SADLER’S WELLS TECHNICAL SPECIFICATIONS

Sadler’s Wells Trust Ltd does not guarantee that all or any of these facilities or equipment will be available or suitable for the purposes of the visiting company. A visiting company should in all cases check with Sadler’s Wells Technical Manager to ensure this information is up to date and correct. At certain times some equipment detailed in this document may be temporarily unavailable.

Please be aware of Sadler’s Wells Health and Safety Policy for Visiting Companies, which details safe systems of work for the theatre, and which forms part of the contract with the visiting company. This policy is available to view on our website at http://www.sadlerswells.com/page/technical-specifications

All current plans and technical specifications for the theatre available to download from our website at http://www.sadlerswells.com/page/technical-specifications

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1. CONTACTS

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2. ADVANCE INFORMATION FROM INCOMING PRODUCTIONS

Sadler’s Wells requires the following information in advance from any visiting production:

− Technical specifications, including plans for any set or other construction
− Details of the materials for any set or other constructions
− Method statements for construction activities
− Risk assessments for any special effects in the show (or your risk management procedures)
− Detailed production or technical schedules, with staffing levels required from the house
− Lighting plan (preferably AutoCAD)
− Line schedule or hanging plot, including all weights (see Appendix F for a blank hanging plot)

3. WORKING PRACTICES AND SAFETY ONSTAGE

Onstage Briefing and Set Induction

Any show containing elements of construction should include a preliminary briefing at the start of the load-in for all venue and touring staff. This practice is in accordance with CDM 2015 Regulations and should be scheduled in advance. Furthermore, any set which poses difficulties for backstage access and safe movement in show conditions will require a set induction or briefing session for the show crew prior to the first dress rehearsal.

Length of shift / overnight breaks

Please note that in accordance with Working Time Regulations 1998, an 11 hour break between working shifts must be scheduled for all members of staff. Split shifts can be scheduled to accommodate longer hours for the production onstage, but the 11 hour break should not be infringed for any individual member of staff.
Suitable meal breaks must also be scheduled, for the safe working and the welfare of all staff the maximum shift worked without a break is 5.5 hours. This will also include get-outs. If in doubt as regards any aspect of the working schedule or to discuss suitable breaks when scheduling, please contact the Technical Manager. All schedules must be agreed in advance.

Noise levels

Please note that in accordance with the Noise at Work Regulations 1989, the Control of Noise at Work Regulations 2005, and for the benefit and care of all staff and members of the public, Sadler’s Wells Trust reserves the right to monitor and if necessary limit the sound levels for any given performance.

Tallescope use (access equipment)

Sadler’s Wells Theatre uses a Tallescope for focusing lights and other access requirements. Under current guidelines the Tallescope can now be moved whilst personnel are in the basket at the top. This process involves 4 crew, 1 in the basket, 2 at the base guiding the tallescope, and 1 supervisor. A member of Sadler’s Wells staff must be present at all times the tallescope is used. Please bear this in mind when setting schedules and crewing levels. The person in the basket must wear a harness to facilitate an emergency rescue if required.

Power Flying Method Statement

Sadler’s Wells Method Statement for Operation of the Power Flying System is included in this document (Appendix A). It is the responsibility of the visiting company to ensure that all staff are made aware of this Method Statement and that work is scheduled accordingly in agreement with Sadler’s Wells.

Loading and Unloading Guidelines

Sadler’s Wells Code of Practice for loading and unloading is included in this document (Appendix B). It is the responsibility of the visiting company to ensure that all staff are made aware of this Code of Practice and that all relevant activities are carried out in accordance with the Code.

Sustainability and Waste

In accordance with our Sustainability Policy we try wherever possible to reduce our energy consumption, reduce the production of waste at source, and recycle any remaining waste. To this end we provide water coolers in the café and by the side of stage, and we do not supply water in plastic bottles. We would also encourage visiting companies to separate their waste in all offices and dressing rooms using the bins provided, and to switch off lights when leaving rooms unoccupied.
4. UNLOADING AND PARKING RESTRICTIONS

Load-in / dock doors

Loading doors to street both sides (please advise if you need to use Arlington Way):
Rosebery Avenue (main entrance): (4.5m H x 3.2m W) at street level
Arlington Way (secondary entrance): (3.1m H x 3.1m W) shallow ramp down to stage.  
(adjustable to flat once load-in is complete)

Parking / Loading

The general hours of restricted parking outside the theatre are all days of the week, Monday to Sunday, 08.30-18.30. Single yellow lines and the signs illustrated indicate no parking during these designated times (Double yellow lines indicate no parking ‘at any time’).

Sadler’s Wells is situated on a busy main road, and as a result there are additional restrictions in force. Waivers to parking restrictions unfortunately cannot be obtained by Sadler’s Wells from the local authority (Islington Council).

There are restrictions for loading (between 08.30-10.00 and 16.00-18.30), and for waiting overnight with a vehicle over 5T (see photographs). Please consider if you wish to adjust your schedule or the arrival of your freight accordingly. Please contact the Technical Manager should you need further information or guidance.

Secure Truck Parking offsite

Our recommended Truck parking facility is the Titan Truckstop. We advise advance booking:
Stoneness Road
Thurrock
Essex
RM20 3AG
T: +44 (0)1708 258500
E: ttp@icgl.co.uk

All other freight parking in the UK can be found here:
http://www.iru.org/transpark-app
5. HOUSE LIGHTS

House lighting

The auditorium lighting is all LED. The system is GDS’ Arc System. This operated through ETC Unison Paradigm. The houselights work over Wi-Fi and are on channels 1, 12 & 13. If you are using Wi-Fi in your production please inform Sadler’s Wells which channels you will be using.

The minimal lighting levels suitable for emergency lighting have been agreed and licensed by the local authority. We cannot extinguish the emergency lighting including fire exit signs for any performance, but the lighting levels are very low and are suitable for onstage blackouts.

The light levels for house lights as the audience enter (full house lights) has also been agreed by the local authority and for the safety of the audience cannot be adjusted to a lower level whilst audience are moving around in the auditorium.

