



Typical configuration shown (not site specific)

Important note:

This package provides only indicative information intended for use in very early project phases to provide an impression of room set ups and required site preparation. Any information, figure or value shown is not necessarily applicable, accurate and/or up-to-date. Your Philips contact can arrange Room Designs and Site preparation specifications for your specific situation.

Site Preparation Drawings

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Revision history

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A

0 20-Feb-2023 Typical Site Preparation drawings

Rev	Date	Drw	Chk	Proj. phase	Description
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Important notes

Philips contact

Customer ID

Technical ID

Philips Healthcare



Project
MR7700
Typical Site Preparation drawings

Sheet Subject
Cover sheet
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Drawing
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Drawing alerts:

- 1

Dimensions for building works in the examination room (like RF-cage construction and wall openings) are for indication and bidding only! Refer to the drawing of the RF cage vendor for actual construction dimensions. For ranges refer to AD-1 sheet.
- 2

Passive shielding or fencing may be required to contain the 0.5mT field line within the floor and ceiling of the examination room.
- 3

Passive shielding or fencing may be required to contain the 0.5mT field line within the back and side wall of the examination room.
- 4

Philips strongly recommends the RF door opens outwards to aid opening in the event of a possible quench. If the door opens inwards an overpressure feed through with minimum dimensions of 600mm x 600mm must be installed.
- 5

Ferromagnetic beams perpendicular to the Z-axis of the magnet must be located at least 250mm below the finished floor. All other ferromagnetic beams must be located at least 600mm below the finished floor.
- 6

For the square area of 3000mm x 3000mm symmetrically around magnet isocentre, ferro-magnetic reinforcement must be:
- NO less than 50mm below finished floor.
- NO greater than 25kg/m² average concentration between 50mm and 250mm below the finished floor. Reinforcements below 250mm can be ignored.
- Evenly distributed.

Maximum Cable lengths:

Maximum Cable lengths between the Cable in- and Outlets of the Cabinets:

From:	To:	Meter:
System Filter Box	CombiCabinet (DACC(*)+LCC(**)(****)	7
System Filter Box	ACC (MN option) (*)	7
System Filter Box	Gradient Amplifier (**)(***)	7
CombiCabinet (*)	SACU (****)	14
CombiCabinet (*)	Gradient Amplifier (**)	7
CombiCabinet (*)	ACC (MN option (*)	7
CombiCabinet (*****)	480V / 60 Hz Ramp Tool Cabinet	10
CombiCabinet (*****)	All other units	10

- (*) Cable outlet on top of ACC/DACC cabinet is reference point for the length.
Note: low/ rear cable outlet is possible but will reduce cable length by 2m.
- (**) Cable and hose connections on top of the cabinet only.
- (***) Gradient cables are supplied in one set with a length of 15m. Cable length can be divided/ cut between length needed inside technical room and length needed inside the examination room.

Default length is reduced to reduce costs because in many cases shorter gradient cables are sufficient. 18m length is possible with an extra cable set. Please contact SPS to order a duplicate extra set of cables to be able to extend the length to maximum 18m.
- (****) Location of the SACU in the technical room is not required; Interface with examination room return air duct outside the RF-enclosure is leading. Keep the acoustic noise in mind!
- (*****) DACC and LCC are mechanically connected and renamed CombiCabinet. The LCC is located left.

Site requirements

- Mains power**
- Supply configuration:
Star, 3 phase+neutral+protective earth (PE).
Delta is allowed for the 480V version.
MDU version to be ordered via order questionnaire,
 - Nominal Line Voltage:
220/380V +/-10% 50/60Hz +/-1Hz
230/400V +/-10% 50/60Hz +/-1Hz
480V +/-10% 60Hz +/-1Hz
 - Mains impedance (at nominal voltage):
< 110mOhm

- Electrical power rating (230/400 voltage input)**
Apparent Power: 115kVA
Rated current: 175A/phase
Peak current: 400A/phase <5ms (*)
Peak current: 500A/phase <1ms (*)
Nominal fuse rating (**): 175A rms
- (*)
If an UPS, Power conditioner etc. for the complete MR system is required, provide the UPS supplier that not only the required kVA but also the required above-mentioned peak current. This can result in a higher (kVA) specification of the UPS needed.
- (**)
• For 230V Y-configuration (= fase to neutral), type AM or GL according DIN 43620, VDE 0636 part 1 and 2a

- Remote service diagnostics**
To establish this feature, a RJ45 type Ethernet connector must be installed with access to the customer's network (100/1000Mbps)

- Environmental requirements**
Examination room:
Temperature 18°C-22°C
Maximum temperature change 5°C per 10min
Relative humidity 40% - 70%, no condensation
Required Air Conditioning Capacity (peak and standby): 2kW
- Energy dissipated in the examination room will be removed from the room by an additional air exhaust system.
- Gradient coil heat dissipation (1 to 15kW) will be removed via liquid cooling of the gradient coil.

- Technical room:
Temperature 15°C-24°C
Maximum temperature change 5°C per 10min
Relative humidity 30% - 70%, no condensation
Required Air Conditioning Capacity: 6kW
- Standby heat dissipation: 2kW
- Heat dissipation to Water: 7 - 60kW

- Control room:
Temperature for human comfort 18°C-24°C
Temperature required for X-ray films15°C-30°C
Temperature MR equipment 10°C-35°C
Maximum temperature change 5°C per 10min
Relative humidity 30% - 70%, no condensation
Required Air Conditioning Capacity: 0.3kW

MR7700

			Mass	Heat	Noise
Resp	No	Description	[kg]	[W]	[dB(A)]
Examination Area (Basic system excluding options)				2000*	-
A	1.1	Scanner gantry 3.0T	6300	-	-
A	1.2	Patient table	260	-	-
A	1.3	System filter box	80	-	-
A	1.4	He gas exhaust pipe inside RF-cage	-	-	-
A	1.5	He gas exhaust RF feed through	-	-	-
B	1.6	He gas exhaust pipe outside RF-cage	-	-	-
A	1.7	Accessory cabinet (Optional)	-	-	-
A	1.8	Patient trolley FlexTrak (Optional)	78	-	-
Control Area (Basic system excluding options)				300	40
A	2.1	Operating station	-	-	-
A	2.2	Emergency run down button	-	-	-
A	2.3	Storage Rail	-	-	-
A	2.4	Operator's table (Optional)	100	-	-
Technical Area (Basic system excluding options)				6000**	75
A	3.1	CombiCabinet (LCC & DACC + MDU)	653	-	-
A	3.2	Gradient amplifier cabinet 2250-XP	1100	-	-
A	3.3	System Air Cooling Unit (SACU)incl.Smoke detector	25	-	72
B	3.4	Chilled water connection	-	-	-
B	3.5	Mains switch	-	-	-
B	3.6	Earth reference terminal	-	-	-
B	3.7	RF-waveguide System Air Cooling Unit (SACU)	-	-	-
General					
B	4.1	RF door	-	-	-
B	4.2	RF window	-	-	-

