

# Joan Sutherland Theatre

**Sydney Opera House**

**Technical and Production Information  
The Joan Sutherland Theatre**

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# Technical and Production Information

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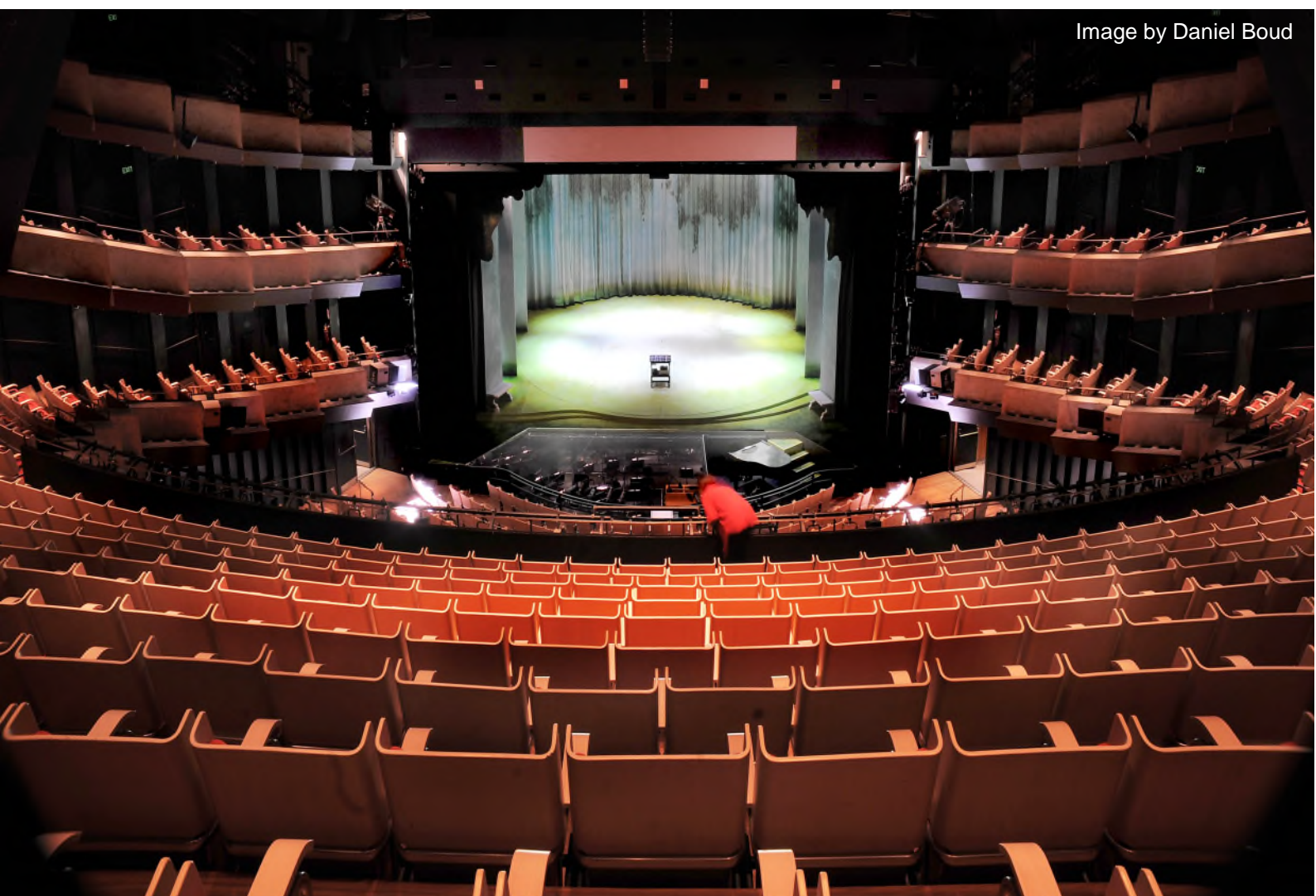
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# 1 Introduction

The Joan Sutherland Theatre (JST) occupies the upper levels of the east side of SOH. With an audience capacity of up to 1507, it is the second largest indoor venue.

The JST is a proscenium arch venue with continental seating in the stalls and dress circle. Wing space is extremely limited and there are two Rear Stage Elevators (RSE) in the up-stage area to move scenery between the stage and the scenery dock (two levels below).

The orchestra pit is suitable for up to 70 musicians.

The venue is primarily used for grand opera and classical ballet performances. It is also used for contemporary dance, contemporary music, award shows, talks and film premieres.

The Yellow Caribbean timber walls and ceiling are painted matte black and the auditorium floor is satin matte clear polyurethane on plain brush box timber. The seats are made of white birch timber shell, upholstered in rich red wool.

The foyers of the JST completely encircle the venue, offering unsurpassed views across Sydney Harbour and the Harbour Bridge to the north and west, the Royal Botanic Gardens to the east, and the city to the south.

It is intended that this document is read in conjunction with the SOH Event Guide.

## 1.1 List of Acronyms

BOH	Back of House
AV	Audio Visual
DR	Dressing Room
EWP	Elevated Work Platform
FOH	Front of House
GR	Green Room
HC	House Curtain
JST	Joan Sutherland Theatre
OP	Opposite Prompt (Stage Right)
PS	Prompt Side (Stage Left)
RSE	Rear Stage Elevator
SM	Stage Manager
SMD	Stage Manager's Desk
SOH	Sydney Opera House
SWL	Safe Working Load
UDL	Uniformly Distributed Load



## 1.2 Risk Management

In NSW, if you conduct a business or undertaking, you are legally obliged to manage certain risks. In particular, you must:

- Identify and eliminate risks to health and safety, or, if that is not practicable, then minimise those risks so far as is reasonably practicable; and
- Ensure the health and safety of your own workers, AS WELL AS ensure that other workers' or persons' safety is not put at risk by work carried out as part of your business or undertaking.

Work health and safety obligations in NSW are non-transferable and concurrent. This means that:

- Each business or person with safety obligations must comply with their WHS requirements; and
- If more than one business or person has a duty under the law, then they must comply to the extent that they can influence or control the safety matter.

Please refer to the SOH Event Guide.



## 2 Venue Access

The JST stage is located two levels above its dedicated scenery dock which is on the ground floor.

SOH staff will assist you to unload equipment and transport it to the venue from the main Loading Dock which is situated two levels beneath the JST Scenery Dock.

### 2.1 Venue Lifts

#### 2.1.1 Lift 21

JST lift 21 links the Loading Dock to the JST Scenery Dock and Central Passage.