Lighting for the House curtain

The house curtain is multi-layered fabric able to be lit in different colours, with a grey gauze covering red and blue fabric. The theatre carries permanently-rigged house curtain lighting. Whenever the house curtain is lowered in front of an audience, including for curtain calls, it will need to be lit. The company may select colours and suitable light levels when plotting lights for any performance. If the company fails to plot these then Sadler’s Wells Trust will arrange house curtain lighting at its discretion.

Lighting for auditorium ceiling and side panels

The auditorium’s ceiling and side walls are made of neutral grey perforated metal panels that respond to coloured lighting and act as projection screens for gobos and colour. The colours and levels for the lighting for these auditorium panels are preset by Sadler’s Wells Trust unless the company selects other colours or patterns which are acceptable to Sadler’s Wells Trust.

Orchestra Conductor’s lights

For those productions which require a conductor, the theatre carries two profile lights either side on Bridge 1 to light the conductor’s face and hands. The conductor will normally be lit when s/he takes the conductor’s stand and during any bow from the stand.
6. AUDITORIUM/CAPACITY

Maximum capacity  1568

Stalls  667 seats (including 10 seats in galleries each side)
(Reduces according to pit layout – see below)

First Circle  420 seats (including 30 seats in galleries)

Second Circle  481 seats (including 30 seats in galleries)

**Orchestra pit/forestage**

Seating in the stalls can be varied as follows:

- With a full-sized orchestra pit/forestage of 3 orchestra pit lifts (rows AA-DD removed)
  Seats in the stalls remaining: 574 seats

- With medium sized pit/forestage of 2 orchestra pit lifts (rows BB-DD removed)
  Seats in the stalls remaining: 598 seats

- With a small sized orchestra pit/forestage of 1 orchestra pit lift (rows CC-DD removed)
  Seats in the stalls remaining: 622 seats

To set a sound control position in the rear stalls removes a further 18 seats in rows S, T, U.

**Promenade option**

Removes a total 302 seats in stalls rows DD to AA and A to H.
Replaced by up to 533 standing positions (subject to licensing).
Please note that this option MUST be chosen in advance and will depend on other requirements

**Wheelchair spaces (standard setting)**

Removes 12 seats in stalls rows J & K to create spaces for 3 wheelchair users and 3 accompanying persons.
The number of wheelchair spaces in rows J & K is increased or decreased in response to demand.
7. SPRUNG FLOOR

Sadler’s Wells stage is flat and without rake. It has a full sprung floor, width 19.5m and depth 15.5m.

The sprung floor is laid in panels over a substructure, each panel is comprised of several layers: the 1\textsuperscript{st} layer is 6mm hardboard, the 2\textsuperscript{nd} layer is 14mm plywood, the 3\textsuperscript{rd} layer is 18mm thick squares of neoprene foam placed at intervals in a hollow void, the 4\textsuperscript{th} layer is 3mm hardboard.

Screwing into the floor can cause significant damage to the top level and subsequent levels, and due to the void/neoprene foam it is not a secure base for anything that may require substantial anchoring. Due to the void in the sprung floor’s construction a load under pressure has the potential to cause significant damage.

As we also use the stage for performance without dance floor and entirely bare, Sadler’s Wells requests that you do not screw into or bolt into the sprung floor and so damage the top level, so that we may continue to offer the floor as a suitable performance surface.

We have a solid 22mm ply floor that we can lay on top of the sprung floor, this discounts the effect of the sprung floor but also makes the stage suitable for heavier loads and for screwing in. Please note the laying of this floor takes approximately 2-4 hours depending on the performance area required and the time required should be considered in your schedule.
8. STAGE AREA

Performance Area variable up to 15m by 15m

Proscenium
Width: max 15m, adjustable down to 12.7m
Height: 9m, adjustable down to 8m
By removing proscenium border and speaker assembly, height may be increased to 10m.

Height to underside of grid 21m

Depth of flying from proscenium wall 15.2m

Stage flat and sprung for dance 19m x 16m (approx sprung area)
Trapped area downstage 12m x 6m (set 1.7m from proscenium line)

Stage depth on centre-line from upstage side of safety curtain 16m

Side wall to side wall 23.5m downstage
21.5m upstage

Wings measured from proscenium opening
4.5m SR
4.5m DSL
2.5m USL

Side stage storage (approx) 25m²
9. FLYING SYSTEM

Visiting companies are also advised to make themselves familiar with Appendix A: Safe System of Work - Power Flying System

Measurements

Height to underside of fly-floor: 7.6m (6.5m clearance)
Between fly galleries: 20m

System Control

Krupp Silent Winches control system by Stage Technologies, with E-Chameleon Nomad control desks.

The system is usually controlled from the fly floor stage right, but alternative control positions are available.

Power flying winch bars at 200mm centres start at 2m upstage from the front edge of the stage/the proscenium, 73 bars including house curtain, all with 600kg load capacity except bar #4 which has a 1000kg capacity, speed variable according to load.

In the 2m from the front edge of the stage/the proscenium are: safety curtain, drencher, house curtains, and (variable) proscenium masking. Details are on the theatre plans and Appendix F of this document. These items remain in position at all times and must not be obstructed.

Bar length: 16m (extensions for masking to 19m) – all bars 48mm OD double-truss.

4 wing bars (2x SL & 2x SR) operated by power flying system – bar length 13m.

18 point hoists, variable positions across full setting area – (800kg) operated by Nomad power flying system – winches located in level 2 grid.

Forestage grid with 6 power flying winch bars, although bars #101 & #102 are in use for the speaker bar assembly and architectural panels.

Bars #4, #10, #20, #40, #70 #75 & #76 all have load sensing on them, giving you the ability to know the exact weight on the bar.

Safety curtain controlled power in and out at 1 mps (fixed speed). This enables a hard edge guillotine ‘curtain’ effect.

House tabs, variable speed.

Load-bearing beams above bridges 1, 2 and 3, capacity 250k per point, 750k in total for each beam.
10. FIXED SCENERY BARS

The first few bars upstage and downstage of the iron (safety curtain) are detailed in the table below. All the bars are controlled by the Nomad power flying system except for the safety curtain.

