

*Oper*Graz

TECHNICAL DATASHEET

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2. CONTACT INFORMATION

This section provides you with the address and technical contact directory.

2.1. Address:

The legally correct name and address of the Graz Opera House is as follows:

OPERNHAUS GRAZ GmbH
Kaiser Josef Platz 10
A - 8010 Graz

2.2. Contacts:

Below is an overview of the technical contacts.

Position	Name	Tel.[+43 (0) 316 8008]	E-Mail [@oper-graz.com]
Technical Director	N.N.	-	-
Technical Management Office	Sarah Diesel	-1100	sarah.diesel
	Lisa Wagenthaler	-1100	lisa-marie.wagenthaler
Head of Technical Production	Martin Lipp	-1210	martin.lipp
Technical Production	Sebastian Weiss	-1214	sebastian.weiss
Head of Costume	Silke Fischer	-1258	silke.fischer
Coordination of Costume	Elisabeth Perteneder	-1208	elisabeth.perteneder
Head of Stage Carpentry	Gerald Trummer	-2007	gerald.trummer
	Hannes Peindl		hannes.peindl
	Marc Maier		marc.maier
Head of Lighting	Sebastian Alphons	-2933	sebastian.alphons
Video	Philipp Fleischer	-2933	philipp.fleischer
Head of Sound	Christian Komp	-2403	christian.komp
Head of Building Services and Automation Technology Fire Marshall	Željko Crnjak	-2410	zeljko.crnjak
Armorer	Thomas Egger	-2405	thomas.egger
Head of Props	Christian Langs	-2008	christian.langs
Head of Dress Dept.	Sandra Spelec	-2103	sandra.spelec
Head of Make-Up Dept.	Stephanie Klock	-2409	stephanie.klock
Head of Facility Management	Thomas Mussbacher	-1003	thomas.mussbacher

Table 1: Contacts

3. HISTORY

The first evidence of opera performances in Graz reaches back into the 17th century. In the year 1736, an adapted couch house of the royal stable served as a theatre that as well staged opera productions. Although the existing facilities were quite modest, the program was an attractive one: The avant-gardists Gluck and Pergolesi were performed and the theatre as a consequence acquired such a good reputation that the empress Maria Theresa offered to adapt a building for the theatre that belonged to the cathedral of Graz. In the year 1776, the National Theatre was opened on the "Freiheitsplatz" – the building today is still hosting the theatre of Graz. The theatre owed its reputation primarily to its staging of opera productions like Mozart's "Le nozze di Figaro", "The Abduction from the Seraglio" or "Don Giovanni".

Johann Nestroy, later known as Austrian comedian and playwright, sang several bass parts, e.g. the Figaro in Rossini's "Il barbiere di Siviglia" in 1826. In the year 1864 the opera received its first building of its own that was the direct predecessor of today's building, an ancient dodecagonal circus with room for 2000 visitants. Famous artists like Karl Millöcker, Wilhelm Kienzl and Franz Schalk worked as Musical Directors there.



Illustration 1: Historical View Opera

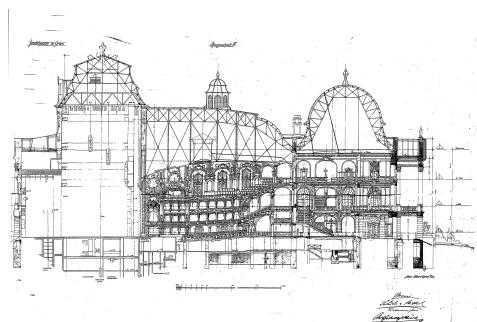


Illustration 2: Original Section by Helmer & Fellner Architects

Finally a building that reflected the opera's splendor was erected. Ferdinand Fellner and Hermann Helmer, both renowned architects of the empire, were assigned to plan a new opera house. Particular attention was paid to the baroque-manner interior of the auditorium that is kept in the colors gold, white and red. The auditorium provides seats for 1200 visitors and has more than 40 boxes. The house was opened with Schiller's drama "Wilhelm Tell" on 16 September 1899, followed by the first premiere of an opera on the next day with Richard Wagner's "Lohengrin". In 1906 the Austrian premiere of "Salome" took place under the direction of the composer.

From 1983 till 1985, the house has been sensitively adapted in order to meet today's requirements of stagecraft by building a glass bridge that connects the stage area to the newly erected scene dock. Throughout the last hundred years the opera has continuously staged countless productions and has like this turned into an important centre for southeastern music culture. In the season 2000/2001 it was selected as "Opera House of the Year" by 50 international theatre critics.

Until today, the Oper Graz has hosted numerous renowned composers and singers and often served as a springboard for their world careers. Franz Schalk, who later was Director of the Viennese State Opera, Clemens Krauss and Karl Böhm worked among others as conductors in Graz, Robert Stolz launched his career as a conductor before becoming a celebrated composer of operettas and film music. Among the great singer celebrities, especially Ljuba Welitsch and Maria Kouba, both will remain unforgettable for their "Salome", as well as the mezzo-soprano Hertha Töpper, who was also born in Graz, rose to fame. Angelika Kirchschrager also was part of the ensemble of the opera house and gave her role debut as "Octavian" ("The Knight of the Rose") in Graz.



Illustration 3: View Opera

(Source: www.oper-graz.com)

4. FRONT OF HOUSE

This section provides information about the forestage area, including the audience area and the orchestra pit.

4.1. Auditorium

Below you will find more detailed information about the audience area of the opera house.

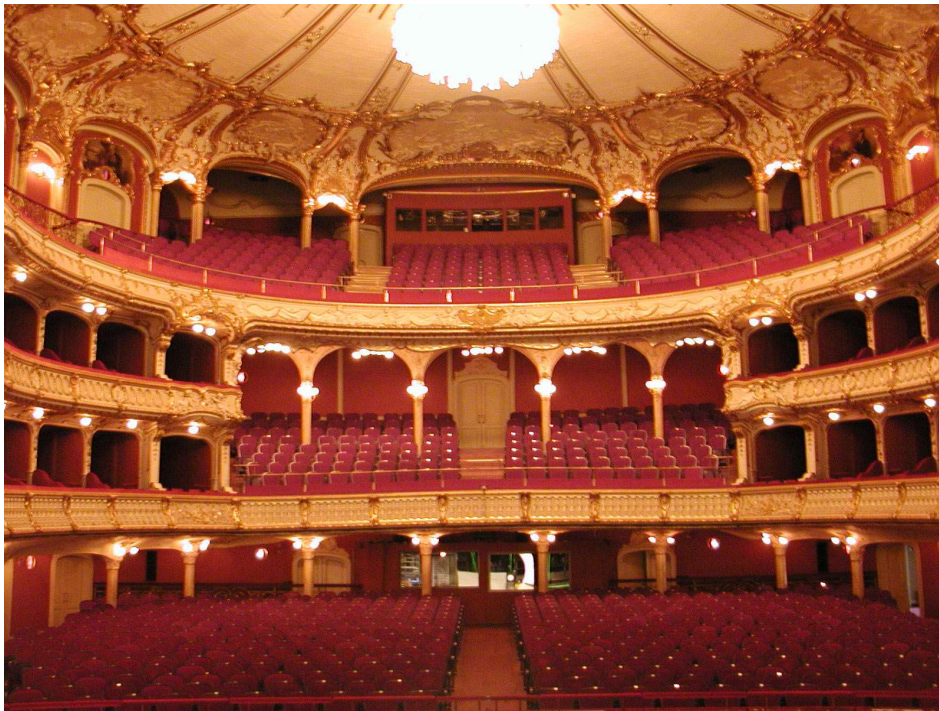


Illustration 4: Auditorium Opera

4.1.1. Seating

The chairs are dark brown glazed „Thonet“- folding chairs with red velvet upholstery.