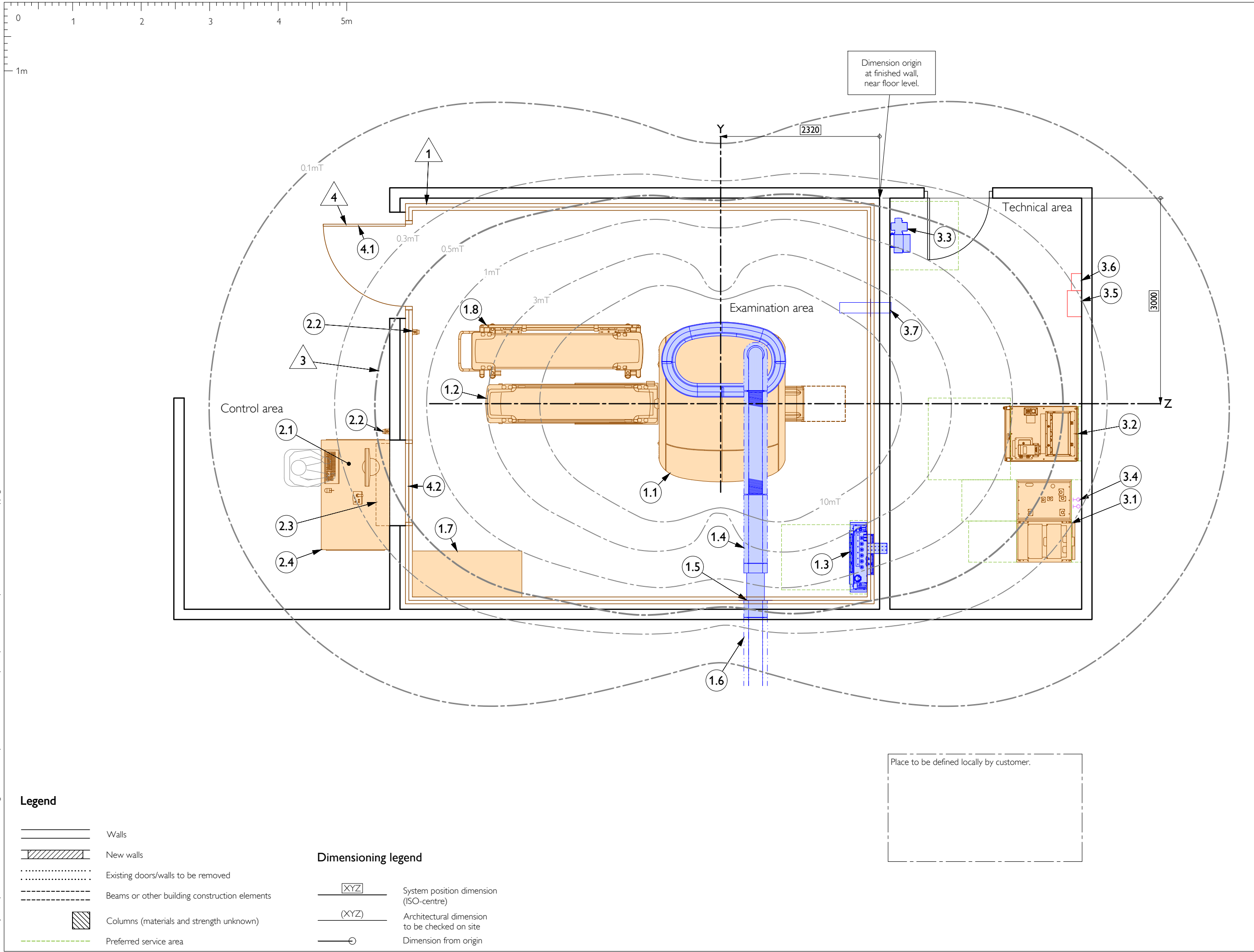
Responsibilities

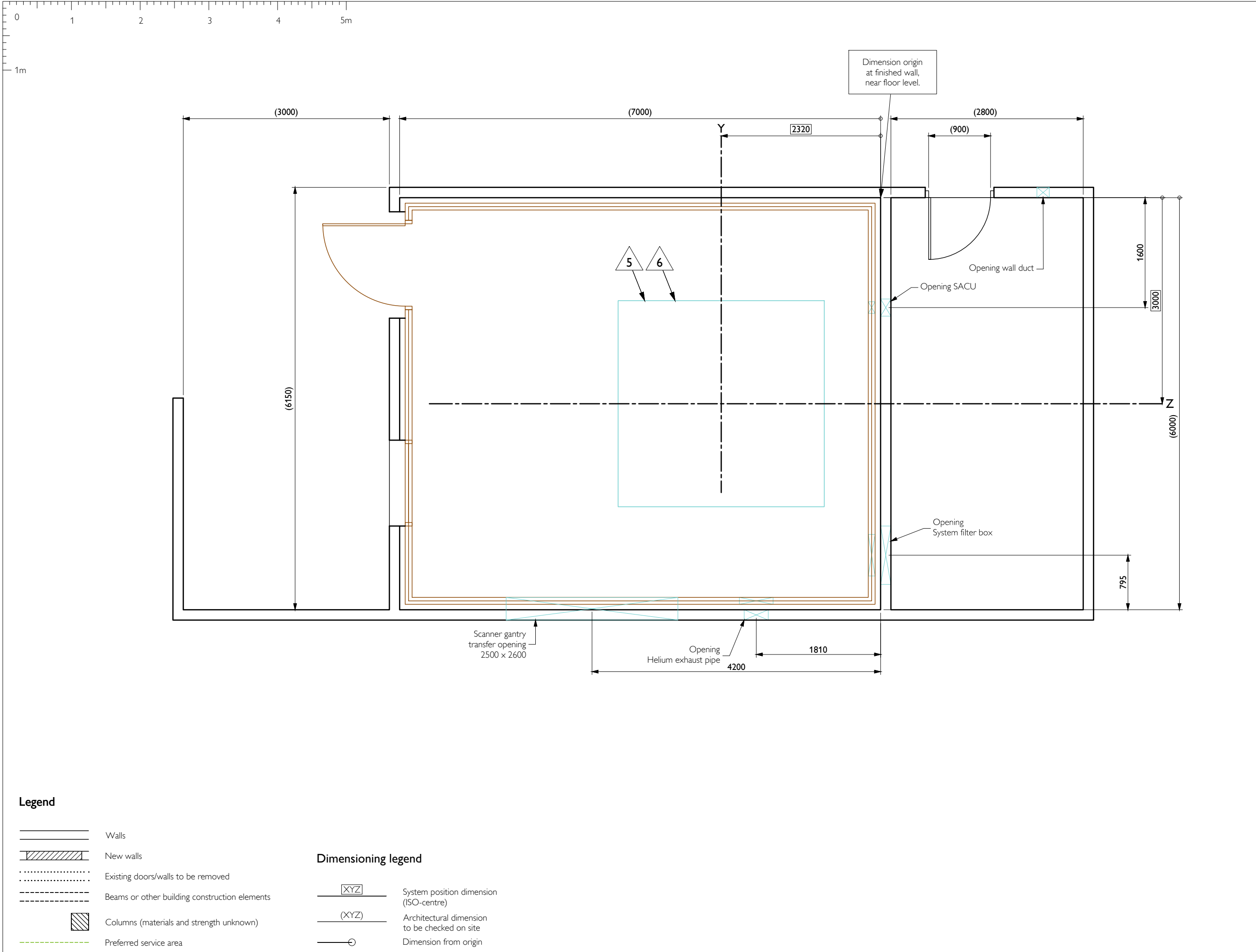
- A Delivered and installed by Philips
- B Delivered and installed by customer/contractor
- C (Pre) Delivered by Philips, installed by customer
- D (Pre) Delivered by customer and installed by Philips
- E Existing