<table>
<thead>
<tr>
<th>Line number</th>
<th>Scenery</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>106</td>
<td>Forestage – fixed speed</td>
<td></td>
</tr>
<tr>
<td>105</td>
<td>Forestage – fixed speed</td>
<td></td>
</tr>
<tr>
<td>104</td>
<td>Forestage</td>
<td></td>
</tr>
<tr>
<td>103</td>
<td>Forestage</td>
<td></td>
</tr>
<tr>
<td>102</td>
<td>Architectural panels - PERMANENTLY RIGGED</td>
<td>Forestage – fixed speed</td>
</tr>
<tr>
<td>101</td>
<td>Speaker bar and architectural panels - PERMANENTLY RIGGED</td>
<td>Forestage – fixed speed</td>
</tr>
<tr>
<td>IRON 100</td>
<td>Tabs - PERMANENTLY RIGGED</td>
<td>IRON</td>
</tr>
<tr>
<td>200</td>
<td>House hard border - PERMANENTLY RIGGED</td>
<td>Fixed speed</td>
</tr>
<tr>
<td>300</td>
<td>House hard legs - PERMANENTLY RIGGED</td>
<td>Fixed speed</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
11. STAGE EQUIPMENT

<table>
<thead>
<tr>
<th>Soft Goods</th>
<th>Width (m)</th>
<th>Drop (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Black Masking Borders</td>
<td>19</td>
<td>4</td>
</tr>
<tr>
<td>6 Pairs of Black Legs</td>
<td>3</td>
<td>10.5</td>
</tr>
<tr>
<td>1 Pair Black narrow Legs</td>
<td>1.5</td>
<td>10.5</td>
</tr>
<tr>
<td>3 Black Full Width Cloths</td>
<td>19</td>
<td>10.5</td>
</tr>
<tr>
<td>2 Black Wide Cloths</td>
<td>16</td>
<td>10.5</td>
</tr>
<tr>
<td>2 Black Gauze</td>
<td>19</td>
<td>10.5</td>
</tr>
<tr>
<td>1 White Cyc</td>
<td>16</td>
<td>10.5</td>
</tr>
<tr>
<td>1 Cream Bounce Cloth</td>
<td>16</td>
<td>10</td>
</tr>
<tr>
<td>3 Truss borders of various sizes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

All the drapes above are without fullness, ties at top, conduit pocket at bottom.

**Dance floor**

8x Harlequin ‘Cascade’ Black dance floor 20m long 2m wide
1x Harlequin ‘Cascade’ Black dance floor 15m long 2m wide (for proscenium)

8x Harlequin ‘Studio’ White dance floor 20m 2m wide
1x Harlequin ‘Studio’ White dance floor 15m 2m wide (for proscenium)
*(Please ask about using this floor at least 4 weeks in advance)*

6x Joelmat Black dance floor 12.5m long 2m wide
*(Please ask about using this floor at least 4 weeks in advance)*

**The use of rosin is not permitted on any Sadler’s Wells dance floors.**

**Other**

Several portable ballet barres for onstage use.
1 upright rehearsal piano for onstage use.
12. ACCESS EQUIPMENT

The Tallescope is model 50524
http://www.tallescope.co.uk/tallescopemodels.pdf

We also have use of a Genie AWP 30S *(this should be requested in advance if possible)*

Additionally the following ladders are available for use onstage:

- 1 x Zarges Light-alloy multi-function ladder, 3 x 14 rungs Z600 - 41524
- 1 x Zarges Light-alloy multi-function ladder, 3 x 12 rungs Z600 - 41523
- 1 x Zarges Light-alloy push-up ladder, 3 x 10 rungs Z600 - 40128
- 2 x Zarges Light-alloy stepladder with treads, 10 treads Z600 - 41230
- 1 x Zarges Z500 telescopic multi-function ladder, 4-part - 41196
http://www.zarges.com/

- 6 x Small A frame aluminium ladders of varying sizes

13. ORCHESTRA PIT

**Orchestra pit**

There are 3 orchestra pit lifts which can be fully seated to accommodate up to 4 additional rows of seating (93 seats) up to the front edge of the stage. Once the seats are removed they can be used to create the orchestra pit in 3 settings: the small orchestra pit (pit lift 1 only) can seat around 30 players, medium orchestra pit (pit lifts 1 & 2) can seat around 45, or large orchestra pit (pits lifts 1, 2 & 3) This can seat up to 65 musicians.

These 3 pit lifts can be set at variable levels from orchestra pit up to stage level. There in addition a 2m deep section of the orchestra pit under the front of the stage. This level cannot be adjusted as is permanently in place.

**Orchestral equipment**

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>RAT stands with light fitting (dimmable)</td>
</tr>
<tr>
<td>1</td>
<td>RAT conductors stand (dimmable)</td>
</tr>
<tr>
<td>50</td>
<td>Black cushioned chairs</td>
</tr>
<tr>
<td>1</td>
<td>Conductors rostra</td>
</tr>
</tbody>
</table>
14. DRESSING ROOMS AND WARDROBE

Wardrobe equipment

3 domestic washing machine
1 domestic tumble dryer
1 Industrial tumble dryer
1 drying cabinet
2 spin dryer
1 sewing machine
5 ironing boards
1 steam irons
2 domestic irons
3 upright clothes steamers
10 costume rails

Dressing Rooms

A dedicated quick change room is at stage level accessed through the stage right exit. Other on-stage temporary facilities by request.

