5.3.13 Scaffold

All scaffolds shown below will have fully engineered plans developed.

5.3.14 Stage Scaffold – currently in Jands scope

- Ground scenery dock to grid
- Demolition of stages and structural steel columns/ counterweight risers, grid machinery, grid
- Installation of new machinery and grid
- Access hoist from scenery dock to grid then mechanical plantroom above supported off scaffold
- Internal scaffold stair
- Intermediate deck setups for demolition works to intermediate levels
- Protection deck to be installed over orchestra pit to allow split level works

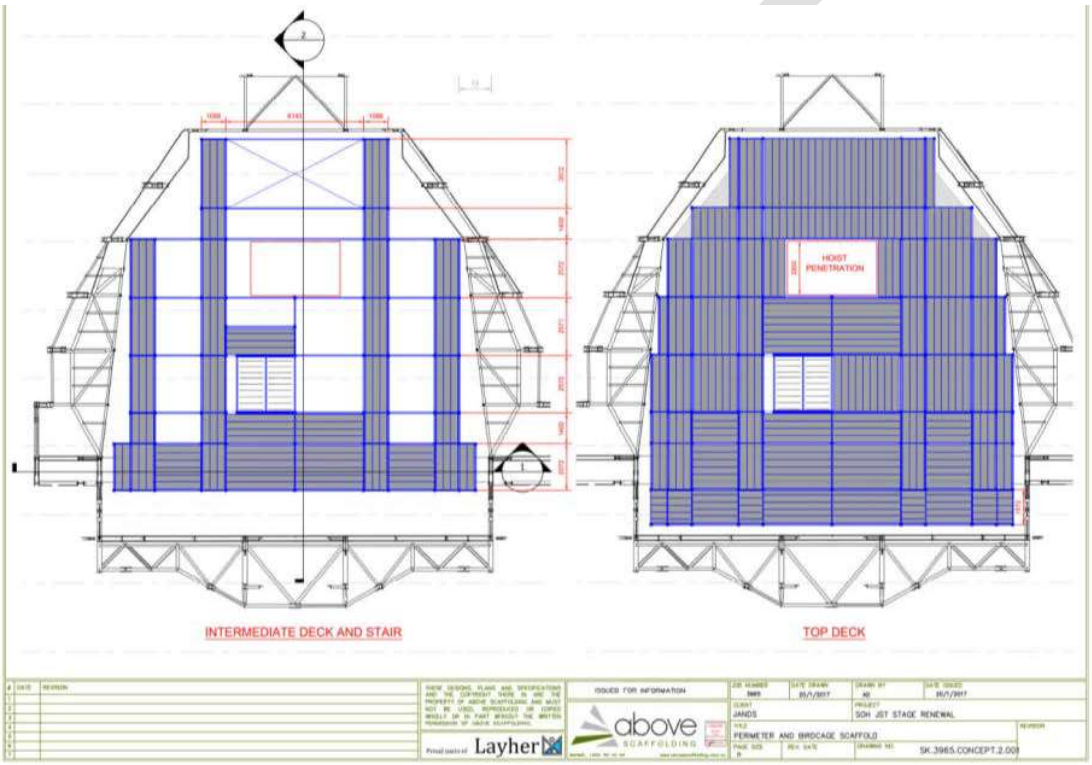


Figure 151- TMP Scaffold Plan View Shop Drawing

5.3.15 Main Theatre

The best form of access to carry out the works will be via a birdcage scaffold. The scaffold is the safest form of access and will consist of various decks, internal stretcher stairs, hoisting locations and loading bays to provide access and better efficiencies through multiple work fronts for the following work:

The scaffold birdcage shall be built in 2 halves. The eastern western side split from the centre is first and the gear will be recycled across to the west.

- A small man/ materials hoist will be incorporated into the design which will serve from level 2, level 4, new follow spot room and up to top deck level
- A rated deck for materials to be moved along shall be installed from the hoist to nominated work areas
- Installation of new constellation lighting to soffit
- Installation of new sound system to main theatre walls, ashtrays and soffit
- Removal of the existing lighting bar at the rear of the theatre and relocating it to the existing follow spot area
- Construction of the new follow spot rooms at the rear of the theatre
- Give access to level 4 and 3 northern foyers for lift 31 works
- Works to the proscenium – removal of existing speakers, installation of new speakers, modification to joinery

Figure 152- Auditorium Scaffold

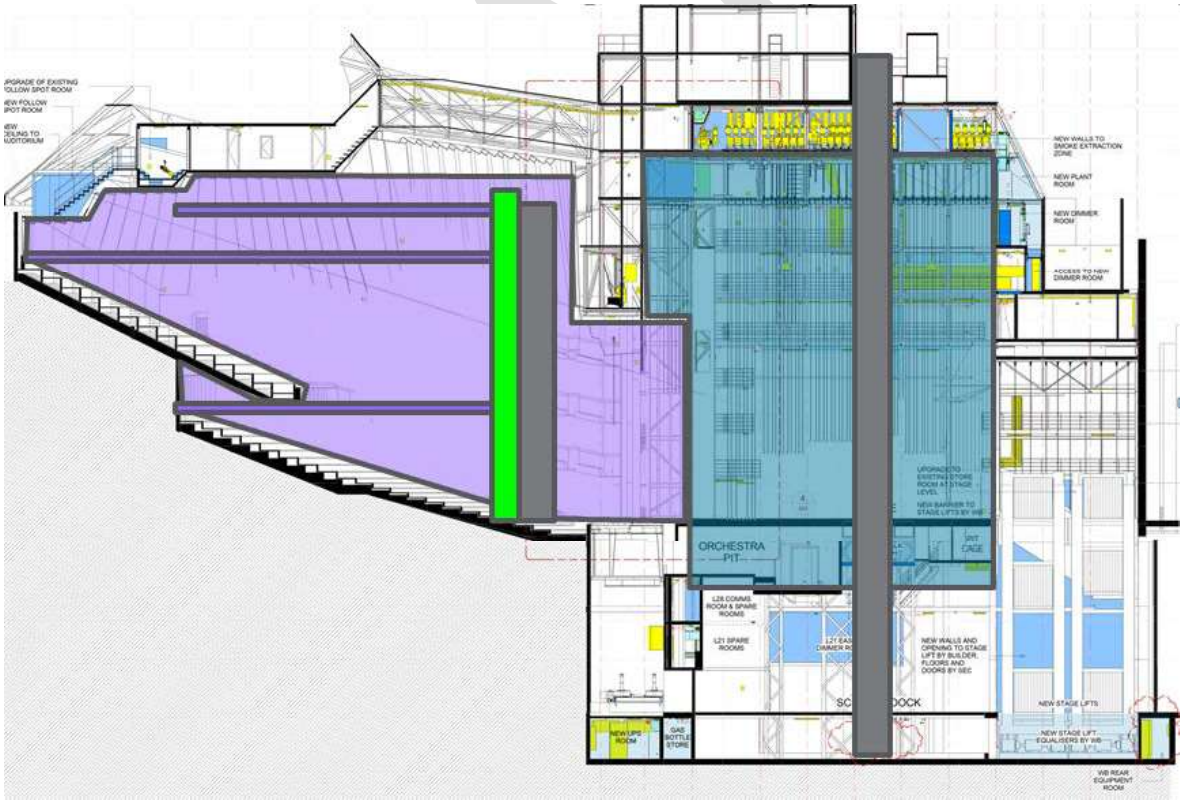


Figure 153- Auditorium Scaffold

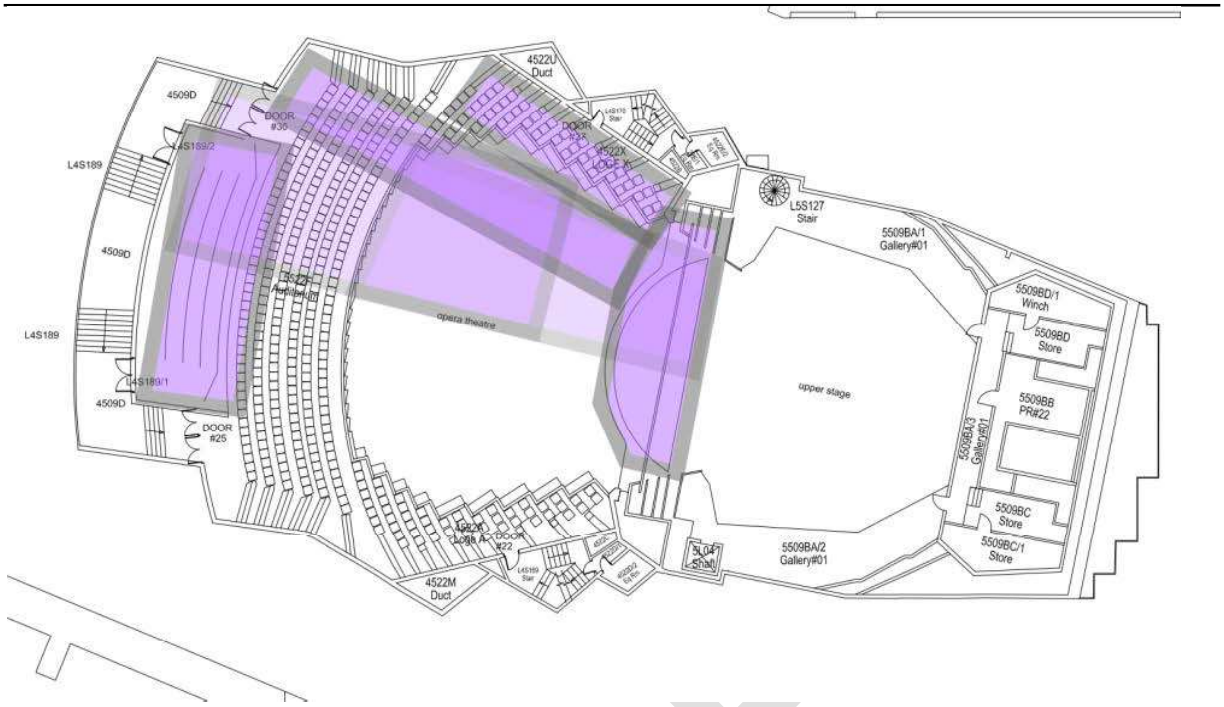


Figure 154- Auditorium Scaffold Plan view

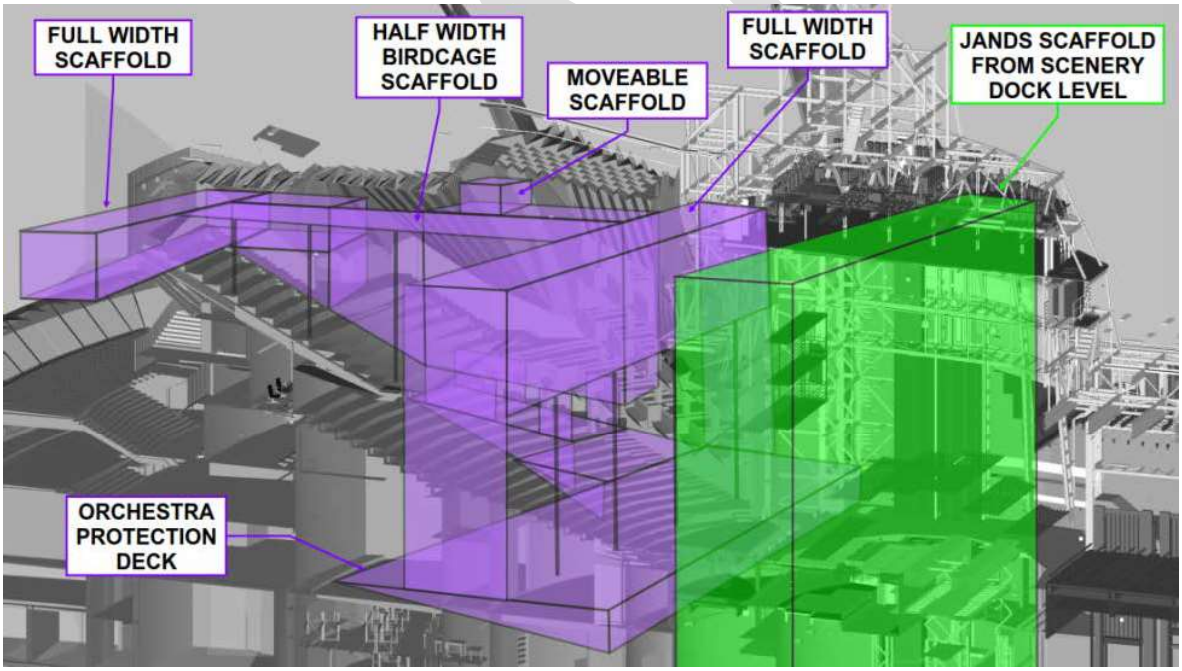
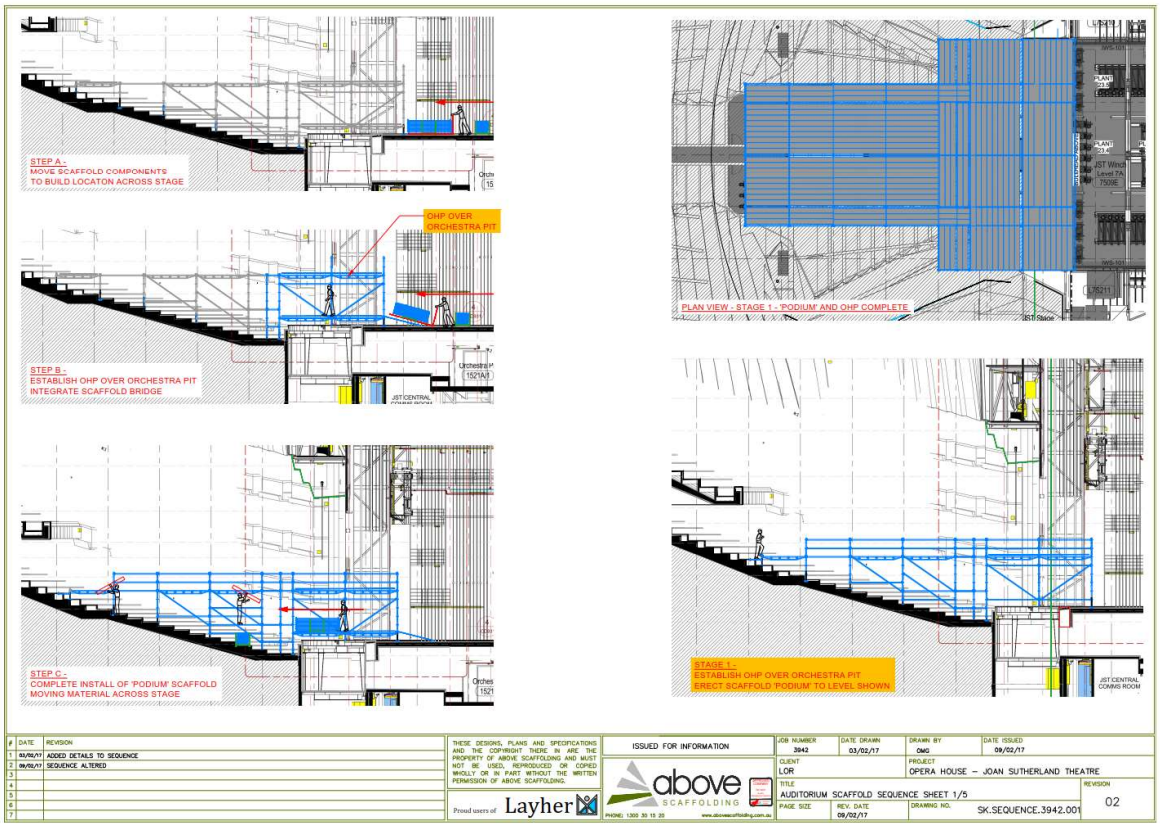
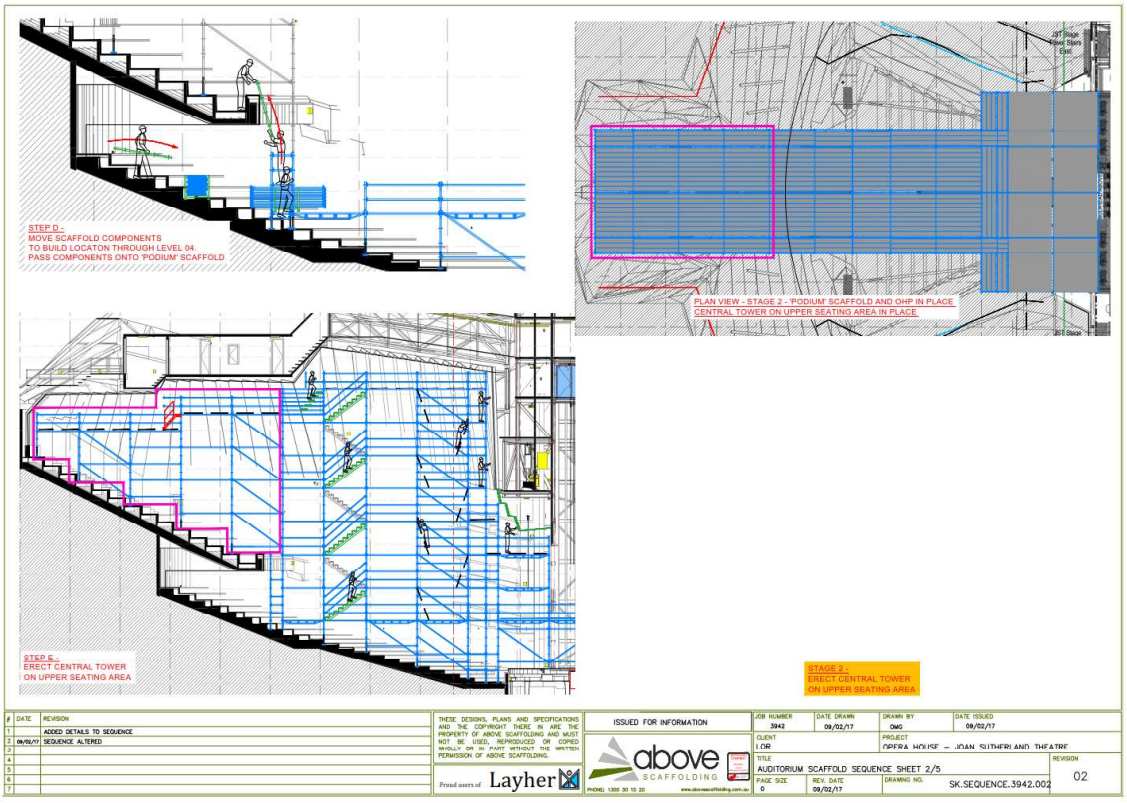