* Total heat dissipation to air. Energy dissipated in the examination room will be removed from the room by the air exhaust system. Gradient coil heat dissipation (1 - 15kW) will be removed through liquid cooling of the Gradient coil.
** Heat dissipation of an optional chiller or other third party equipment, if installed in the technical room is not included.

Project notes MR

- The feasibility of this project is based on site information (like drawings) provided to Philips. Philips cannot assume any liability for the accuracy of this information and the consequences.
- The equipment proposed in this room layout produces a strong magnetic field. It is the customer's responsibility to comply with the local regulation. Normally this field has to be contained in a controlled area that is only accessible by authorised personnel and screened patients. Consult the Philips contact for details and support.

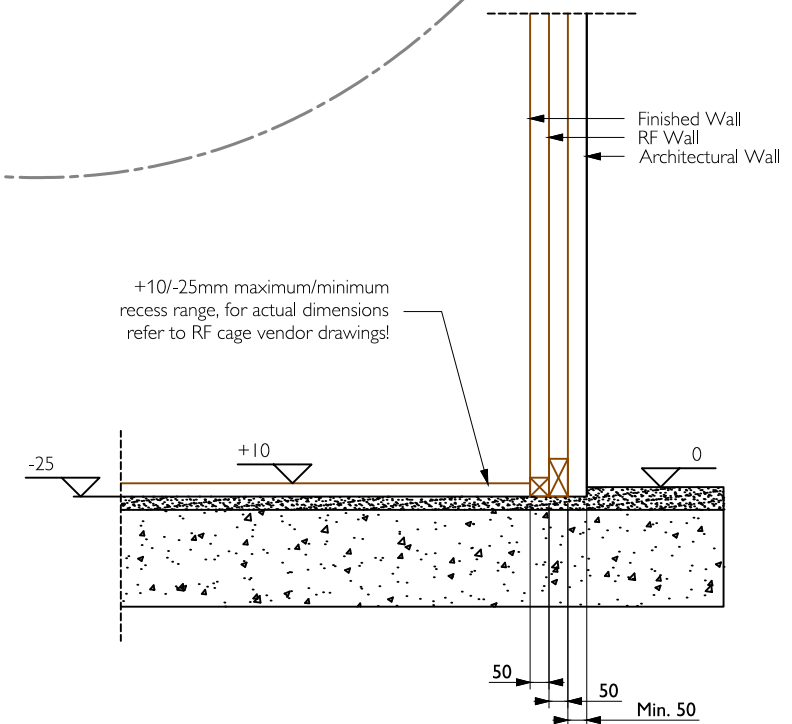
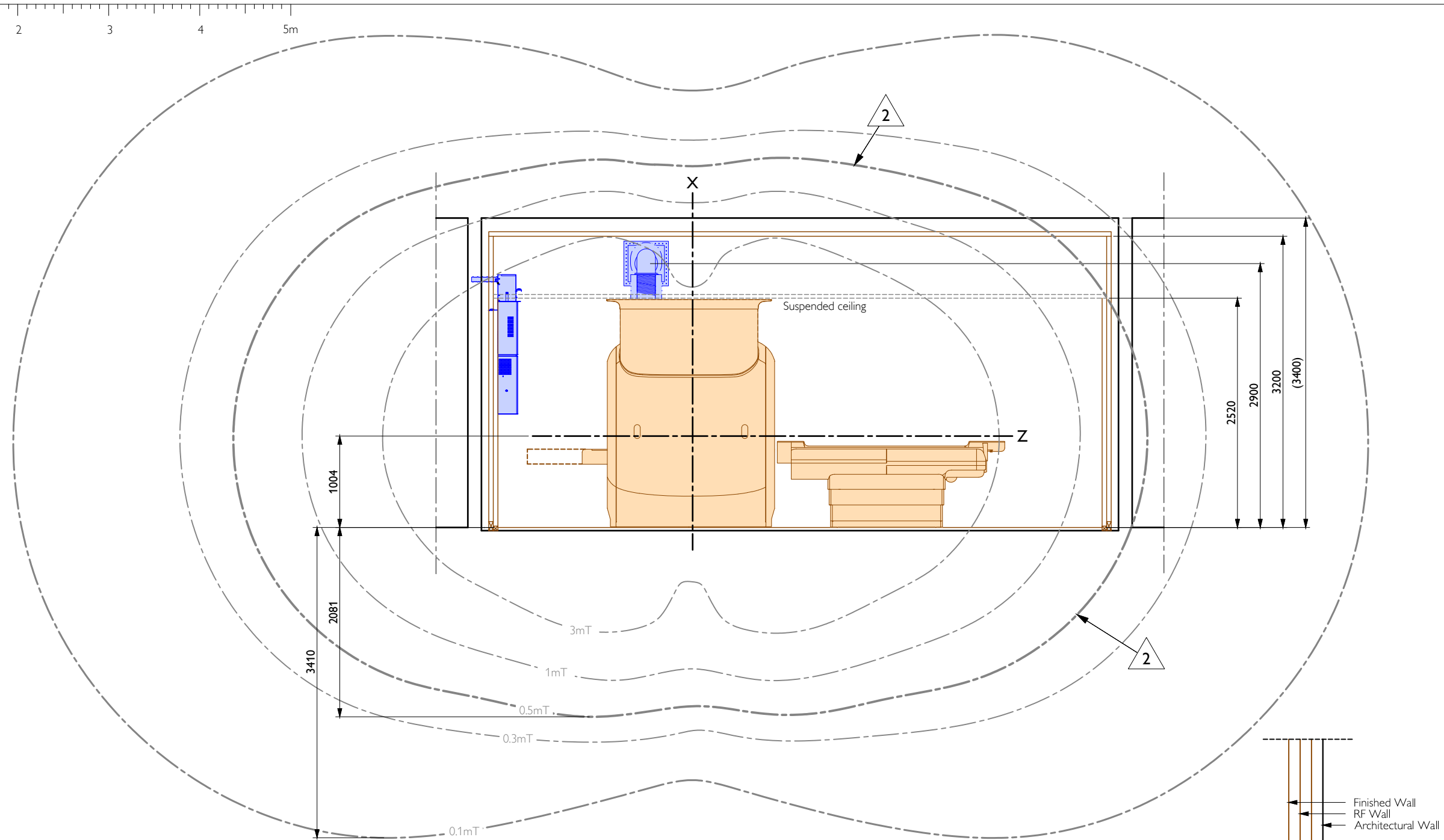