Lift 21 Internal Dimensions	
Height	3.80m
Width	3.28m
Depth	9.20m
Load Capacity	10,000kg

#### 2.1.2 Lift 4

Lift 4 is a small personnel lift located down-stage on PS. It stops at the following levels:

- Scenery Dock (U2)
- Orchestra / Dressing Rooms (U1)
- Stage (ST)
- Perch (P)
- Fly Floor (G1)
- Mid Gallery (G2)

Lift 4 Dimensions		
Internal Car Dimensions	Height	2.25m
	Width	1.00m
	Depth	1.24m
Clear Door Opening	Height	2.00m
	Width	0.80m
Load Capacity	630kg	

#### 2.1.3 Lift 6

Lift 6 is a props or personnel lift located up-stage on OP. It stops at the following levels:

- Scenery Dock (U2)
- Orchestra / Dressing Rooms (U1)
- Stage (ST)



Lift 6 Dimensions		
Internal Car Dimensions	Height	2.99m
	Width*	1.25m*
	Depth	2.37m
Load Capacity	1,768kg	
*The lift car tapers in at the rear, down to 1.08m		

#### 2.1.4 Rear Stage Elevators (RSE)

The stage is accessible from the JST dock via the RSEs, which are able to transport both scenery, equipment, and crew. They can only be operated by SOH staff.

Access to the elevators is via an opening 10.65m W x 7.15m H.

The RSEs have rising barriers integrated into them for safe carriage of crew and equipment. These barriers need to be taken into account when planning loads.

RSE Dimensions	
Width of Opening at Stage Level	10.65m
Platform Width	11.0m
Platform Depth	6.85m (both RSEs combined)
	3.25m (individual RSE)
Load Capacity	10,000kg live load (evenly distributed)
	20,000kg static load (evenly distributed)

When the RSEs are at stage level, beneath them are four 1-tonne pile drive winches:

- East / west crawling capacity
- Four wireless remote controls (option to drive from hardwired control box situated behind western RSE wall)

## 2.2 JST Scenery Dock

There are four gantry cranes in the Scenery Dock:

- Independent working, in tandem or quad tandem
- Each crane has a SWL of 1,000kg
- Operated by 1 – 4 wireless remote controls

Only SOH staff are permitted to operate RSE chain motors and dock cranes.

All staff working in the dock area are required to wear protective footwear, and hi-vis vests are required if forklifts or heavy plant are in use.



### 3 Venue Dimensions

Dimension	Details	Distance
Width	Downstage Proscenium	14.03m
	Proscenium Opening	11.35m
	Stage Area	Varies (see plan)
	Rear Stage Area	11.88m
Depth	Downstage edge to setting line (zero line)	1.97m
	Setting line (zero line) to fly line #62	14.08m
	Setting line (zero line) to upstage wall	21.85m
	Pit front to fly line #50	20.25m
Height	Downstage proscenium	7.32m
	Grid	16.15m
	Drift over stage (to underside of flybar)	15.74m
	Drift over rear stage (to underside of flybar)	7.40m
	Proscenium opening*	0.35m – 7.10m
	Under first fly gallery	8.60m

\*The proscenium teaser is adjustable by prior arrangement.

Dimensions are approximate and critical measurements should be confirmed on site.

#### 3.1 Stage Description

Surface	50mm Oregon timber covered with a 9mm Weathertex sheeting with a further 18mm ply sacrificial layer on top
Stage Rake	0 degrees (flat)
Maximum Loading	7.5kPa (750kg/m <sup>2</sup> ) UDL
	4.5kN (450kg) Point Load



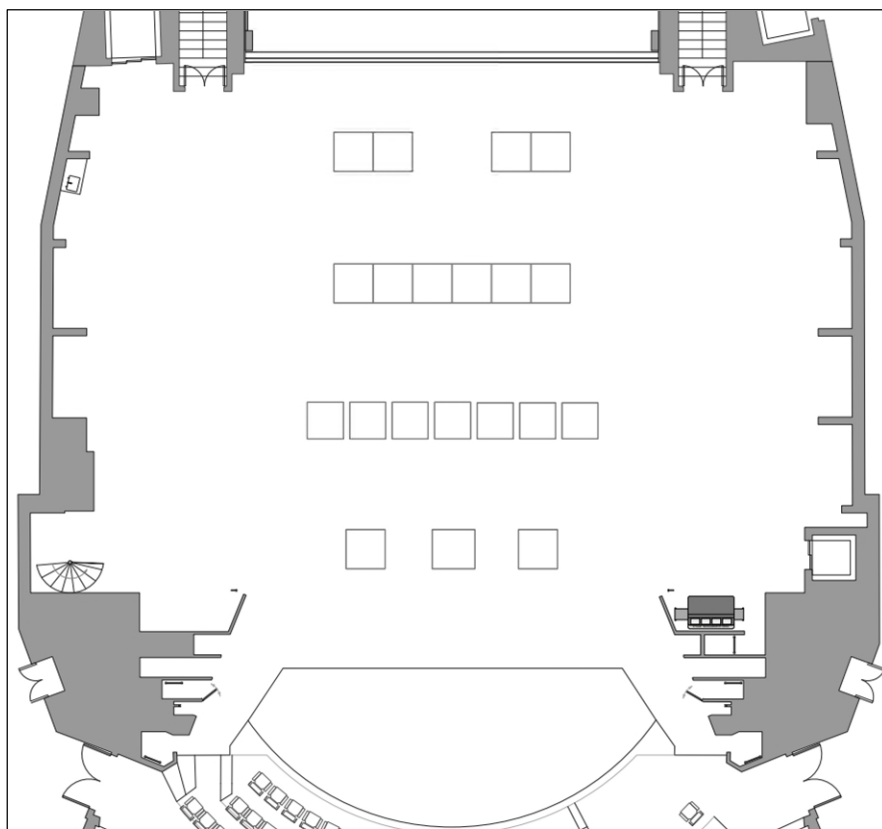


### 3.2 Actor's Traps

Actor's traps measure 1.10m x 1.10m and are positioned as shown below.

There are no carriages installed so you will need to supply appropriate mechanisms to use these traps as part of your scenery design.

The use of these traps and any carriage mechanisms requires a detailed and targeted Risk Assessment in line with current legislation.



### 3.3 Stage Plans

Stage plans are available at [sydneyoperahouse.com](http://sydneyoperahouse.com)

Scale plans can be requested through SOH Event Operations as PDF's or as Vectorworks files. Email [techspec@sydneyoperahouse.com](mailto:techspec@sydneyoperahouse.com) or through your SOH Production Manager.

