

STORMEN



KONSERTHUSET

Technical specification

Stormen Concert Hall

Bodø, Norway

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Norway

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STORMEN



General information

Stormen concert hall and library is a state-of-the-art facility for concerts and performances. It is built and run by the municipality of Bodø and had its grand opening in November 2014. The various venues have audience capacities from 60 to 918 and feature comprehensive technical installations for maximum flexibility. A highly skilled staff will handle your production needs from planning through a successful performance. The complex is situated in the middle of Bodø in northern Norway.



■ Main Hall | Store sal

Max 918 seating capacity, depending on configuration. Store Sal features a variable acoustic, accommodating performances ranging from theatre with a reverberation time (RT) of around 1s, through to symphonic works with a RT of at least 1.8s. The volume of the hall is 11,000m³ to deliver the design RT with height and width of 18m.

The space is transformed for amplified music and theatrical use by exposing the flytower and deploying a unique system of unity-absorbing wall panels covering half of the side and rear walls, reducing reverberance and delivering the RT criterion. In orchestral mode, these slide into enclosures behind the timber linings. When parked, these provide defined and precise limited low frequency absorption.

To prevent sound being lost into the flytower of a theatre when used for orchestral music, a unique transformation system has been developed; folding away the proscenium header and sides to continue the width and height of the auditorium into the stage. Three further ceiling panels are flown and hinged into place. A sliding track system allows the remaining 14m high side-wall panels to slide into place to complete the room, dramatically changing it to a classic shoe box proportion, with the correct volume and providing the acoustic excellence required.

The acoustic of the Store Sal is on a par with the finest single purpose concert halls in the world, and yet this auditorium can transform into a proscenium theatre with a full height flytower equipped to international standard.

The venue is equipped with first class sound and lighting equipment and a high quality 20k ansi lumen projector and various projection screens.

A full size Harlequin sprung floor is available for ballet and dance.

■ Small Hall | Lille sal

Max 240 seating capacity, depending on configuration. Lille Sal features a variable acoustic and a retractable seating system. It can be configured for standing audience, café style seating, conference seating or dining. The venue is equipped with first class sound and lighting equipment and a high quality 8k ansi lumen projector and projection screen.

■ Sinus

Max 460 capacity club venue, depending on configuration. Standing audience or café style seating is possible.

Heavily dampened acoustic ideal for amplified music.

The venue is equipped with a comprehensive sound and lighting system.

■ Chamber Hall | Kammersal

Intimate venue with max 60 seated capacity. Rich acoustic that can be dampened by the use of drapes. The venue is ideal for intimate acoustic performances and also for meetings, pretalks and as a VIP lounge.

Main hall | Store sal

Stage in theatre mode

- 12,5m x 15m x 0,75m (W x D x H) raised stage
- 12,5m x 9m (W x H) proscenium opening
- 22m flytower height

Stage in orchestra mode

- 18m x 15m (W x D)
- 14m ceiling height
- Orchestra overhead reflectors
- 6x RPG Vamps 1,2m(w) x 2,6m(h) small ensemble reflectors

Dressing rooms

- Two greenrooms with kitchen, coffee brewer, refrigerator, for approx. 20 persons each
- Two soloist wardrobes with private bathroom/shower, for 1-2 persons each
- Two dressing rooms with makeup mirrors and hair wash, for 12 persons each
- One warming-up wardrobe, for approx. 20 persons
- Production office facilities in stage level greenroom, printer/copy machine
- Two shower rooms available with six showers in total
- Washing machine and dryer available
- Show relay system throughout the entire back-of-house area

Orchestra pit platform

- Two movable platforms each 16m x 2,5m (W x D)
- Under stage pit 16m x 2,5m (W x D)
- Total size in lower position 16m x 7,5m (W x D)
- Movable platform can also be used as stage extension

Flybars

- 36x silent flybars, 1,8m sec, 600kg capacity
- 1x forestage flybar, 400kg capacity
- 2x side flybars, 600kg capacity
- Flybar #3 is reserved for the House curtain
- Note that the 6 LX bars (flybars 7, 11, 14, 22, 24 and 33 have a fixed arrangement for the in-house light rig)
- 4x movable pointhost 1000kg capacity (movable within the stage grid)
- 2x syncropoint 250kg capacity (movable within the stage grid) same speed as the flybars 1,8m sec