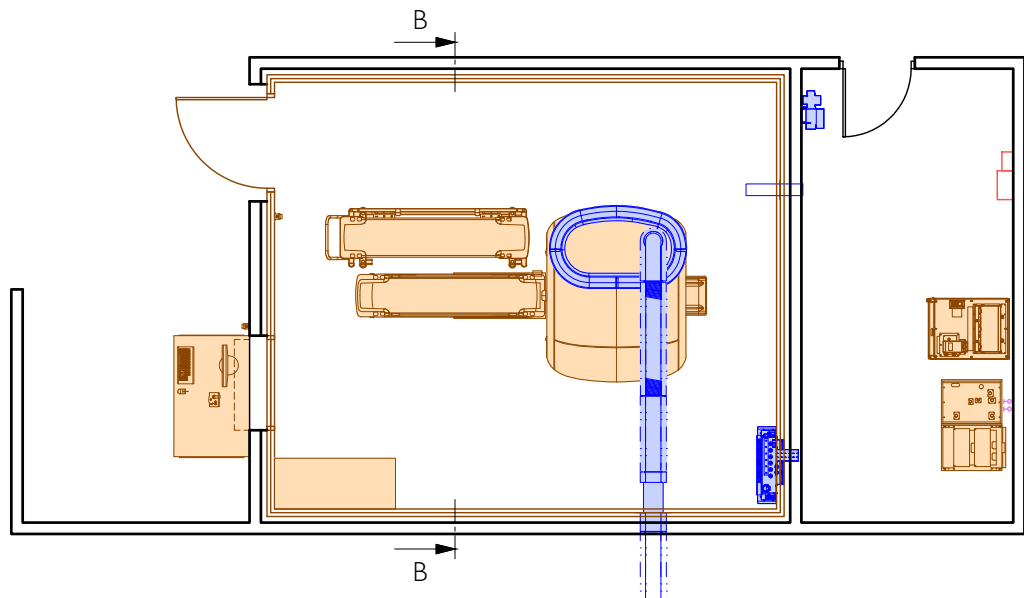
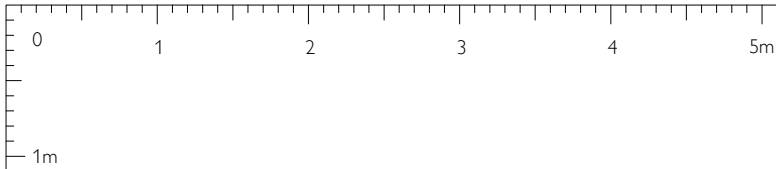
Project MR7700 Typical Site Preparation drawings	
Sheet Subject Building modifications	
Drawing A3	0
20-Feb-2023	Quote No Order No Technical ID
1 : 50	mm
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Situation (scale 1:100)

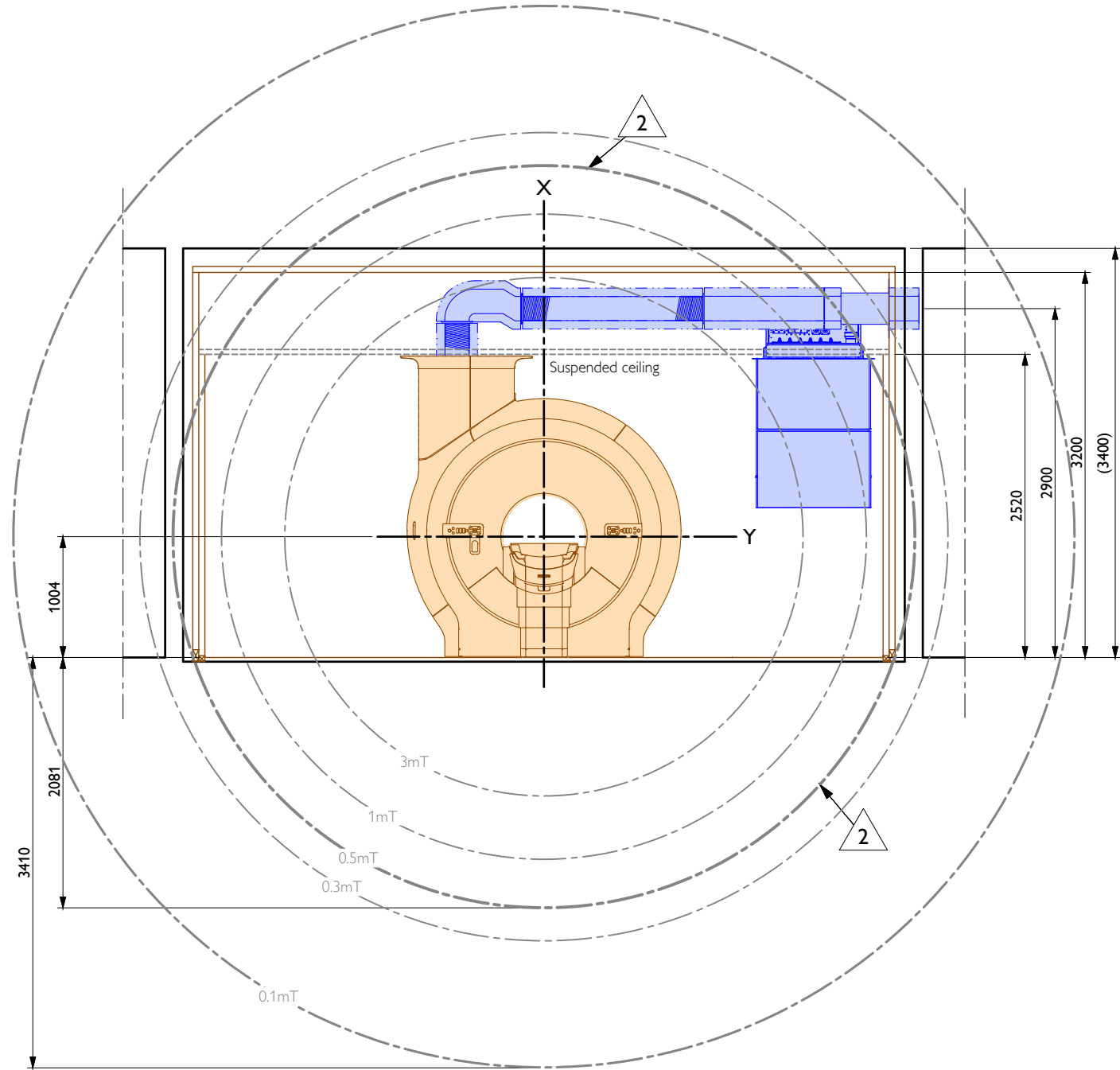
Schematic cross section A-A



Detail - Floor lowering principle (scale 1:20)



Situation (scale 1:100)