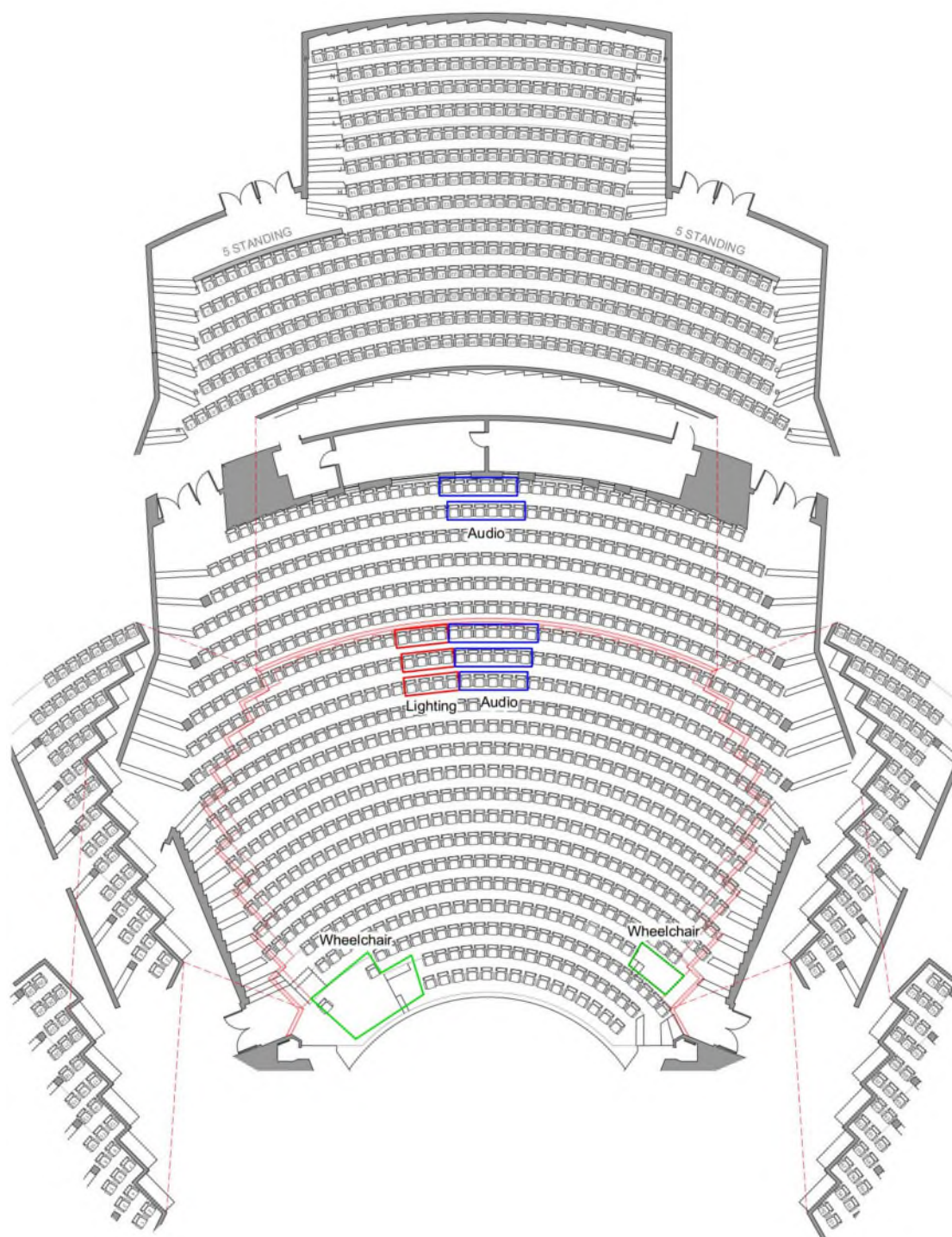
Uncontrolled copies can be found in the appendices of this document.



### 3.4 Auditorium Seating

The maximum seating capacity in the venue is 1507, continental style in the stalls and dress circle:

- Stalls: 883 seats (there is space for up to four wheelchairs, two each side of the auditorium) Some of these wheelchair positions involve the removal of seats to facilitate.
- Circle: 466 seats (plus 10 standing room positions)
- Boxes: 158 seats (some with restricted viewing)





## 4 Staging

### 4.1 Staging Machinery

The stage machinery and flying system may only be operated by authorised SOH staff, and the grid must be cleared at the conclusion of each hire period.

#### 4.1.1 Control System

The flybars, portal bridge, chain motors and pin spot winches are all controlled via a Waagner Biro CAT4 system, with multiple operating locations on Gallery 1. Remote wireless Cat120 and fixed points for hardwire are also positioned on stage level.

The pit lift is operated from a local control panel with pendant (see Orchestra Pit / Stage Thrust)

The RSEs are operated from local control panels or via a CAT192A for more complex moves (Risk Assessment required).

### 4.2 Under-Stage Machinery

#### 4.2.1 Orchestra Pit / Stage Thrust

There are only two positions available for the pit lift:

- Pit lift lowered to form the Orchestra Pit (standard configuration)
- Pit lift raised to create a thrust down-stage of the proscenium (incurs additional time and labour costs, including the reset after your hire period)

Orchestra Pit / Stage Thrust Dimensions	
Total Orchestra Pit Area (Including Pit Lift / Stage Thrust)	144m <sup>2</sup>
Pit Lift / Stage Thrust Total Area	31m <sup>2</sup>
Pit Lift Speed	50mm/s
Pit Lift Load Capacity	6,200kg in motion
Pit Lift Upper-level Floor Load Capacity	7kPa (700 kg/m <sup>2</sup> ) UDL
Pit Lift Lower-level	2.5kPa (250 kg/m <sup>2</sup> ) UDL

#### 4.2.2 Pit Net

The pit net spans the entire Orchestra Pit when the pit lift is in the standard position. It is made from a custom 45 x 45mm corded mesh plus a secondary 10 x 10mm mesh overlay nearer the stage edge, and has been installed in accordance with Australian Standards BS-EN-1263.

If the Stage Thrust is required, the net must be removed and re-instated after your hire period (incurs additional time and labour costs).