<table>
<thead>
<tr>
<th>Room</th>
<th>Floor</th>
<th>Capacity</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>1</td>
<td>3</td>
<td>Has 1 x toilet and shower</td>
</tr>
<tr>
<td>1.2</td>
<td>1</td>
<td>7</td>
<td>Has 2 x showers</td>
</tr>
<tr>
<td>1.3</td>
<td>1</td>
<td>4</td>
<td>Has 1 x toilet and shower</td>
</tr>
<tr>
<td>1.4</td>
<td>1</td>
<td>4</td>
<td>Has 1 x toilet and shower</td>
</tr>
<tr>
<td>1.5</td>
<td>1</td>
<td>4</td>
<td>Has 1 x toilet and shower</td>
</tr>
<tr>
<td>1.6</td>
<td>1</td>
<td>5</td>
<td>Has 1 x toilet and shower (both fully accessible)</td>
</tr>
<tr>
<td>1.7</td>
<td>1</td>
<td>10</td>
<td>Has 1 x sink</td>
</tr>
<tr>
<td>2.1</td>
<td>2</td>
<td>12</td>
<td>Has 3 x sinks and showers</td>
</tr>
<tr>
<td>2.2</td>
<td>2</td>
<td>16</td>
<td>Has 3 x sinks and showers</td>
</tr>
<tr>
<td>2.3</td>
<td>2</td>
<td>10</td>
<td>Has 1 x sink</td>
</tr>
<tr>
<td>2.4</td>
<td>2</td>
<td>9</td>
<td>Has 2 x sinks and showers</td>
</tr>
<tr>
<td>B1</td>
<td>SB</td>
<td>1</td>
<td>Has 1 x toilet and shower</td>
</tr>
<tr>
<td>B2</td>
<td>SB</td>
<td>7</td>
<td>Has 2 x toilets and showers</td>
</tr>
<tr>
<td>B3</td>
<td>SB</td>
<td>-</td>
<td>Has 30 x lockers</td>
</tr>
<tr>
<td>B4</td>
<td>SB</td>
<td>-</td>
<td>Has 42 x lockers</td>
</tr>
</tbody>
</table>

All dressing rooms are fully accessible, have mirrors, audio show relay, paging calls and a video feed of the main stage.

All dressing rooms have keypad locks and additional showers and toilets are available on all levels.
15. LIGHTING

Consoles and Dimmers

ETC Eos Ti lighting console (System Backup as default)
ETC Eos Remote Processor Unit (System Primary as default)
ETC Nomad Client touch-screen PC console onstage for focus and patching etc.
ETC Eos iRFR App on Apple iPAD mini for rigging remote purposes.
ETC Net3 2 & 4 port gateways for alternate console use (fully configurable DMX in and out)
ETC Net3 show control gateway for Midi & SMPTE transmit and receive
ETC 2 x 20 universal fader wing

Note, by default all SWT house dimmers are on ACN universe 1.

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>390</td>
<td>ETC Sensor 3 ThruPower* dimmers (2 x 15A sockets)</td>
<td></td>
</tr>
</tbody>
</table>
| 82       | ETC Sensor 3 ThruPower* dimmers (32A CeeForm sockets) *

*ThruPower allows dim/non-dim power changeover via RDM

Network

The main infrastructure of the in-house lighting network is on an RSTP protected fibre optic ring between control/dimmers/peripherals with building wide CATVe patch system.

Dimmer distribution

Front of house outlets are brown phase, max load 400A
Stage overhead outlets are black phase, max load 2 x 400A
Stage level and perch outlets are grey phase, max load 400A

Lighting stock

Profile Units

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>Robert Juliat 611Sx 1.2kw 11°-26° (Inc. FOH rig)</td>
</tr>
<tr>
<td>24</td>
<td>Robert Juliat 613Sx 1.2kw 28°-54° (Inc. FOH rig)</td>
</tr>
<tr>
<td>105</td>
<td>ETC Source 4 750w bodies (Inc. FOH rig)</td>
</tr>
<tr>
<td>30</td>
<td>ETC Source 4 LED Series 2 Lustr</td>
</tr>
<tr>
<td>50</td>
<td>19° ETC Source 4 LENSES to fit above. (Inc. FOH rig)</td>
</tr>
<tr>
<td>60</td>
<td>26° ETC Source 4 LENSES to fit above. (Inc. FOH rig)</td>
</tr>
<tr>
<td>50</td>
<td>36° ETC Source 4 LENSES to fit above.</td>
</tr>
<tr>
<td>30</td>
<td>50° ETC Source 4 LENSES to fit above.</td>
</tr>
<tr>
<td>20</td>
<td>14° ETC Source 4 LENSES</td>
</tr>
</tbody>
</table>

Units may be exchanged from Bridge 2/3 if preferred
We hold a stock of Iris, top & half hats, gobo holders to fit the above
Sadler’s Wells Technical Specifications and Equipment List
Updated April 2016

Wash Units
30 x Robert Juliat 329 2.5kw PCs 7°-49°
50 x Robert Juliat 310 1.2kw Fresnels 8°-53° (plus 10 x additional Fresnel lenses)
10 x Robert Juliat 310 1.2kw PC 8°-53° (plus 10 x additional clear prism convex PC lenses)
4 x Strand Bambino 5kw Fresnel 14°-48°
2 x Strand Pollux 5kw Fresnel 11°-62°
2 x Robert Juliat Cin’k 350 LFV 5Kw Fresnel 11-62°
2 x Arri 2.5kw Compact Theatre HMI Fresnel 7-59° with Robert Juliat Jalousie DM shutter, barn doors, 30m head cable, and ballast

Par Units
100 x Par64 1kw (CP60 / CP61 / CP62 –)
(55 units have braced arms for use with scrollers)
40 x Par 20 Birdie 240v (10° Spots)

Flood Units
22 x ETC Source 4 LED Series 2 Lustr with Cyc lens
See examples: https://www.etcconnect.com/Products/Lighting-Fixtures/Source-Four-LED-Series-2/Source-Four-LED-Series-2-Lustr-CE/
8 x Selecon Lui 1kw asymmetric single cell flood units

Followspots
3x Robert Juliat Cyrano 2.5kw HMI profile (standard position on Bridge 3) with electronic ballasts and optional DMX control.

Miscellaneous
6 x UV Cannons 400w
45 x 10m ES pendant fitting
8 x Festoon (please ask for details)

Colour Changers
30 x Wybron CXI 7½” dual string colour-mix scroller
30 x 250mm² back plates to fit Par 64
25 x 160mm² back plates to fit S4 19/26/36/50°
18 x Rainbow 8” Pro2 32 frame scroller with 245mm² back plates to fit Par 64/RJ 329
(See Appendix E for colours)
All ETC Source 4 LED Series 2 Lustr are 7 colour mixing
See examples: https://www.etcconnect.com/Products/Lighting-Fixtures/Source-Four-LED-Series-2/Source-Four-LED-Series-2-Lustr-CE/

Effects
2 x JEM ZR22 DMX smoke machine
1 x JEM ZR12 DMX smoke machine
1 x Cirrolite Strata CS6 Haze machine (Non DMX)
2 x Unique 2.1 Haze machine (DMX controllable)
2 x JEM AF1 DMX fans