Schematic cross section B-B

Project
MR7700
Typical Site Preparation drawings

Sheet Subject
Schematic cross sections

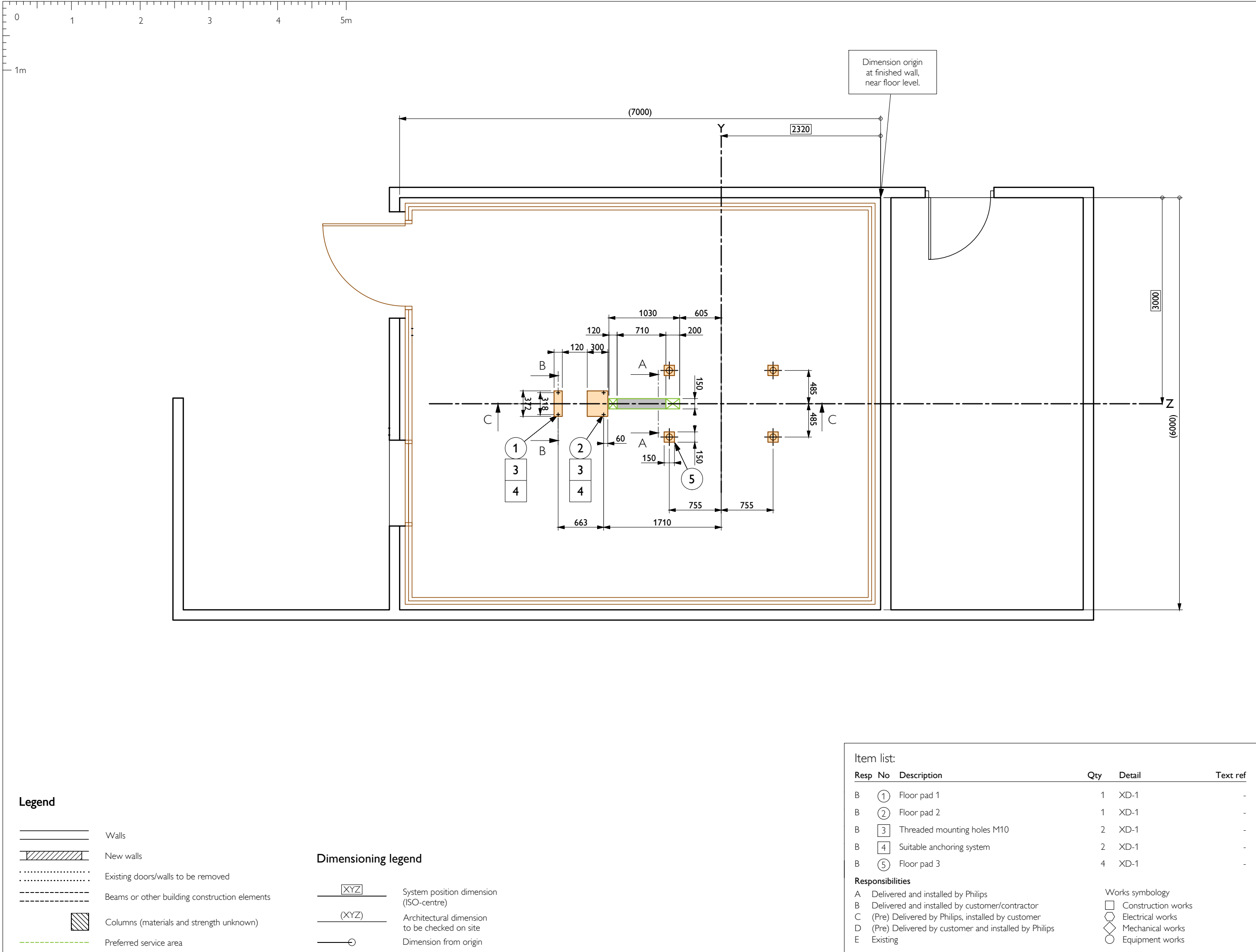
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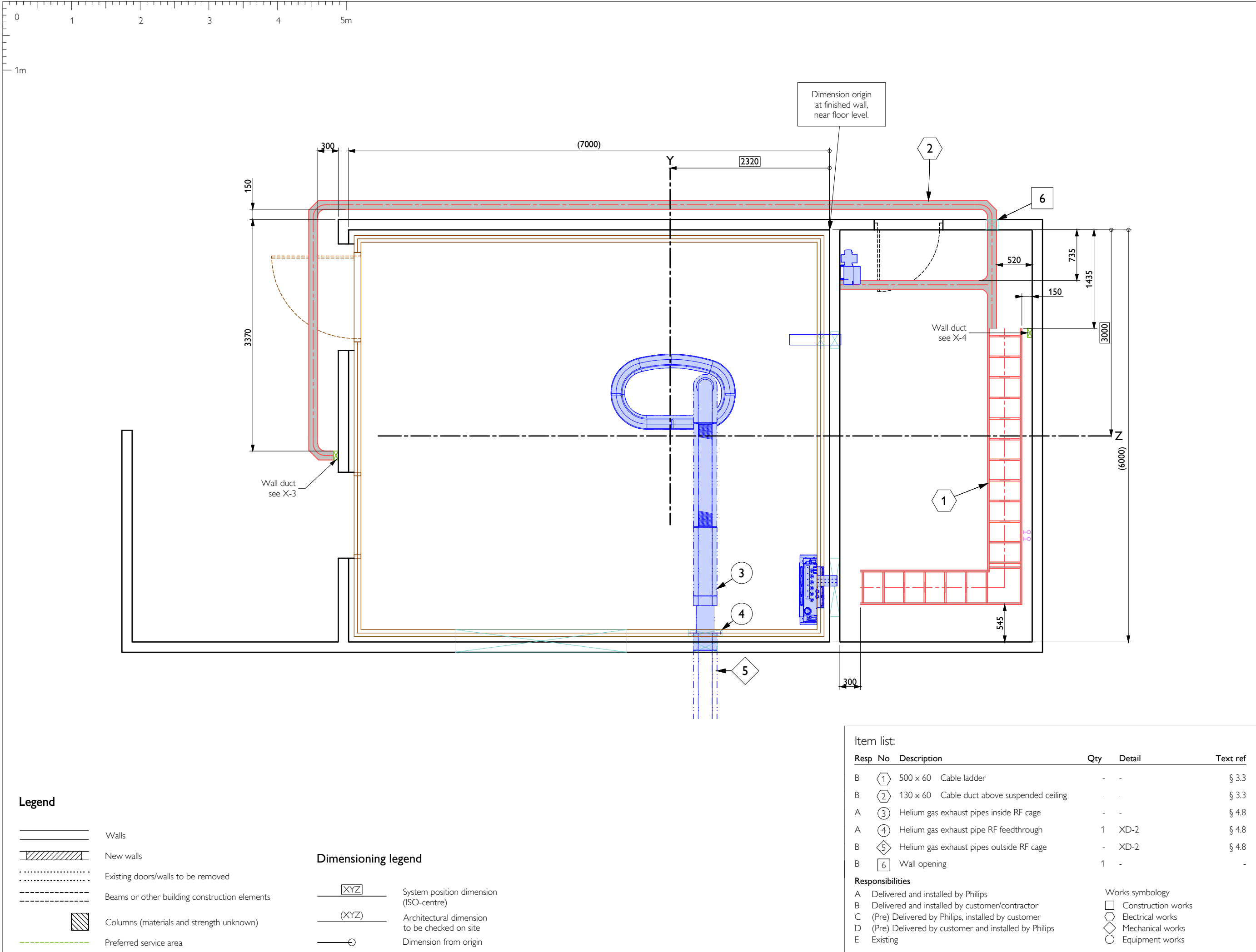
Quote No
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Technical ID