### 4.3 Over-stage Machinery

Over-stage equipment permanently installed in the venue:

Equipment	Location	CAT ID	Quantity	Load Case 1	Load Case 2
Forestage Flybars	Downstage of Portal Bridge	FS101 - FS107	7	800kg @ 0.9m/s	400kg @ 1.2m/s
Mainstage Flybars Type 1	Upstage of Portal Bridge	FB1 - FB19 FB21 - FB30 FB32 - FB52	50	800kg @ 0.9m/s	400kg @ 1.2m/s
Mainstage Flybars Type 2	Upstage of Portal Bridge	FB53 - FB62	10	600kg @ 0.9m/s	300kg @ 1.2m/s
Lighting Flybars	Upstage of Portal Bridge	LX20, LX31	2	1500kg @ 0.5m/s	800kg @ 1.0m/s
Rear Stage Flybars	Rear Stage	RF71 - RF80	10	800kg @ 0.5m/s	-
Panorama Bars	PS outside	PSPAN1	1	800kg @ 0.9m/s	400kg @ 1.2m/s
	PS inside	PSPAN2	1	800kg @ 0.9m/s	400kg @ 1.2m/s
	OP outside	OPPAN1	1	800kg @ 0.9m/s	400kg @ 1.2m/s
	OP inside	OPPAN2	1	800kg @ 0.9m/s	400kg @ 1.2m/s
Curved Cyc Bars (detachable) (FB53 - FB62 unable to be used at same time)	Downstage	CYC1	1	800kg @ 0.9m/s	400kg @ 1.2m/s
	Upstage	CYC2	1	800kg @ 0.9m/s	400kg @ 1.2m/s
Portal Bridge	Proscenium	LXPB	1	2700kg @ 0.3m/s	-
Orchestra Bar	Auditorium	LXORCH	1	1500kg @ 0.5m/s	800kg @ 1.0m/s
Advance Lighting Bar 1	Auditorium	LXAD1	1	800kg @ 0.5m/s	-
Advance 2 – CM OP	Auditorium	-	1	500kg @ 0.4m/s	-
Advance 2 – CM PS	Auditorium	-	1	500kg @ 0.4m/s	-
Forestage Point Hoists	Auditorium	FOR1 - FOR4	4	500kg @ 1.8m/s	-
Fixed Point Hoists w/Double Purchase Block	Grid	PIN1 - PIN12	12	500kg @ 1.8m/s	-
			12	1,000kg @ 1.3m/s	
Moveable Point Hoists	Grid	MOV1 - MOV12	12	250kg @ 1.8m/s	-
Over-stage Chain Hoists	Grid	CHN1 - CHN12	12	1,000kg @ 8m/min	-
Rolling Beams	Grid	MOV1 - MOV12 & CHN1 - CHN12	17	1,400kg per beam	1,400kg per beam
Grid Floor	Grid	-	-	250kg per sq/m	250kg per sq/m



## Over-stage Machinery Notes

- Refer to venue plans for hanging plot and bar spacing
- All fly bars have a maximum point load of 200kgs
- Machinery on the grid may limit the use of some penetration points for grid point and chain hoist placement. Grid slat spacings accommodate pin spot and chain motor deployment
- The black velour house curtain usually hangs on line FS105
- The sound curtain is a heavy multi-layered smother usually positioned immediately up-stage of the house curtain hung on FS106
- FS101 has removable extensions for the far PS and OP pick-ups
- Rolling Beams include relevant rigging equipment

### 4.3.1 Flybar Extensions

Bar extensions can fit any venue flybar and are available in the following lengths:

Extension Size	Allocation
400mm – 700mm (adjustable)*	9
800mm (fixed)	3
400mm (fixed)	1
Additional extensions would need to be brought in or hired at your cost	

\*Four are normally installed on Panorama Bars

### 4.3.2 Smoke Curtain

The smoke curtain is located within the proscenium, forward of flybar FS101. The area directly underneath and up-stage of the smoke curtain must be kept clear of fixed scenery to facilitate smoke extraction.

In the event of a fire the curtain can be lowered manually (from either side of the stage) or automatically.



## 4.4 Standard Staging Equipment

The following equipment is included within the venue hire costs:

Element	Equipment	Allocation	Details
General Furniture	Card Table	10	830 x 830mm Square Top
	Trestle Table	6	1800 x 750 Top
	Vinyl Chair	50	Main Rehearsal Room
		15	BOH Stage
	Black Screen	6	
Wardrobe	Wardrobe Rack (Large)	35	
	Wardrobe Rack (Small)	25	
	Desk Unit	12	Portable with mirror/screen
Pit Rostra	Custom Tiered Megadeck	1	For orchestral use

## 4.5 Elevated Work Platform (EWP)

The venue EWP allocation is as below. All operators must be licenced.

Equipment	Allocation
Uplift UG30	1
Genie GR20	1

## 4.6 Additional Staging Equipment

The following sections of equipment can be utilised by your production at an additional cost, subject to the requirements of the other venues.

### 4.6.1 Masking

The following cloths are allocated to the venue at additional cost:

Element	Equipment	Allocation	Details
Masking	Leg	6prs	Black, 4300 x 9900
		9prs	Black, 4350 x 8000
		2prs	Black, 2900 x 7400
	Border	8	Black, 16000 x 3000
		4	Black, 16000 x 2000
		4	Black, 16000 x 1250
		2	Black, 14250 x 2000
	Smother	2	Black, 16000 x 8000
		1	Black, 16000 x 6000
		1	Black, 12000 x 7250
	Tabs	3prs	Black, 8700 x 8000
		1pr	Black, 6000 x 7250



#### 4.6.2 Additional Equipment

The following equipment can be can be utilised by your production at an additional cost:

Element	Equipment	Details
Rostrum	Megadeck 1.2 x 2.4m	Carpeted
	Megadeck 1.0 x 2.0m	
	Megadeck 1.0 x 1.0m	
	Megadeck Legs	200 / 400 / 600 / 800mm
Floor Covering	Black Carpet	
	Vinyl	Black or White
	Sprung Dance Floor	
General Furniture	Card Table	830 x 830mm Square Top
	Trestle Table	1800 x 750 Top, Various Colours
	Cabaret Table	600mm or 900mm Round Top
	Vinyl Interlocking Chair	Black, Padded
Orchestral Furniture	Padded Orchestral Chairs	Height Adjustable
	Music Stands	
	Conductors Stand	
	Base Spike Board	
	Cello Riser	
Cloths	Sharkstooth Gauze	Various
	Filled Cloth	Various
	Push-up Drapes on Poles	Black, Various sizes
	2m Book Flat Masking	Black or Grey, Padded
	1.3m Book Flat Masking	Black, Padded
Rigging	1T Chain Block	7m chain
	1/2T Chain Block	
	Tail Pipe	20-25mm, various lengths
	Mini Quad Truss	100mm, various lengths
	Tri Truss	Various lengths
	Box Truss	Various lengths





## 5 Lighting

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### 5.1 Standard Lighting Equipment

The following equipment is included within the venue hire costs.