4.1.2. Capacity

The following table provides a more detailed breakdown of the space allocation for the area.

Seated		Standing	
Designation	Capacity	Designation	Capacity
Parterre	499	Parterre	100
Parterre loges	24 in 6 loges	Balcony	100
Balcony	170	-	-
Balcony loges	78 in 18 loges	-	-
2 nd Balcony	345	-	-
2 nd Balcony lo- ges	70 in 16 loges	-	-
Total	1186	Total	200

Table 2: Seating arrangements in the auditorium

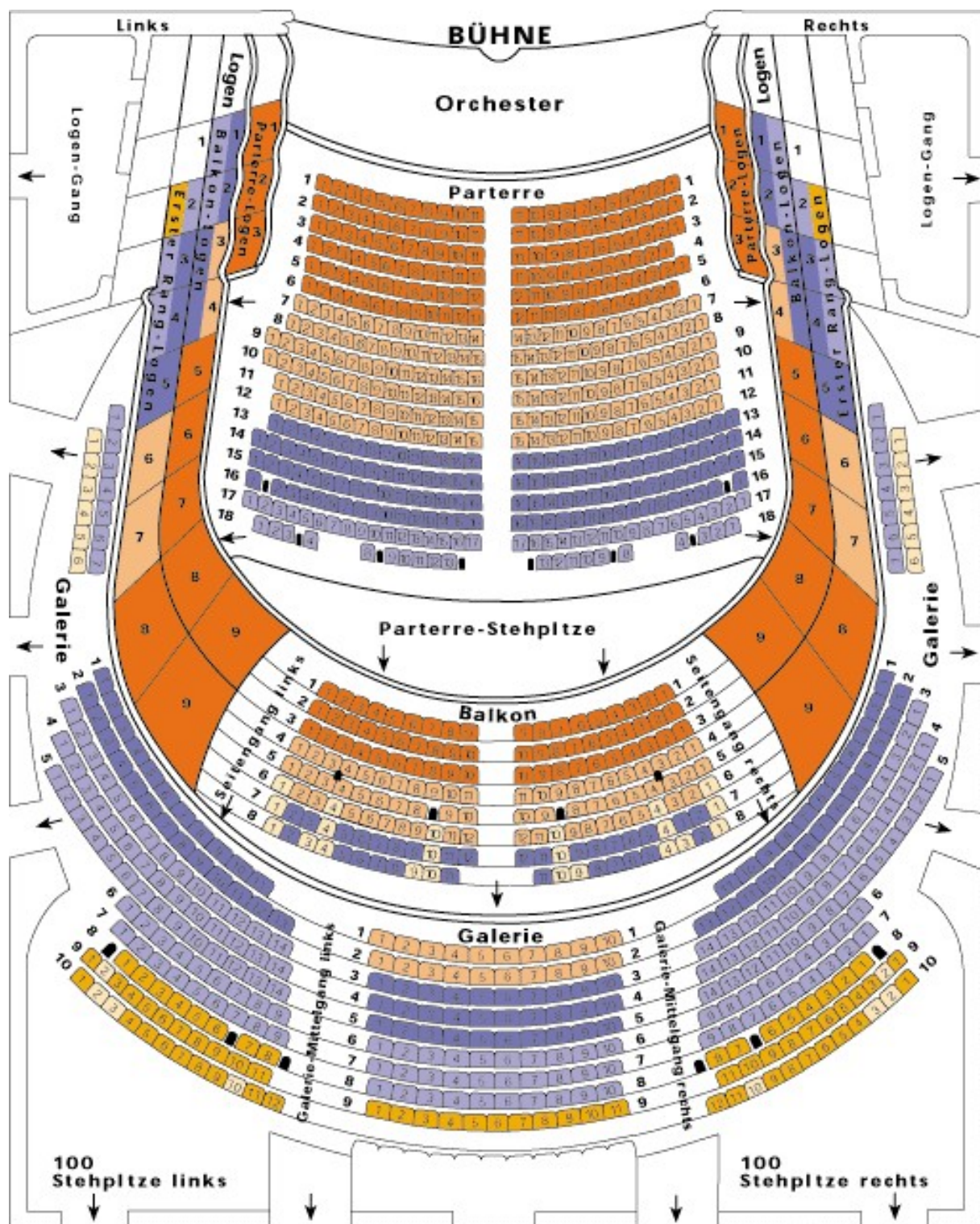


Illustration 5: Auditorium Opera

On the website of the Opera Graz (www.oper-graz.com/eckdaten.php) you can do a virtual tour of both the auditorium and the lobby.

4.2. Orchestra Pit and Prompt Box

The orchestra pit and the prompter's box are described below.



Illustration 6: Orchestra Pit

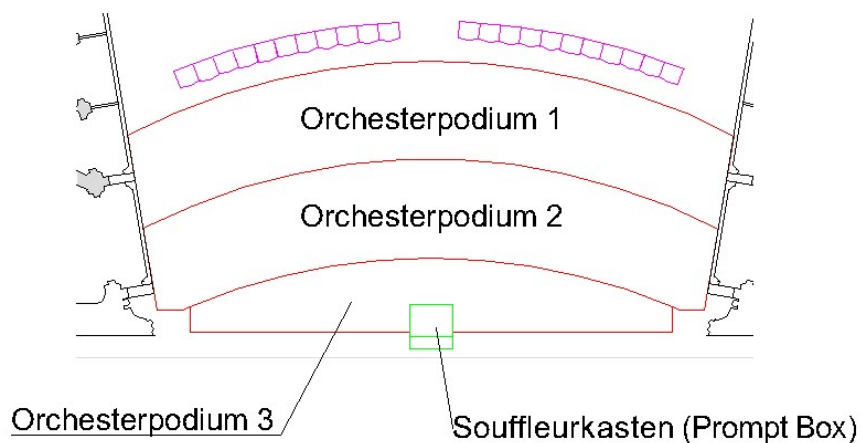


Illustration 7: Layout Orchestra Pit

The Opera house in Graz has three electrical powered orchestra lifts. The “Orchesterpodium 2” has a fixed lug sub podium 200cm underneath the main deck. You can enter the orchestra pit trough the basement at fixed heights between -180cm and -215cm. The orchestra pit is usually used at -180cm for opera-, operetta- and musical productions. Sometimes it is also used at -215cm and rarely at -145 cm.