Sound

- d&b Audiotechnic V-series, 8x top + 4x sub each side, flown
- d&b Audiotechnic 2x J-Infra subs, 8x E6 front fills
- d&b Audiotechnic D80 amplifiers
- Soundcraft Vi7000 128ch FOH mixer, 64ch stagerack
- Soundcraft Vi600 96ch MON mixer, 64ch stagerack
- 64ch passive microphone splitter
- Pyramix native 64ch recording system
- 8x d&b M4 monitors
- 4x d&b M6 monitors
- 8x monitor channels, D80 amplifiers (12ch upon request)
- 28x channels of Shure Axient digital radio mic's
- Good selection of standard mic's and DI's

Light

- 1x MA Lighting GrandMA3 light
- 1x MA Lighting GrandMA2 light
- 416 ADB dim/switch channels
- 12x ADB 2500W profile 9-22"
- 12x ETC S4 zoom profiles 750W 15-30"
- 24x ETC S4 junior profiles 575W 25-50"
- 24x ETC 750 fixed profiles, various lenses from 10-50"
- 14x Arri 2000W Fresnel True Blue ST2 PO w/ barndoors
- 12x Selecon Rama 150 1000W Fresnel w/ barndoors
- 40x James Thomas PAR64 CP62
- 2x Robert Juliat 1200W HMI follow spots, dmx dimmers
- 14x ADB ALC4-2 RGB+W horizons
- 6x Clay Paky Alpha profiles 1500
- 12x Clay Paky Alpha spot HPE 1500
- 10x Clay Paky A.leda B-EYE K20
- 26x Robe LED wash 300W
- 4x 4light blinders + 8x 2light blinders
- 1x MDG ICE FOG Compact
- 1x MDGATMe hazer

Backline

- Ludwig Legacy Classic drum kit w/DW hardware (details on last page)
- Zildjian K custom cymbals (details on last page)
- Ampeg SVT Classic tube bass amplifier
- Ampeg 4x10" bass cabinet
- Ampeg 1x15" bass cabinet
- Fender Twin Reverb guitar combo
- Fender 65 Delux Reverb guitar combo
- Vox AC30 OC2 guitar combo
- Clavia Nordstage2 88 electric piano
- Steinway model D grand piano (2012)

AV

- Panasonic PT-DZ21KEJ, 3G/HD-SDI, 20000 AL DLP projector
- 11 x 7m (W x H) front projection screen
- HDMI or SDI connection at FOH or at stage

Production power

- 6x 63A 400V CE outlets
- 2x 125A 400V CE outlets
- 1x 250A 400V powerlock
- NB: if powerlock is used only 2 63A and 1 125A is available.
- 12x 16A 230V shuko clean power outlets for audio and video
- 4x 16A 230V shuko technical power outlets