#### 5.1.1 Control Room Position

The lighting system is controlled by an ETC Gio console with an ETC EOS Ti running as a tracking back-up. Both consoles have 24K channels and use an ELC DMX over Ethernet system for DMX distribution.

An EOS Net3 Remote Video Interface is installed on stage in PS corner and an ETC Nomad Puck is available for use with designer's monitors (two monitors) at the production desk in the auditorium.

An ETC Pad (remote control unit) is available for rigging and focussing sessions on stage.

#### 5.1.2 Stalls Control Position

A stalls control position can be set in rows P / Q / R (removal of 12 seats from sale).

See Auditorium Seating Plan for position.

#### 5.1.3 Data

SOH has an ELC DMX over Ethernet system. It utilises sACN to distribute an almost infinite number of DMX universes. In the venue it appears in the Control Room, Dimmer Rooms, stage area and in the stalls. Some points have permanently installed ethernet to DMX nodes, and extra Pathport nodes can be installed on request.

External network devices must be approved by SOH prior to installation onto the network.

Alternate protocols such as ArtNet are not permitted to run on the House network. Please advise if protocols other than sACN are required.

#### 5.1.4 Power

All general and dimmed electrical power supplies are 240v AC @ 50Hz.

Additional 3-phase supplies (415v AC) are available with Wilco pattern 5-pin connectors. (or with a distribution board, by prior arrangement at an additional cost).

#### 5.1.5 Dimmers

980 x 3K and 180 x 5K ADB Eurodim Twin Tech dimmers are comprehensively distributed throughout the stage area, including the rear galleries and beneath the stage.

All dimmer outlets can be configured to any of the following modes:

- 240v dimmer
- 120v dimmer
- Controllable hot power (on / off via the lighting console or ETC paradigm system)
- Bypass hot power (always on)





Position	3K Outlet	5K Outlet
FOH Bridge 1 / 2 / 3	50	2
Circle Front / Ladders	60	2
Advance Bar	22	
Pit Rail	10	
Orchestra Bar	42	4
Niches Upper / Lower	12 per side	
FOH Galleries / Balconies / Loges	32 per side	5 per side
Pro Booms / Extra Pro Booms	36 per side	4 per side
Orchestra Pit	16	
Portal Bridge Upper / Lower	60	12
Lighting Frame 1 / 2 / 3 / 4 / 5	150	30
Rear Stage / Galleries	12 per side	6 per side
Perches	24 per side	5 per side
Stage floor	54 per side	30 per side
G1 / G2 / G3	114 per side	32 per side
FOH Gallery Crossover	12	

### 5.1.6 Lighting Positions

Area	Position	Details
Front of House	Circle Ladders	
	FOH Bridge 1	Above front of circle
	FOH Bridge 2	Above centre of circle
	FOH Bridge 3	Followspot position
	Niches	
	Orchestra Bar	Over forestage with 17 Mac Encore installed
	Circle and Box Fronts	
	Proscenium Booms	Two booms per side
Portal Bridge	Lower Lighting Bar	Height adjustable double-decked position directly underneath Proscenium Arch
	Upper Lighting Bar	
Stage Galleries	Double Galleries Each Side	Provision for multi-core cables to be lowered to stage
Perch Lighting	Booms Up-stage of Proscenium	May be used for on-stage followspot positions



### 5.1.7 Installed Lighting

The venue is hired with some luminaires in fixed rig positions as shown below and in the Standard Rig Plan in the appendices of this document.

You may alter these positions, but must move them from and return them to their original location with associated labour costs.

Position	Lamp Type	Allocation
Niches and Loges	Source 4 19°	28
Loges	Source 4 14°	8
Orchestra Bar	Mac Encore Performance WRM	17
Pro / Extra Pro Booms	ETC Lustr2 26°	32
Pro Booms	ETC Lustr2 19°	4
FOH Bridges	Robert Juliat 710	24
FOH Bridge 3	Robert Juliat Cyrano Followspot	4

### 5.1.8 House Lights

The house lights are a seamless mix of warm white LED fixtures and incandescent fixtures.

They can be controlled by the lighting desk or a manual fader system on a highest-takes-precedence basis.

The integrated ETC Paradigm system allows for control of house lights, work lights and rehearsal lights from either the Lighting Control Booth or from a touch screen on stage.

### 5.1.9 Overhead Lighting Battens

There are ten Igus TwisterBand cable management reelers (windlasses). They are designed to work in pairs to supply thirty 3k dimmers, six 5k dimmers, four data and two work light circuits to five overhead lighting bars.

Lighting frames are mobile and can be pre-rigged off-stage. They are 2.3m in length and have six circuits that patch back to the windlass header. These can join together once on stage to different length configurations depending on production requirements.

All other scenery battens are capable of being used for lighting bars if required. There are multicore cables available to run off to the side galleries to patch into dimmer outlets on the galleries.

### 5.1.10 Lighting Brackets

There are four detachable lighting brackets that can be used for mounting lights to the fronts of the auditorium loges and boxes (one per side, per level).

Each bracket has a SWL of 50kg.



### 5.1.11 Followspots

Four Robert Juliat “Cyrano” 2.5kW HMI followspots with manual colour changers are available at position in FOH Bridge 3.

The throw from this location is approximately 35m to the down-stage edge. Additional portable followspots with stands may be available upon request.

### 5.1.12 Music Stand Lights

24V LED scone lights to fit music stands for use in the Orchestra Pit.

## 5.2 Additional Lighting Equipment

The following equipment is dedicated to the venue and can be utilised by your production at an additional cost:

Lamp Type	Number Available
SL 15/32	110
SL 23/50	40
Source 4 14°	8
Source 4 19°	24
Source 4 26°	60
Source 4 36°	36
Source 4 50°	12
Selecon Rama F	20
Cantata PC	34
Selecon 2k F	48
Robert Juliat Dalis 810 LED Cyc Units	24
Additional 24V LED scone lights (for use other than in the pit)	12
Lee Lito Quad Footlights	12



## 6 Sound & Audio Visual

### 6.1 Standard Sound Equipment

The following equipment is included within the venue hire costs:

#### 6.1.1 Loudspeaker System

The venue has a permanently installed D&B sound system with speaker positions discreetly placed in a wide variety of locations as outlined in the table below.