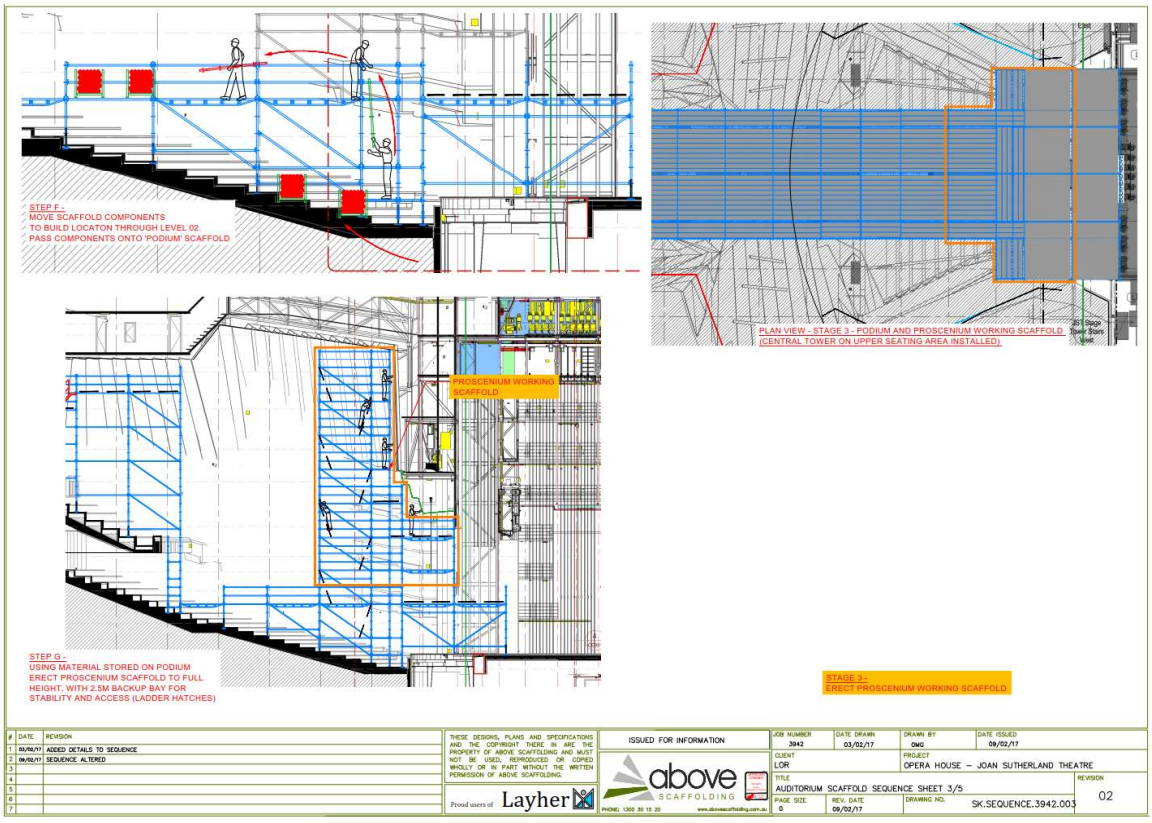
Figure 155- Indicative Graphic of Possible Scaffolding Solution

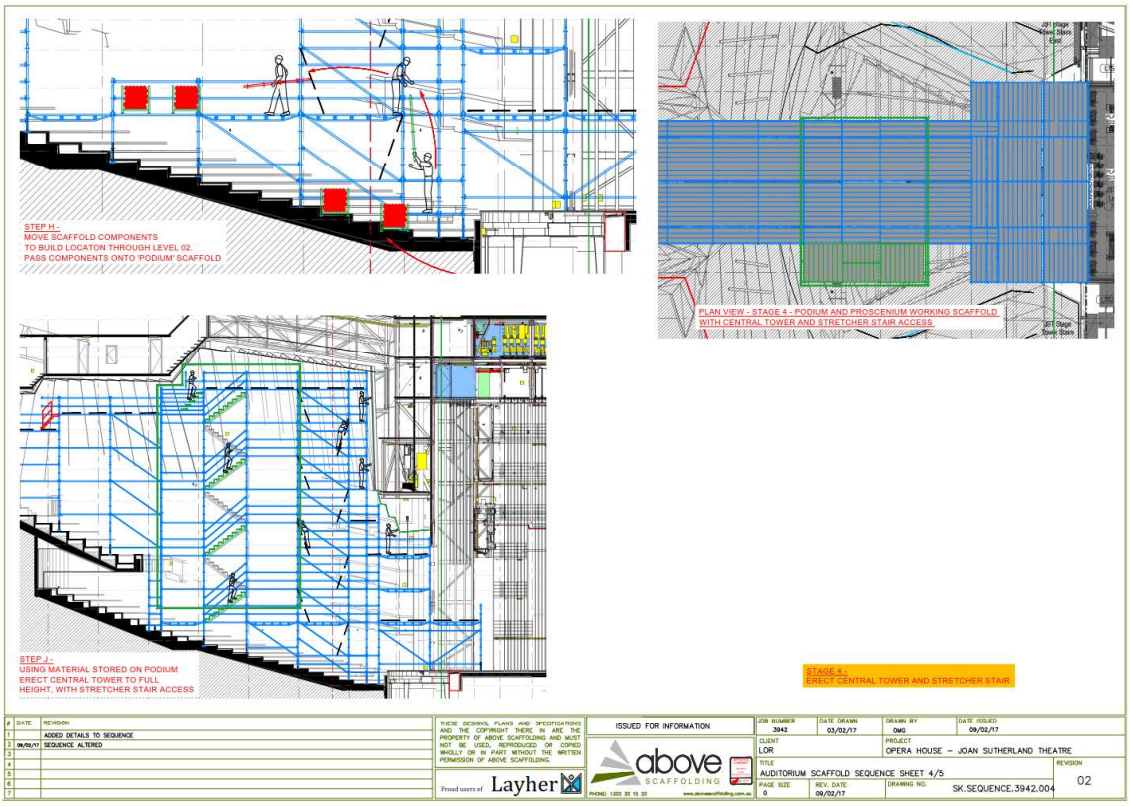
5.3.15.1 JST Auditorium Scaffold Methodology

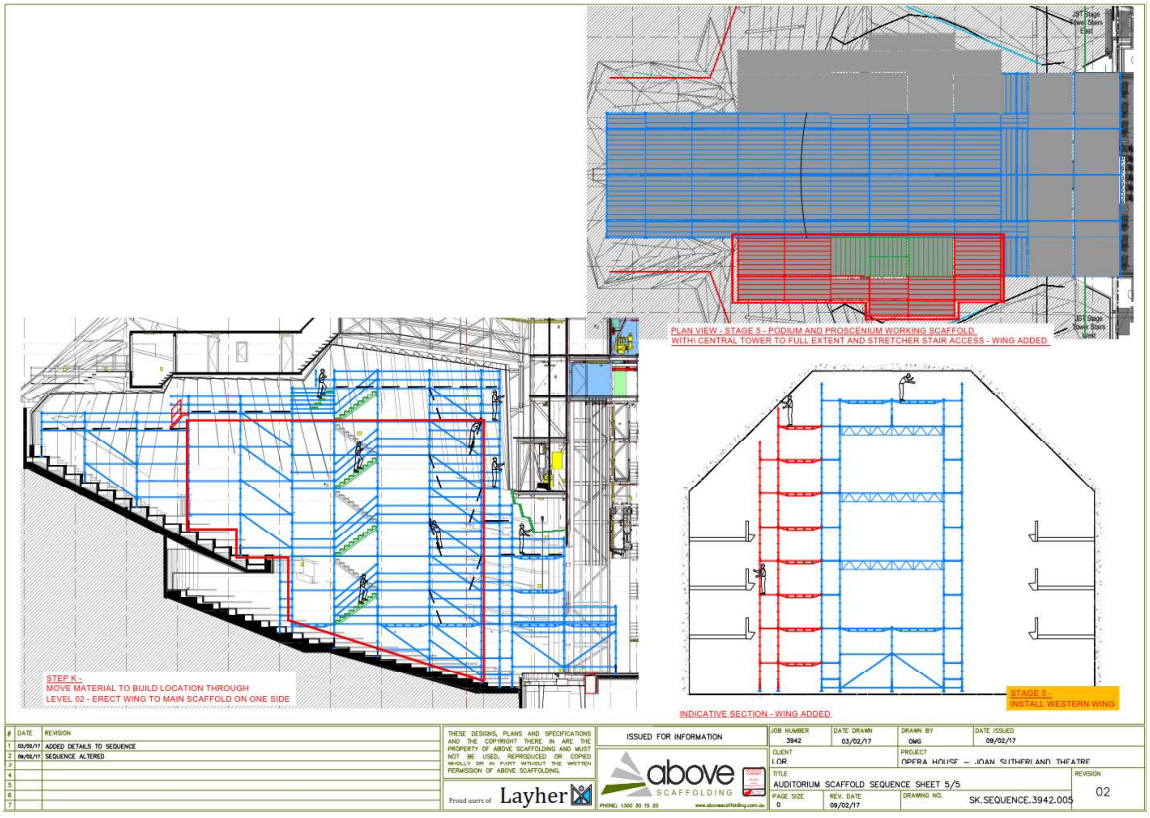
Preliminary Shop drawings for the JST Auditorium Scaffold sequencing are included below.











5.3.16 New and Refurbished Lifts

- Lift 31(new) – internal and external scaffold for demolition of existing structure and installation of new lift from level 1 to level 4. Also included is scaffold for materials handling cranage and associated handrail platform.
- Lift 36(new) – internal and external scaffold for demolition of existing structure and installation of new lift from Ground to level 2
- Stair access to lift pits as required
- Access ladders and intermediate decks to internal and external scaffold

Figure 156- Lift 31 Level 4

Figure 157- Lift 31 Level 4 Scaffold

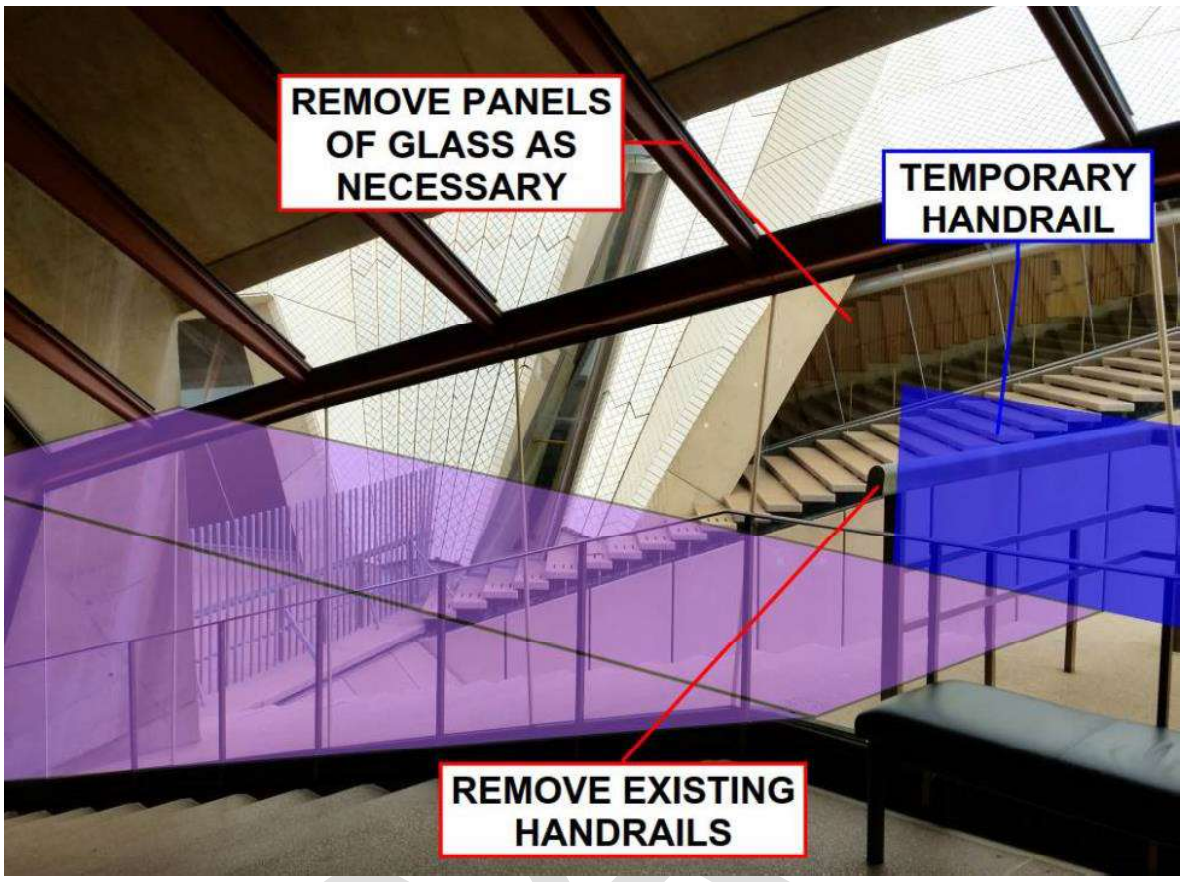


Figure 158- Level 4 Scaffold Landing Deck

5.3.17 Southern Foyer

Figure 159- Southern Foyer Lift 36

Scaffold access and deck platforms for lifting of new mechanical plant to location behind the existing brush box wall joinery

Figure 160- Southern Foyer Plant room 22 Scaffold

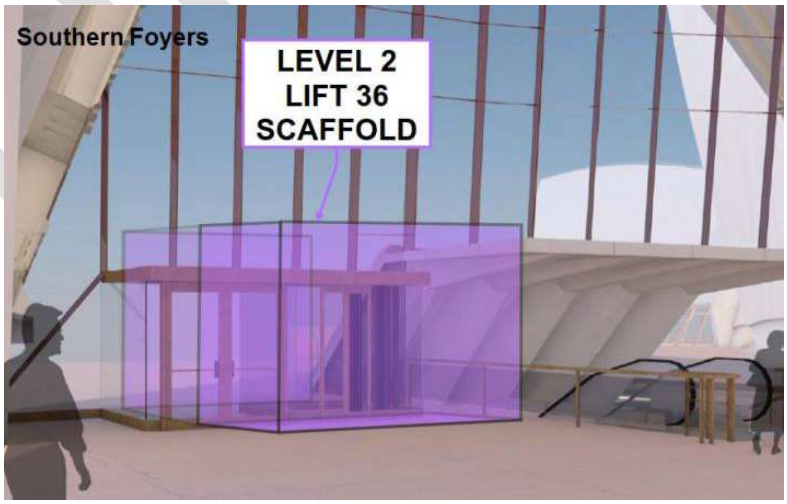


Figure 161- Lift 36 Southern Foyer Scaffold

Ballet Room

- Ballet room old – scaffold for removal of joinery and cutting of new opening both sides
- Ballet room new – scaffold to demolish new windows and doors, scaffold to support existing slab to be demolished