Power for outside production vehicle

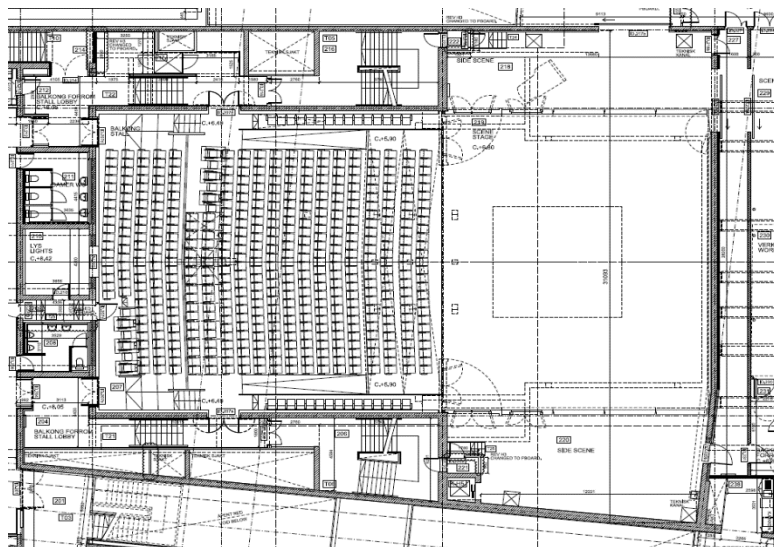
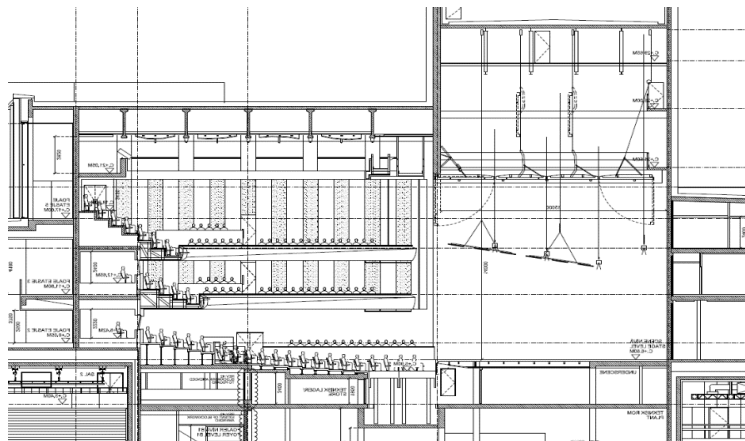
- 2x 63A 400V CE outlets
- 2x 32A 400V CE outlets
- 2x 16A 230V shuko clean power outlets for audio and video
- 2x 16A 230V shuko technical power outlets

Stage drapes

- 8x Black borders 16x5m
- 2x Black borders 16x0,5m
- 8x Black legs 10 x 2m (4 pairs)
- 2x Black proscenium legs 10 x 1m (1 pair)
- Black tabs 16 x 10m total
- White cyclorama 26 x 11m
- White sharktooth 18 x11m
- Black bobbinette 12 x 9m
- Purple-red main curtain, vertical and horizontal opening
- Black acoustic drapes in orchestra pit and auditorium technical gallery

Dance floor

- 228m2 Harlequin Liberty HD (please contact us for configuration options)
- Harlequin DUO black/white vinyl



Smallhall | Lille sal

Stage

- 11,9m x 6,1m (W x D) flat floor
- 8,2m ceiling height
- 7,3m rigging height
- 10x motorized 250kg bars
- 5x fixed height bars at 7,3m
- The stage is surrounded by a technical gallery, height under gallery is 5,1m. Please refer to drawings.

Dressing rooms

- Two dressing rooms with kettle and refrigerator, for approx. 10 persons each
- Washing machine and dryer available
- Show relay system

Sound

- d&b Audiotechnic V-series, 4 top (flown) + 1 sub each side, Q10 front fills, D80 amplifiers
- Soundcraft Vi400 72ch FOH mixer, 48ch stagerack
- Pyramix native 48ch recording system
- 4x d&b M6 monitors
- 4x monitor channels, D80 amplifiers
- 8x channels of Shure Axient analog radio mic's
- Good selection of standard mic's and DI's

Light

- MA Lighting GrandMA2 light
- 84 ADB dim/switch channels
- 24x ETC S4 junior profiles 575W 25-50"
- 3x Arri 2000W Fresnel True Blue ST2 PO w/ barndoors
- 19x Selecon Rama 150 1000W Fresnel w/ barndoors
- 8x Robe LED wash 300W
- 1x Robert Juliat Cricket 1200W follow spot

Backline

- DW Performance series drum kit w/ DW 5000 hardware (details on last page)
- Sabian cymbals (details on last page)
- Ampeg SVT Classic tube bass amplifier
- Ampeg 4x10" bass cabinet
- Markbass CMD 121H bass combo
- Fender 65 Delux Reverb guitar combo
- Vox AC15 guitar combo
- Steinway model D grand piano (1985)

AV

- Panasonic PT-RZ970BEJ, 1920x1200, 3G/HD-SDI, 10000 AL DLP laser projector
- Draper motorized screen 2,67 x 4,27m, 16:10
- HDMI or SDI connection at FOH

Sinus

Stage

- 9,0m x 6,8m x 0,75m (W x D x H) raised stage
- Max 5.6m rigging height

Dressing rooms

- One dressing room with refrigerator and private bathroom/shower, for approx. 8 persons
- Washing machine and dryer available
- Show relay system