The balustrade between orchestra pit and auditorium can be removed completely.

Orchestra lifts cannot be used for scenic changes!

Lift		Area [m ²]	
1	14,91 x 2,45	35,22	±0 ... -2,83
2	13,87 x 2,50	32,88	±0 ... -5,20
3	11,92 x 1,80	16,92	±0 ... -2,15

Table 3: Dimensions Orchestra Pit

The prompt box can be used with the orchestra lift number 3 set between -180cm and -215cm. Currently there are two ready-to-use covers for the prompt box (both in black)

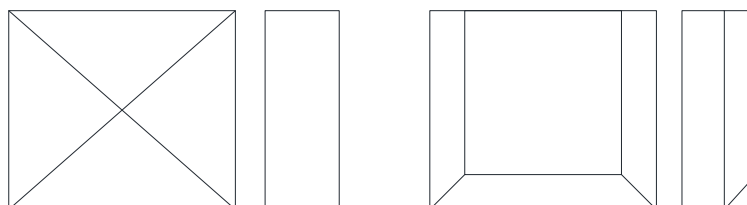


Illustration 8: Prompt-box covers

4.3. Curtain & Proscenium

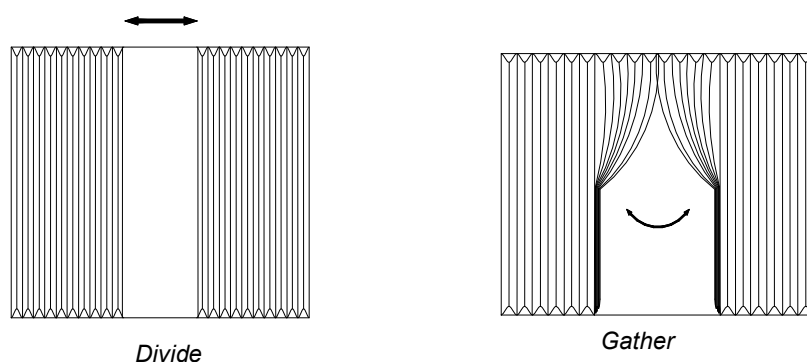
This chapter describes the iron curtain, the main curtain, the veil curtains, the sound curtain, and the portal.

4.3.1. Fire Curtain

The former main curtain (painted by Alexander Rothaug) is glued to the front of the steel structure of the fire curtain. The fire curtain cannot be used for scenic changes.

4.3.2. Main Curtain

The Graz Opera House has a two-part red velvet curtain. It can be opened by pulling it apart or gathering it together.



4.3.3. Veil Train

There are two electrically powered flybars (guided by wires on each end) just behind the main curtain in front of the proscenium.

4.3.4. Sound Curtain

The sound curtain is a seven-layer thick black velvet that is positioned right behind the two Veil Trains and can be lifted vertically.

4.3.5. Proscenium

The width of the proscenium opening is 12m; the height is variable between 0,2m and 9,0m.

4.3.6. Technical Data

All flybars are computerized (except for the fire curtain) and can be used for scenic changes.

Abbreviation	Name	Comments	Max. load	Scenic changes	Speed	Number	Length	Depth	Height
			[kg]		[m/s]				[m]
EV	Fire Curtain			No	0,3	1	15	0,2	9,5
HV-H	Main Curtain	Only for maintenance		No	0,1	1	19	-	+1,5...11,5
HV-T	Main Curtain divide - electrical	Variable speed		Yes	0,001...3,0	1	19	-	-
HV-R	Main Curtain gather - electrical	Variable speed		Yes	0,001...1,5	1	19	-	-
SL1	Scrim bar 1		500	Yes	0,001...1,2	1	17	-	+0,2...24,5
SL2	Scrim bar 2		500	Yes	0,001...1,2	1	17	-	+0,2...24,5
S3	Sound Curtain		750	Yes	0,001...1,2	1	17	-	+0,5...24
-	Proscenium	Height is variable		Yes	0,1	1	12	1,3	+0,2...9

Table 4: Technical Data Curtains

5. STAGE

The following chapter provides a more detailed explanation of the stage with its upper machinery and lighting, as well as the lower machinery and general stage equipment.

5.1. Stage Terms

Stadtseite (St.S.) = Bühne Rechts = "City side" = Stage Left

Parkseite (P.S.) = Bühne Links = "Park side" = Stage Right

Orchesterpodium III = Kernhub = Orchestra lift 3

5.2. Fly System / Winches

All flybars and winches are electrically powered and computerized. They adhere to the German Safety Standard BGV C1 and are rated as safe to use for flying people.

5.2.1. Stage

The maximum speed of the bars depends on the load; Loads up to 500kg can be moved with up to 1.2m/s and loads between 500kg and 750kg with up to 0.8 m/s.

Abbreviation	Name	Comments	Max. load	Speed	Number	Length	Depth	Height
			[kg]	[m/s]				
E1... E36	Flybar	Speed depending on load	500 (750)	0,001...1,2- 0,8	33	18,8; max. 19,8		+0,2...25,4
E37...E39	Flybar	Speed depending on load	500- 750	0,001...1,2- 0,8	3	18,2; max. 19,2		+0,2...24,4
L6, L19, L34	Heavy Load Flybar		1500	0,001...0,7	3	18,8; max. 19,8		+0,5...25,4
Pa1...Pa4	Panorama Flybar	Pa1: stage right	500	0,001...1,2	4	11,3		+0,2...24,5
		Pa2: stage left						
		Pa3: stage right (outside)						
		Pa4: stage left (outside)						
P1...P12	Point hoist	Can be set up at almost any point of the stage	500	0,001...1,2	12			+0,2...24

Table 5: Upper Machinery

5.2.2. LX bars

The table shows the data for the lighting in the upper machinery.

Abbreviations	Name	Comments	Max. load	Speed	Number	Length	Depth	Height
			[kg]	[m/s]		[m]	[m]	[m]
OL1, OL2	Overhead Lights 1 & 2	Each in three parts OL1 L / M / R, OL2 L / M / R	2000 (500/1000/500)	0,001...0,60	2	18,8 (5,1/ 8,2/ 5,1)	1	+0,2...18
OL3	Overhead Light 3	-	1000	0,001...0,60	1	18,2	-	+0,2...24,4
OL4	Overhead Light 4	Upstage	750	0,001...0,60	1	18,8	-	+0,2...+11,0
PL1...PL4	Panorama Light	-	250	0,001...0,30	4	-	10	+0,2...8

Table 6: Upper Machinery Lighting

5.2.3. Upstage Flybars

Below are the specifications for the upper machinery of the backstage area.

Abbreviations	Name	Comments	Max. load	Speed	Number	Length	Depth	Height
			[kg]	[m/s]		[m]	[m]	[m]
HB1...HB5	Upstage Flybar	-	500	0,001...1,20	5	19	-	+0,1...+11,8

Table 7: Upper Machinery Backstage Area

5.3. Under stage machinery

Below are the specifications for the upper machinery of the backstage area.

