

# FESTSALEN MUNCH

**TECHNICAL SPECIFICATIONS - LAST UPDATED NOV 2023**



## **TECHNICAL CONTACTS**

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# ROOM DIMENSIONS

L= 276,7m  
W=12,6-15,3 m  
H=8,6 m

The room with full height has the following dimensions:  
length 26.7 m; width between 12.6-15.3 m; height 8.6 m.

This gives an area of around 370 m<sup>2</sup> and a volume of about 3000 m<sup>3</sup>

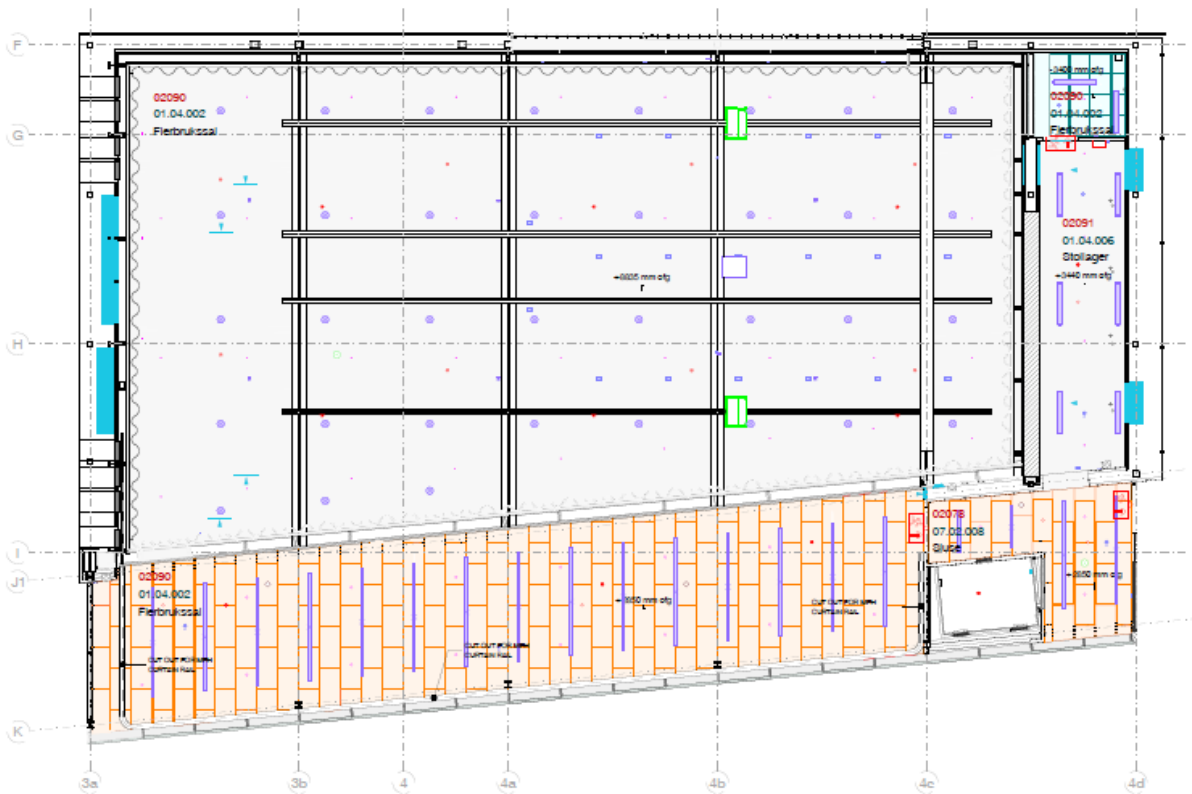


Figure 1: Floorplan of Festalen

# STAGE

Scalable Nivtec system.  
30 x Nivtec modules 2x1 m  
9 x Nivtec modules 1x0,5m  
Legs: 20cm, 40cm and 60 cm  
All necessary railing

Standard stage size:  
Width: 10m  
Depth: 5m  
Height: 0,6m  
Clearance stage floor truss:  
No sidestage!

# BLEACHERS

Festsalen has automated bleachers with 274 seats. FOH is rigged on top level.  
See attachment for details.