Sound

- d&b Audiotechnic V-series, 4 top (flown) + 3 sub each side, Q10 front fills, D80 amplifiers
- Midas HD96, 48ch stagerack, analog outboard (PCM91, PCM92, SPX2000, D-Two, 2x 160A)
- Nuendo Live 64 ch recording system
- 8x d&b M4 monitors
- 8x monitor channels, D80 amplifiers
- 8x channels of Shure Axient analog radio mic's
- Good selection of standard mic's and DI's

Light

- MA Lighting GrandMA2 light
- 48x Okero dim/switch channels 13A
- 10x ETC S4 junior profiles 575W 25-50"
- 22x James Thomas PAR64 CP62
- 14x Varilite VL2600 spot (spades + 2 gobo)
- 10x Robe 300W LED washers
- 2x Martin Atomic 3000
- 4x 4light blinders + 4x 2light blinders
- 2x Martin K1 hazers
- 1x Martin ZR44 smoke machine

Backline

- DW Collector series drum kit (details on last page)
- Zildjian A custom cymbals (details on last page)
- Gretsch Brooklyn Jazz drum kit (details on last page)
- DW 9000 hardware
- Ampeg SVT Classic Heritage tube bass amplifier + 8x10" Heritage bass cabinet
- 1x G&K MB150S/112 bass combo
- 1x Fender Twin Reverb guitar combo
- 1x Fender 65 Delux Reverb guitar combo
- 1x Fender Hot Rod Delux guitar combo
- 1x Vox AC30 OC2 guitar combo
- 1x Ramp Bassmann 50W head + 2x12" cabinet
- 1x Roland 2x12" Jazz Chorus guitar combo
- 1x Marshall JCM900 guitar amplifier
- 2x Marshall JCM800 guitar amplifiers
- 3x Marshall 1960A 4x12" guitar cabinets
- 1x Clavia Nordstage2 88 electric piano
- Yamaha C7 grand piano (1985)