The system is designed for moderate SPL reinforcement as well electro acoustic enhancement. All speakers are permanently installed and cannot be re-located.

Access to the system is via Dante, MADI or Analogue with overlay patching in a number of positions in the auditorium which cater for MADI, single mode fibre and CAT5e connectivity.

Component	Equipment	Position	Allocation
Main Flown System*	Six Ti10	LL / L / C / R / RR	5 arrays
Subs	Y Sub	Flown centre	2
	E15	Loge L / R	2
Delay and Fill	Ti10	Front fill	6
	Ti10	Proscenium fill	6
	5S	Stalls under balcony	14
	4S	Stalls under balcony	2
Distributed Surround and Ceiling system / Electro-acoustic enhancement	4S	-	22
	5S	-	26
	8S	-	20
Stage Foldback	E6	-	2
	Q10i	-	2
	10S	-	14
Orchestra Pit Electro-acoustic Enhancement	4S	-	24
System Processing and Routing	D&B R1 Vivace Lawo Nova 73		

\*Different production genres may require additional flown augmentation



### 6.1.2 Vivace by Müller-BBM

Vivace by Müller-BBM is capable of 96 inputs / 192 outputs and performs the following functions in the system:

- Main matrix mixer
- Electro-acoustic enhancement
- Object Based positioning

### 6.1.3 Mix Positions

Position	Location	Features
Control Room	Yamaha Rivage PM5 with DSP RX-EX permanently installed	<ul style="list-style-type: none"><li>▪ 288 Input processing channels</li><li>▪ 32 Matrix busses</li><li>▪ 72 Mix busses</li><li>▪ RPIO 622 with 64 RY-ML-Silk Preamps, 16 analogue out and 16 AES I/O installed for orchestra pit and utility I/O</li><li>▪ RPIO 622 with 64 RY-ML-Silk Preamps, 16 analogue out and 16 AES I/O in floating rack for stage use</li></ul>
Stalls	Rows P / Q / R (removal of 18 seats from sale)	
	Rows W / X (removal of 12 seats from sale)	
Circle	A small mix position can be set on the circle level	

See **Auditorium Seating** for positions

Overlay patching is available in these locations to interface with systems from either SOH internal stock or touring equipment.

### 6.1.4 Playback

- 2 x Apple Mac Pros with Qlab 4
- Discreet AES3 in/out
- Q-Widget Dual output show control remote



## 6.2 Additional Sound Equipment

The following equipment can be utilised by your production at an additional cost:

Equipment	Model
Mixing Consoles	Midas Pro X Midas Pro 2 Midas Pro 1
Stage Monitors	D&B Audiotechnik M4 D&B Audiotechnik Y-SUB D&B Audiotechnik V series line array. D&B Audiotechnik V-Sub D&B Audiotechnik V10P D&B Audiotechnik Y10P D&B Audiotechnik Y7P D&B Audiotechnik E8
Radio Microphones – Belt-packs (Shure Axient Wireless System)	<u>AXT 100 Belt Packs:</u> DPA 4066 DPA D:Fine DPA D:Fine 66 DPA 4061 DPA 4080 DPA 6066
Radio Microphones – Handheld (Shure Axient Wireless System)	<u>AXT 200 Handhelds:</u> Shure KSM9 Shure Beta 58 Shure SM58
Shure In-Ear Monitors	Stereo PT10T dual wireless transmitters P10R wireless body-pack receivers SE425 earpieces
Wired Microphones	SOH have a wide range of microphones from brands such as Sennheiser, Shure, AKG, DPA, Beyer and Neumann and offers a variety of packages to suit
Additional Playback	MacBook Pro running QLab



### 6.2.1 Video Replay

The Sound & AV department has a range of playback options and switchers. SOH vision equipment is shared between all venues and its use in the JST is subject to availability and will incur additional charges.

Equipment	Model
Switchers	Barco Image Pro
	Blackmagic Design ATEM 2 M/E Production Studio 4K
Vision Playback	MacBook Pro
	Sound Devices Pix 270i

### 6.2.2 Projection and Video Monitors

There are a number of options available for projector placement within the venue, including front and rear projection. Please note that in order to facilitate projection, truss and a screen must be rigged.

Element	Equipment
Projectors	Barco HDX 14k
Screens	Stumpfl 7.3m x 4.1m (24ft x 13.5ft) 16:9 ratio Fastfold
	Stumpfl 6.1m x 3.4m (20ft x 11.3ft) 16:9 ratio Fastfold
	Stumpfl 4.8m x 2.7m (16ft x 9ft) 16:9 ratio Fastfold
	Stumpfl 3.6m x 2.1m (12ft x 7ft) 16:9 ratio Fastfold
Video Monitors	LCD 75"
	LCD 55"
	OLED 17"

### 6.2.3 Technical Panels and Routing

The venue has an extensive installation of cabling infrastructure to send audio and video signals throughout the venue. Please discuss with your Sound Supervisor the various options to accommodate your production.

## 6.3 Surtile Screens

The venue is equipped with five small surtyle screens as standard, positioned strategically around the auditorium. There is no associated control system installed, so if they are required it must be supplied or hired in at your cost.



## 7 Communications

### 7.1 Stage Manager's Desk

A Stagetec Stage Manager's Desk (SMD) is located in Prompt Corner. The desk is fully programmable, includes four broadcast-quality show relay screens, a telephone, two integrated Riedel Artist communications panels and dynamically assignable tactile LED buttons.

The SMD controls audio and video relay to both FOH and BOH spaces, and can be used to broadcast live or pre-recorded announcements to backstage or foyer spaces.

There is an automatic message stacking facility to prevent conflict with other venues when announcements are simultaneously sent from other venues to common areas of the building, such as the Green Room (GR). Features include dynamic allocation of paging, program audio relay, cue lights, and foyer bells.

FOH functions are generally managed by the Theatre Manager from a touch screen in the foyer, however these functions are also accessible at the SMD.

### 7.2 Show Relay

A colour image of the venue stage is distributed to the SMD, lighting control, sound control, GR, some dressing rooms, and venue foyers. The SM has pan, tilt, and zoom control of the longview camera. A low-light camera is also permanently installed and sends vision to the SMD.

Longview and low-light feeds can be sent to most areas of the building by arrangement and can be sent to the Recording Studio for archival recordings (Refer to SOH Event Guide for further details on archivals).

### 7.3 Headset Communications

A Riedel Artist wired intercom system operates across all venues. Permanent talkback stations are available in lighting and sound control locations, and wired headset tie lines are installed at all regular operating positions.

