	5-Jan-21	28-Jan-21	300		12	12	Distribute
66	Load In Roof Plant	6 days	15-Dec-20	4-Jan-21				4	Distribute
							Steel Sheet - 10Kg / M2 * 1.2		
67	Install Roof Drainage / Roofing Works	12 days	29-Jan-21	12-Feb-21	300		3.96	2	Start

	48	Basement - Construct External Wall	10 days	5-Dec-20	19-Dec-20				1	Start
	49	Ground Level - Install External Walls	8 days	19-Dec-20	11-Jan-21	210		0.784	1	Start
	50	Ground Level - Install Glazing	7 days	11-Jan-21	19-Jan-21				2	Start
	51	Level 1 - Install External Walls	7 days	12-Jan-21	20-Jan-21	210		0.784		
	52	Level 1 - Install Glazing	7 days	20-Jan-21	29-Jan-21	120	22	3.6	2	Start
	53	Level 2 - Install External Walls	7 days	21-Jan-21	1-Feb-21	210		0.784		
	54	Level 2 - Install Glazing	7 days	1-Feb-21	8-Feb-21	120	22	3.6	2	Start
	68	Level 3 - Install External Walls	7 days	2-Feb-21	9-Feb-21	105		0.392		
	69	Level 3 - Install Glazing	4 days	9-Feb-21	12-Feb-21	120	22	3.6	2	Start
	55	Stage 1 - Building Mainly Watertight	0 days	12-Feb-21	12-Feb-21					
EXTERNAL FAÇADE										
	57	External Render & Paint	10 days	15-Feb-21	25-Feb-21					
	70	Install Cladding & Façade Fitout	12 days	19-Feb-21	5-Mar-21				1	Start
	71	Patch Up and Apply Final Façade Finishes	8 days	3-Mar-21	11-Mar-21					
	74	Stage 1 - External Façade Works - Complete	0 days	18-Mar-21	18-Mar-21					
Fitout (materials brought onsite during basement fitout)										
Unique ID		Task Name	Duration	Start	Finish			Weight (Plasterboard 10kg/m2, Carpet 5 kg/m2)		
	119	Install High Level Services	10 days	4-Jan-21	14-Jan-21				2	Start
	120	Install Lobby Wall	2 days	13-Jan-21	14-Jan-21					
	121	In wall Services / Test Prior to Lining	4 days	15-Jan-21	20-Jan-21				2	Start
	122	Install Wall Linings and False Ceiling / Set and Sand	7 days	21-Jan-21	1-Feb-21			9.8	4	Start
	123	Apply Initial Paint	2 days	2-Feb-21	3-Feb-21					
	124	Services Fit out / Doors etc.	2 days	4-Feb-21	5-Feb-21					
	125	Apply Final Coat Paint / Final Fit out	2 days	6-Feb-21	8-Feb-21					
	126	Install Carpet Flooring / Vinyl	5 days	9-Feb-21	15-Feb-21			1.5	2	Start
	127	Common Areas / Stairs / Corridors - Services and Finishes	9 days	4-Feb-21	15-Feb-21					
	131	Plant Rooms - Builder's Works	5 days	4-Feb-21	9-Feb-21					Start
	132	Plant Rooms - Install Equipments / Testing & Commissioning	15 days	10-Feb-21	1-Mar-21				3	Start
	128	Basement - Testing & Commissioning / Defects Inspection & Rectification	5 days	2-Mar-21	6-Mar-21					
	129	Basement - Move In FF & E	5 days	8-Mar-21	12-Mar-21				3	Start
	130	Basement - Services & Finishes - Complete	0 days	12-Mar-21	12-Mar-21					
Fitout (GF Fitout)										
Unique ID		Task Name	Duration	Start	Finish			Weight (Plasterboard 10kg/m2, Carpet 5 kg/m2)		
	83	Install High Level Services	10 days	15-Jan-21	29-Jan-21				2	Start
	84	Install Lobby Wall	2 days	28-Jan-21	29-Jan-21					
	85	In wall Services / Test Prior to Lining	4 days	1-Feb-21	4-Feb-21				2	Start
	86	Install Wall Linings and False Ceiling / Set and Sand	7 days	5-Feb-21	12-Feb-21			9.8	4	Start
	87	Apply Initial Paint	2 days	15-Feb-21	16-Feb-21					
	95	Services Fit out / Doors etc.	2 days	17-Feb-21	18-Feb-21					
	96	Apply Final Coat Paint / Final Fit out	2 days	19-Feb-21	20-Feb-21					
	97	Install Carpet Flooring / Vinyl	5 days	22-Feb-21	26-Feb-21			1.5	2	Start
	98	Common Areas / Stairs / Corridors - Services and Finishes	9 days	17-Feb-21	26-Feb-21					
	99	Ground Level - Testing & Commissioning / Defects Inspection & Rectification	5 days	1-Mar-21	5-Mar-21					
	100	Ground Level - Move In FF & E	5 days	6-Mar-21	11-Mar-21				3	Start