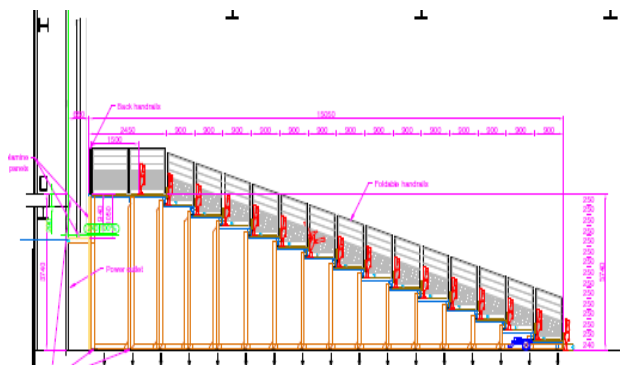


Figure 2: Side view Bleachers

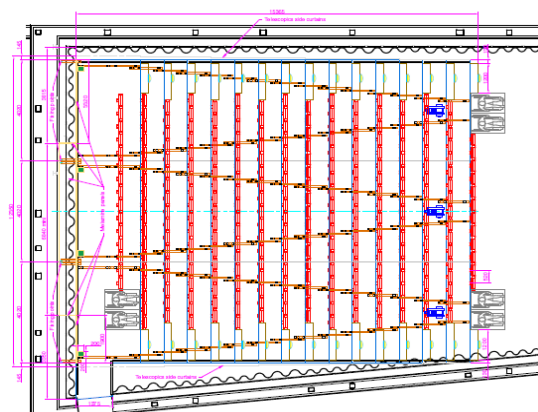


Figure 3: Top view Bleachers

# **SOUND**

## PA SYSTEM

Tops: 10x Meyer Lina pr side  
Subs: 6x Meyer LFC 750, flown mono endfire  
Front fill: 2x Meyer x40 pr side

## FOH:

Alt1: Allen & Heath Dlive S5000  
Alt2: Allen & Heath Dlive S2500  
Alt3: Allen & Heath Dlive C1500

## Stagerack:

Allen & Heath CDM 64 (64 in, 31 out)  
4x A&H DX 168 (16 in, 8 out)

## External FX:

2x Bricasti M7

## **WIRELESS SYSTEM:**

Shure Axient, 8 ch  
8x ADX 1m bodypack  
8 x countryman headsetmics  
4x SM 58 WL  
4X KMS9 WL

## Sennheiser, 2ch:

2 ch Sennheiser WL  
2x Headset mics  
2x HH mics

## Recording:

We can provide different versions of recording.  
Please contact head of sound for further details and agreements

# PROJECTION/AV

**Projector 1** (Short side / stage end)  
Panasonic RQ-22, HD projector  
Screen size: 7 X 4 meters  
Format: 16:10

## **Projector 2 (Long side)**

Screen size: Panasonic RQ-22, HD projector  
Screen size: 487 X 304 cm  
Format: 16:10  
HD BASE-T, Connection HDMI available at FOH, stage and in every patch around the room

# LIGHTS

## OPERATION

1x GrandMA3 light

## LUMINEERS:

Martin	
aura XB	30
Martin encore (stage)	8
Martin encore (front)	5
XLED	
Ledbar	8
Okerø dimmer channels	60
Nodes: MA2 port node	10

## HAZE:

MDG ATMe HAZE w/MDG FAN

# HOUSE POWER

DELTA-system 400V/50Hz (red); 3 phases + ground, - but no neutral.  
230V between the three phases. 130V between phases and earth.

Available connectors:

2x 32 A , 400 V

2x 63 A, 400V

# RIGGING

All trusses are motorized

Truss 1-3 moveable both horizontally and vertically. SWL = 300kg

Truss 4-11 can be moved vertically SWL = 400kg

See attachment for details

Controller has weightcells for loadmonitoring. Overload will indicate and keep truss from moving.