Name	Comments	Speed	Number	Width	Depth	Turn radius / Lift height
		[m/s]		[m]	[m]	[°/m]
Revolving Stage (computerized)	Ø13,9m, both directions possible	0,001...1,2	1	Ø 13,9		±0°...360°
Double deck platform (computerized)	Rope engine, rated for personal transport and scenic uses, Static load (upper deck): 500 kg/m², Static load (lower deck) 250 kg/m², Dynamic load (upper deck): 250 kg/m², Dynamic load (lower deck): 250 kg/m², Maximum dynamic load: 10.000 kg	0,001...0,3	1	10	4	-3,0...4
Trap Doors	Covered openings in the floor to place the trap mechanisms	-	16	2	1	-
Trap Mechanism "Waagner-Biro"	Maximum load both static and dynamic 250kg	0,05...0,5	1	1,98	1	-3,0... ±0
Trap Mechanism "Hauleitner"	Maximum load both static and dynamic 500kg	ca. 0,1	1	1	1	-3,2... ±0
Trap Mechanism "Tüchler"	Static load max. 500kg, dynamic load max. 150kg, maximum speed while transporting persons 0,5m/s	0,01...0,7	1	1,96	1	-3,1... ±0
Drop storage lift	Not for scenic use	0,05	1	22,4	2	±0 -+5

Table 8: Under Stage Machinery

Additional information about the double-deck platform

Due to the fact that the platform is hanging in ropes it is very sensitive to lateral forces and unbalanced heavy loads. It is therefore necessary to limit lateral forces (maximum 5000 N) and distribute heavy loads evenly onto the platform.

5.4. Stage wagon systems

The table provides an overview of the data on mobile stage equipment.

Name	Comments	Speed	Number	Width	Depth	Height
		[m/s]		[m]	[m]	[mm]
Stage wagon in "Hoac"-frame (Height: 140mm); Manufacturer: Greenmotion	Remote controlled; can be used for scenic changes; direct load up to 500kg/m ² ; movable loads on plane surfaces approx. 3500kg	0,005...0,5	2	1	1	200
Stage wagon in aluminum frame, Manufacturer: Greenmotion, (Height: 105mm)	Remote controlled; can be used for scenic changes; direct load up to 500kg/m ² ; movable loads on plane surfaces approx. 3500kg	0,005...0,5	2	1	1	167

Table 9: Stage Wagon Systems

5.5. Stage Equipment

Stage area: black brick wall

Stage floor: wooden panel flooring, black, max. load 1000 kg/m²

Wooden platforms: standard heights: 16, 33, 50, 66, 75, 83, 100

Main curtain: red velvet, w: 17 m, h: 10 m, permanently installed

Sound curtain: black velvet, w: 16.5 m, h: 11 m, permanently installed

In addition, we have a standard range of tulle curtains in black, gray, and white, as well as black velvet for soffits, curtains, and aisles.

Rear and front projection foils are available in white, gray, and black.

Please contact us personally for detailed planning of veils, soffits, curtains, aisles, and projection foils.

6. DELIVERY

This chapter explains the components that are relevant for delivery.

6.1. Loading dock and gate:

The Graz Opera House has a hydraulic loading ramp with an extendable tongue that must rest on the delivery vehicle. For dimensions of the ramp and the access situation, see Appendix VI. The decorations are brought into the assembly hall via the loading ramp through the delivery gate and assembled there. The delivery gate has the following dimensions:

Height:	3,5m
Width:	5,0m

6.2. Glass Bridge

The decorations are brought from the assembly hall to the stage via the glass bridge. The glass bridge is a connecting walkway between the assembly hall and the right-hand side stage.

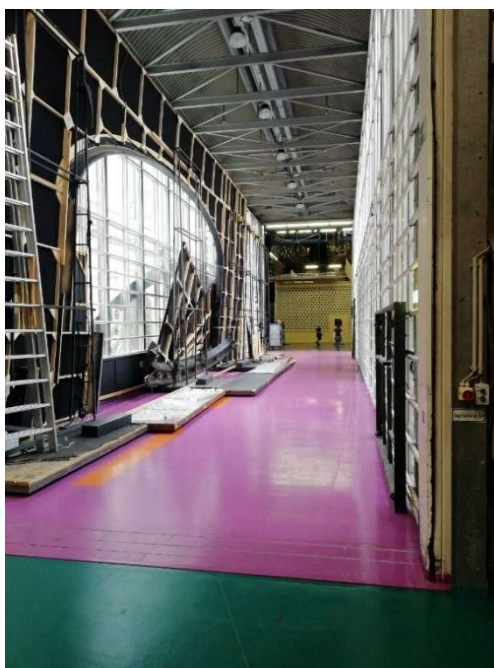


Illustration 9: Glass Bridge Opera

All decorations will be brought on stage using the glass bridge. The glass bridge connects the wing stage with the assembly hall and all of the storage facilities. In order to ensure fast and easy load in/load out it is necessary to limit the maximum height of all decorations to 8m. Since the glass bridge is partly used for storage it usually has a usable width of 3m

Overall measurements of the glass bridge:

Height:	8,0m
Width:	5,8m

6.3. Backstage Gate

In very exceptional cases decoration can also be brought directly on stage through a gate at the back of the stage. The backstage gate measures as follows:

Height:	3,5m
Width:	2,3m

6.4. Freight Elevator

The freight elevator is adjacent to the assembly hall and connects to “Studio stage”, Storage rooms of the “Next Liberty” and the rehearsal stage.

Height:	8,0m
Width:	3,1m
Length:	5,6m

Depending on the destination the usable elevator door size varies:

Basement (Studio Stage)	1,75m x 4,0m
1.OG (Assembly Hall)	3,5m x 8,0m
3.OG (Rehearsal Stage)	3,1m x 8,0m

7. LIGHTING

This section provides information about the components and configuration of the lighting system.

7.1. Components

Below is a brief overview of the opera house's lighting system.

7.1.1. Light Console

1x Grand MA 3, Fullsize
1x Grand MA 3, light
2x Grand MA 2 On PC, Tourpack

7.1.2. Used Connectors

CEE 16A, 32A und BNS 63A

7.1.3. Mains

240/380V

7.2. Fixtures (See lighting plot for exact positions)

The following table shows the equipment available, including location.