AV

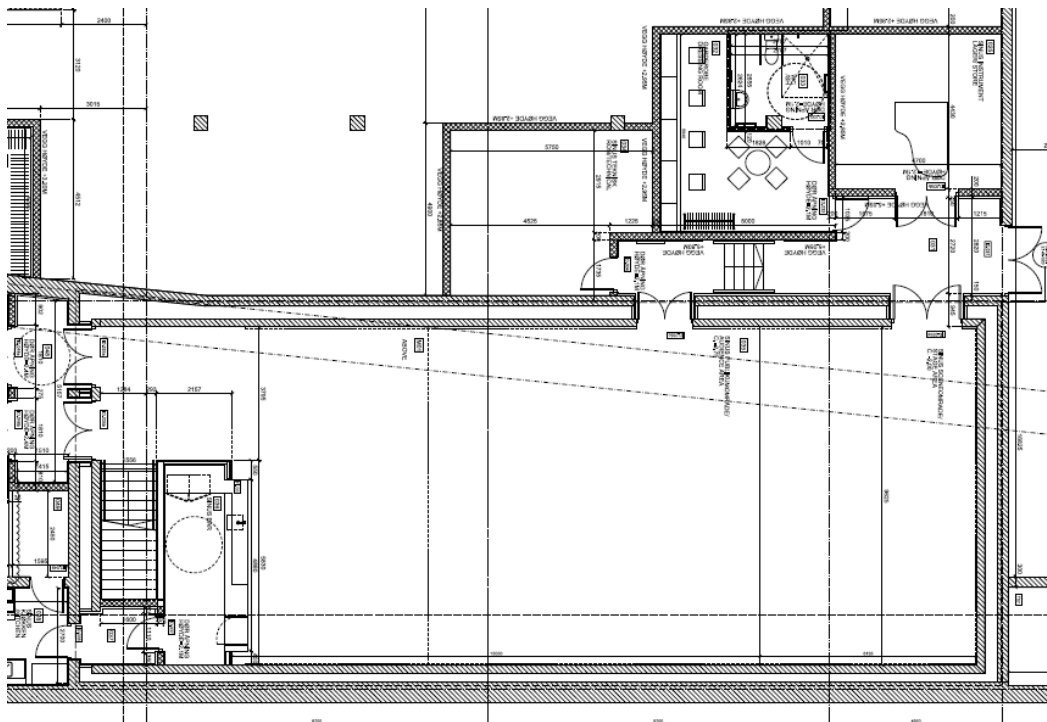
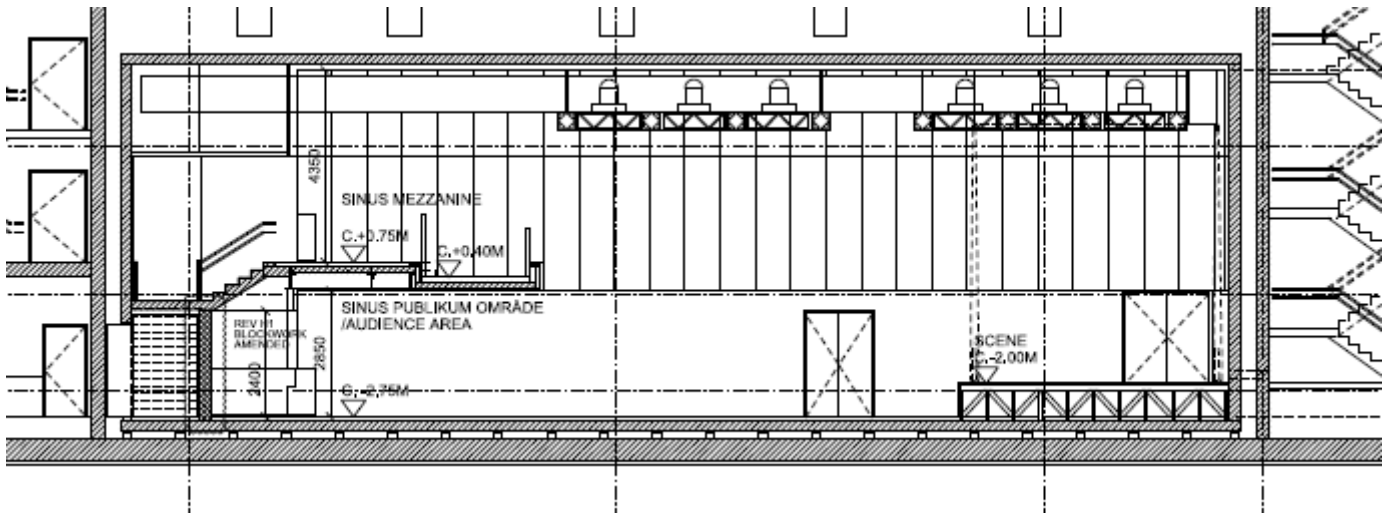
- Panasonic PT-RZ970BEJ, 1920x1200, 3G/HD-SDI, 10000 AL DLP laser projector
- Draper motorized screen 2,67 x 4,27m, 16:10
- HDMI or SDI connection at FOH

Production power

- 2x 63A 400V CE outlet
- 8x 16A 230V shuko clean power outlets for audio and video
- 3x 16A 230V shuko technical power outlets

Stage drapes

- Black surround
- White cyclorama 9x7,5m



Chamber hall

Stage

- 7m x 3m (W x D) flat floor

Sound

- d&b E8 + E12X, 1 top and 1 sub per side
- d&b D12 amplifier
- Soundcraft MFX 12ch mixing console
- 3x wireless bodypack w/DPA headwork mics
- 1x wireless handheld Shure SM85

Lights

- 24ch DDE Actor dimmer
- 24ch Strand 200 Plus light console w/ two presets
- 8x ETC S4 junior profiles 575W 25-50"
- 8x Selecon Rama 150 1000W Fresnel w/ barndoors
- 4x James Thomas PAR64 CP62