Motors: Liftket 030/22mb -250 kg

Truss: Milos 2KH-40 -M390K, pipe Ø48,4 X 4,47mm, length 9,5m

Class: UC1 - SIS standard

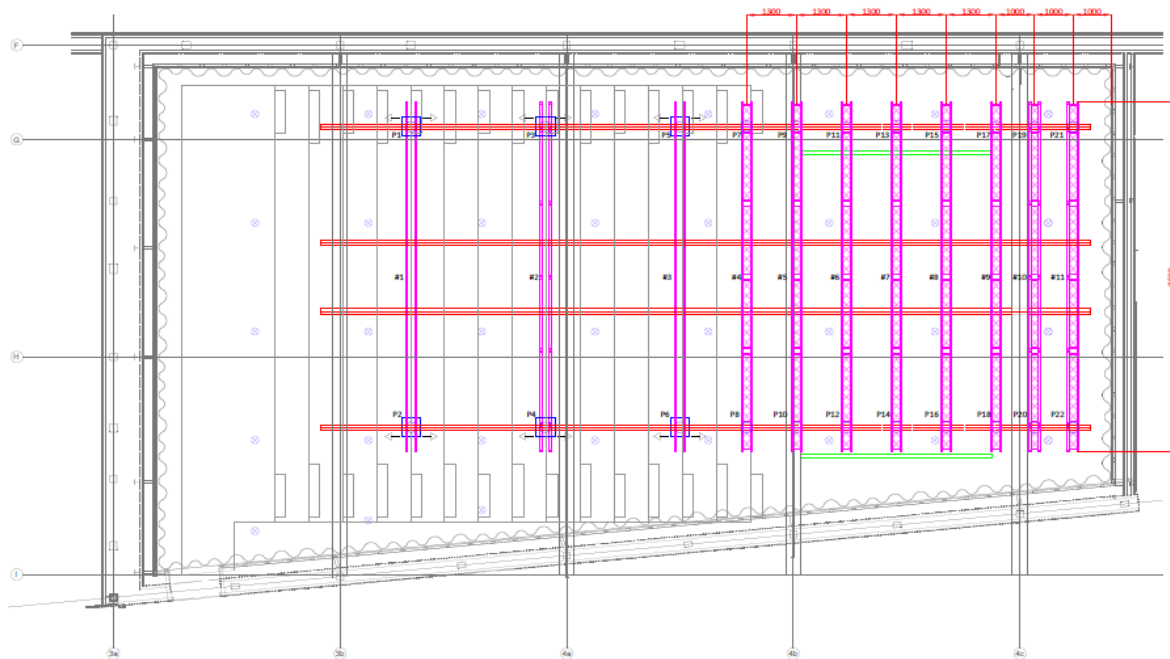


Figure 4: Trusses Festsalen

See weight distribution chart bellow

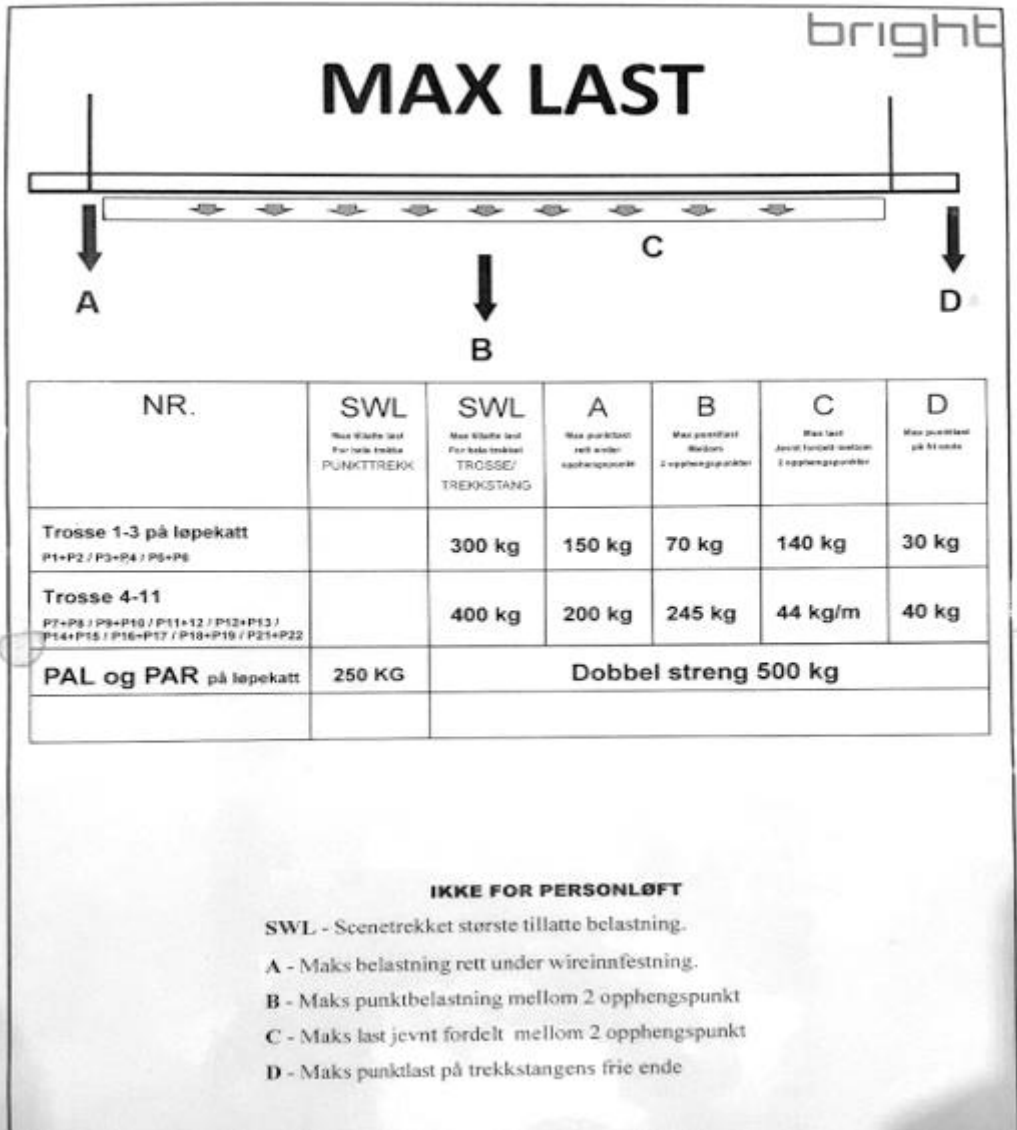


Figure 5 Weight distribution chart

Directly under suspension \_\_\_\_\_ 150 kg  
 Point load between 2 suspensions \_\_\_\_\_ 70 kg  
 Evenly distributed load btwn 2 suspensions \_\_\_\_ 140 kg  
 Point load free end load carrier \_\_\_\_\_ 30 kg

**Pleas note:**

- All equipment/other to be hanged in truss MUST be approved by technical department.
- Please contact technical department regarding all external equipment mounted in truss.



# FLOATING KITS

All items are subject to availability.

Contact technical department for solutions and availability.

## MONITORS:

8 programs with possibility of adding 8 more

Separate monitor mix available on request.

Wedges:

16x Turbosound TFM 122

Amps:

8x LAB IPD 2400

## Mics/DIS:

Shure B91	2
Shure B52	2
Shure SM58	14
Shure SM57	10
Shure KSM44A	2
DPA 2011	10
DPA 4099	10
DPA 6061	4
Audio Technica ATM350	6
Audio Technica AT4050	2
Audio Technica AE3000	2
Audio Technica AT4081	4
Audio Technica AE5400	1
Audio Technica ATM450	1
Audio Technica ATM650	1
Beyerdynamic M 160	4
Beyerdynamic M 88 TG	2
Beyerdynamic M 201 TG	2
Sennheiser MD441-U	2
AKG C411	6
AKG C414 XLS	8
Yamahiko CPS-PF1P Tone Plug model	2
Radial PZ-DI	2
Klark Teknik DN100	24
Electrovoice RE20	1
Telefunken M80	1

## **ADDITIONAL LIGHTS**

All items are subject to availability.

Contact technical department for solutions and availability.