5.3.18 Function Centre

- Function centre – scaffold for demolition of mezzanine plantroom slab and new structural strengthening of columns and beams, scaffold for new western entry and hood construction,

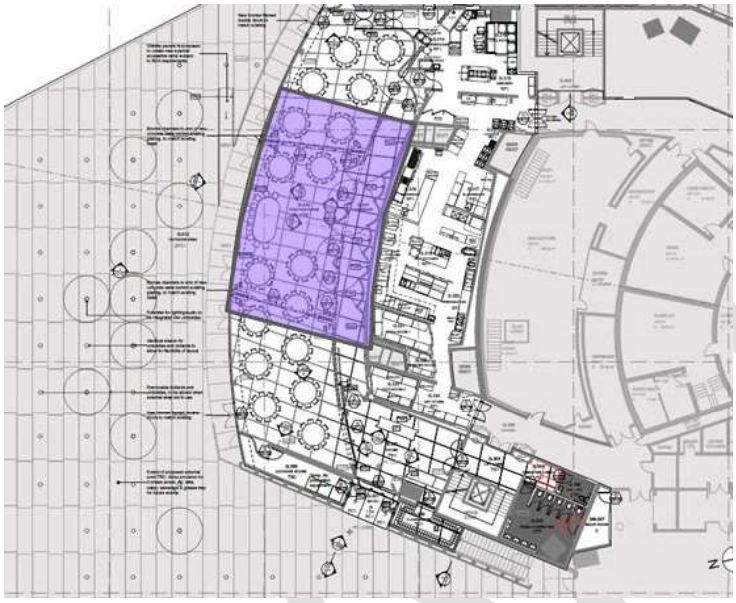


Figure 162- Function Centre Scaffold

5.3.19 Access Tunnels

- Tunnel scaffold for edge and wall finishes southern and northern sides

Figure 163- Access Tunnel Scaffold

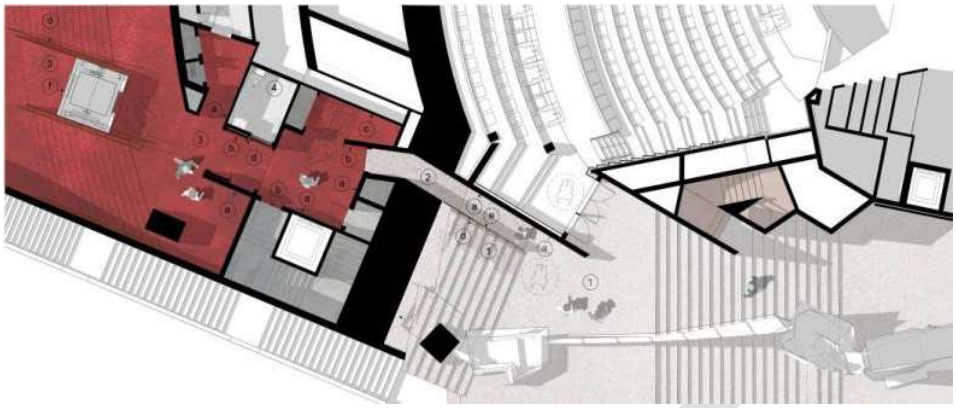


Figure 164- Plan View Access Tunnel

5.3.20 Base Building Services

Building services will be installed according to programme in multiple work fronts.

6. Access Plans

All logistics and site establishment plans have been reviewed in conjunction with SOH. This is inclusive of pedestrian and worker travel routes, materials handling and vehicular access routes. In order to communicate the approved logistics information, a separate Site Establishment, Logistics and Temporaries Plan as well as a 3D Navisworks model have been developed.

6.1 2D Plans

Excerpts from the 2D representations Site Establishment, Logistics and Temporaries Plan are shown below. As before, pedestrian routes, materials handling, vehicular access, hoarding lines, crane lifting locations, posted personnel as well as temporaries are shown.