Backline

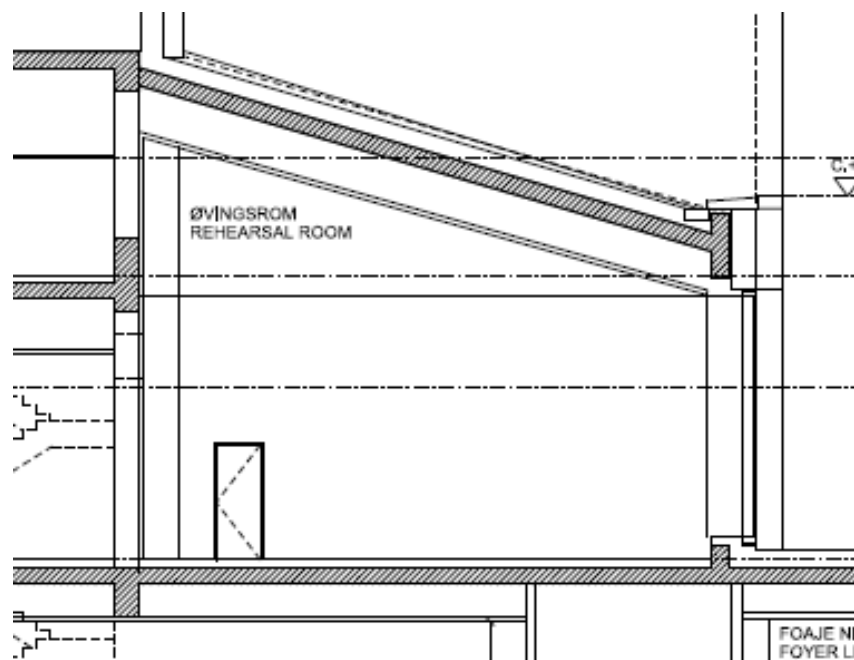
- Bösendorfer 230 Vienna Concert grand piano (2022)

AV

- Epson EB-L610U, 1920x1200, 6000 AL laser projector
- Draper motorized screen

Production power

- 1x 63A 400V CE outlet
- 1x 32A 400V CE outlet
- 2x 16A 230V shuko clean power outlets for audio and video
- 2x 16A 230V shuko technical power outlets



Detailed specifications of drums

Ludwig Legacy Classic (Main Hall)

Ludwig Finish: Black Oyster 1Q
22x16" Kick drum, Legacy Classic Curved Spurs
18x16" Floor tom, Legacy Classic
16x16" Floor tom, Legacy Classic
14x14" Floor tom, Legacy Classic
13x9" Rack tom, Legacy Classic
12x8" Rack tom, Legacy Classic
10x8" Rack tom, Legacy Classic
14x6,5" Snare drum, Chromed Aluminum Supra-Phonic
10,5mm Elite Double tom holder

Cymbals #1
Zildjian K Custom
Dark
14" Hi Hat
16 Crash
18 Crash
20 Ride
17 China
1x 9000 Hi Hat
stand

DW Performance Series (Small Hall)

20x16" Kick drum, Performance Series
18x 4" Kick drum, Performance Series
10x8" Rack tom, Performance Series
12x9" Rack tom, Performance Series
14x12" Floor tom, Performance Series
16x14" Floor tom, Performance Series
14x5,5" Snare drum, Performance Series
DW 5000 series hardware

Cymbals #2
13" Zildjian K Hi Hat
16" Sabian Crash
18" Sabian Crash
20" Sabian Ride
1x 9000 Hi Hat stand
1x 9000 Snare stand
5x 5000 Cymb. stands

DW Collector Series (Sinus)

22x16" Bass drum, Collector Series
20x16" Bass drum, Collector Series
18x16" Floor tom, Collector Series
16x14" Floor tom, Collector Series
14x12" Floor tom, Collector Series
12x10" Rack tom, Collector Series
12x8" Rack tom, Collector Series
10x9" Rack tom, Collector Series
10x7" Rack tom, Collector Series
14x5,5" Snare drum, Collector Series

Cymbals #3
Zildjian A Custom
14" Hi Hat
16" Crash
18" Crash
20" Ride
2x 9000 Hi Hat stands
4x 9000 Snare stands
8x 9000 Cymb. stands

Gretsch Brooklyn Jazz (Sinus)

18x16" Bass drum, Brooklyn Jazz
14x15" Floor tom, Brooklyn Jazz
12x9" Rack tom, Brooklyn Jazz
14x5" Snare drum, Brooklyn Jazz