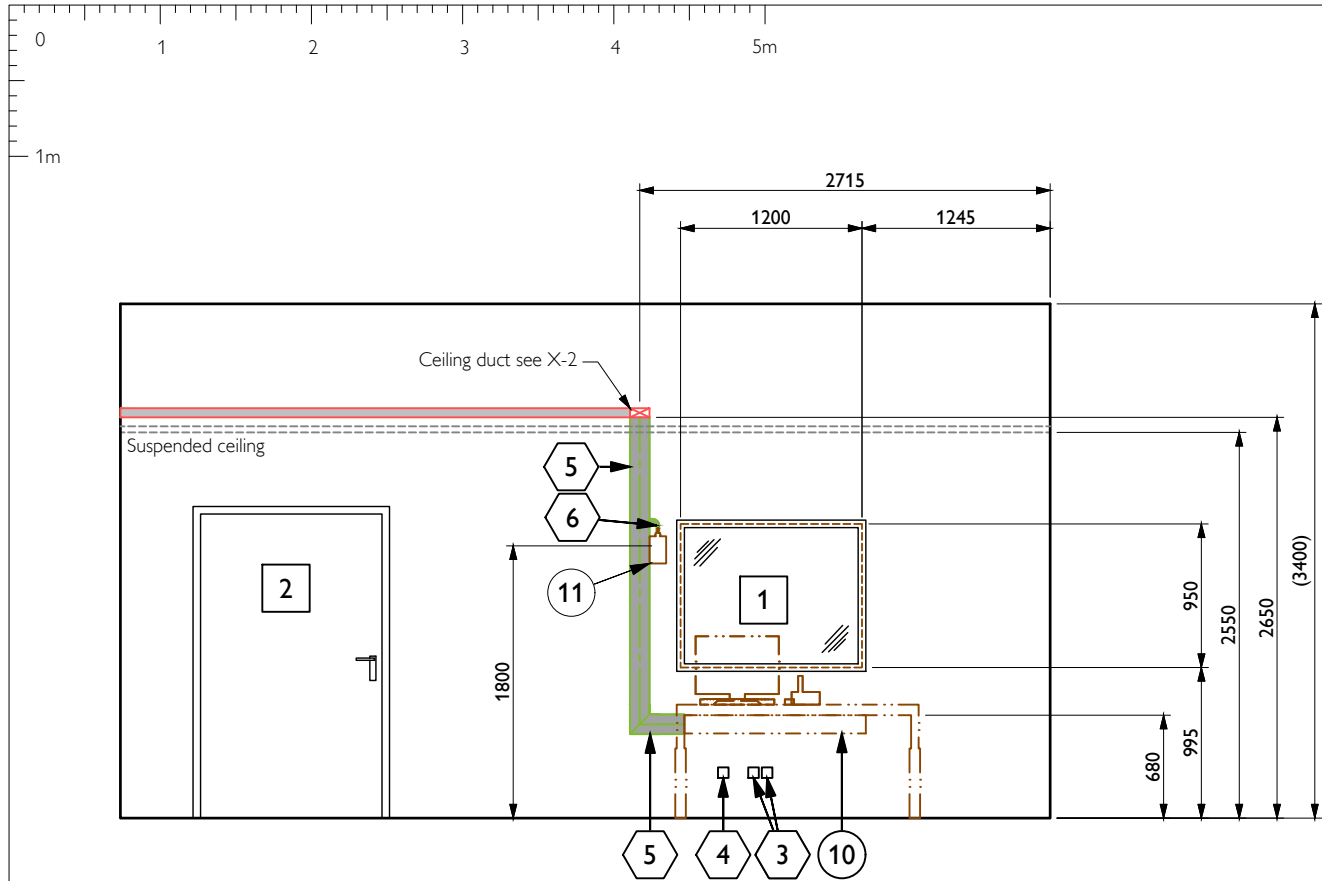
A3 1 : 50 mm

AD-2
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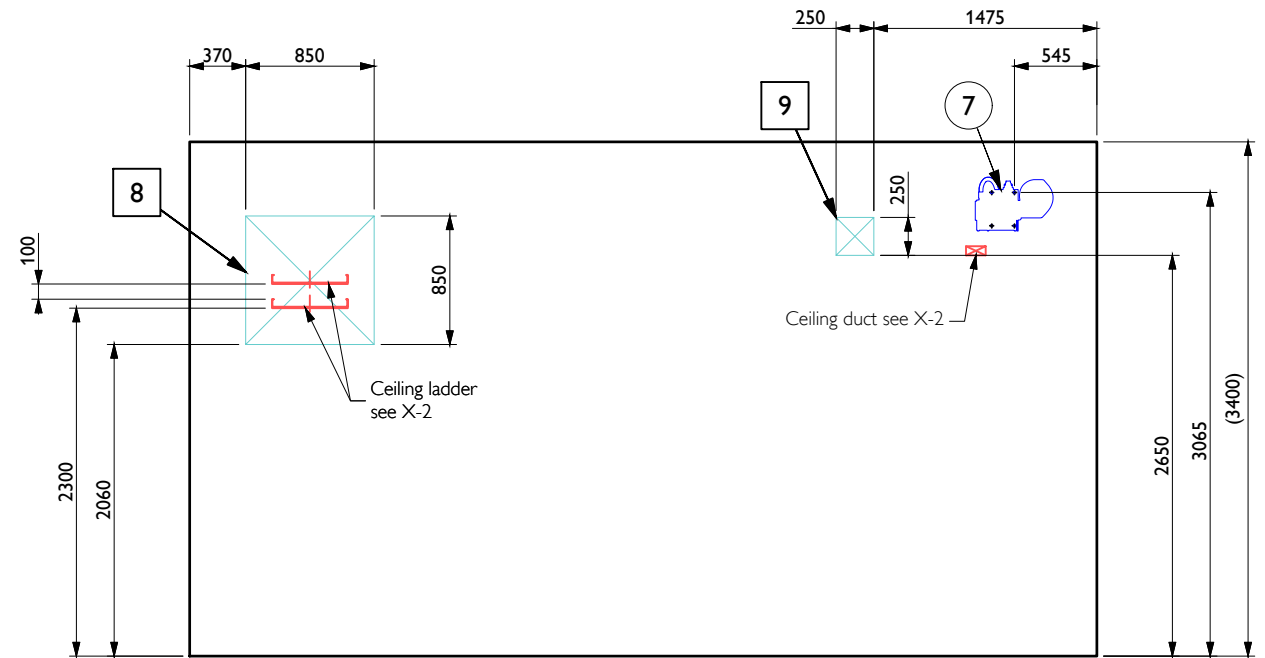
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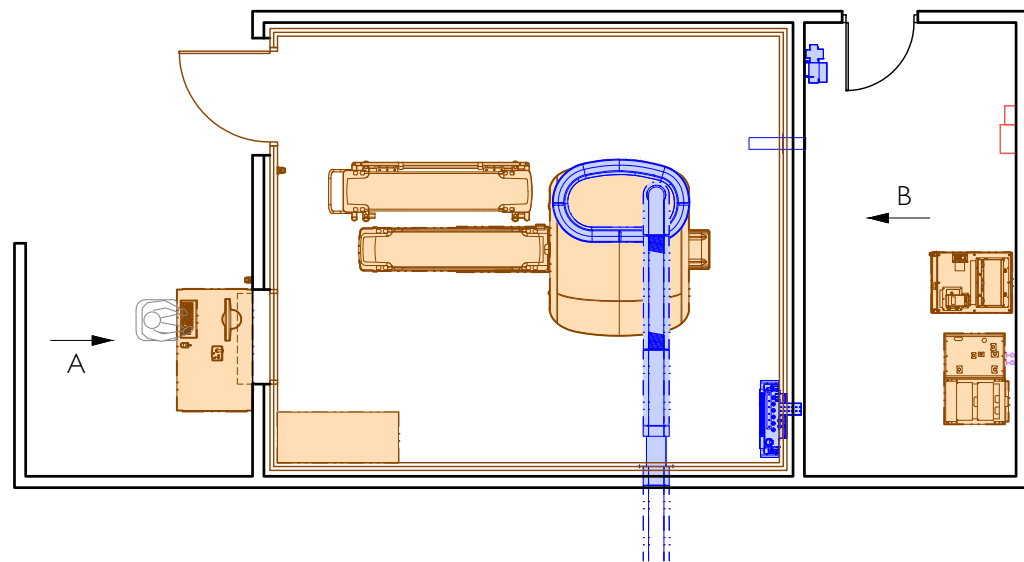