Type:	Qty:
4 lights LED	4
Astera AX 1-Pixeltube	16
Quartzcolor studio LED X3plus	6
Bright XBAR	23
XLED HD	19
AMAC AURA XB	6
Martin Atomic 3000 LED	4
BRIGHT XLED FX	4
Quartzcolor Fresnel HMI 1200w	6
Aria f 1000 plus	4

## **WIRELESS SYSTEM**

Shure Axient, 8 ch  
8x ADX 1m bodypack  
8 x countryman headsetmics  
4x SM 58 WL  
4X KMS9 WL

## **DJ EQUIPMENT:**

1x Pioneer DJM 900 NX  
2x Pioneer CDJ 2000 NX  
2x Pioneer PLX-1000

## **VIDEO /RECORDING**

Equipment for videoproduction, recording and/or stream is available on request.  
Please contact technical manager for details on equipment and solutions.

## **PA SYSTEMS**

Type:	Qty:
Meyer X 40 Top	6
Meyer 750 sub Genelec	4

## **RIGG**

4x Manfrotto 087NWB

## **GRAND PIANO**

Steinway D-series 274

Standard tuning: 440 Hz

## **SCREENS**

Samsung 75" on stand

Samsung 32" stage monitor

# ACOUSTICS

Festsalen has variable acoustics which can be adjusted with our motorized, black wool curtains.