Type	Performance / Resolution	Qty.
Auditorium: Loges + Proscenium Area + Balcony		
Niethammer HPZ 215+Scroller (Logen)	160W	6
Niethammer HPZ 215 (Logen)	160W	10
Clay Paky Rhapsodia (Loge Front)	1500W	4
Robert Juliat OZ Verfolger (Logen)	1100W	2
JB P18 HCRI LED Profiler (Logen)	1100W	8
JB P 12 HCRI (Goldportal)	500W	2
JB A12 (Goldportal)	400W	2
PAR64 mit CP62 (Goldportal)	1000W	6
Profil Limax (Goldportal)	1200W	2
Lighting Bridge		
JB P 12 HCRI	800W	3
JB A12 Sparx	760W	6
Clay Paky K 10	500W	2
Desisti Stufenlinse	5000W	2
Niethammer HPZ Profiler 211	2000W	4
Niethammer HPZ Profiler 215	2000W	8
Niethammer HPZ Profiler 2511	2500W	6
NV 1200 Superbeam	1200W	6
Strobe Hungaroflash	6000W	1
JB A12 Washlight	800W	6
Selecon Fresnel (7-55°)	1200W	4
Nanopix 2880 LED RGBWwKw	300W	6

Type	Performance / Resolution	Qty.
1st and 2nd Technical Gallery		
Niethammer HPZ Profiler 2511	2500W	20
NV 1000 / PANI	1000W	10
Portal Towers		
JB P12 HCRI	400W	4
JB A12 LED Wash	400W	2
ADB Niethammer HPZ 2515+Scroller	2500W	4
ADB Niethammer HPZ 2515	2500W	5
ADB Niethammer HPZ 215	2000W	7
ADB Niethammer HPZ 2511	2500W	1
Robert Juliat 614 SX (28-54°)	1200W	3
Six Pack PAR 64 CP 62	6x1000W	4
HVP 208 / Niethammer	2000W	4
NV 1000 / PANI	1000W	6
ETC Source 4 (26°)	575W	2
ETC Source 4 (36°)	575W	2
Strobe Hungaroflash	6000W/25A	2
LX Bars		
JB P12 HP (OL 1+2)	640W	8
Solawash 2000 (OL 1+2)	600W	8
JB 18 MKII Wash WW (OL 1+2)	1100W	8
Martin Mac Ultra Profile (OL 3)	1500W	5
Martin Mac Ultra Profile (OL 4)	1500W	5
JB A 12 LED (OL3)	300W	6
ARRI HMI+Scroller (Motorbügel) (OL 1+2)	2500W	4
ARRI HMI+Scroller (Motorbügel) (OL 1+2)	4000W	2
Mac Encore Performance CLD (Pano Schienen)	500W	10

Table 10: Fixtures Lighting

7.3. Mobile lights

Please do not plan with the listed fixtures below before talking with the head of lighting!

Type	Performance / Resolution	Qty.
HMI's		
With motorized yoke and scroller:	-	-
ARRI HMI	4000W	4
ARRI HMI	2500W	4
On light stand, with scroller	-	-
ARRI HMI (alt)	4000W	1
ARRI HMI	2500W	4
D'Artagnan MSR 11-25°	2500W	2
D'Artagnan MSR 29-50°	2500W	2
Moving Heads		
JB P 18 MK2 HCRI	1100W	4
JB A 12 LED	300W	4
MAC Encore Performance LED	500W	2
PARs		
RGBW LED Pars mit Zoom	120W	8
RGBWA LED Pars (Akkubetrieb möglich)	120W	8
Profil Lights		
ETC Source 4 (26°)	575W	3
ETC Source 4 (36°)	575W	9
ETC Source 4 (26°)	750W	2
ETC Source 4 (36°)	750W	4
ETC Source 4 Jr. (26°)	575W	8
Niethammer HPZ 2511	2500W	1
Niethammer HPZ 2515 / ADB 15-40°	2500W	5
Niethammer HPZ 215	2000W	1
Profil Limax	1200W	2
Fresnel		
Pollux	5000W	4
ADB F 51	500W	8
Floods		
LDDE Nanopix Fluter Asymetrisch LED RGBWwKw	200W	18
Flourecents / LED-Bars		
Nanopix 2880 LED RGBWwKw	240 W	6
Nanopix slim LED RGBWwKw	80 W	24
Nanopix FR 1440 Fußrampe	80 W	12

Miscellaneous		
Gassentürme Variante 1	Par, Profil, Profil, Par, Profil	10
Extras		
ADB Svobodarampen Doppelt	2500W	8
HQI Lampe	150W	4
Astera Titan Tube 2m	48W	40
Astera Nyx Bulb	-	32
Astera Pixel Brick	-	8
Astera AX 9	-	8
Astera Hydra Panel	-	8
Astera Quick Punch	-	10
Astera Titan Tube 1m	-	6
Haze Maschine:	-	-
MDG Atmosphere	-	2
Unique	-	4
Aqua Low Fog	-	2
Jem Hazer Pro	-	2
Wind Maschine	-	4

Table 11: Mobile Equipment Lighting

8. VIDEO EQUIPMENT

This chapter explains the requirements and technical equipment for video technology at the opera house.

8.1. Content requirements

File names should not contain any special characters such as brackets or dots. Only the following are permitted: A-Z, a-z, 0-9, hyphen (-) and underscore (_).

Technical notes such as a looped video or alpha channel are very welcome as part of the file name.

In addition, each file should have a consecutive version number at the end.

e.g. "Video01_V01.m2v" or "Video02_Loop_Alpha_V02.m2v"

The following parameters must be met for videos or animations:

- Codec: Mpeg-2 without audio track (xxx.m2v)
- Bit rate: SD 8MBit/s, HD max. 35MBit/s; CBR (constant bitrate!)
- Frame rate: 25p
- GoP settings: GOP-1 (I-frames only)

Formats, resolutions, frame rates and codecs that deviate from this must be agreed with the video department in advance.

The three projectors on the backstage are able to create a softedge projection in the approximate size of 17.6m x 9.8m (**with projection surface in E39**). Content for this process should have the format 1920 x 1200px (WUXGA). Higher resolutions are also possible after consultation (up to approx. 3200 x 1920px).

8.2. Fixed positions – House Equipment

Below is the list of video equipment.

Type	Performance / Resolution	Qty.	Location
Beamer Festeinbau			
Panasonic-PT-RQ22K Panasonic Objektiv ET-D3LEW10	21000 Ansi Lumen 4K+	1	Forestage, first balkony middle
Cristie Roadster WV20K Crimson WU Cristie HD Fix-Objektiv 0.67:1	25000 LM 1920x1200px	3	Backstage Portrait Modus
Medienserver			
Medienserver Coolux Pandoras Box (2 Output)	4K	2	Main Stage
Medienserver Coolux Pandoras Box (4 Output)	4K	1	Main Stage (Rear Projection)
Medienserver Coolux Pandoras Box (2 Output)	4K	1	Mobile
Player			
LG BD 660 BluRay Player	HDTV	1	Work Shop
LG 32 LM660S TV	HDTV	1	Work Shop
Switches			
Analogway Diventix 2	HDTV	1	Main Stage
Kramer VP-727XL	HDTV	1	Main Stage
Recorder			
BlackMagic Atem Mini-SDI-ISO	HDTV	1	Amplifier Room