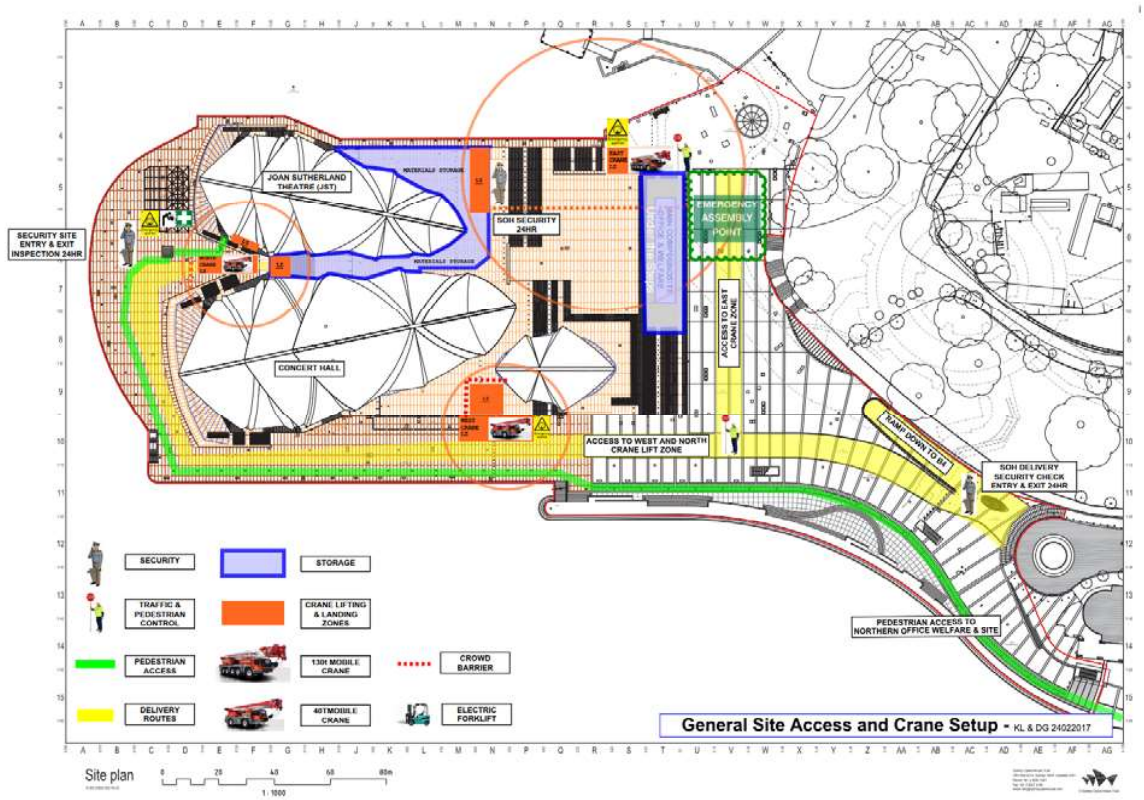


Figure 165- Overall Site Plan

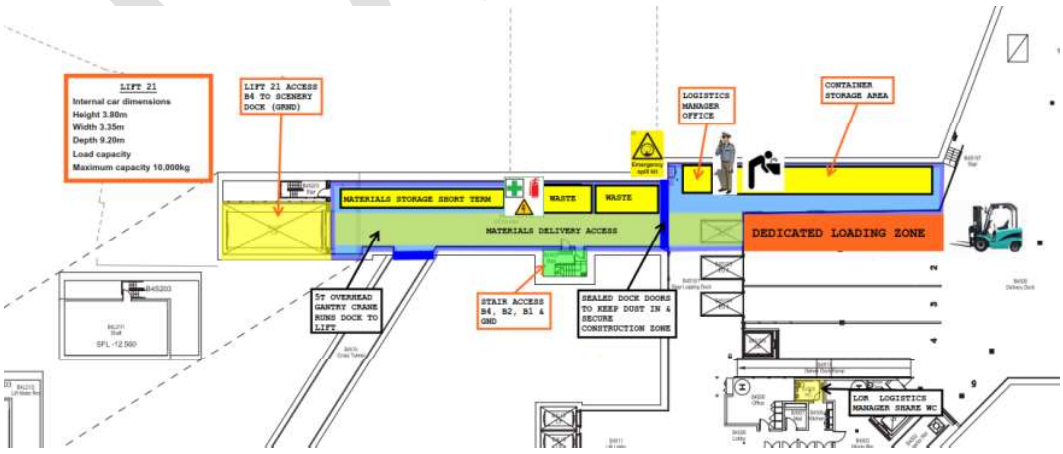


Figure 166- B4 Loading Dock

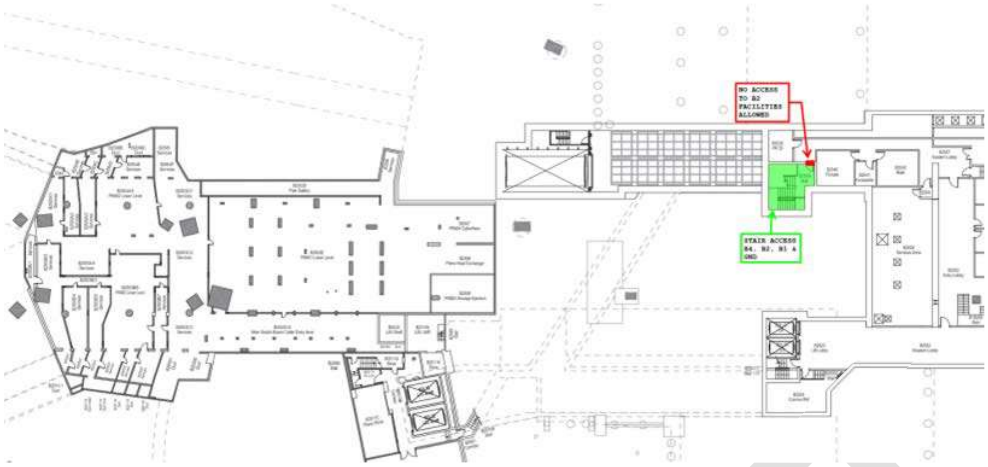


Figure 167- B4 Access

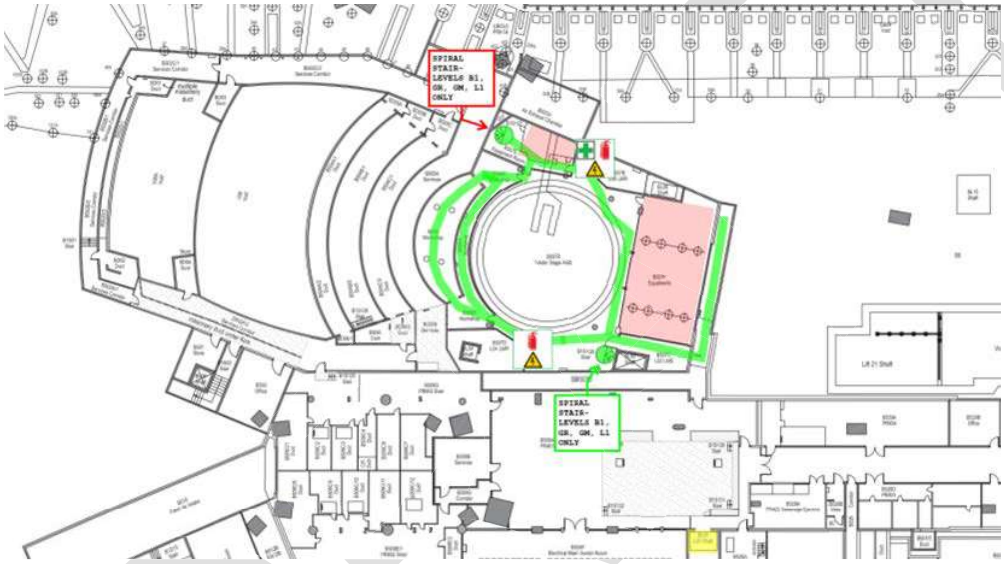


Figure 168- B1 Access

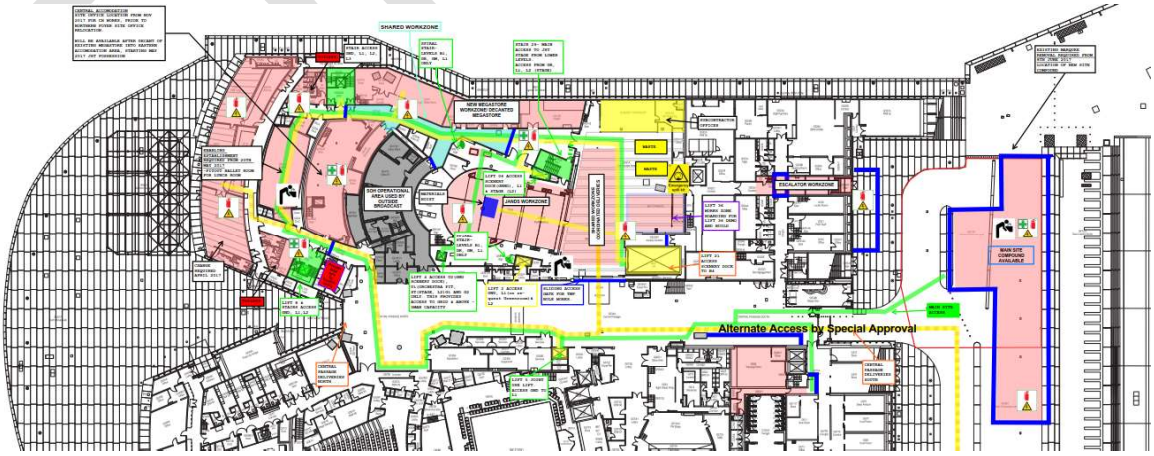


Figure 169- Ground Floor Access

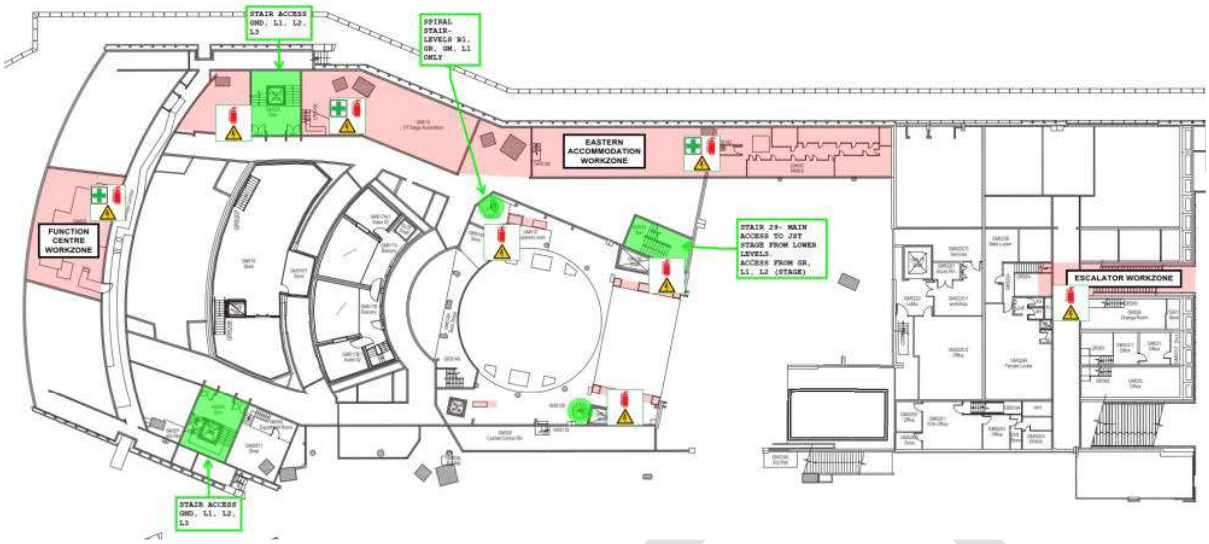


Figure 170- Ground Mezzanine Access

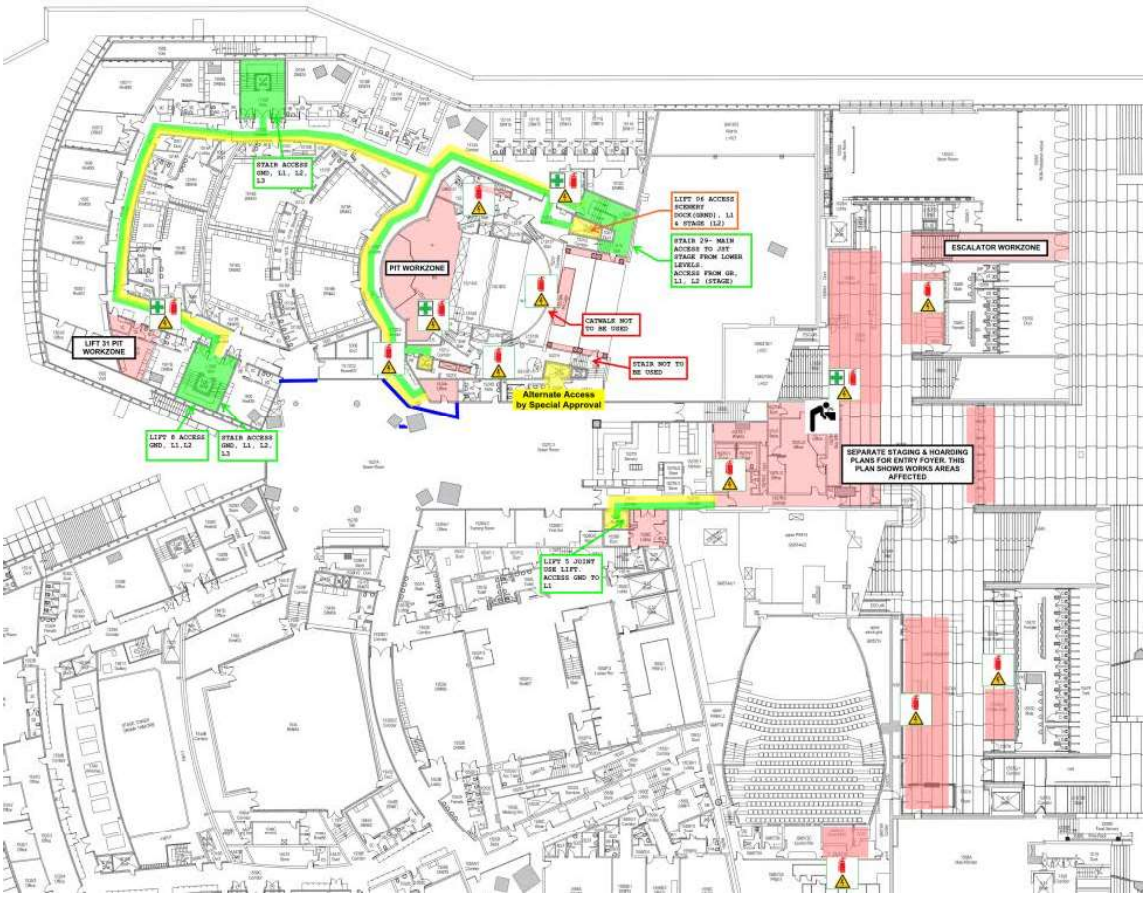


Figure 171- Level 1 Access

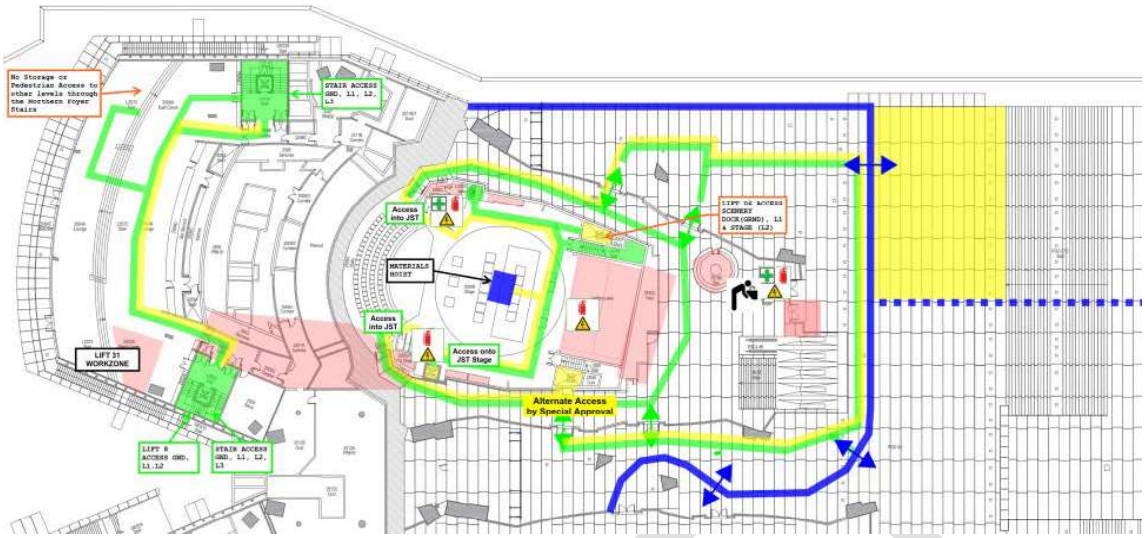


Figure 172- Level 2 Access

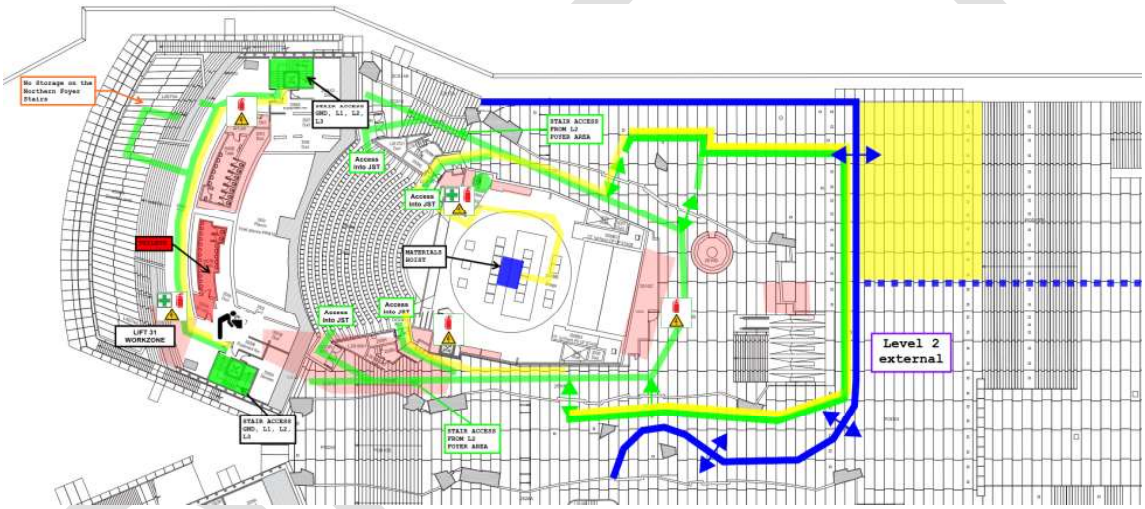


Figure 173- Level 3 Access

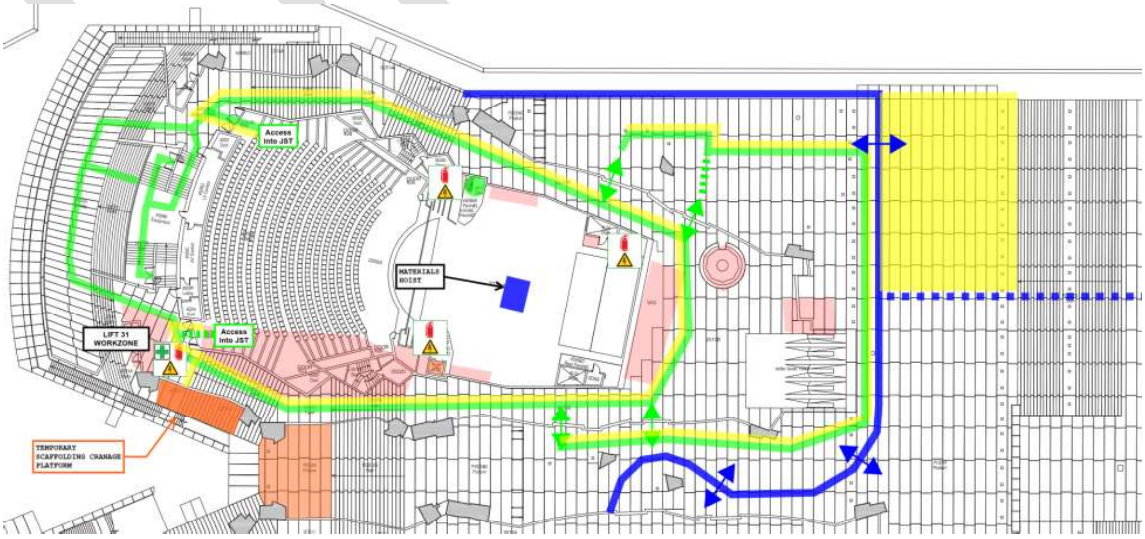


Figure 174- Level 4 Access

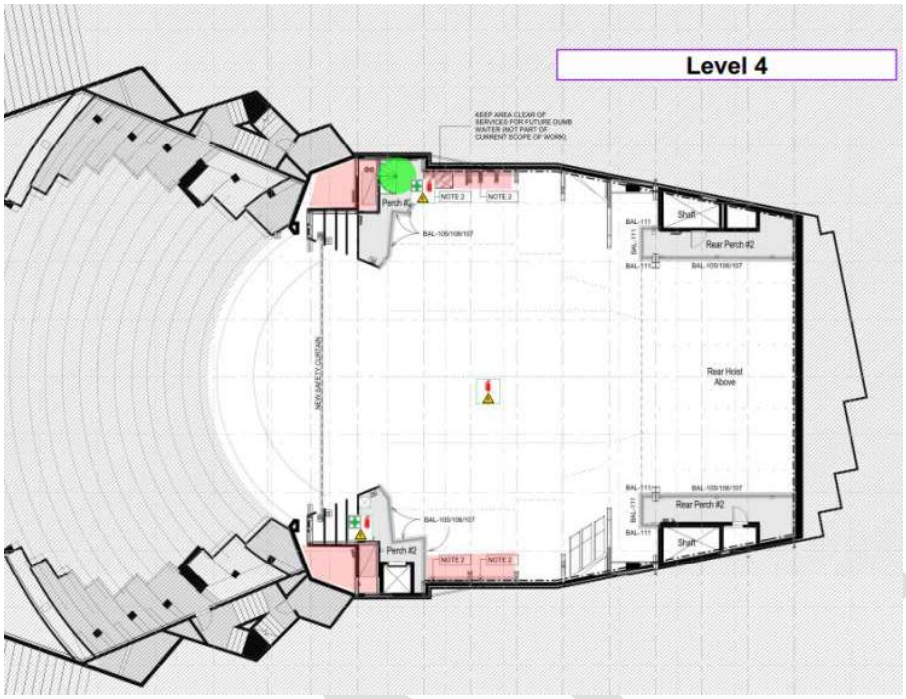


Figure 175- Level 4 Stage Access

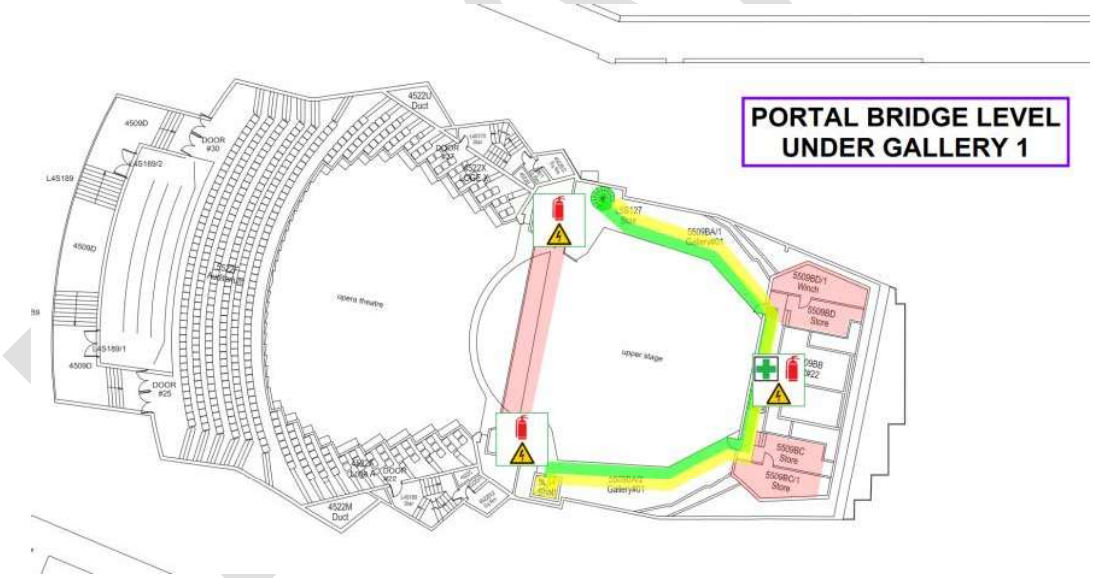


Figure 176- Level 5 Portal Bridge Access

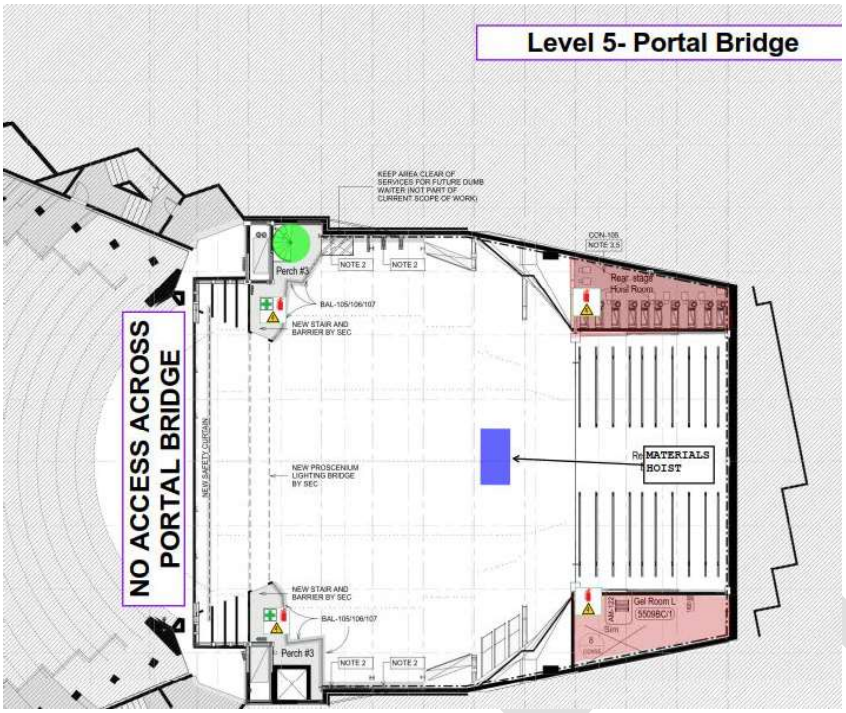


Figure 177- Level 5 Access

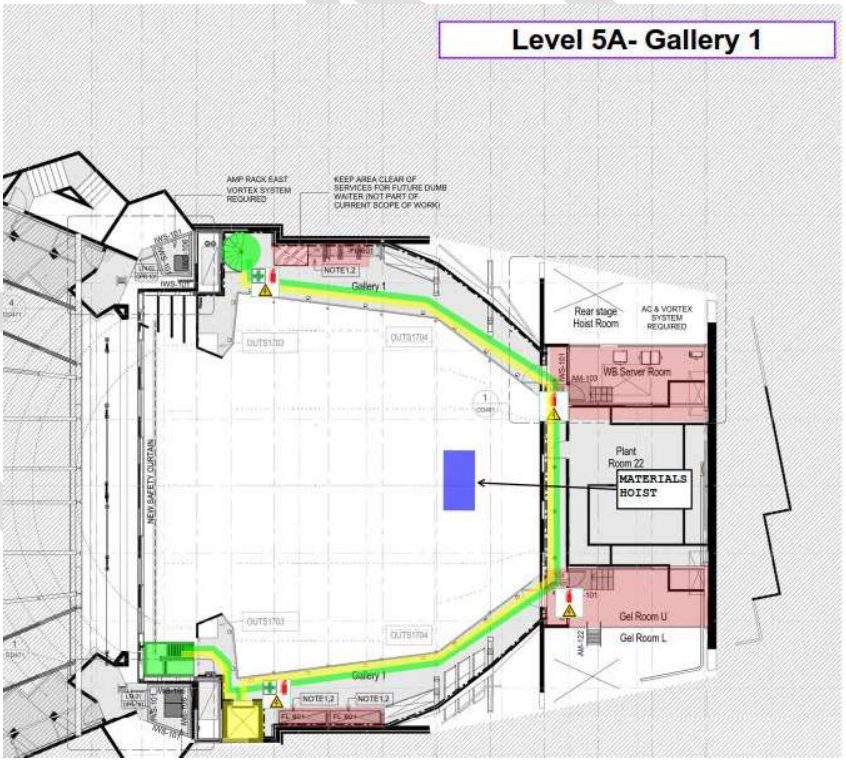


Figure 178- Level 5A Access

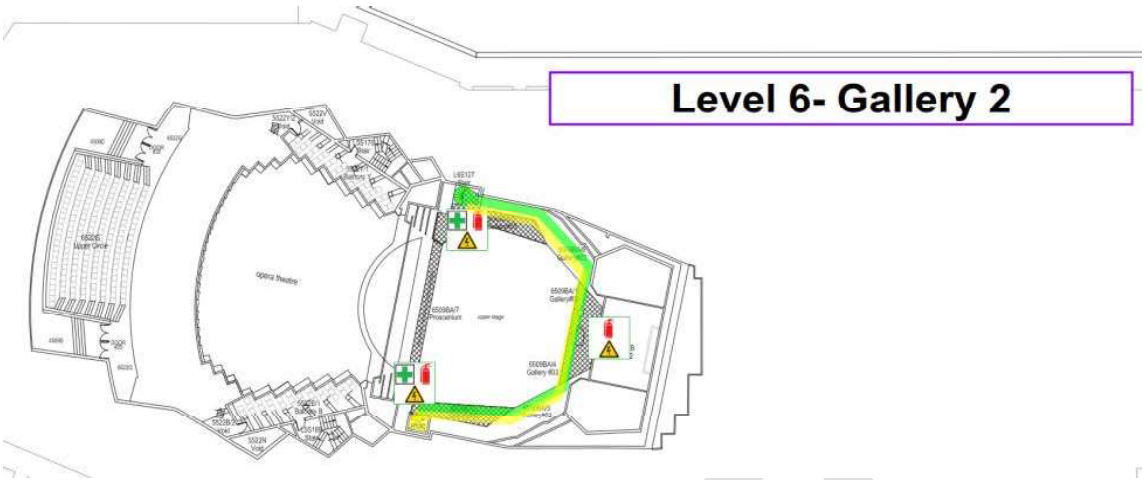


Figure 179- Level 6 Gallery 2 Access

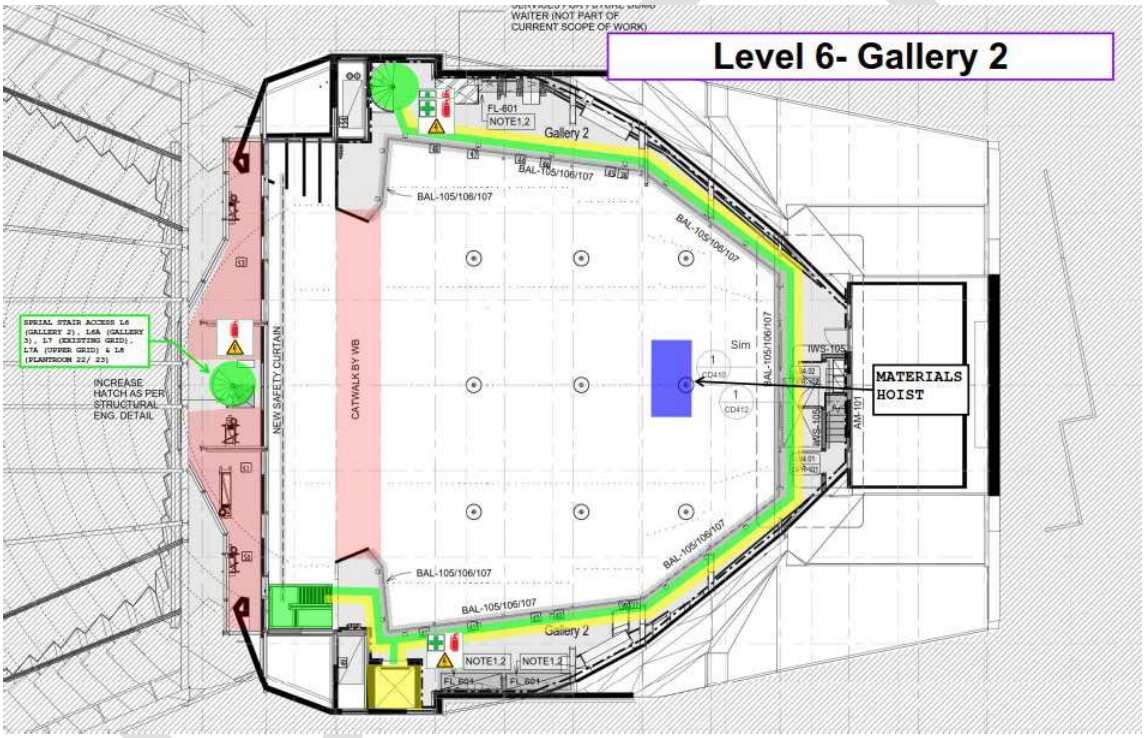