	101	Ground Level - Services & Finishes - Complete	0 days	11-Mar-21	11-Mar-21					
Fitout (L1 Fitout)										
Unique ID		Task Name	Duration	Start	Finish			Weight (Plasterboard 10kg/m2, Carpet 5 kg/m2)		
	133	Install High Level Services	10 days	1-Feb-21	11-Feb-21				2	Start
	134	Install Internal Partition Walls	5 days	10-Feb-21	16-Feb-21					
	135	In wall Services / Test Prior to Lining	6 days	17-Feb-21	23-Feb-21				2	Start
	136	Install Wall Linings and False Ceiling / Set and Sand	7 days	24-Feb-21	4-Mar-21			9.8	4	Start
	137	Apply Initial Paint	2 days	5-Mar-21	6-Mar-21					
	138	Services Fit out / Doors etc.	2 days	8-Mar-21	9-Mar-21					
	139	Apply Final Coat Paint / Final Fit out	2 days	10-Mar-21	11-Mar-21					
	140	Install Carpet Flooring / Vinyl	5 days	12-Mar-21	18-Mar-21			1.5	2	Start
	141	Common Areas / Stairs / Corridors - Services and Finishes	9 days	8-Mar-21	18-Mar-21					
	142	Level 1 - Testing & Commissioning / Defects Inspection & Rectification	5 days	19-Mar-21	24-Mar-21					
	143	Level 1 - Move In FF & E	5 days	25-Mar-21	31-Mar-21				3	Start
	144	Level 1 - Services & Finishes - Complete	0 days	31-Mar-21	31-Mar-21					
Fitout (L2 Fitout)										
Unique ID		Task Name	Duration	Start	Finish			Weight (Plasterboard 10kg/m2, Carpet 5 kg/m2)		
	145	Install High Level Services	10 days	12-Feb-21	24-Feb-21				2	Start
	146	Install Lobby Wall	3 days	23-Feb-21	25-Feb-21					
	147	In wall Services / Test Prior to Lining	6 days	26-Feb-21	5-Mar-21				2	Start
	148	Install Wall Linings and False Ceiling / Set and Sand	7 days	6-Mar-21	15-Mar-21			9.8	4	Start
	149	Apply Initial Paint	2 days	16-Mar-21	17-Mar-21					
	150	Services Fit out / Doors etc.	2 days	18-Mar-21	19-Mar-21					
	151	Apply Final Coat Paint / Final Fit out	2 days	20-Mar-21	22-Mar-21					
	152	Install Carpet Flooring / Vinyl	5 days	23-Mar-21	29-Mar-21			1.5	2	Start
	153	Common Areas / Stairs / Corridors - Services and Finishes	9 days	18-Mar-21	29-Mar-21					
	154	Level 2 - Testing & Commissioning / Defects Inspection & Rectification	5 days	30-Mar-21	7-Apr-21					
	155	Level 2 - Move In FF & E	5 days	8-Apr-21	13-Apr-21				3	Start
	156	Level 2 - Services & Finishes - Complete	0 days	13-Apr-21	13-Apr-21					
Fitout (L3 Fitout)										
Unique ID		Task Name	Duration	Start	Finish					
	158	Assemble Roof Plant & Equipment / Connect Services	24 days	15-Feb-21	16-Mar-21				1	Start
	159	Roof Plant & Equipment - Testing & Commissioning	10 days	17-Mar-21	29-Mar-21					
	160	Roof Plant - Services Fitout & Final Finishes	10 days	23-Mar-21	7-Apr-21				1	Start
	161	Roof Plant - Defects Inspection & Rectification	5 days	8-Apr-21	13-Apr-21					Start
	10	Roof Plant - Services & Finishes - Complete	0 days	13-Apr-21	13-Apr-21					
EXTERNAL WORKS										
Unique ID		Task Name	Duration	Start	Finish					
	164	Outdoor Learning & Lightwell Area - External Finishes & Fitout	15 days	19-Mar-21	9-Apr-21				4	Start
	165	Public Domain Works / Make Good Damages	13 days	25-Mar-21	13-Apr-21				4	Start
Remove demountables										
Unique ID		Task Name	Duration	Start	Finish					
	295	Decant back FF&E / Remove Demountables / Clean up & Handover	10 days	21-Apr-21	3-May-21				20	Distribute
Miscellaneous/Debris Removal										
		Task Name		Start	Finish				No. of trucks	
		Structure (3 Trucks Per day prior to structure completion)		16-Apr-20	4-Jan-21		178 Working Days x 3 Trucks Per day		573	Distribute
		After structure to Nett Date (2 Trucks per day after structure works)		5-Jan-21	3-May-21		89 Working Days x 2 Trucks Per day		178	Distribute