Table 12: House Equipment Video

8.3. Mobile equipment

Type	Performance	Qty	Location
Beamer / Lenses			
Eiki LC-XT5	15000 Ansi Lumen 1024x768px	2	Work Shop
Eiki Optik Wide 1:0,8	-	1	Work Shop
Eiki Optik Standard Zoom	-	1	Work Shop
Eiki Optik Tele	-	1	Work Shop
Eiki LC-X85	7000 Ansi Lumen 1024x768px	1	Studio Theatre
Eiki Optik Wide 1:0,8	-	1	Studio Theatre
Eiki Optik Standard Zoom	-	2	Studio Theatre
Eiki Optik Tele	-	1	Studio Theatre
Panasonic PT-D 10000	10000 Lm 1400x1050px	2	Work Shop
Panasonic Optik ET-D 75 LE 5 – Wide	-	2	Work Shop
Panasonic Optik ET-D 75 LE 3 - Standard	-	2	Work Shop
Panasonic-PT-RQ22K Panasonic Objektiv ET-D3LEW50	21000 Ansi Lumen 4K+	1	Work Shop
Panasonic-DS100XE Panasonic Objektiv ET-D75LE10	10500 Ansi Lumen 1400x1050px	1	Work Shop
Screens			
Stumpfl AV Vario 32	-	1	Studio Theatre
4m x 3m Leinwand für Vario 32 Auf- + Rückpro	-	1	Studio Theatre
4m x 2,3m Leinwand für Vario 32 Auf- + Rückpro	-	1	Studio Theatre
Cameras			
Sony PMW EX-3	HDTV	1	Work Shop
Sony Alpha A7S-III	4K	1	Work Shop
Sigma 24-70mm 2.8 DG DN	-	1	Work Shop
Sony !6-38mm FE 2.8 GM	-	1	Work Shop
Sony 70-200 FE 2.8 GM OSS-II	-	1	Work Shop
Sony 2x TeleConverter SEL20TC	-	1	Work Shop
Recording Equipment			
Atomos Ninja-5 + SDI-Expansion	-	1	Work Shop
Sennheiser MKE-600	-	1	Work Shop
Rode NTG-2	-	1	Work Shop
Sony URX-P03D (2-Kanal Empfänger incl. Mi-Shoe-Adapter)	-	1	Work Shop
Sony UTX-B40 (Audio Sender Body-pack incl. Lav-Mic)	-	2	Work Shop
Tentacle Sync-E Timecode Generator	-	2	Work Shop
Stativ (Sachtler FSB8 Speedlook)	-	1	Work Shop
Stativ (Sachtler Flowtech 75 + Active 8T)	-	1	Work Shop
DJI Ronin RS2-ProKit	-	1	Work Shop
Tilta Float Kit für RS2-Pro	-	1	Work Shop

Table 13: Mobile Equipment Video

9. SOUND EQUIPMENT

Below the components of the operas house's sound system.

Location	Qty.	Type
Mixing desk		
-	1	DIGICO Quantum 7T (steht nicht für Gastproduktionen zur Verfügung!)
	1	Behringer X32 (Fixinstallation Studiobühne)
	1	Behringer X32 (Mobil)
	1	Behringer X32 Compact (Mobil)
		diverse Klein-Mischpulte
Speaker		
Front	2	d&b V7P
	4	d&b V-G SUB
Center	-	Bohlender & Gräbener Planar Magnetic Transducers
Procenium	4	L132-A3
	2	L190-A3
	2	L365
	2	Studt S1214T
	2	Studt S121S 21" Bassreflex Subs
	3	Xilica ControllerXD8080
	5	LAB Gruppen C48:4 Amps
Delay	4	d&b 16C-Säulen
Upstage	2	d&b Ci14 Tops
	2	d&b Ci7 Subs
Dome (above auditorium)	1	d&b 2x Q1 + 1x Q7
Monitoring	8	d&b M6
	6	d&b Maxx 10" 1"
	6	d&b E-Pacs
	6	d&b E3 + d&b E-Pacs
	4	LD SAT82AG
	-	diverse Aktivlautsprecher (Mackie, FBT, LD, ...)

Designation	Qty.	Type
Microphones		
HF-Mikrofone	-	32 channel Sennheiser Digital 6000 and 9000 series, microphones: DPA 4060 lavalier microphone or Sennheiser HSP 2-3 neckband microphone
	8	Sennheiser SK 5212-A
	24	SK6212 pocket transmitter
	8	Sennheiser SKM6000+MME865
Condenser Microphones	2	Audix SCX25A
	6	Haun MBUM630
	4	Microtech Gefell M297
	12	Microtech Gefell M300
	6	Microtech Gefell M930
	2	Microtech Gefell UMT 70S
	20	Neumann KM184
	2	Neumann TLM103
	4	Sennheiser AKH 8020
	3	Sennheiser e865
	22	SCHOEPS CCM 4
Dynamic Microphones	4	Shure SM58
	1	Shure BETA 57
	1	Shure BETA 58
	1	Shure BETA 56
	1	AKG D112
Miscellaneous		
Stands	60	stands
FX	1	Lexicon PCM96
Playback	2	Ableton Live

Table 14: Sound Equipment

9.3.1. Signal flow

The signal inputs are organized in 8 DigiRack I/O Frames which are spread throughout the house in 4 different places. The signals are linked through two redundant Optocore networks. There are over 60 connection boxes for both audio and video signals in the stage area, the auditorium and the sound and light booths. All signals are linked through to central patch panels and the DigiRacks.

10. DRESSING ROOMS

Below an overview of the available dressing rooms.

♂ ♀	Solo, Choir, Extras	Room	Location	Capacity	Seats for make up	Floor
Women	Solo	101	Stage Right	7	2	1st
		102		3	0	
Men	Solo	202	Stage Right	7	2	2nd
		203		4	0	
Women	Choir	302	Stage Right	12	1	3rd
		303		9	1	
Men	Choir	304	Stage Left	22	2	
Women	Extras	502	Stage Right	24	2	5th
Men	Extras	505	Stage Left	28	3	
		507 kinds dressing room		9	0	
Women & Men	Ballet	1 Men	Giraditrakt	7	5.places ballet- mask	2nd base- ment
		2 Men		5	-	
		3 Women		5	-	
		4 Women		5	-	
		5 Women		5	-	
		6 guests	-	5	5	

Table 15: Dressing Roms

11. STUDIO STAGE OPERA

This section provides detailed information about the studio stage at Graz Opera House.

11.1. Studio Stage

Below is the floor plan and the most important dimensions of the studio stage.