Figure 180- Level 6 Gallery 2 Access

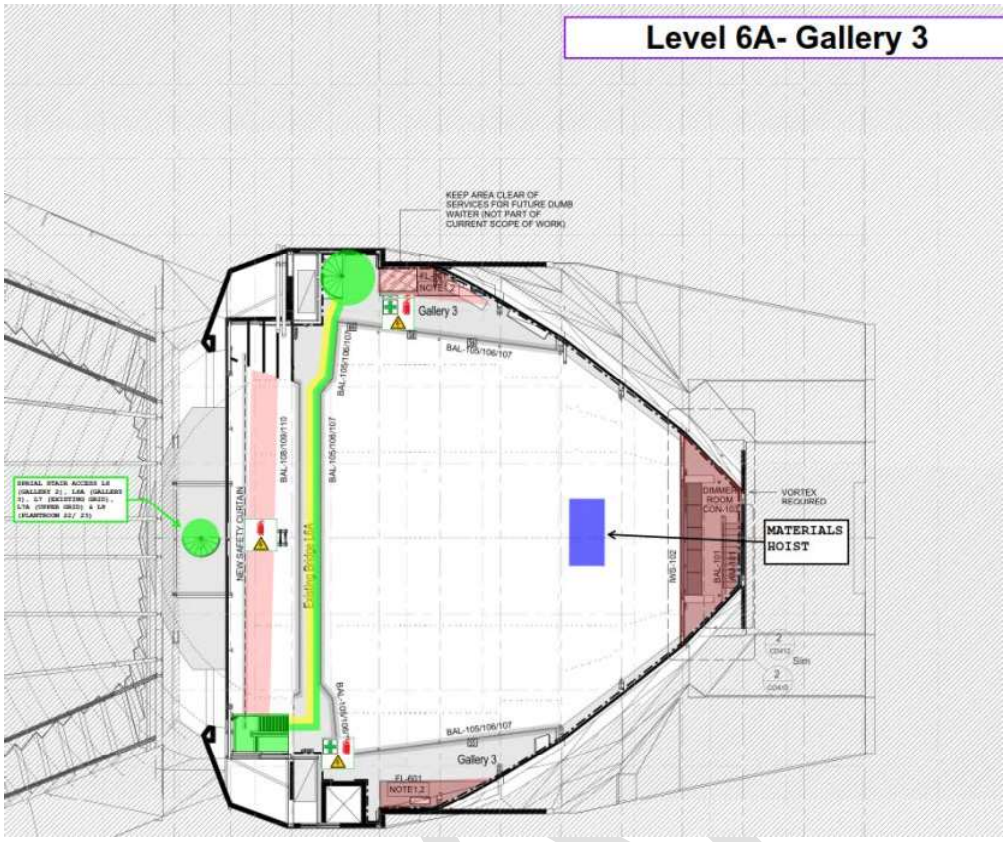


Figure 181- Level 6A Gallery 3 Access

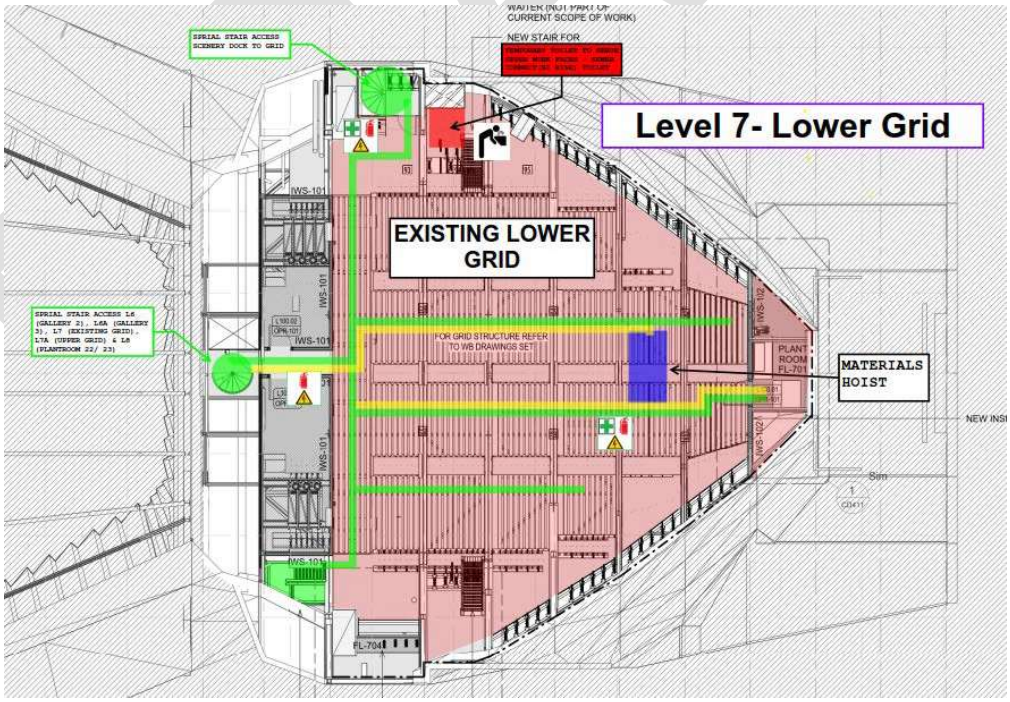


Figure 182- Level 7 Lower Grid

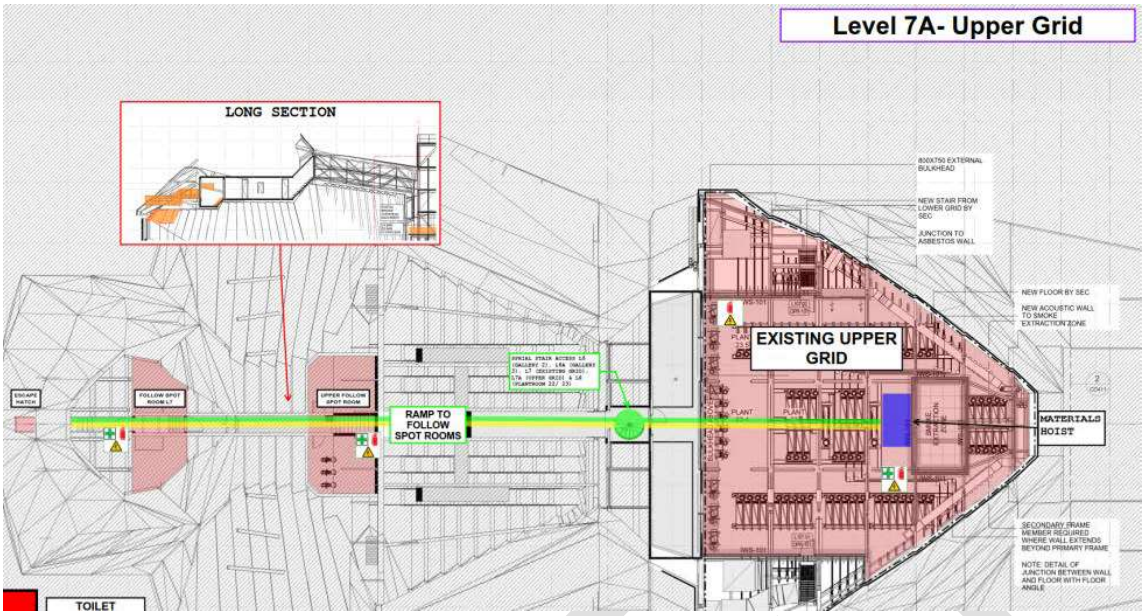


Figure 183- Level 7A Upper Grid Access

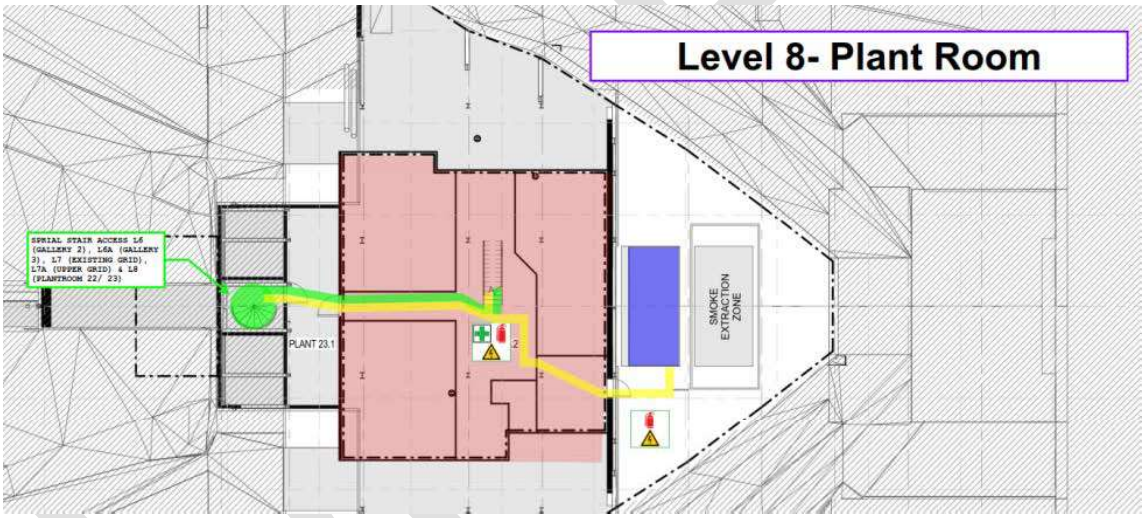


Figure 184- Level 8A Plantrooms

6.1.1 SOH Logistics Plans

The SOH have a set of logistics plans which are utilised for day to day operations of the buildings. Some of these plans will still be applicable during the construction works. These are shown as follows:

6.1.1.1 Northern Broadwalk Truck Path Marquee Loading

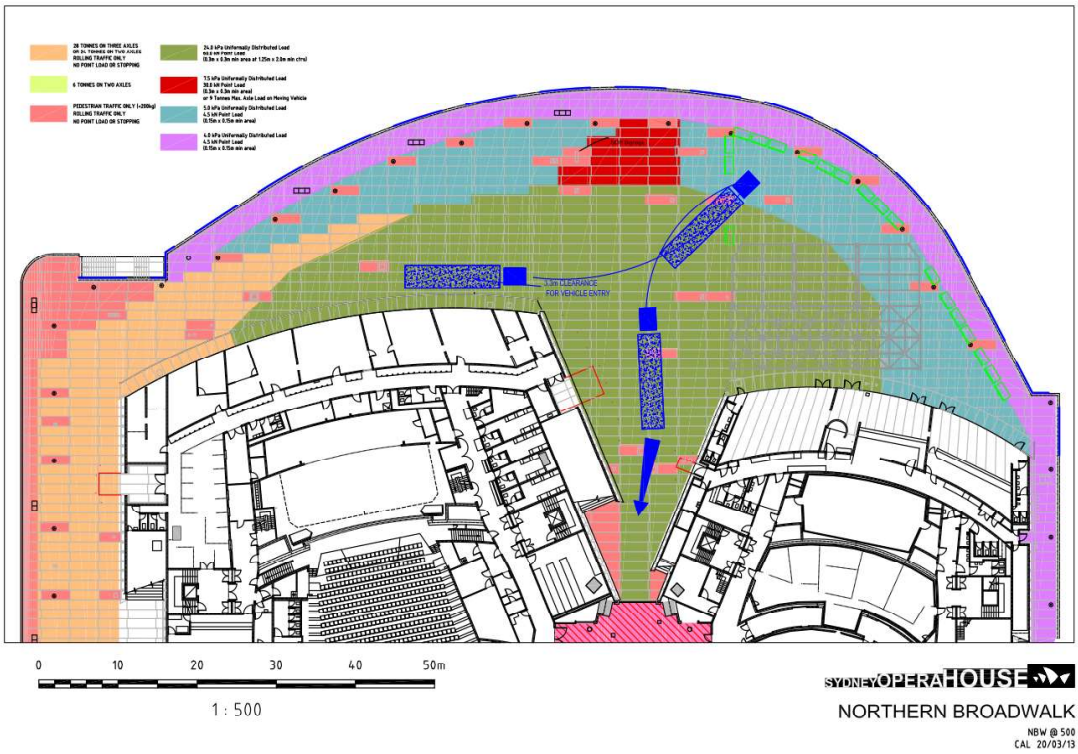


Figure 185- Northern Broadwalk Truck Loading Path

6.2 3D plans

To better convey the information described in the 2D plans, a 3D Navisworks model was developed with the access routes overlaid to allow any users to explore and interact with the existing building fabric without having to walk the site. The Navisworks file is available on the LOR Sydney Opera House Server, with the path available in the Appendix of this document. Several screenshots from the model are displayed below.