The venue has additional talkback stations positioned in the following BOH areas:

- Dressing Rooms 34 / 37 / 38
- Props Cage (JST Scenery Dock)
- Orchestra Pit Entrance (OP)
- JST Scenery Dock (adjacent to RSE control panel)

Additional headsets and desktop stations can be supplied at a cost.

A Riedel Bolero wireless beltpack system is fully integrated with the Riedel Artist wired intercom system, and is included within venue hire costs as per the below table:

Equipment	Allocation	Details
Wireless Beltpack Comms	28	Riedel Bolero BBP
Additional units may be provided upon request at a per unit charge		





## 7.4 Conductor View / Low Latency Video Feed

For the purpose of conductor view monitoring or any other low latency video feed, the venue comes standard with the following monitors:

Equipment	Allocation	Position
Sony PVM-A160 17" low latency OLED monitor	5	Orchestra Pit
	2	Downstage (PS / OP)
	2	Perch (PS / OP)
	2	G1 Fly Floor (PS / OP)
	4	Circle Rail (2 PS / 2 OP)
Samsung 17" LED Monitor	2	G1 Fly Floor (PS / OP)
Sony PVM-X550 55" monitor	1	Circle Rail (Centre)
Three Sony PVM-A160 17" low latency OLED monitors available upon request Further allocations can be hired in at additional costs		

## 8 Production Desks

SOH are able to provide production desk equipment in the auditorium as part of the venue rental, with costs for labour to install or remove.

Standard set-up for this venue:

Equipment	Allocation	Details
Production Desk	3	Set-up in row K or P
Comms Panel	4	Riedel DCP1016
DELEC Panel	1	Links to SM system, enables BOH calls & cue lights
Phone	1	Avaya IP phone
Additional units may be provided upon request, pending availability. In the event of SOH stock exhaustion, costs may be applied.		



## 9 Backstage Facilities

### 9.1 Dressing Rooms

The venue includes use of 17 associated dressing rooms. The dressing rooms are all located close to the Green Room, one level beneath stage.

Dressing Room	Details	Allocation
Soloist's Rooms	Accommodate two to four artists each Rooms include an en-suite bathroom with shower, toilet, and locker facilities	8
Conductor Suite (DR 20)	Reserved for conductors, soloists, or company management This room has a lounge area with a baby-grand piano, a writing desk, and a television with relay view of the stage Dressing facilities include a dressing table, full-length mirror, wardrobe rack and an en-suite bathroom	1
Chorus Rooms	Large rooms used as chorus spaces with one usually allocated to ladies and one to gentlemen Each is equipped with 35 lockers, dressing tables and mirrors A bathroom is adjacent to each and there is space for costume storage	2
Orchestra Rooms	Each room contains only lockers and bathroom facilities, there are no make-up tables or wardrobes	2
Other Dressing Rooms	Accommodate five to six artists each Rooms include an en-suite bathroom with shower, toilet, and locker facilities	4

Lockers in the dressing rooms are fitted with a staple and hasp. In order to lock a locker, a performer or presenter should bring their own padlock/s. Lockers must be cleared at the conclusion of the hiring period, or at the end of each day where other hirers will be using the JST between your sessions. Your Stage Manager will inform you if this is required.

### 9.2 Rehearsal Rooms

The Main Rehearsal Room, located on the Green Room level is generally included with the venue hire.

Rehearsal Room 77, also generally assigned to the venue, is located two floors below the stage off central passage and can accommodate small to medium groups.

Rehearsal rooms are equipped with a piano, full length mirrors, bars, and sprung dance floor.

Additional rehearsal space is very limited across SOH.



### 9.3 Coaching Rooms

The venue has two small Coaching Rooms usually used by soloists or small groups of musicians for rehearsals or warm-up. Each room has a baby grand piano, and the floors are carpeted, so these rooms are not suitable for dance.

### 9.4 Stage Management Office

The venue has a Stage Management office suitable for up to eight people.

### 9.5 Wardrobe and Laundry Facilities

The venue is equipped with wardrobe and laundry facilities.

There is a drying room adjacent to the laundry room, and a wig / make-up room is equipped with all the necessary facilities for the maintenance of costume wigs and application of stage make-up.

Venue laundry allocation:

Equipment	Allocation
Electric clothes dryer	3
Top loading clothes washing machine	3
Upright electric drying cabinet	2

### 9.6 Pianos

Pianos are located in the following BOH spaces as standard:

- Orchestra Pit
- Dressing Room 20
- Main Rehearsal Room
- Rehearsal Room 77
- Both Coaching Rooms

These pianos are included within venue hire costs, and further information can be found in Backstage Facilities 'Dressing Rooms'.



## 10 Protection of Building Surfaces

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Appropriate measures must be taken to ensure the protection of all SOH building fabrics and surfaces, including wood, granite, glass, ceramics, concrete and bronze.

Prior consultation and approval is required for any plans to attach to or penetrate building surfaces.