Curtains = molton 500gr/m<sup>2</sup>, 50%fold

## Configuration 1, conference setup with chairs

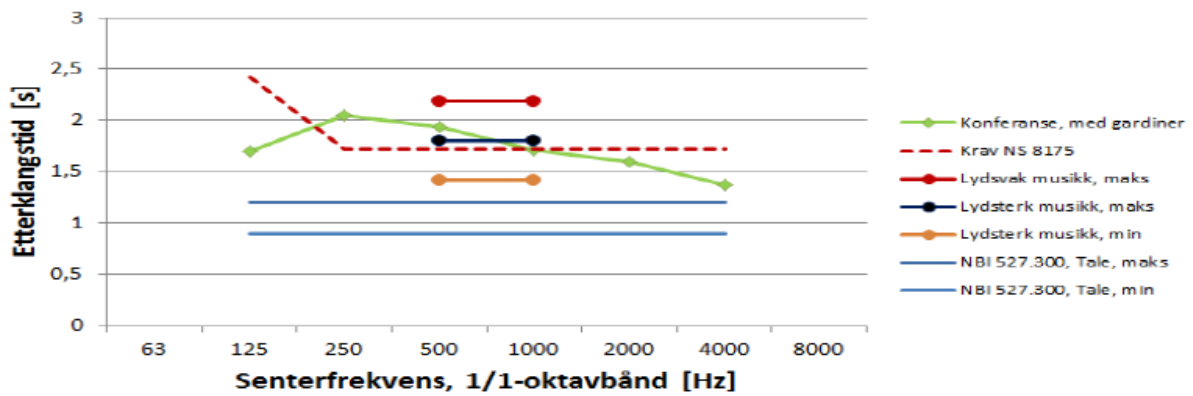


Figure 6: Reverberationtime conference setup with chairs

## Configuration 2, stage on long wall

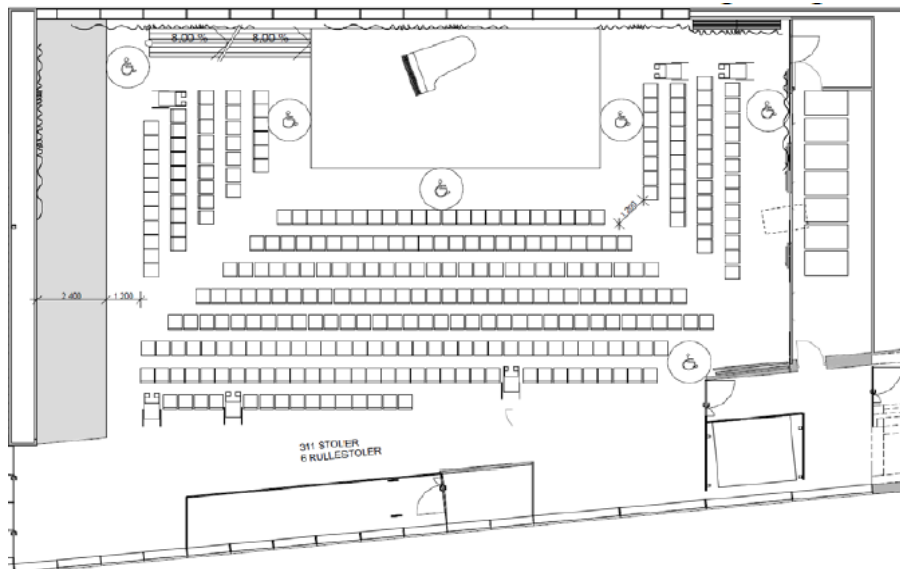


Figure 7: Setup stage on long wall

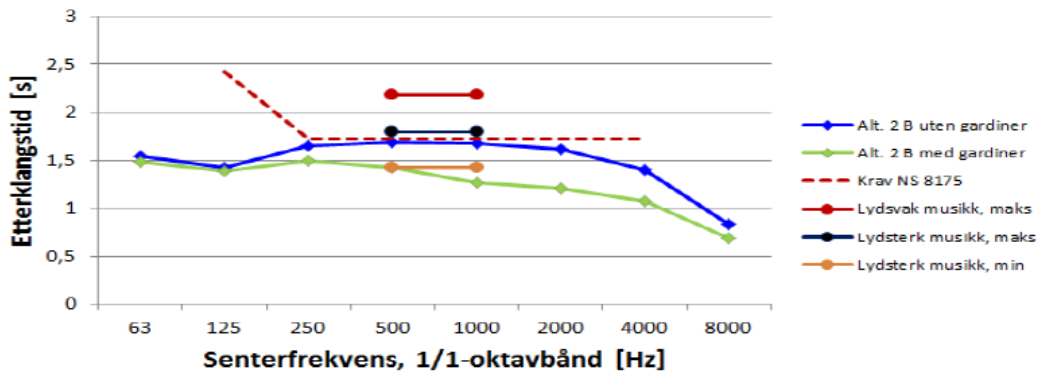


Figure 8: Reverberation time stage on long wall