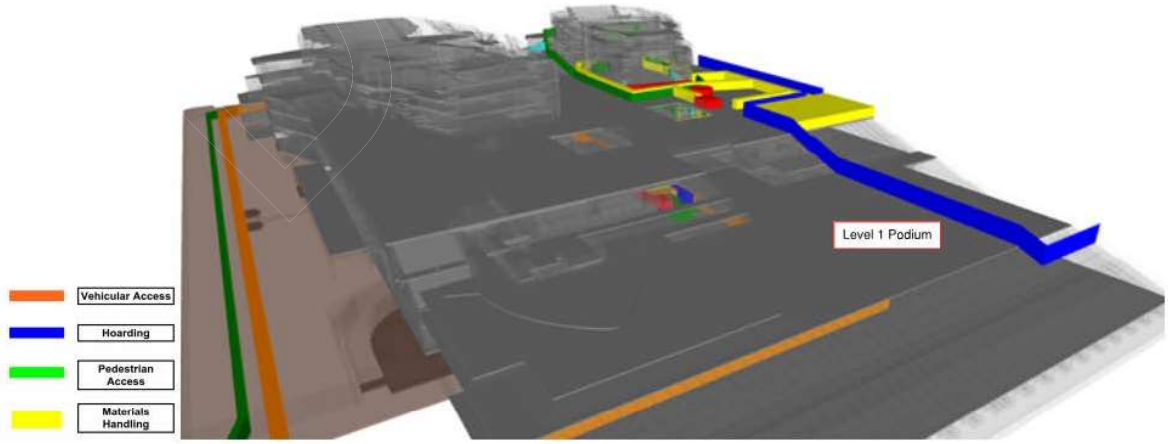


Figure 186- Ground Floor Section of the Navisworks model

7. Materials Handling

7.1.1 Basement 4 Loading Dock

Basement 4 is the main delivery loading dock for Sydney Opera House (SOH).

Works Packages 1A, 1B & 1C have been allocated Bay 1, the side loading dock and the corridor to Lift 21. There will be a dust proof door on the loading dock to stop construction dust entering the main dock area

Loading and unloading of materials can be done utilising the following methods:

- Existing 5t gantry crane which runs from the front of Bay 1 to lift 21
- 2.5t electric forklift with rotator
- Electric pallet trolley
- Existing dock leveller

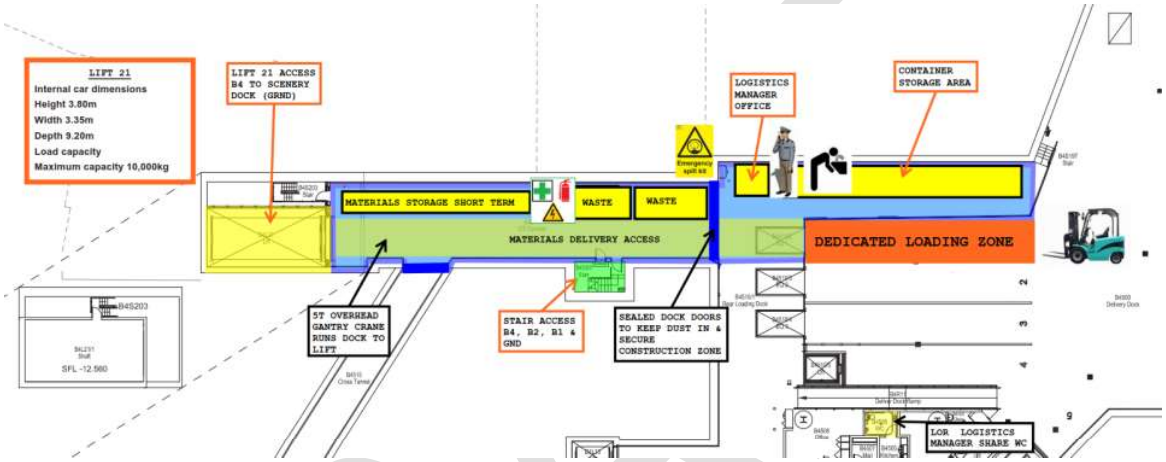


Figure 187- Loading Dock Level B4

7.1.2 JST Ground Floor Internal Scenery Dock

- Access to the JST scenery dock is via either lift 21(from B4) or from Central Passage. Access to Central Package is via the external broadwalk.
- Central Passage used to be the main delivery corridor to SOH. The use of Central passage is to be kept to a minimum and notification is required.

Loading and unloading of materials can be done utilising the following methods:

- 2.5t electric forklift with rotator
- Small City Crane
- Electric pallet trolley
- Lift and Reach Electric Pallet trolley

7.1.3 External Broadwalks

External to SOH there are marked crane zones north, east and west. Within these zones are 3 types of mobile cranes that will be utilised.

Vehicular deliveries to these locations are to be booked on through Mobile Port. The deliveries will be escorted in using a traffic controller.

Loading and unloading of materials can be done utilising the following methods:

- 2.5t electric forklift with rotator
- 130t, 40t, 20t mobile cranes
- Electric pallet trolley
- Hiab truck

7.1.4 Level 1 & 2 Upper Podium & Cleavage areas

From the crane lift zones materials will be lifted into the landing zones on the podiums. These zones will have crowd barriers around them to stop pedestrians from entering. Protection will be placed on the precast planks and travel paths

Loading and unloading of materials can be done utilising the following methods:

- Electric pallet trolley
- Hand pallet trolley
- Lift and Reach Electric Pallet trolley

7.1.5 JST Auditorium, Grid and Plantroon 22,23

- Access to these areas will be via either lift 21(from B4), Lift 2,4,6,8
- A materials hoist will be installed through the stage for the TMP.
- A materials hoist will be installed within the auditorium birdcage scaffold
- Central Passage used to be the main delivery corridor to SOH. The use of Central passage is to be kept to a minimum and notification is required.
- Loading and unloading of materials can be done utilising the following methods:
- 2.5t electric forklift with rotator
- Small City Crane
- Electric pallet trolley
- Lift and Reach Electric Pallet trolley
- Materials hoists

8. Plant and Equipment

8.1.1 Forklift

Laing O'Rourke proposes to use 2off 2.5ton electric forklifts on the project. The forklift will be used to unload vehicles from within B4 loading dock, the JST Scenery dock and the external broadwalks.

The forklifts will be road registered and managed by the Laing O'Rourke staff that hold relevant qualifications and licenses to operate the plant.

Figure 188- Toyota Electric 2.5t forklift with rotator

Figure 189- Electric Pallet Trolley

8.1.2 Mobile Cranes

The use of Mobile Cranes will be required to load materials in and out of the following areas:

- northern main site compound
- northern cleavage level 3
- northern landing zone level 4
- eastern level 1 and 2 stairs
- western level 1 and 2 stairs
- JST ground floor scenery dock TMP equipment
- Eastern accommodation external precast

8.1.3 130t All terrain Mobile - to be used within the east crane lift zone

The Grove GMK 5130 is an all-round general hire crane. Able to fit into some tight sites where truck cranes use to operate.

This crane has 60m of main boom and an 18m fly and needle as standard, with an additional 14m insert available. Giving the GMK 5130 a dominant lifting range on any site / project.

- Boom Size 12.9m - 60m
- With fly and needle 11m to 32m available
- Max tip height: 95m
- Running Gear 5 Steerable Axles
- Length 14.090m
- Width 2.75m
- Height 3.91m
- Outrigger Footprint: 8m x 7.5m - 4 point support
- Counterweight: up to 40.1 tons

Figure 190- 130t Mobile Crane

8.1.4 40t Mobile Crane - to be used within the west and north crane lift zone

The Liebherr LTM 1040-2.1- 40t Crane is the benchmark general hire mobile crane.

With its ability to access even the tightest site and still work with amazing results, leaving truck cranes in its wake. With amazing lift charts overall, it is hard to go past the 40t Mobile Crane as the modern slewing taxi crane in the industry.

- Boom size: 10.5m to 45m
- Wrap around fly: 9.5m
- Counterweight: 0t to 6.5t
- Length: 10.608m
- Width: 2.55m
- Height: 3.600m
- Outrigger base: 6.3m x 6.0m
- Max tip height: 49m
- 2 steerable axles

Figure 191- 40t Mobile Crane

8.1.5 22t City Crane - to be utilised within the east and north crane lift zones

Able to keep up with 30t truck cranes in many areas.

Able to access small sites / restricted setup areas. Has the ability to work + mobile on rubber. A versatile crane for the small end of the market.

- Telescopic Boom Size: 6.7m to 28m + 5m fly extension.
- Carrier Dimensions
- Length: 8.46m
- Width: 2.395m
- Height: 3.4m
- Outrigger footprint: 5.8m x 5.8m
- Max tip height: 35m

Figure 192- 22t City Crane

8.1.6 3t Maeda Crawler Crane

The 3t Maeda Crawler Crane is able to access even the tightest of sites.

Whether it's inside shopping centres, plant rooms and workshops or working on suspended slabs and rooftops. This little crane gets in there and does the lifting other cranes cannot do.

- Telescopic Boom Size: 3.7m to 12.49m
- Carrier Dimensions
- Length: 4.115m
- Width: 1.28m
- Height: 1.695m
- Outrigger footprint: 4.88m x 4.5m
- Max tip: 13m

Figure 193- 3t Maeda Crawler Crane

8.1.7 Floating Crane Barge

Potentially going to be utilised to install the precast panels to the eastern accommodation. Times for use are between 12am and 6am due to the ferries ceasing work and the harbour being still.

Figure 194- Floating Barge Crane

8.1.8 Road Access Limitations and Overhead Hazards

- The only access to the Sydney Opera House is via Macquarie Street.
- Access into the Loading dock, JST Scenery dock and external broadwalks is controlled SOH security at the main guardhouse
- Height restrictions Apply to the following areas:
  - B4 loading dock - 4.3metres
  - Under the steps - 3.6metres

- Northern Central Passage entry - 4.4metres from northern doors only
- Due to the high pedestrian activity it is advised that traffic control is to be placed on the broadwalks at the nominated locations