Premier Genista (Sinus)

24x18" Bass drum, Genista
20x16" Bass drum, Genista
16x14" Floor tom, Genista
14x12" Floor tom, Genista
12x8" Rack tom, Genista
10x8" Rack tom, Genista
8x8" Rack tom, Genista
14x6,5" Pearl Snare drum

Recording Studio

30m2 control room
Studer Vista One digital mixer
Genelec 7.1.4 Dolby Atmos monitoring
Dynaudio Air 25 2.0 monitoring
Pyramix masscore unlimited recording system, 3x MADI + 40 micpre inputs
Nuendo 12 workstation
Pro Tools Ultimate native workstation

Camera production

Blackmagic ATEM Production Studio 4k 2M/E mixer with advanced 2M/E panel
Panasonic AW-RP150GJ camera controller
4x Panasonic AW-UE150 PTZ camera
2x Panasonic AW-HE130 PTZ camera
4x Panasonic AW-UE4K ultra wide angle camera
3x Panasonic AK-HC3900GJ system camera, Fujinon optics, pedestal dolly system
13x Hyperdeck recorders
3x Panasonic AJ-PX270 P2 camcorders, Libec dolly tripods
1x Lilliput 23" HDMI + SDI monitor
1x Lilliput 15" HDMI + SDI monitor
4x Blackmagic HD assist 7" recorder/monitor

Microphones for recording system

3x Neumann TLM 50
2x Neumann KM 133
2x Neumann KM 143
2x Neumann KM 120
2x Neumann TLM 103
4x DPA 4006
16x DPA 4011
12x DPA 4015
4x DPA 4018
20x 4099 clip-on, selection of all clip types
2x Sennheiser 8020
6x Sennheiser 8040
2x Sennheiser 8050
2x Sennheiser 8090
2x Schoeps MK5
2x Gefell M300

Headset microphones

18x DPA 4166
5x DPA 4188
5x DPA 4066
4x DPA 6066

General cabling specification

Sound

Analogue cabling: 12pair LK and XLR tie lines, all 110ohm

Speaker cabling: 4x4mm Speakon

Fiber cabling: 50/125 fiber, Neutrik OpticalCon field connectors, LC patch

Network cabling: Cat 7 F/FTP, Neutrik EtherCon (Cat6) field connectors, RJ45 patch

Light

Multicables: 6 pair socapex, parallel on shuco in all locations

DMX cabling: 110ohm, xlr 5pin

Network cabling: Cat6a S/FTP, Neutrik EtherCon (Cat5) field connectors, RJ45 patch

AV

HD-SDI cabling: 75ohm RG59, Neutrik BNC field connectors, Musa patch

Various equipment

- 2x 2.67 x 4.27 Draper Stage Screen front projection
- 2x 30cm mirror balls with motors
- 2x 40cm mirror balls with motors
- 1x 75cm mirror ball with motor
- AER Basic performer acoustic instrument amplifier
- Premiere Genista drum kit
- 6ch Shure PSM1000 InEar system, 16 receivers, mobile rack
- d&b mobile PA, 2x Q10 + 2x V-sub, 4 monitor channels
- 8x confetti tube canons w/4ch trigger
- 2x large confetti fans for overhead use
- 1x Martin JEM AF-2
- 20x XLED
- 18x XBAR
- 4x Martin Atomic 3000
- 2x MAudio Axiom 61
- 2x Ultracase GSX-8 guitar rack
- 2x Ultracase GSX-4 guitar rack
- Fender Precision bass
- Fender Stratocaster
- Fender Telecaster
- Gibson Les Paul
- 2x Samsung 65" monitors on wheeled stands, 1920x1080, HDMI + SDI
- Doughty rigging system

Sound Level

Maximum allowed sound levels

Main Hall: 99dBA, LEQ30min

Small Hall: 99dBA, LEQ30min

Sinus: 100dBA, LEQ15

Intercom

Wired

Clearcom wired beltacks. two separate channels in each venue.

IP based 12 button panels for stage managers and control rooms.

Wireless

Clearcom wireless beltacks. 12 units for building wide use.

Generally very good coverage. Operates together with wired and IP based panels.