### Configuration 3, Acoustics empty hall

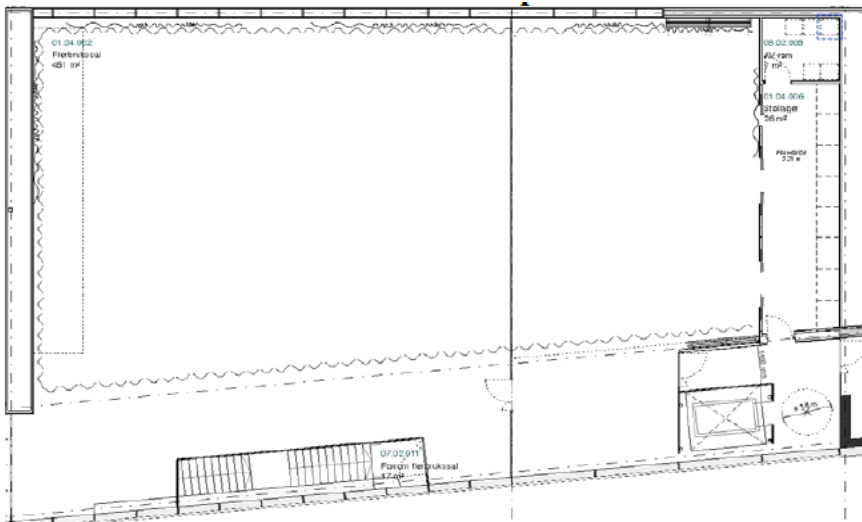


Figure 9: Setup empty room

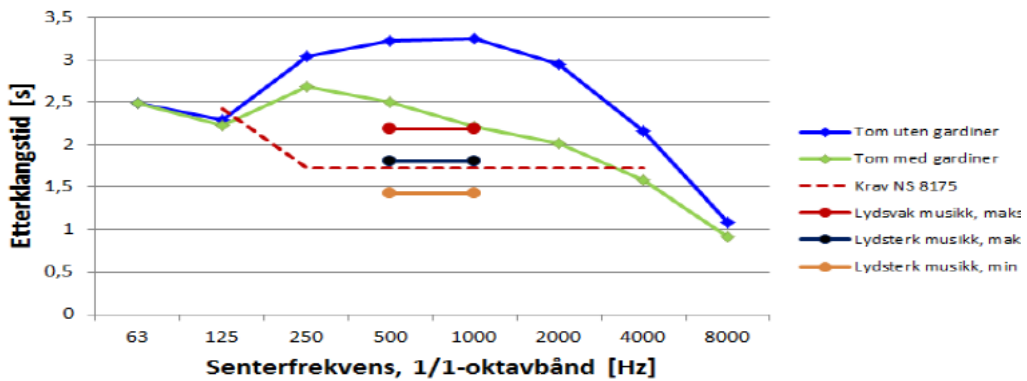


Figure 10: Reverberation time empty room with and without curtains

# Configuration 4, telescopic bleacher

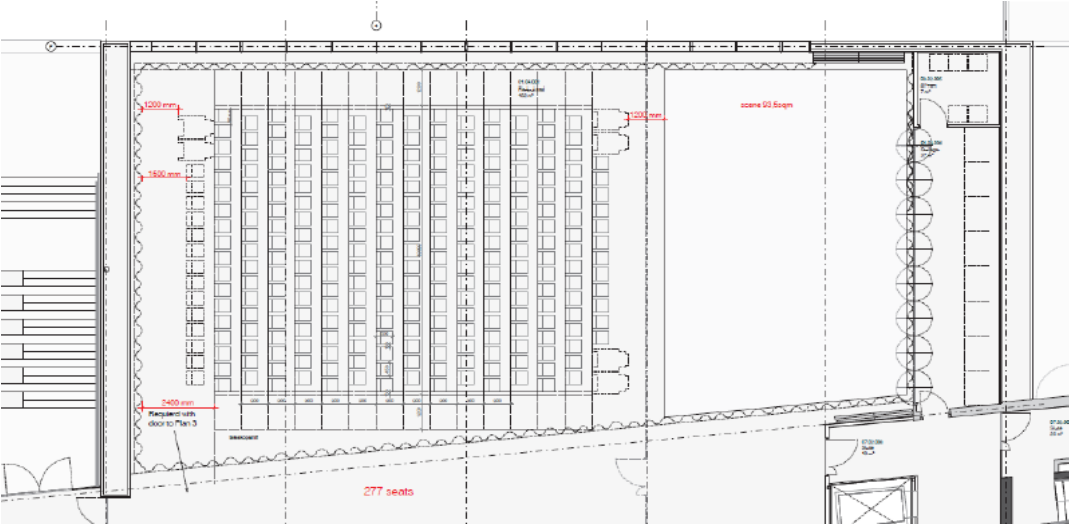


Figure 11: Setup telescopic bleachers

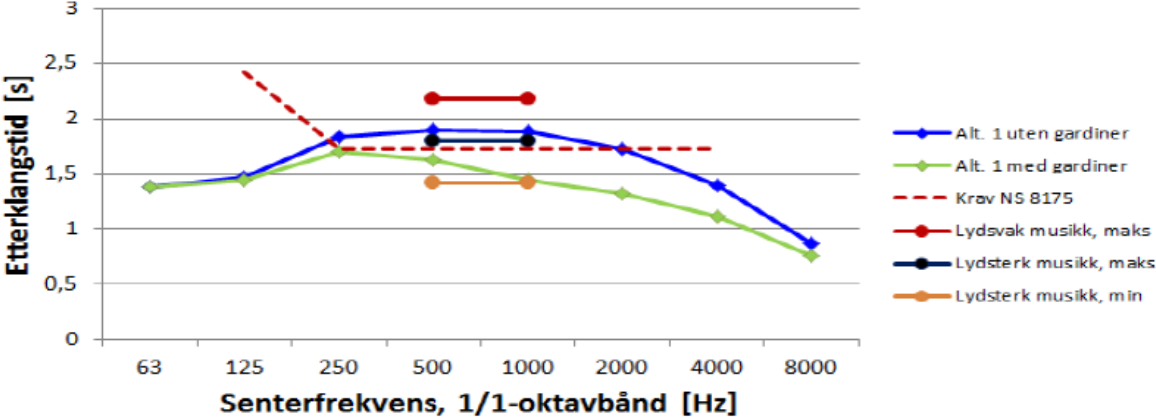


Figure 12: Reverberation time telescopic bleacher