Pavement Weight Restrictions

See detailed plans below

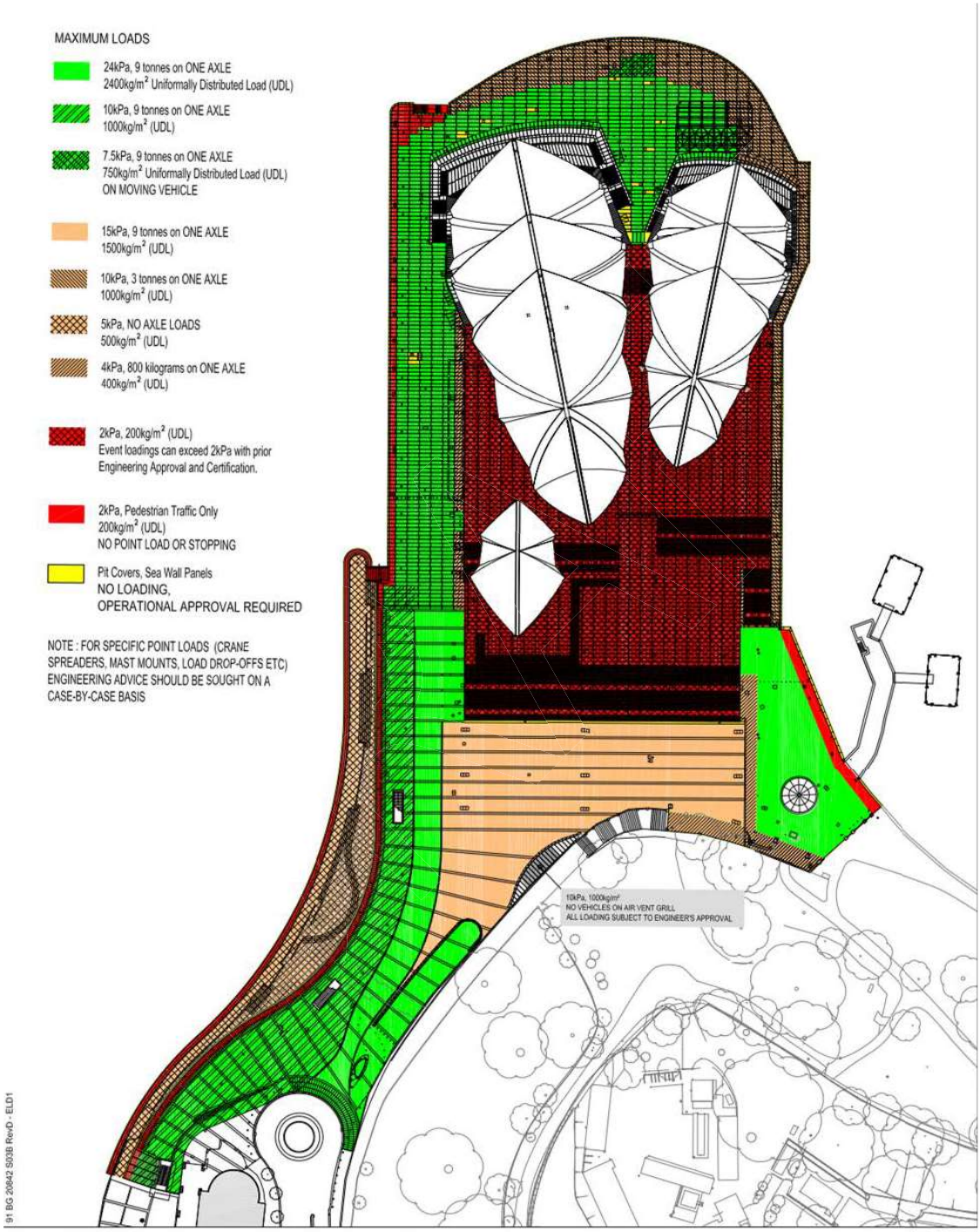


Figure ELD1 : Event Loading Diagram - External Areas
as at December 2013

Figure 195- Pavement Loadings

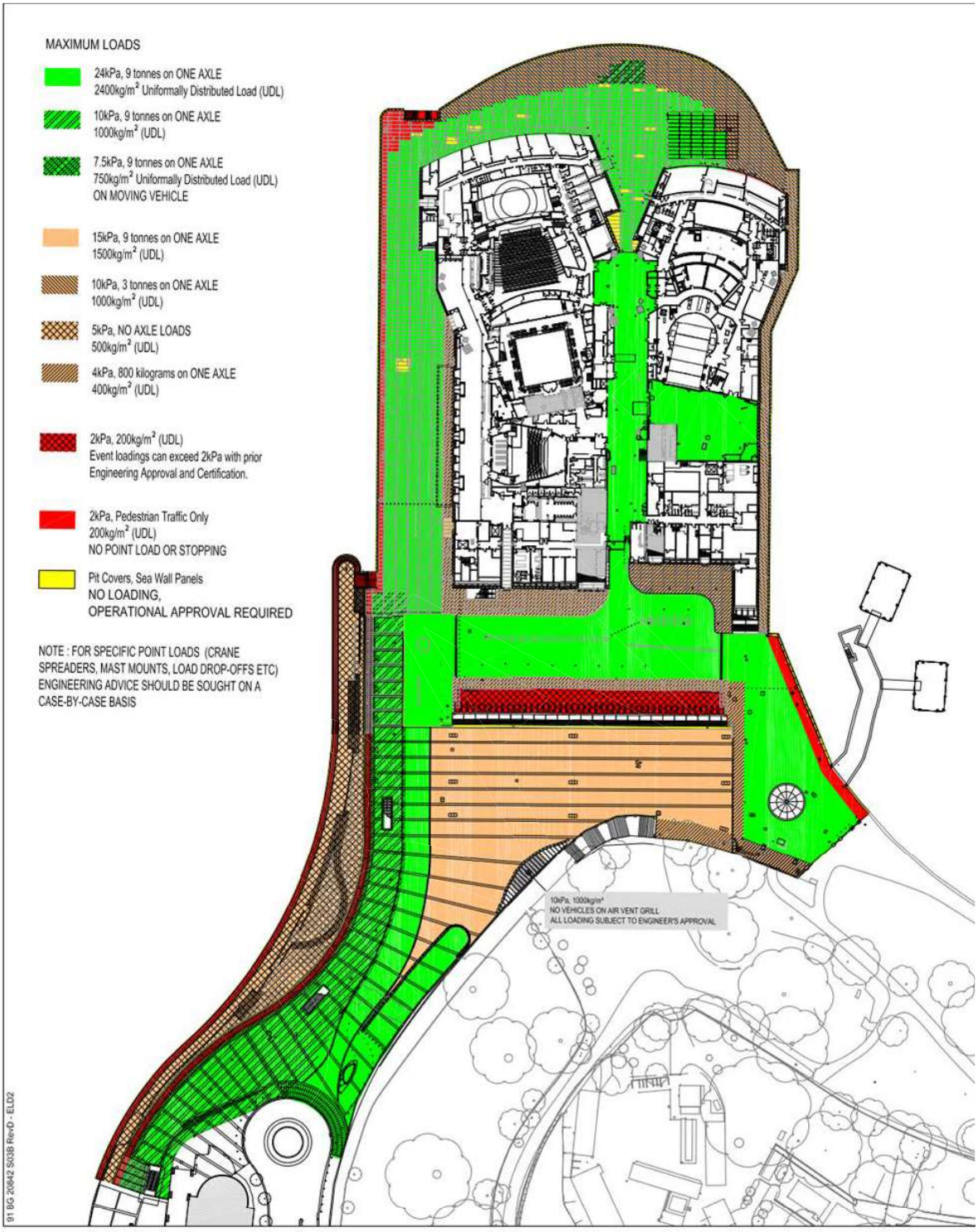


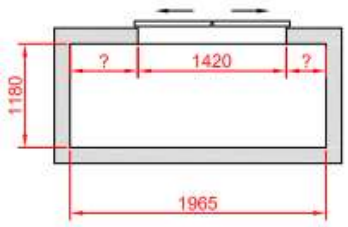
Figure 196- Pavement Loadings 2

8.1.9 Builders Hoists / Lifts

The existing lifts 2, 4, 5, 6, 8 and 21 will be utilised for men and materials. All lifts will have temporary protection installed and the service contract will be taken over by LORAC during construction. At the end of the programme a full detailed clean will be carried out prior to handover.

8.1.9.1 Lift #2

Entry is via ground level off Central Passage. This Lift travels serves from ground to level 1 Green Room then to Level 2 Southern Foyer JST

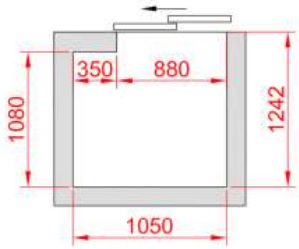


LIFT #02
Joan Sutherland Theatre
West Foyer
Passenger
GR - L1
1150kg

Figure 197- Lift 2 Specs

8.1.9.2 Lift #4

Entry is via ground floor level JST Scenery Dock, orchestra pit stage gallery 1 and gallery 2. This lift is very small and is the only lift that gets up to the level below the Grid



LIFT #04
Joan Sutherland Theatre
On-Stage Staff Only
GR - UG
630kg

Figure 198- Lift 4 Specs

8.1.9.3 Lift #5

This lift is to be utilised to take men and materials from Central Passage up to the Entry is via ground floor central passage to level 1 greenroom corridor. This lift is to be utilised/ shared by current SOH staff and LORAC subcontractors.

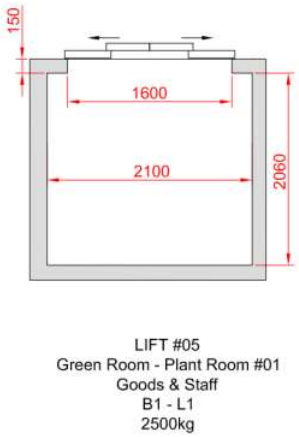


Figure 199- Lift 5 Specs

8.1.9.4 Lift #6

Entry is via ground floor level JST Scenery Dock and the lift serves Level 1 orchestra pit and Level 2 stage.

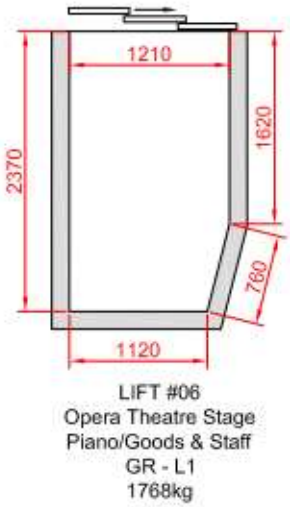


Figure 200- Lift 6 Specs

8.1.9.5 Lift # 8

Entry is via ground floor level JST Scenery Dock and the lift serves Level 1 orchestra pit and Level 2 stage.

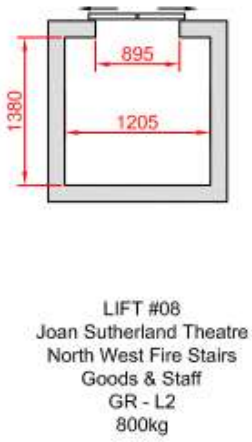


Figure 201- Lift 8 Specs

8.1.9.6 Lift # 21

Lift 21 is the main materials handling lift that serves from B4 loading dock to Ground floor scenery dock.

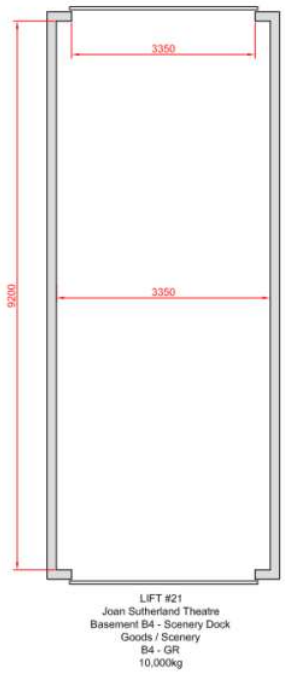


Figure 202- Lift 21 Specs

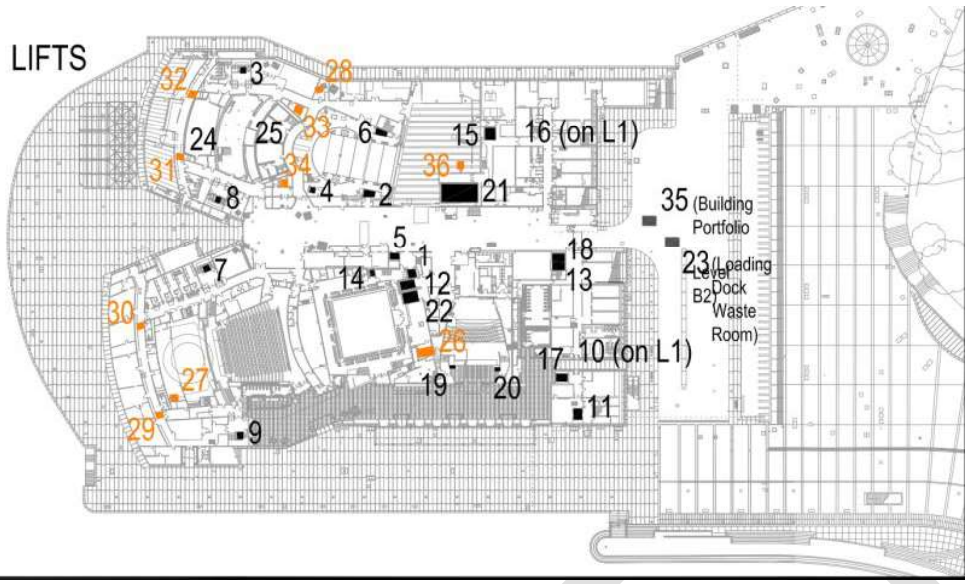


Figure 203- Sydney Opera House Vertical Transport Plan

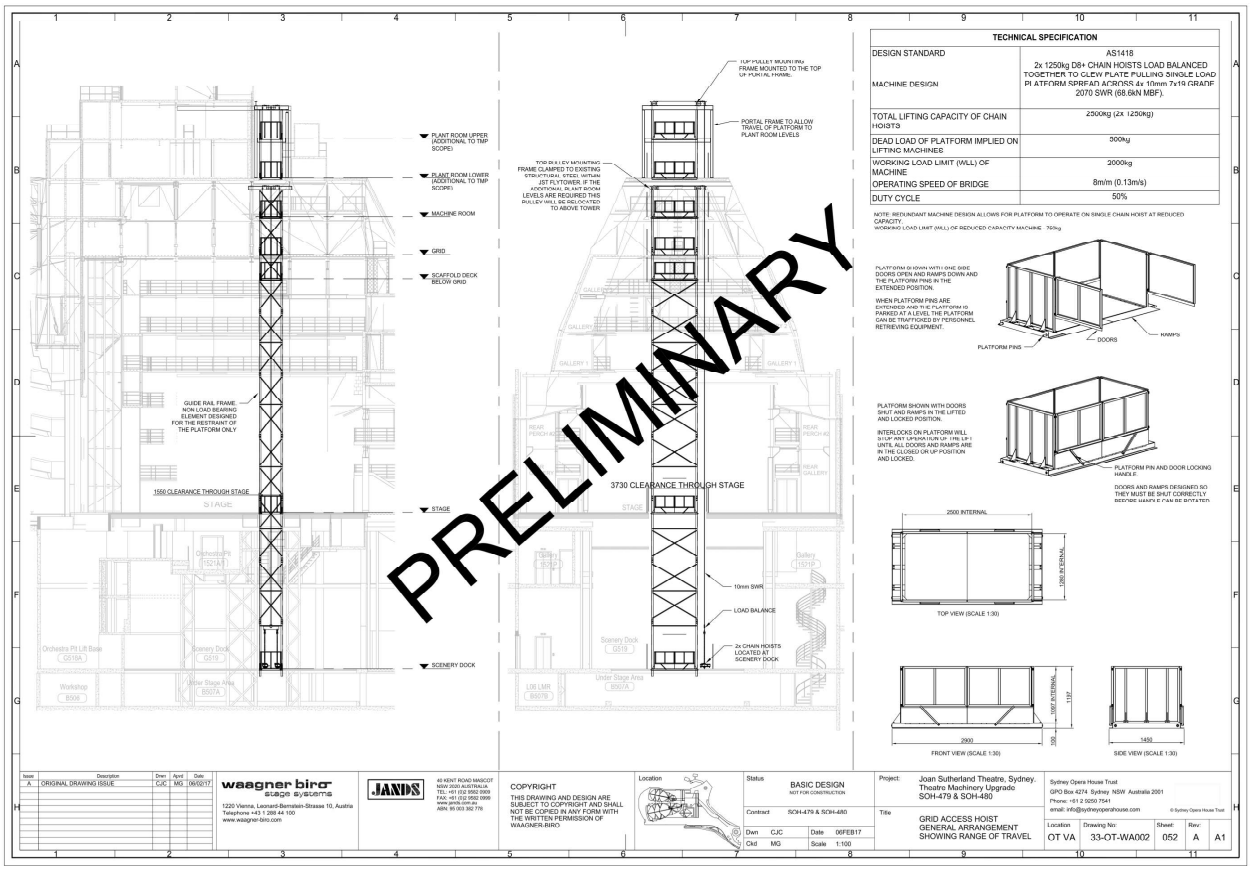
8.1.9.7 JST Hoist (Jands Hoist)

A construction hoist will be installed for the duration of the JST closure. This hoist will installed and commissioned by JANDs who are undertaking early works in and around the vicinity of LORA construction areas. The hoist shall be shared between JANDs, LORA and LORA's subcontractors.

The hoist will run from Ground Level Scenery Dock to Level 8A Plantroom 23. Preliminary Data for the hoist includes:

- 2000kg Safe Working Load
- 2500 x 1280 mm Internal Dimensions

A preliminary drawing showing details for the hoist is attached in the following page.



8.1.10 Deliveries

Sydney Opera House deliveries are carried out using an online booking system called Mobile Dock. This system will be controlled by the LORAC Logistics Manager located within the B4 loading dock.

Figure 204- Mobiledock System

8.1.10.1 VEHICLE ACCESS REQUEST

Go to https://bookings.mobiledock.com/loginsoh.php to make a booking for a vehicle to come onto site.

Log in your using your individual user ID and password to the SOH computer network.

Press the Plus sign in the bottom right of your screen to start making a booking.

Complete the following fields:

- Requested date
- Requested time
- [Auto-populated] Sydney Opera House Staff / Contractor Booking
- Vehicle Licence Plate (if known)
- Driver name (if known)
- Receiver (Use generic Sydney Opera House, or more accurately the ResCo, Restaurant, Contractor, Department, VC Parking)
- SOH Destination (Loading Dock / Vehicle Concourse / Precinct)

Vehicle Type

Choose ONLY one of the next four fields, which will then auto calculate your time onsite in multiples of 10 minutes

- Cartons – estimate of boxes
- Pallets – estimate of pallets
- Roadcases – estimate of roadcases
- Minutes – leave the other three fields blank if you know the amount of minutes you need on site, for example – parking for 90 minutes
- Comments – Please populate with additional details including the Purpose of Visit, Venue booked and Site Contact that will be available if needing to liaise with someone onsite on arrival.

Bookings for the loading dock less than 40 minutes in length will auto-approve if capacity exists and within dock operating hours.

Bookings that are greater than 40 minutes in length, or outside dock operating hours, will go into a Submitted state for manual approval. All bookings for the Vehicle Concourse or Precinct will also go into a Submitted state for manual approval. These will be manually approved by the Building Operations Service Centre, which can always be contacted 24/7 on 02 9250 7979.

Note, once one appointment has been made, you will be able to clone that appointment to auto-populate many of these fields and just change date/time request as desired.

8.1.11 Concrete Pumping

Concrete will be pumped horizontally and vertically using a mobile line.

The line will run from the following locations:

- Central Passage to the Scenery Dock and various work face
- Northern broadwalk to level 3 tunnel
- Monumental stairs
- Under the steps

Notification of concrete pumping needs to be given to SOH so it can be communicated to the user groups.

Concrete pumping shall be done after hours. The pump need to be set up within Central Passage with the northern and southern roller doors opened for ventilation. A security guard will need to be in place at each of these roller doors.

For the washing out and Washout and Cleanup for concrete pumping a service such as Pumperdump will be utilised.

Image of a Concrete Line pump

9. Planning and Project Controls

A fully coordinated design procurement and construction programme has been completed in both gross and construction format. An overview only for reference has been included in this CMP. As the project progresses and milestone dates become clear this section will be updated.