ALL SPECIAL EFFECTS MUST BE REQUESTED AND APPROVED IN ADVANCE as they may require alterations to automated fire and smoke alarm systems and special local authority licensing approval.
**Colour Frame sizes**

<table>
<thead>
<tr>
<th>Brand</th>
<th>Model</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robert Juliat</td>
<td>600 Profiles</td>
<td>180 x 180mm</td>
</tr>
<tr>
<td>ETC S4</td>
<td>19/26/36/50°</td>
<td>160 x 160mm</td>
</tr>
<tr>
<td>ETC S4</td>
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<tr>
<td>Selecon Lui (flood)</td>
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<td>265 x 203mm</td>
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<tr>
<td>Aramis Followspot</td>
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**Lighting Rigging – Miscellaneous details**

- 10 x 4.5m Silver mobile lighting towers with 6way IWB* per tower (See CAD plan for details)
- 10 x Doughty boom bases
- 10 x 3.2m black 48mm aluminium scaffold pipe
- 6 x 2.7m Black Aluminium Scaffold pipe
- 40 x Doughty Black 500mm De-rig arms
- 30 x Doughty Black 250mm De-rig arms
- 6 x 16m lighting bars with 4 x 6-way IWB (24 circuits per bar), can be rigged on any fly bar.
- 2 x 3m mobile lighting stands
- 4 x 2.5m lighting stands

*IWB = internally wired bar*

**Front of House Default Rig**

(Pre-rigged, plans available online at [www.sadlerswells.com](http://www.sadlerswells.com))

- Bridge 3: 16 x 19° ETC Source 4 750kw fixed beam profile
- Bridge 2: 16 x 26° ETC Source 4 750kw fixed beam profile
- Bridge 1: Conductors spots and MD specials
- Proscenium booms: 6 X Robert Juliat 611Sx 1.2kw 11°-26° zoom profile (3 per side)
- Slips: 12 x Strand SL 15-32° 600w zoom profiles (6 per side)
16. POWER SUPPLIES

230V single phase, 50 hertz onstage and throughout building

Distro at mid-SL (Stage level)  415V 3PNE 300A per phase Powerlocks (2 sets).
1 x 125A CEE form 3PNE
1 x 63A CEE form 3PNE
4 x 32A CEE form 3PNE
4 x 32A CEE form 1PNE

Distro at mid-SL (Upper Gallery level)  4 x 32A 1PNE (CEE-form)
24 x 15A 1PNE (All with individual MCB)

Distro at mid-SR (Stage level)  1 x 125A 3PNE
1 x 63A 3PNE

Outside broadcasts

Outside Broadcast routes: both horizontal and vertical allow access to all levels of the auditorium, the control boxes, stage and orchestra pit. Power and data points at OB entrance on Arlington Way. Power is 125A 3PNE CEE form connection.
17. SOUND

Sound power: 230V single phase supply throughout building

Sound distro mid-SL & mid-SR: Each has 1 x 63A / 1 x 32A / 1 x 16A SPN+E Ceeform
*(total load across sound distros can not exceed 200A)*
Orchestra Pit Sound Power (SR): 1 x 32A / 1 x 16A SPN+E Ceeform
FOH Sound Power (Behind mix position): 1 x 32A / 1 x 16A SPN+E Ceeform

**FOH Speakers and delays**

- d&b Audiotechnik E12  x 2 centre cluster (stalls and circle)
  x 2 left and right 2nd Circle
  x 2 left and right 1st Circle
  x 2 left and right Stalls

- JBL Control 1  x 5 front fills (100v soffit / mono feed)

- d&b Audiotechnik E12  x 2 left and right delays 2nd circle from bridge 3

- EAW JF260  x 1 centre delay for second circle from bridge 3

- JBL Control 1 delay lines  x 2 in Stalls, x2 in 1st Circle, x1 in 2nd Circle
  *(100v lines / 7 speakers per line.)*

- d&b Audiotechnik E6  x 6 for use as surround (2 Per seating level)

- d&b Audiotechnik B2 subs  x 2 left & right Stalls

- EAW SB180p subs  x 2 left & right 1st Circle

- MARTIN S218 subs  x 2 left & right 2nd Circle slips

- d&b Audiotechnik E3  x 2 stalls delay fill
  x 2 first circle delay fill

*(E12s & B2s powered by d&b D12 amplifiers, E6s powered by D6 amplifiers, E3 powered by d&b E-PAC, Martin subs by Crest CA9, remaining speakers by Crest CA6)*
Processing and Speaker Management
3 X Yamaha MTX5D matrix processors for routing, and speaker settings comprising of:

- 48 Dante Inputs, 48 Dante Outputs
- Full wireless tablet/remote desktop control of MTX editor software and Yamaha CL5
- Windows 8.1 PC running all control Software including
  - D&B Audiotechnik R1 for all D6/D12 amps
  - MTX Controller
  - Dante Controller Software
  - Yamaha Studio Manager
  - Rio Controller

Additional speakers

- EAW JF200 x 2 with flying frames
- EAW JF260 x 2 with flying frames

Monitors

d&b Max 12 x 4 (powered by D6’s when surrounds are not in use otherwise powered by Yamaha P7000S amps x 2)
Additional 8” and 12” Tannoy monitors can be made available with prior notice with Crest or Yamaha power amps (assorted)

Mixers

- Yamaha CL5 72 mono + 8 stereo
  - 24 mix busses / 8 matrix / LCR out
  - 1 X Dante MY16 Aud Cards
  - 1 X MY8 - AD96 Card allowing an additional 8 analogue inputs
- Soundcraft LX7ii 24 mono + 2 stereo inputs. 6 aux sends / 4 groups / LCR out

Main mixing positions are in a booth at rear of first circle or at the rear of the stalls by removing seats STU 15-20 to create an area of **2.8m wide x 2.4m** deep with steps in line with seating rows

Network

A fully redundant Dante Network with fibre backbone connects FOH to amplifiers and onstage. The following I/O Devices are available:

- 2 X Yamaha RIO1608-D
- 1 X Yamaha RIO3224-D
- Dante Virtual Sound Card installed on all playback computers
- Nuendo Live software available for Virtual I/O recording and playback
Playback