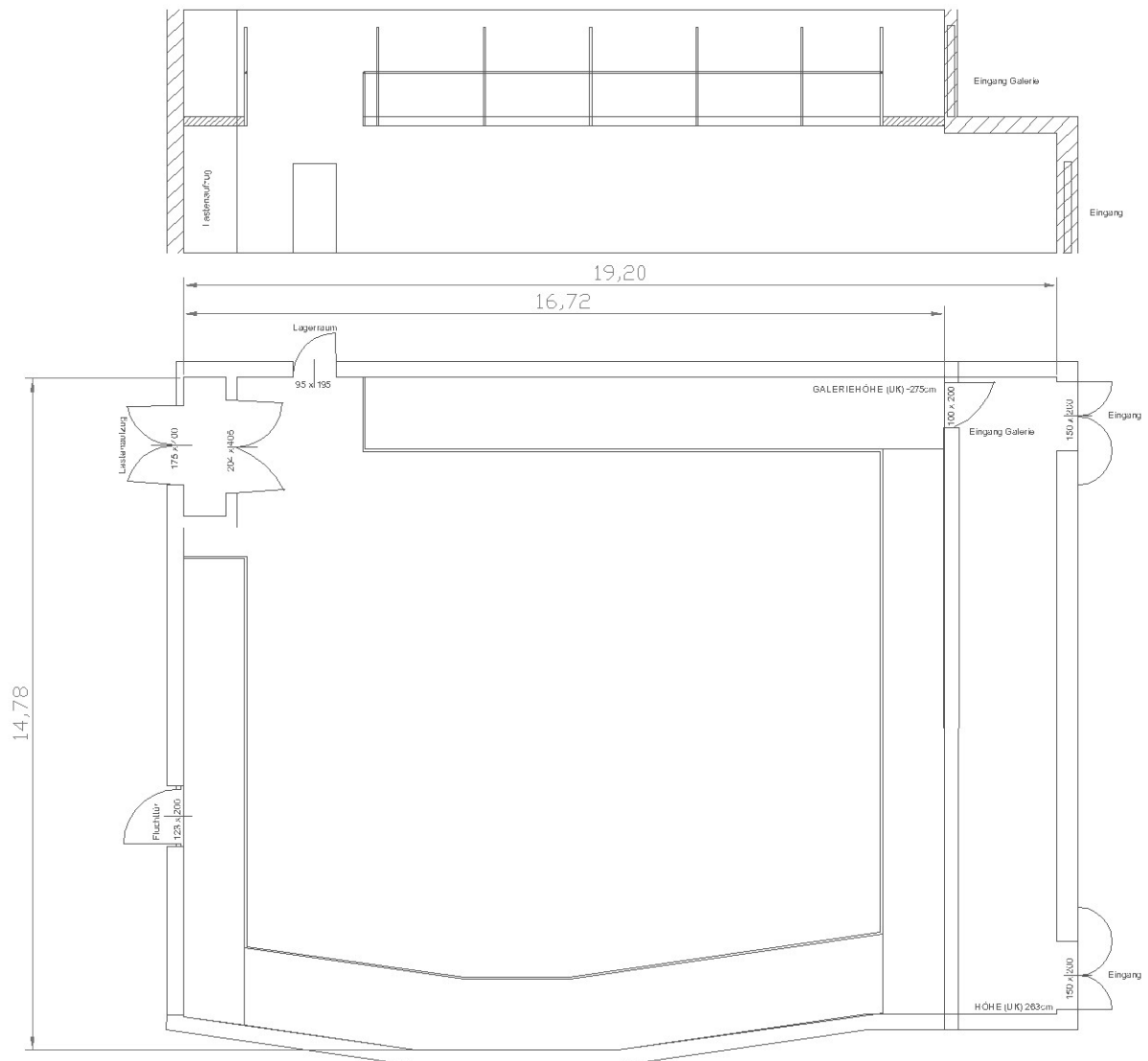


Illustration 10: Floor Plan Studio Stage

11.1.1. Information:

Below are the key data for the studio stage mentioned before.

Type	Description
Floor	Black Stage Floor
Area	280 m ²
Light	No Daylight
Specialties	Above Ground Level +2,75m Floorlevel + 2,98m Width 1,5m
Transport	Maximum transport dimensions for decoration Height < 2,75m Width 1,7 m Length 5,15m Maximum transport dimensions for decoration Height > 2,75m Width 1,35 Length 5,15m Height 4,00m

Table 16: Data Studio Stage

11.2. Lighting

Below you will find more detailed information about lighting in the studio stage.

11.2.1. Lighting desk

GrandMA2 OnPC Tourpack (*from mobile equipment*)

11.2.2. Lights

Below is the available spotlight material.

Type	Wattage [W]	Qty.
Solaframe 750 Theatre	750W	4
VariLite VL 1000	1000W	6
Clay Paky Aleda K 10 LED	500W	12
Arri Fresnel	2000W	8
ETC S4 - 36°	750W	8

Table 17: Light Studio Stage

11.3. Sound Studio Stage

This section provides further information on the audio options available.

11.3.1. Mixer:

Behringer X32 Digital Desk / digital stagebox 32/8

11.3.2. Speaker System

See the table for more information on sound reinforcement.

Qty.	Type
4	Powered Speakers QSC 10" 1"
2	Powered Speakers QSC 12" 2" auf Stativ
2	Powered Subwoofer Mackie SWA 1801 Z

Table 18: Speaker System Studio Stage

11.3.3. Wireless-System

Below is information about the Studiobühne's wireless system.

Qty.	Type
-	Sennheiser EM3032
-	4-Kanal Mikroportanlage
4	Beltpack
4	Handheld wireless sender

Table 19: Wireless-System Studio Stage

11.3.4. Players & Other

The possibilities of players and accessories on the studio stage.

Qty.	Type
-	CD-Player
-	PC + Wavelab

Table 20: Players and Other Studio Stage

11.3.5. Mobile

The mobile equipment for the studio stage.

Anzahl	Bezeichnung
2	Powered Speakers Dreiweg Mackie SA 1532 Z
2	Powered Speaker / Monitor Mackie SRM 450

Table 21: Mobile Equipment Sound Studio Stage

All additional equipment (i.e. cables, DI boxes, microphones, amps, effects, etc.) are also used in the Opera house and therefore availability is subject to change.

12. REHEARSAL ROOMS

This section provides you with the most important information about the various rehearsal stages at the opera house.

12.1. Rehearsal Stage Thalia

Below is the floor plan and the most important information of the Thalia rehearsal stage.

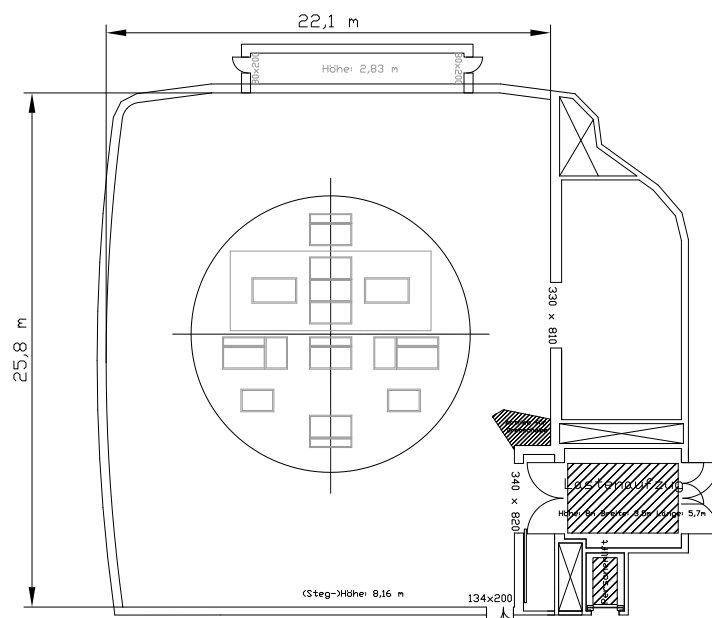


Illustration 11: Ground Floor Plan Rehearsal Stage Thalia

12.1.1. Information

Below are the key data for the rehearsal stage mentioned above.