CMP SOH Renewal Project - Works Packages 1A, 1B & 1C
Construction Management Plan

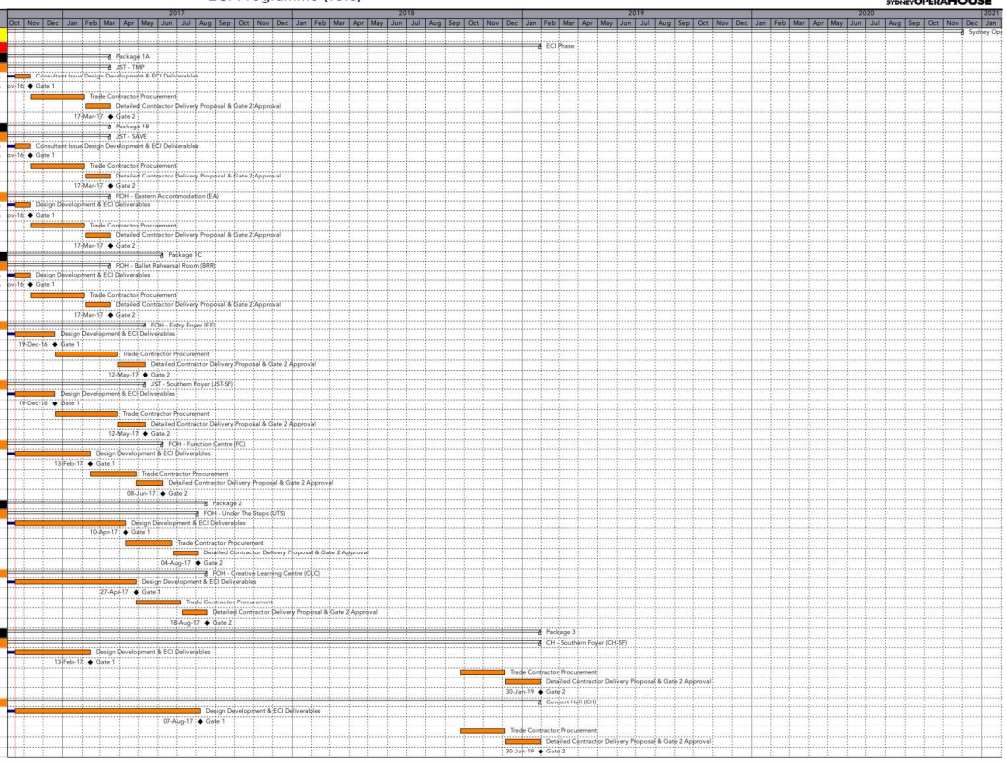
LAING O'ROURKE

Sydney Opera House Renewal Project

ECI Programme (v3.0)

SYDNEY OPERA HOUSE

Activity ID	Activity Name	Remaining Duration	Start	Finish
Sydney Opera House Programme - Update 25 October 2016 (Alternate		1078	16-Aug-16 A	02-Dec-20
ECI Phase		555	16-Aug-16 A	30-Jan-19
Package 1A		99	16-Aug-16 A	17-Mar-17
JST - TMP		99	16-Aug-16 A	17-Mar-17
A2680	Consultant Issue Design Development & ECI Deliverables	19	16-Aug-16 A	10-Nov-16
A2690	Gate 1	0		10-Nov-16
A2700	Trade Contractor Procurement	50	11-Nov-16	03-Feb-17
A2720	Detailed Contractor Delivery Proposal & Gate 2 Approval	30	06-Feb-17	17-Mar-17
A2710	Gate 2	0		17-Mar-17
Package 1B		99	16-Aug-16 A	17-Mar-17
JST - SAVE		99	16-Aug-16 A	17-Mar-17
A2730	Consultant Issue Design Development & ECI Deliverables	19	16-Aug-16 A	10-Nov-16
A2740	Gate 1	0		10-Nov-16
A2750	Trade Contractor Procurement	50	11-Nov-16	03-Feb-17
A2760	Detailed Contractor Delivery Proposal & Gate 2 Approval	30	06-Feb-17	17-Mar-17
A2770	Gate 2	0		17-Mar-17
FCH - Eastern Accommodation (EA)		99	16-Aug-16 A	17-Mar-17
A2780	Design Development & ECI Deliverables	19	16-Aug-16 A	10-Nov-16
A2790	Gate 1	0		10-Nov-16
A2800	Trade Contractor Procurement	50	11-Nov-16	03-Feb-17
A2810	Detailed Contractor Delivery Proposal & Gate 2 Approval	30	06-Feb-17	17-Mar-17
A2820	Gate 2	0		17-Mar-17
Package 1C		155	16-Aug-16 A	08-Jun-17
FCH - Ballet Rehearsal Room (BRR)		99	16-Aug-16 A	17-Mar-17
A2830	Design Development & ECI Deliverables	19	16-Aug-16 A	10-Nov-16
A2840	Gate 1	0		10-Nov-16
A2850	Trade Contractor Procurement	50	11-Nov-16	03-Feb-17
A2860	Detailed Contractor Delivery Proposal & Gate 2 Approval	30	06-Feb-17	17-Mar-17
A2870	Gate 2	0		17-Mar-17
FCH - Entry Foyer (EF)		136	16-Aug-16 A	12-May-17
A2880	Design Development & ECI Deliverables	46	16-Aug-16 A	19-Dec-16
A2890	Gate 1	0		19-Dec-16
A2900	Trade Contractor Procurement	60	20-Dec-16	28-Mar-17
A2910	Detailed Contractor Delivery Proposal & Gate 2 Approval	30	29-Mar-17	12-May-17
A2930	Gate 2	0		12-May-17
JST - Southern Foyer (JST-SF)		136	16-Aug-16 A	12-May-17
A2980	Design Development & ECI Deliverables	46	16-Aug-16 A	19-Dec-16
A2990	Gate 1	0		19-Dec-16
A3000	Trade Contractor Procurement	60	20-Dec-16	28-Mar-17
A3010	Detailed Contractor Delivery Proposal & Gate 2 Approval	30	29-Mar-17	12-May-17
A3020	Gate 2	0		12-May-17
FOH - Function Centre (FC)		155	16-Aug-16 A	08-Jun-17
A2930	Design Development & ECI Deliverables	75	16-Aug-16 A	13-Feb-17
A2940	Gate 1	0		13-Feb-17
A2950	Trade Contractor Procurement	50	14-Feb-17	27-Apr-17
A2960	Detailed Contractor Delivery Proposal & Gate 2 Approval	30	28-Apr-17	08-Jun-17
A2970	Gate 2	0		08-Jun-17
Package 2		455	16-Aug-16 A	16-Aug-17
FOH - Under The Steps (UTS)		195	16-Aug-16 A	04-Aug-17
A3030	Design Development & ECI Deliverables	115	16-Aug-16 A	10-Apr-17
A3040	Gate 1	0		10-Apr-17
A3050	Trade Contractor Procurement	50	11-Apr-17	23-Jun-17
A3060	Detailed Contractor Delivery Proposal & Gate 2 Approval	30	26-Jun-17	04-Aug-17
A3070	Gate 2	0		04-Aug-17
FOH - Creative Learning Centre (CLC)		205	16-Aug-16 A	18-Aug-17
A3080	Design Development & ECI Deliverables	125	16-Aug-16 A	27-Apr-17
A3090	Gate 1	0		27-Apr-17
A3100	Trade Contractor Procurement	50	28-Apr-17	07-Jul-17
A3110	Detailed Contractor Delivery Proposal & Gate 2 Approval	30	10-Jul-17	18-Aug-17
A3120	Gate 2	0		18-Aug-17
Package 3		555	16-Aug-16 A	30-Jan-19
CH - Southern Foyer (CH-SF)		555	16-Aug-16 A	30-Jan-19
A7880	Design Development & ECI Deliverables	75	16-Aug-16 A	13-Feb-17
A7890	Gate 1	0		13-Feb-17
A7900	Trade Contractor Procurement	50	25-Sep-18	04-Dec-18
A7920	Detailed Contractor Delivery Proposal & Gate 2 Approval	30	05-Dec-18	30-Jan-19
A7910	Gate 2	0		30-Jan-19
Concert Hall (CH)		196	16-Aug-16 A	07-Aug-17
A3180	Design Development & ECI Deliverables	196	16-Aug-16 A	07-Aug-17
A3190	Gate 1	0		07-Aug-17
A3200	Trade Contractor Procurement	50	25-Sep-18	04-Dec-18
A3210	Detailed Contractor Delivery Proposal & Gate 2 Approval	30	05-Dec-18	30-Jan-19
A3220	Gate 2	0		30-Jan-19



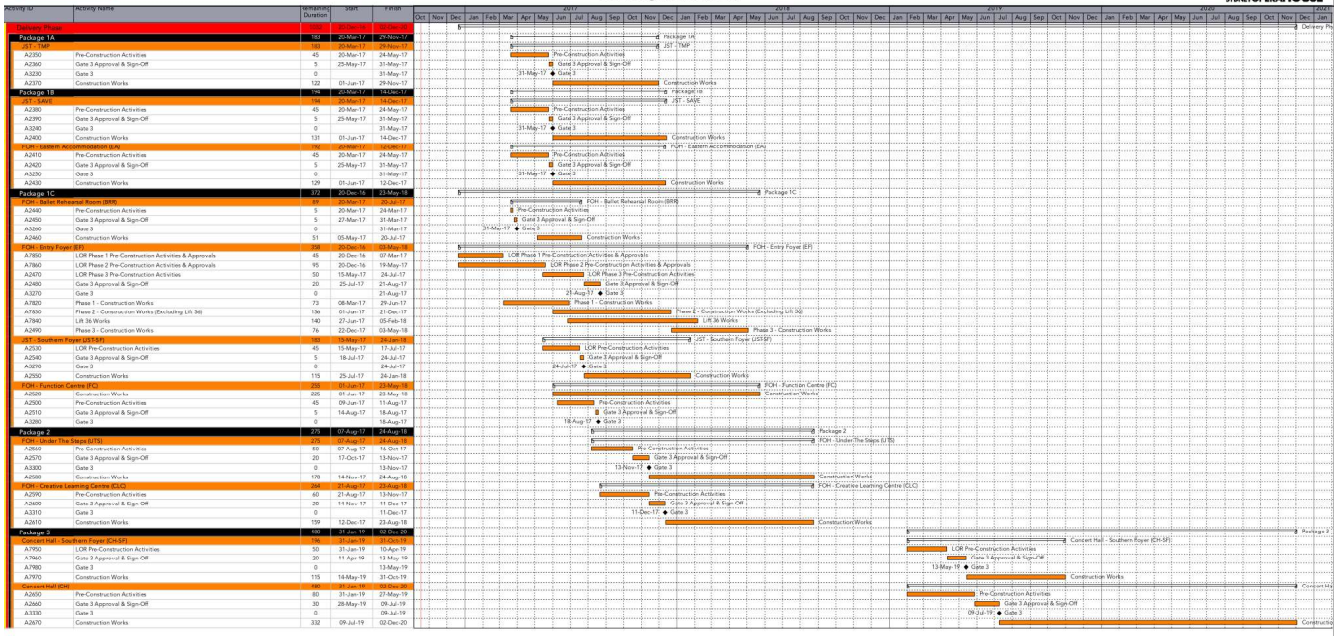
Remaining Level of Effort
Actual Level of Effort
Actual Milestones
Actual Work
Remaining Work
Critical Remaining Work
Milestone
Summary

TASK filters: *Summary Tasks (Y). Incomplete Tasks.

Date	Revision	Checked	Approved
27-Sep-16	v1.0 SOH ECI Programme	MM	
17-Oct-16	v2.0 SOH ECI Programme - As per Master Rev5.11	SB	
25-Oct-16	v3.0 SOH ECI Programme - Align w Master Rev5.12	SB	

Sydney Opera House Renewal Project

ECI Programme (v3.0)



Activity ID	Activity Name	Remaining Duration	Start	Finish
Delivery Phase		1053	20-Mar-17	20-Mar-20
Package 1A		183	20-Mar-17	29-Nov-17
JST - TMP		183	20-Mar-17	29-Nov-17
A2350	Pre-Construction Activities	45	20-Mar-17	24-May-17
A2360	Gate 3 Approval & Sign-Off	5	25-May-17	31-May-17
A3230	Gate 3	0		31-May-17
A2370	Construction Works	122	01-Jun-17	29-Nov-17
Package 1B		194	20-Mar-17	14-Dec-17
JST - SAVE		194	20-Mar-17	14-Dec-17
A2380	Pre-Construction Activities	45	20-Mar-17	24-May-17
A2390	Gate 3 Approval & Sign-Off	5	25-May-17	31-May-17
A3240	Gate 3	0		31-May-17
A2400	Construction Works	131	01-Jun-17	14-Dec-17
FOH - Eastern Accommodation (EA)		192	20-Mar-17	14-Dec-17
A2410	Pre-Construction Activities	45	20-Mar-17	24-May-17
A2420	Gate 3 Approval & Sign-Off	5	25-May-17	31-May-17
A3250	Gate 3	0		31-May-17
A2430	Construction Works	129	01-Jun-17	12-Dec-17
Package 1C		372	20-Dec-16	23-May-18
FOH - Ballet Rehearsal Room (BRR)		89	20-Mar-17	20-Jul-17
A2440	Pre-Construction Activities	5	20-Mar-17	24-Mar-17
A2450	Gate 3 Approval & Sign-Off	5	27-Mar-17	31-Mar-17
A3260	Gate 3	0		31-Mar-17
A2460	Construction Works	51	05-May-17	20-Jul-17
FOH - Entry Foyer (EF)		258	20-Dec-16	23-May-18
A7850	LOR Phase 1 Pre-Construction Activities & Approvals	45	20-Dec-16	07-Mar-17
A7860	LOR Phase 2 Pre-Construction Activities & Approvals	95	20-Dec-16	19-May-17
A2470	LOR Phase 3 Pre-Construction Activities	50	15-May-17	24-Jul-17
A2480	Gate 3 Approval & Sign-Off	20	25-Jul-17	21-Aug-17
A3270	Gate 3	0		21-Aug-17
A7820	Phase 1 - Construction Works	73	08-Mar-17	29-Jun-17
A7830	Phase 2 - Construction Works (Excluding Lift 36)	136	01-Jun-17	21-Dec-17
A7840	Lift 36 Works	140	27-Jun-17	05-Feb-18
A2490	Phase 3 - Construction Works	76	22-Dec-17	03-May-18
JST - Southern Foyer (JST-SF)		182	15-May-17	24-Jan-18
A2530	LOR Pre-Construction Activities	45	15-May-17	17-Jul-17
A2540	Gate 3 Approval & Sign-Off	5	18-Jul-17	24-Jul-17
A3070	Gate 3	0		24-Jul-17
A2550	Construction Works	115	25-Jul-17	24-Jan-18
FOH - Function Centre (FC)		258	01-Jun-17	23-May-18
A2520	Construction Works	205	01-Jun-17	23-May-18
A2500	Pre-Construction Activities	45	09-Jun-17	11-Aug-17
A2510	Gate 3 Approval & Sign-Off	5	14-Aug-17	18-Aug-17
A3280	Gate 3	0		18-Aug-17
Package 2		270	07-Aug-17	24-Aug-18
FOH - Under The Steps (UTS)		270	07-Aug-17	24-Aug-18
A2560	Pre-Construction Activities	60	07-Aug-17	16-Oct-17
A2570	Gate 3 Approval & Sign-Off	20	17-Oct-17	13-Nov-17
A3300	Gate 3	0		13-Nov-17
A2580	Construction Works	170	14-Nov-17	24-Aug-18
FOH - Creative Learning Centre (CLC)		268	21-Aug-17	23-Aug-18
A2590	Pre-Construction Activities	60	21-Aug-17	13-Nov-17
A2600	Gate 3 Approval & Sign-Off	20	14 Nov-17	11 Dec-17
A3310	Gate 3	0		11-Dec-17
A2610	Construction Works	159	12-Dec-17	23-Aug-18
Package 3		680	31-Jan-19	02-Dec-20
Concert Hall - Southern Foyer (CH-SF)		176	31-Jan-19	31-Oct-19
A7950	LOR Pre-Construction Activities	50	31-Jan-19	10-Apr-19
A7960	Gate 3 Approval & Sign-Off	20	11 Apr-19	13 May-19
A7980	Gate 3	0		13-May-19
A7970	Construction Works	115	14-May-19	31-Oct-19
Concert Hall (CH)		490	31-Jan-19	02-Dec-20
A2650	Pre-Construction Activities	80	31-Jan-19	27-May-19
A2660	Gate 3 Approval & Sign-Off	30	28-May-19	09-Jul-19
A3330	Gate 3	0		09-Jul-19
A2670	Construction Works	332	09-Jul-19	02-Dec-20

Remaining Level of Effort | Actual Work | Milestone
Actual Level of Effort | Remaining Work | Summary
Actual Milestones | Critical Remaining Work

Page 2 of 2 Pages

TASK filters: *Summary Tasks (Y), Incomplete Tasks.

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17-Oct-16	v2.0 SOH ECI Programme - As per Master Rev5.11	SB	
25-Oct-16	v3.0 SOH ECI Programme - Align w Master Rev5.12	SB	

10. Appendices

1. Organisational Chart
2. Workplace Health and Safety Plan
    a. Traffic Management
3. Construction Environmental Management Plan
    a. Waste Management
    b. Air Quality
    c. Noise, Dust and Vibration
4. Design Execution Plan
5. Procurement
6. Workplace Relation Management Plan
7. Commissioning and Validation Management Plan
8. Compliance Matrix