Playback Rack (mounted as a complete playback rack and cannot be used separately) consisting of:

- 2 X Apple Mac Mini 2.5GHz dual-core Intel Core i5, 4GB memory (Master/Backup redundancy system) running Q lab 2 or 3 (Full Licence)
- 2 X RME US USB Audio Interface (up to 18 I/O)
- 1 X Q Widget USB Q lab Remote
- 1 X Sony CD Player

Additionally:
- 2 x Tascam CD500 CD Player

Outboard Processing

3 x Rane GE60 EQ dual 30 band graphic equaliser
2 x Yamaha SPX990 effects unit
2 x DBX 166A compressor / limiter

Additional Sound Equipment

1 X iPad 3 with Qlab remote and desk remotes
1 X M Audio Firewire 610
1 X Mac book pro for remote desktop use
2 X Timecode boxes

Microphones

Wireless UHF equipment:
Sadler’s Wells currently holds a license for use of radio mic equipment in Channel 38 + 40. This license is for all in-house radio mics onsite, not just on the main stage. Visiting companies must check in advance of their visit to ensure that all radio equipment will be clear of interference and are advised to license their own frequencies. If Sadler’s Wells Trust is required to license additional frequencies for the use of its own equipment as a result of visiting companies’ requirements, this will be charged to the company at the annual rate set by JFMG and must be paid in advance of any retuning. Sadler's Wells Trust reserve the right to charge any additional costs incurred as a result. Please note that Sadler's Wells also utilise licensed wireless communications across interleaved spectrum in Channels 22, 27, 43, 44 and 45. More details can be found in Radio Spectrum Policy (Appendix G)

Radio Mics
4 x Shure UHF-R. These can be supplied with UR1M beltpacks and/or SMS8-UHF handhelds. Handhelds and beltpacks share frequencies. Additional channels (to a maximum of 10) may be available upon prior request. Each beltpack has the option of a WL93B lavalier or WH20B headset microphone. Additional microphone types may be available upon request including 2, DPA 4061.

1 x Shure UR3 portable transmitter available as alternative transmitter source for above system
Condenser microphones
2 x AKG C535
2 x AKG C1000
4 x AKG C3000 with H-100 shock mounts
2 x AKG C414 with H-100 shock mounts
1 x AKG C418B
2 x AKG HM1000 with CK33 heads
6 x AKG SE300B mics with choice of head: including
   6 x CK91 cardioid
   2 x CK98 rifle.
   Also 4 x VR91 gooseneck extensions

4 x Crown PCC 160
1 x Shure Beta 52A
6 x Shure Beta 57
6 x Shure Beta 58
2 x Shure Beta 98 H/C

Dynamic microphones
1 x AT Pro 25
7 x Shure SM57
6 x Shure SM58 (switched)
3 x Shure SM58

7 x BSS AR133 active DI boxes
3 x EMO passive DI boxes

Selection of mic stands: short and tall with boom arms.
COMMUNICATIONS AND VIDEO

Intercom

12 x Tec-Pro wired belt-packs and headsets (Clearcom compatible)

4 x HME Pro 850 Wireless Comms Packs & Headsets. These work with wired comms in Duplex. Base transmit frequency is 520.250MHz and beltpack transmit frequencies are spread in the range 650MHz to 666MHz. Beltpacks accept most 4 pin XLR headsets. Additional beltpacks in this system are in use by in-house technical staff and can be made available to visiting companies with prior notice given

Cue lights: 8 patchable + 4 pre-set

Backstage calls and Show Relay to dressing rooms

Camera and show relay

(signals from the cameras can be routed to anywhere required by the show in either SD or HD)

1 x HD colour CCTV camera on front of 1st Circle covering stage and routed to: DSM position; SL wing; SR wing, LX control, Flies, stage door and every dressing room.

1 x colour CCTV camera focused on conductor in pit and routed to: DSM position and sound position

1 x infra-red CCTV camera on front of 2nd Circle covering stage and routed to DSM position and fly floor operating position

Monitors at DSM position and wings

Additional SD & HD monitors are available upon request

6 x LCD SD screens with for showing video/surtitling to audience, 2 x extra screens can be added to cover front of stalls. Inputs to the system via BNC or VGA.

Video Equipment

2 X Rosenthal mif4 Timecode interfaces
1 X USB super drive for Macs
AV Playback Rack Consisting of
− 1 Quad-Core and Dual GPU Mac Pro
− Outputs Via 3 X Apple Duel Link DVI adapters and 1 x HDMI Output

BNC, VGA and SDI, DVI and SDI Cable available. We have a full fibre patch system across the building that use Opticon connectors.
Kramer DVI over CAT 5 Extender
Kramer EDID Generator
1 X Blackmagic Intensity Shuttle for Thunderbolt allowing HDMI/Component/Composite I/O into AV rack.
APPENDIX A: Safe System of Work - Power Flying System

• There is an Emergency Stop button located in each corner of the fly tower at every level, including the stage level.

• Maintain good communications between the stage and the fly floors, or wherever the operator is based. Limit the number of persons calling instructions to the fly operator, particularly in show conditions.

• Manual counterweight systems allow the fly operator to feel the effects of snags on the bar through the rope. This is not the case with power flying and, therefore, it is extremely important that all moves are clearly observed; if involving scenic pieces this should preferably be from the floor, and preferably both ends of the bar. There must be agreement in advance between Sadler’s Wells crew and the visiting company for who will be responsible for observing moving bars at stage level.

• The system includes slack rope and overload detection, but these mechanisms must not under any circumstances be relied upon to stop movement in the case of accident: the loads and forces involved means that damage is almost certain to be done before the piece is stopped. The cross stage bars themselves weigh approximately 200kg.

• Ensure that artists are informed of all flying cues within a show, especially where bars are moving in blackout conditions, and that full and safe flying rehearsals have been held before the 1st show. This includes a flying rehearsal in full working light if requested by the fly operator.

• Do not work in the grid whilst the system is in use, unless this has been agreed with the operator beforehand.

• The Safe Working Load is 600kg for each cross bar, and is 800kg for point hoists. Make sure that there is a good estimate of the weight of each piece of scenery to be rigged. If a piece is too heavy to rig on a single bar or hoist, Sadler’s Wells should be notified in advance of the get-in.