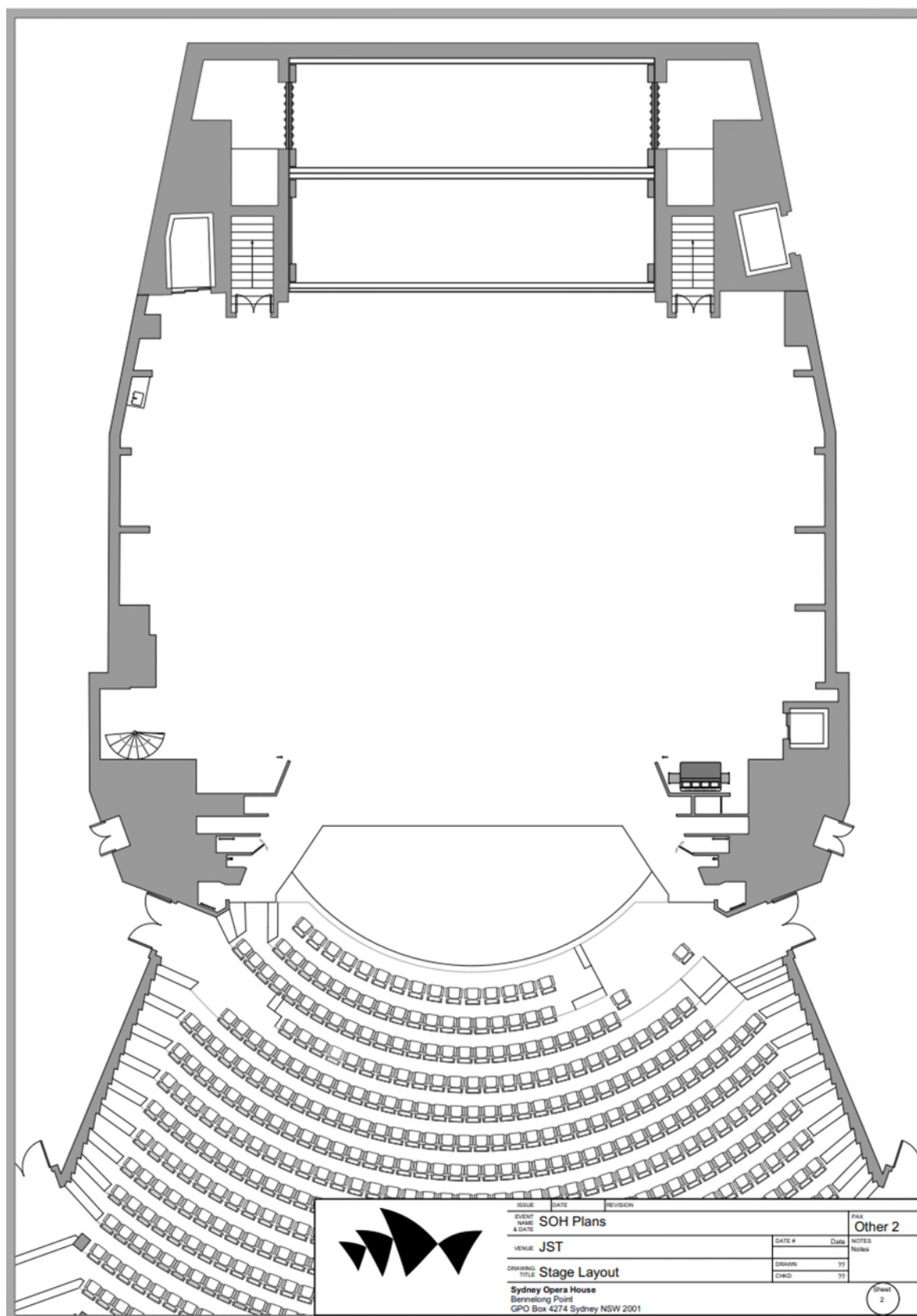
You must provide suitable rubber pads, plywood sheets or plastic to protect all building surfaces including but not limited to floors, walls, chairs, and ceilings.

The use of paints or chemicals on SOH building surfaces or fixtures is prohibited. Similarly, any use of water, soaps or cleaning fluids of any kind must be pre-approved by Building Operations.



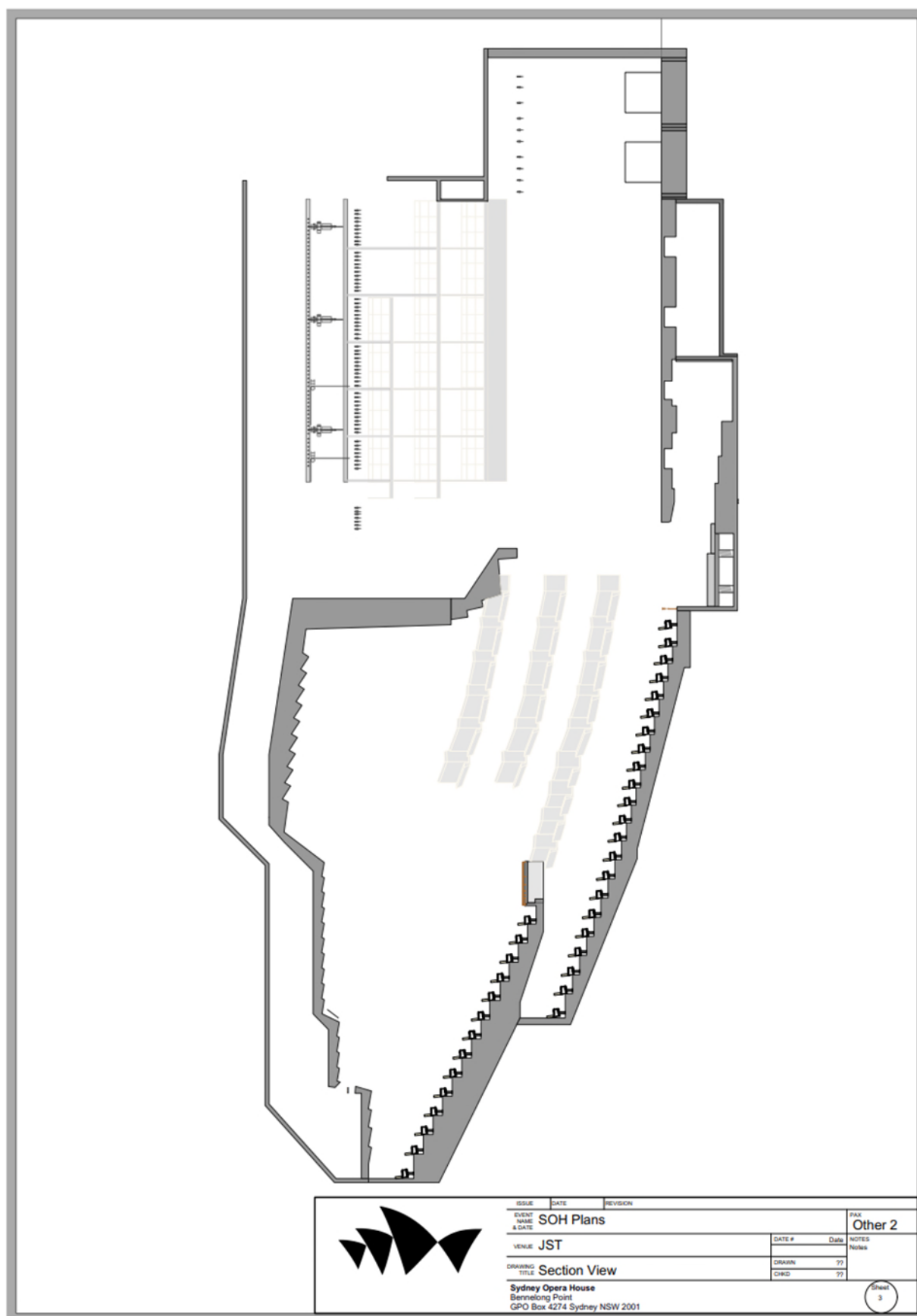
## 11 Appendices

### 11.1 Venue Plan – Full Stage





## 11.2 Venue Plan – Section





## 11.3 Standard Lighting Rig Plan