Type	Description
Floor	White Wooden Floor
Area	Approx. 500 m ²
Light	No Daylight
Specialties	The rehearsal stage is fitted with a fully functioning turntable, which has the same measurements as the turntable on the main stage. Movements of the turntable can be direct-ly transferred to the main stage.
Transport	Maximum transport dimensions for decorations: Width 3,0m Length 5,15m Height 8,15m

Table 22: Key Data Rehearsal Stage Thalia

12.2. Rehearsal Stage “Malersaal”

Below the floor plan and the most important information of the rehearsal stage “Malersaal”.

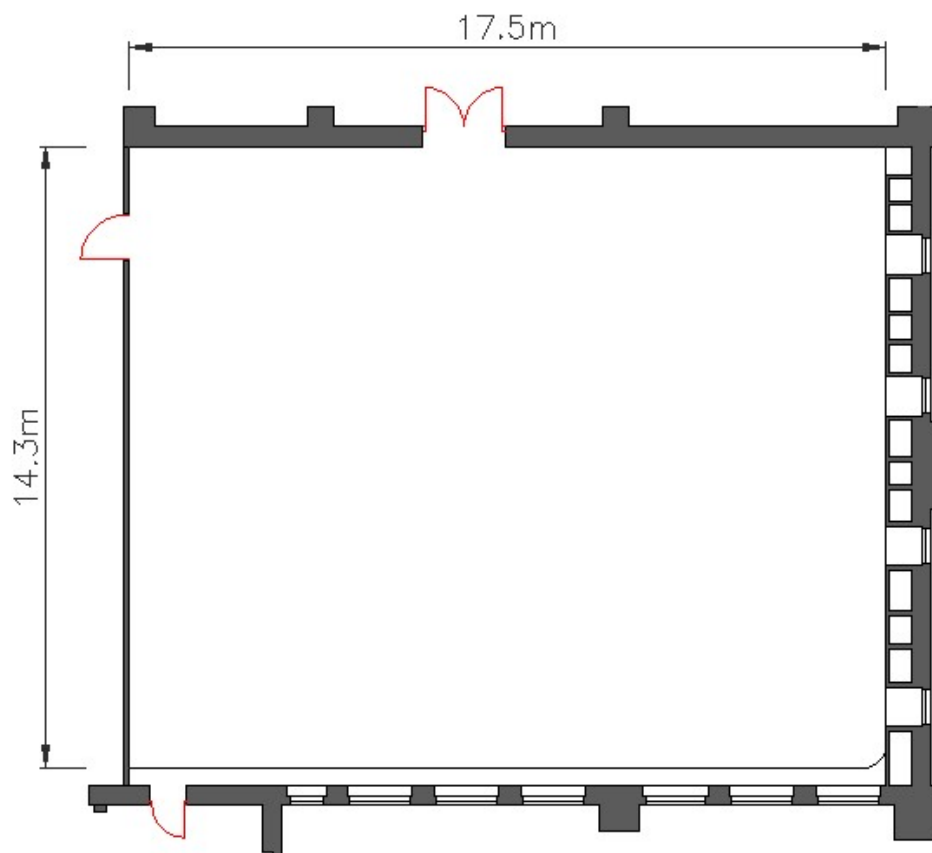


Illustration 12: Ground Floor Plan "Malersaal"

12.2.1. Information

Below are the key data for the rehearsal stage mentioned above.

Type	Description
Floor	Black Dance Floor
Area	235 m ²
Light	Daylight
Specialties	-
Transport	Maximum transport dimensions for decorations: Width 1,0m Length 2,0m Height 2,5m max. Weight 50kg

Table 23: Key Data Rehearsal Stage "Malersaal"

12.3. Rehearsal Stage - Ballet room

Below the floor plan and the most important information of the rehearsal stage ballet room.

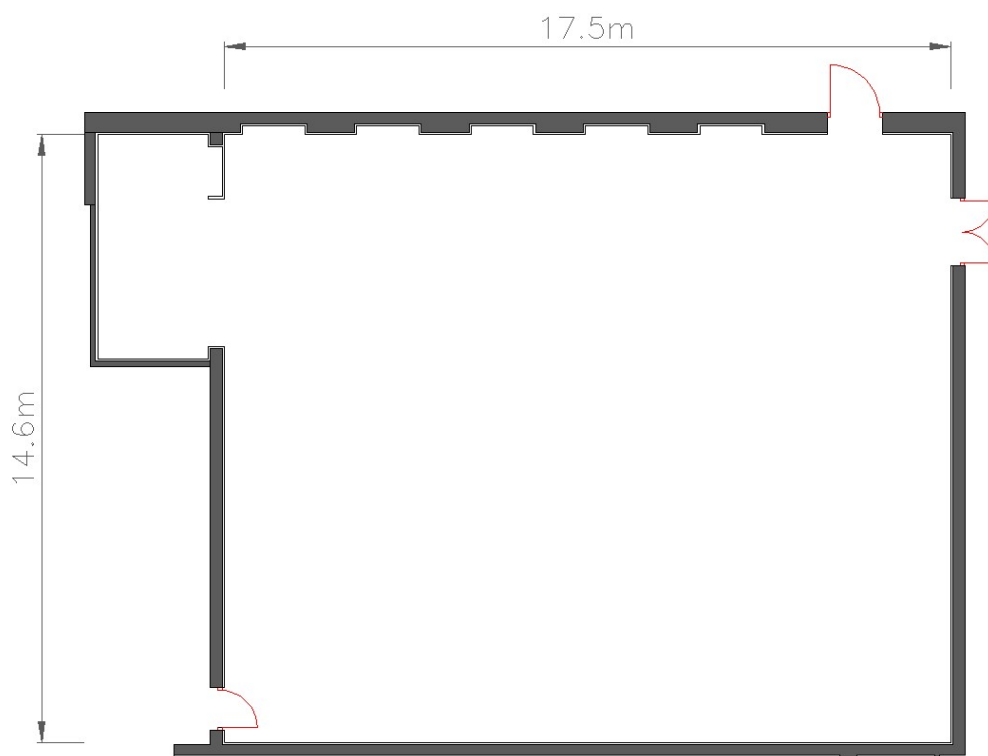


Illustration 13: Ground Floor Plan Ballet Room

12.3.1. Information

Below the key data for the rehearsal stage mentioned above.

Type	Description
Floor	White Dance Floor
Area	255 m ²
Light	Partly Daylight
Specialties	Mirrored walls on three sides Ballet bars on three sides
Transport	Maximum transport dimensions for decorations: Width 1,0m Length 2,0m Height 1,5m max. Weight 50kg

Table 24: Key Data Rehearsal Stage Ballet Room