• The Power Flying System requires the operator to programme information on the show and the scenery, and to take certain decisions about how to control pieces of scenery in discussion with Stage Management. Please note: the system cannot be pre-programmed, all flown elements must be in place, and the flying programming session should be uninterrupted.

• Provide as much information in advance of arriving, including a running plot for the operator in advance of any programming session or technical rehearsal. Without this information the technical rehearsals may take longer than necessary.

• All scene changes, including interval changes behind tabs, should be planned in advance, discussed with the operator, and programmed for both safety and efficiency. Departing from a pre-programmed sequence will incur significant time delays and potential errors, so should be avoided at all costs.
APPENDIX B: Sadler’s Wells Theatre Code of Practice for loading / unloading

Staffing

• The visiting company must ensure that a competent person is appointed to supervise the unloading and loading of the truck(s) or wagon(s).

• ALL crew will be competent, well rested at the beginning of the shift, and sober.

• ALL crew will follow Sadler’s Wells requirements for Personal Protective Equipment and will wear protective footwear throughout any loading or unloading.

• Sufficient breaks must be scheduled. Guidelines to breaks are detailed in the theatre’s technical specifications (these are readily available for all Sadler’s Wells theatres). If in doubt please consult with Sadler’s Wells technical management.

• Sufficient crew must be provided or requested of Sadler’s Wells in advance. If loading/unloading is deemed unsafe as a result of insufficient crew, Sadler’s Wells reserves the right to delay any unsafe activity until such time as additional crew can be deployed.

Loading/unloading

• The visiting company will have ensured the truck is safely packed, with no dangerously balanced items at risk of falling and injuring any member of any crew. Ideally a plan of the truck, showing the distribution of items within the truck, will be provided in advance (or at least be carried by the supervising member of staff unloading the truck).

• The visiting company will have ensured that boxes, skips and flight cases are safely packed to avoid any unbalanced loads. Weight should be indicated on each item.

• The visiting company will request any necessary lifting equipment (example: forklift truck with driver) in advance of their arrival (should there not be an adequate tail lift or ramp provided on their truck).

• Sadler’s Wells will provide lighting should there not be suitable internal lighting on the truck.

Reporting

• Any and all accidents MUST be reported immediately to a member of Sadler’s Wells crew who will ensure that the relevant personnel are informed immediately, in order that all Health and Safety procedures can be followed.

• Near misses MUST be reported to the Technical Director for Sadler’s Wells and to the visiting company’s Technical Director / Company Manager.
APPENDIX C: Code of practice for get-ins and get-outs: local residents

Sadler’s Wells Theatre and the Lilian Baylis Studio are situated in residential areas. It is essential to the nature of our business that we sometimes have to work late at night or during the early hours of the morning (unsociable hours for noise disturbance). We recognise the importance of good relations with our neighbours and are committed to developing and maintaining them.

This Code of Practice will be followed by all staff employed by Sadler’s Wells Trust. We will also endeavour to ensure that staff employed by visiting companies or their agents follow it.

Sadler’s Wells Trust does not own or operate any vehicles, but drivers of vehicles owned by visiting companies or their agents will be asked by Sadler’s Wells staff to:

- Move their vehicles if they are seen to be blocking entrances to residential properties
- Move their vehicles if they are seen to be parked directly in front of any residential property in Arlington Way (provided that alternative space is available on Arlington Way).
- Turn off their engines whilst parked in Arlington Way and Rosebery Avenue, particularly if any residents inform our staff that the engines have been left running.
- Keep truck movements, including all arrivals and departures, to a minimum in Arlington Way during unsociable hours

In addition:

- Theatre staff and staff working for visiting companies will be asked to work quietly whilst in Arlington Way, and to furthermore work quietly in Rosebery Avenue during unsociable hours.
- All staff must comply with the Sadler’s Wells Code of Practice for loading and unloading of vehicles.
- All complaints from neighbours will be dealt with courteously. Wherever possible, the cause of the complaint will be dealt with immediately. A report of the complaint will be made to Sadler’s Wells Executive Director by the member of staff who dealt with the complaint.
- Any suggestions, from staff or from residents, regarding amendments or improvements to this code of practice will be passed to the Chief Operating Officer for consideration.
APPENDIX D: Safe System of Work for Stage

Whilst unloading/loading wagons you must:

- Wear protective footwear.
- Wear high visibility jackets. Jackets are stored Stage left by the dock door.
- Always be aware of people walking past the dock door and give them the right of way.
- On large pieces of equipment have one or two dedicated people watching for people and traffic.
- At night ensure adequate lighting is provided.

Whilst working in the Grid you must:

- Inform the flys operator that you are about to enter the grid.
- Inform the senior member of staff onstage that you are about to enter the grid.
- Activate the beacons.
- Ensure you leave EVERYTHING from your person, including emptying your pockets, that is not attached by a lanyard.
- Ensure that EVERY tool is attached safely to your person.
- Keep in constant contact with a member of staff onstage if your location in the grid changes.

Whilst people are working in the Grid the senior person onstage must:

- Inform EVERYONE on stage that people are working in the grid.
- Activate the beacons (if not already activated)
- Assess if the work being carried out in the grid requires everyone onstage to wear hard hats, or:
  - if the work is restricted to one area then cordon off the area with safety barriers.
  - In the case of anything being hauled/rigged from stage, ensure you have a dedicated member of staff on the ground allocated to the task at ALL times.

Calling in or out flying bars:

- Only the Designated Person for the task should ask for bar to be moved. Inform the flys operator who this will be.
- Ensure that the bar is completely clear to fly before calling a bar in or out.
- Watch the bar in or out until the move is completed. DO NOT walk away after calling a bar.
- If the bar has lighting fixtures on it, then ensure that all the fixtures hook clamps are adequately tightened, safety bonds attached to bars, and colour frame clips clipped down.
- If the bar has speakers on it, then ensure that all adequately tightened, and safety bonds attached to bars.
- If the bar has a piece of scenery on it, then ensure that all fixings are secure and safe.
Whilst working in the basket of the Genie or Tallescope (or ladders) you must:

- Ensure that EVERY tool is attached safely to your person.
- Ensure that the people at the bottom of the Tallescope wear hard hats AT ALL times.
- Ensure that you have a dedicated crew member working on the ground clearing any objects that may impede your progress across the stage.
- If working on a ladder you must always have at least one member of staff at the foot of the ladder.