Elevation A



Elevation B



Situation (scale 1:100)

Item list:

Resp	No	Description	Qty	Detail	Text ref
B	1	RF window	1	-	§ 1.6
B	2	RF door	1	-	§ 1.6
B	3	Additional power outlet (customer)	2	-	§ 3.2
B	4	Network connection 100Mb, RJ45	1	-	§ 3.4
B	5	130 x 60 Wall duct	-	-	§ 3.3
B	6	Ø 19mm Conduit flush mounted	-	-	§ 3.3
A	7	System Air Cooling Unit (SACU)incl.Smoke detector	XD-3	-	-
B	8	Opening system filter box	1	XD-5	§ 2.4
B	9	Opening SACU	1	-	§ 4.2
A	10	Cable storage rail	1	XD-6	-
A	11	Emergency run down button	1	-	§ 3.2

Responsibilities

- A Delivered and installed by Philips
B Delivered and installed by customer/contractor
C (Pre) Delivered by Philips, installed by customer
D (Pre) Delivered by customer and installed by Philips
E Existing

Works symbology

- Construction works
○ Electrical works
◇ Mechanical works
○ Equipment works

Project
MR7700
Typical Site Preparation drawings

Sheet Subject
Wall provisions
(all disciplines)

0

Drawing
20-Feb-2023

A3

1 : 50

mm

Sheet

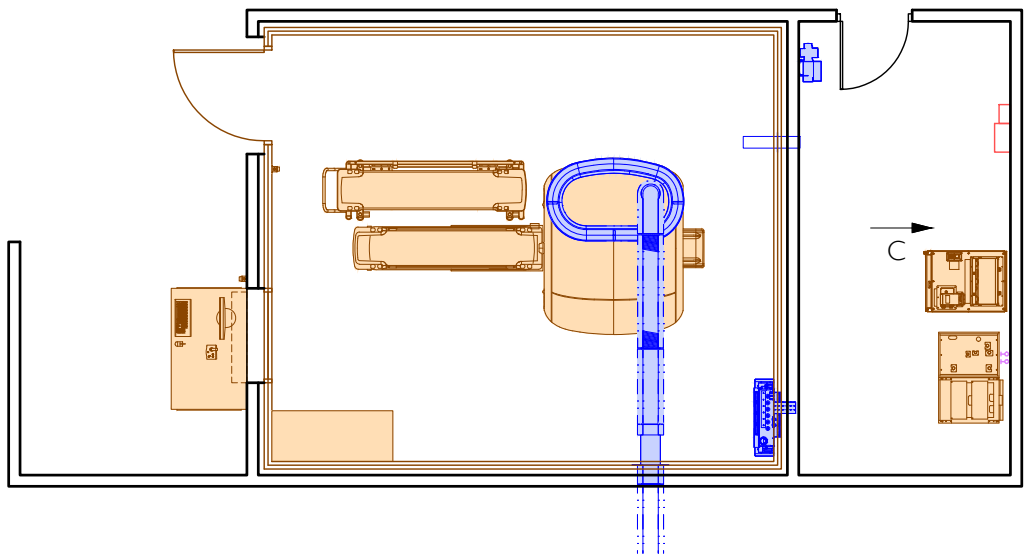
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Quote No
Order No
Technical ID