Whilst using the orchestra pit lifts you must:

- Wear protective footwear.
- Have a full time member of staff in control of the remote for the lifts.
- Always have the red rope across the front of the stage.
- If using more than one lift to transport goods; always make sure that no item is across two lifts, as the lifts are unpredictable and can sometimes go out of sync from one other.

Personal Protective Equipment

- The PPE cabinet is located stage right, the equipment is there for anyone to use.
APPENDIX E: Rainbow Scroller Colours

Pro 8” Scroll #1 In all Rainbow units (Lee filters)

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## APPENDIX F: Hanging Plot


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APPENDIX G: Radio Spectrum Policy

Sadler’s Wells Theatre makes use of wireless technologies for a number of key elements to performances on its site. These uses include control of stage lighting, house light network, sound control, wireless ticketing, Chip and Pin readers, stage effects, radio communications and cloud access. Each is in its own way critical to the shows that the organisation presents and this is why Sadler’s Wells has adopted the following policy on how it deals with the use of the radio spectrum.

This document does pre-suppose some understanding of the terms used within. Where incoming companies and clients would like to discuss in more details, or more simplified terms, this can be arranged. This document can also be distributed to sub-contractors/suppliers as the basis for arrange provision of radio spectrum onsite.

Sadler’s Wells maintains licenses for all radio spectrum use where required and most of these radio bands can not therefore be used by incoming companies or venue users at any time. Select bands can be made available, solely with prior agreement with relevant venue staff and this availability, if granted, is only for the current hire period or show run. Being granted availability will not guarantee that this bandwidth will be available in the future and some bands will remain absolutely for Sadler’s Wells exclusive use on its sites. Any frequencies that Sadler’s Wells require must be kept clear of both direct use and also interference and intermodulation at all times.

If Sadler’s Wells is required to source licenses on behalf of incoming companies, it will charge the visiting company at the annual rate charged by Arqiva PMSE (previously JFMG) (www.pmse.co.uk). This fee may be reduced if the required licence is for a duration of less than 72 hours. This fee will apply every time a licence application is submitted. Submission of additional frequencies must take place no later than five working days before the first date that the frequencies are required. Sadler’s Wells staff can assist with this submission if required but must be informed as soon as such a requirement is desired.

License-exempt bands (863-865MHz (‘Channel 70’ and 2.4GHz & 5GHz (Wi-Fi) can not be legally regulated in this way but in using the facilities of Sadler’s Wells, all users agree that they will inform Sadler’s Wells what any requirements are within those frequencies and accept that Sadler’s Wells has wireless requirements within those bands that may supersede those of the user.

This applies to Sadler’s Wells Theatre (SWT), Lilian Baylis Studio (LBS), Khan Theatre and all meeting rooms and foyer areas at Rosebery Avenue, and to the Peacock Theatre in Kingsway.

There follows a more detailed breakdown of the frequency use by Sadler’s Wells:

Building Walkie-Talkies - 462MHz + 479MHz
These frequencies are used for the building radio communications. As these are used by different departments to aid communication during shows, and particularly if an evacuation should be required, these frequencies must always be available for use by Sadler’s Wells.
Performance Radio Comms – 520.250MHz 521.500MHz and 650 – 666MHz
These frequencies are used by SWT Technical staff for backstage communication during shows. Generally these frequencies must remain clear for use during times that the stage is in use. Visiting companies who are onstage may prefer to provide their own system with prior notice but these frequencies will be considered to be available at all times to Sadler’s Wells.
There are 12 comms packs) available within the range of frequencies. Companies presenting a show/event in Sadler’s Wells Theatre will be able to utilise these comms units but should expect that at least the Duty Technician and Duty Stage (minimum) will require these units
Companies presenting a show/event in any other area at the Rosebery Avenue (including the Lilian Baylis, main foyer areas, Khan Theatre) site should be aware that these frequencies will be in use and should seek to avoid interference on these frequencies.

Wireless Microphones – 606 – 614MHz (Channel 38)
Sadler’s Wells has an annual license for Channel 38 and maintains a stock of 10 Shure UHF-R units that are shared around the site at Rosebery Avenue. Incoming companies requiring the use of frequencies within this band should not presume that these frequencies are available without checking in advance. However, if Sadler’s Wells are not using in-house stock then this frequency band can be made available to incoming companies. Additional frequencies can obtained in interleaved spectrum but care should be taking that any frequencies must be licensed before being used onsite. Do note the proximity of Performance Wireless Comms to likely frequencies of Wireless Microphones.
At the Peacock Theatre, there is no Performance Radio Comms and a smaller number of Wireless Microphones in the house stock. The Channel 38 licence applies and frequency can be made available to incoming users. Please do note that any additional licences for interleaved spectrum held for Sadler’s Wells at Rosebery Avenue will not apply to any other site (and vice versa). Separate applications must be made at each site, even for identical frequencies.

Wireless Microphones – 863-865MHz (Channel 70)
Sadler’s Wells has a couple of radio mics in this frequency band which are used in the FOH areas. With prior warning, Sadler’s Wells will endeavour to not use these units but incoming users are advised that as this is de-regulated spectrum, there is no way to confirm that outside interference will not affect any use of this bandwidth. Show critical uses are not advised in this bandwidth.

Wifi – 2.4 GHz and 5Ghz
Sadler’s Wells maintains a site wide coverage of Wifi that is available by use for staff, incoming companies and public visitors in order to access the internet and cloud based apps. Within both auditoria on the Rosebery Avenue, 2.4GHz channels are utilised for control of stage lighting and sound systems. Within this band, the house lights in the main stage auditorium also have their control network at the top end of 2.4GHz. Wireless ticket readers for FOH staff to check tickets also operate in the 2.4GHz band
Incoming companies are advised to not utilise channels 13 and 14 in the 2.4GHz bandwidth as Sadler’s Wells will not make this part of 2.4GHz available and that the use of digital radio mics that operate in this band (such as Line 6 mics) is unlikely to be permitted.
Incoming companies should be aware that data flow in this band could be slowed down without notice.
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