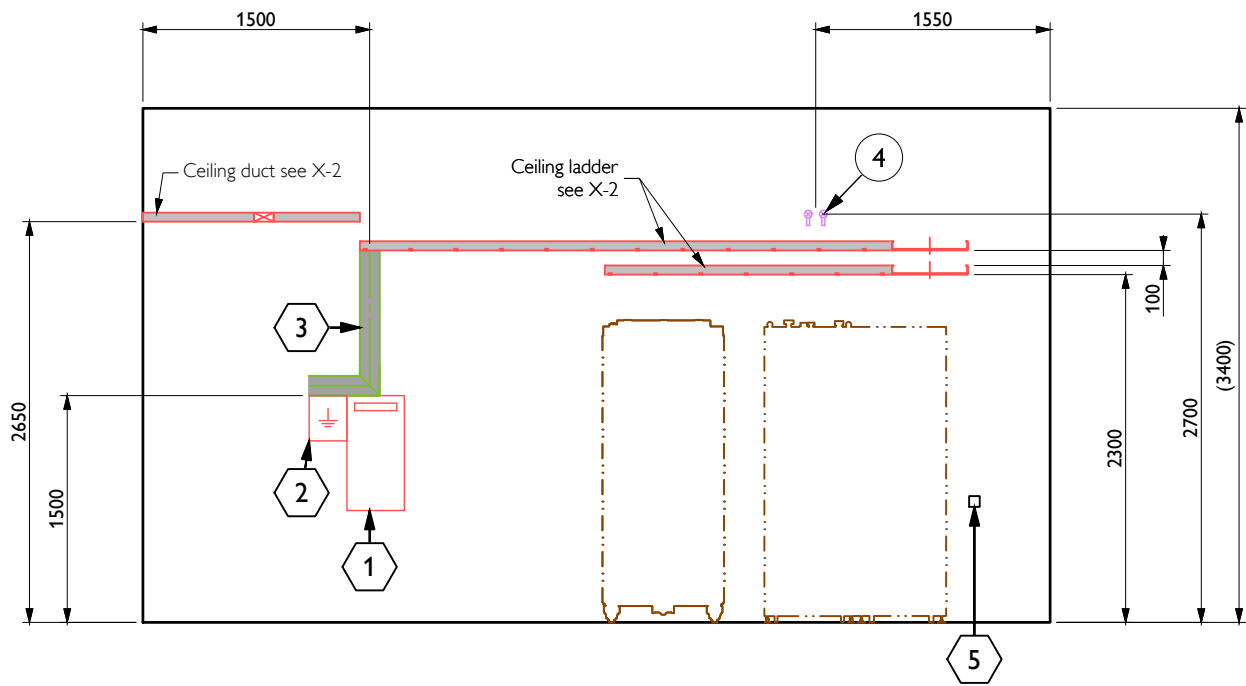
X-3

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PHILIPS



Situation (scale 1:100)



Elevation C

Item list:

Resp	No	Description	Qty	Detail	Text ref
B	①	Mains switch	1	-	§ 3.2
B	②	Earth reference terminal	1	-	§ 3.2
B	③	130 x 60 Wall duct	-	-	§ 3.3
B	④	Chilled water connection	1	-	-
B	⑤	Network connection 100Mb, RJ45	1	-	§ 3.4

Responsibilities

- A Delivered and installed by Philips
B Delivered and installed by customer/contractor
C (Pre) Delivered by Philips, installed by customer
D (Pre) Delivered by customer and installed by Philips
E Existing

Works symbology

- Construction works
○ Electrical works
◇ Mechanical works
○ Equipment works

Project
MR7700
Typical Site Preparation drawings

Sheet Subject
Wall provisions 2
(all disciplines)

0

Drawing
20-Feb-2023

Quote No
Order No
Technical ID

A3

1 : 50

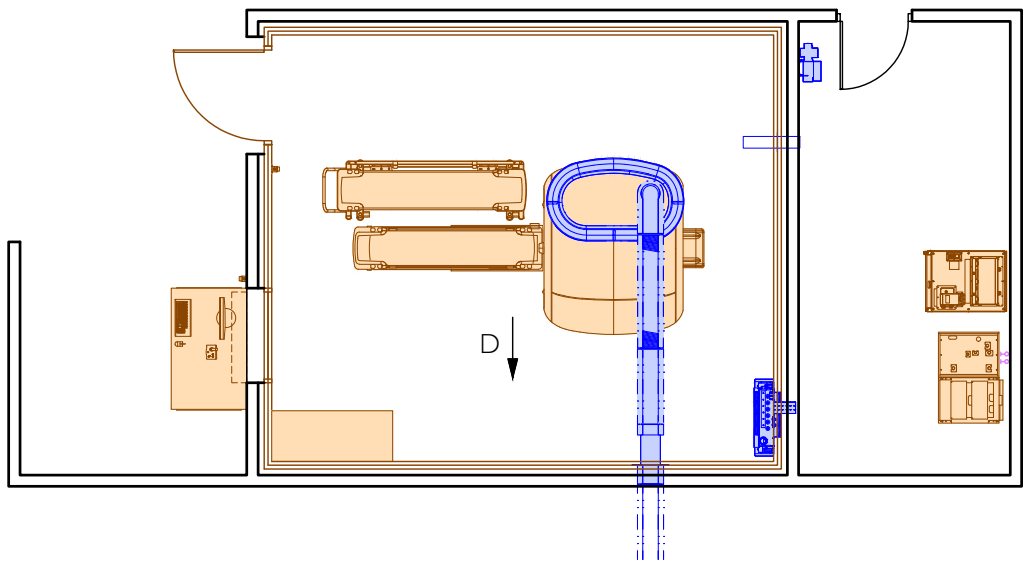
mm

X-4

Sheet

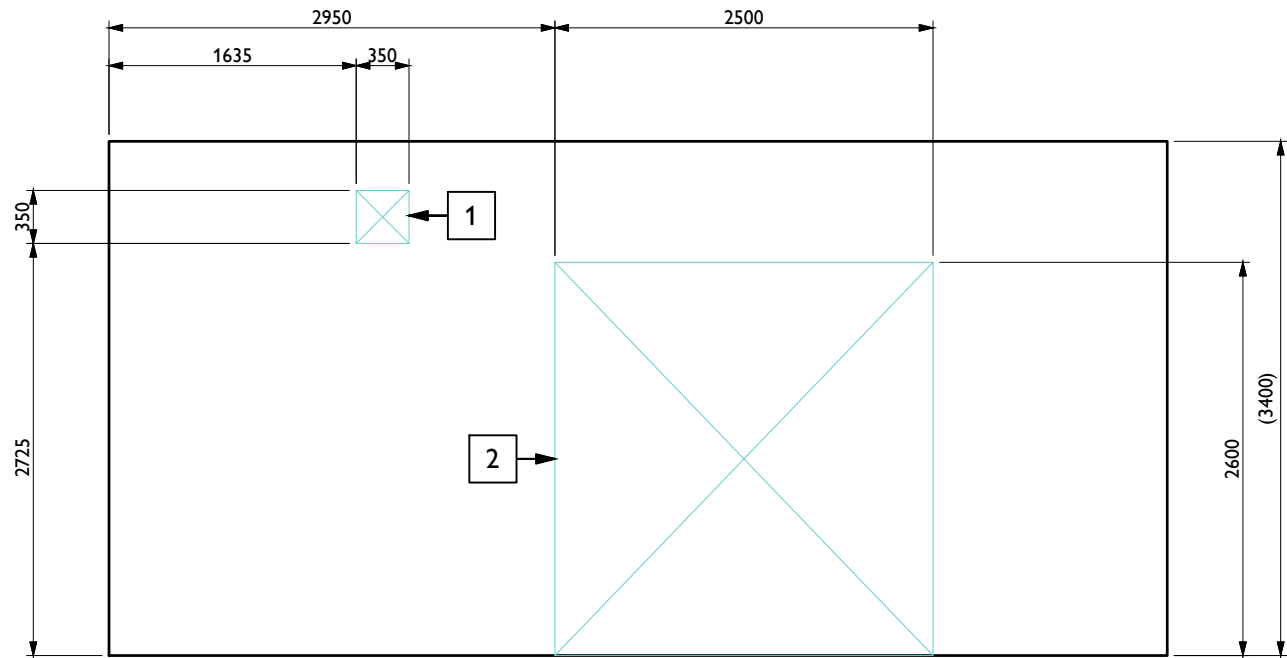
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Situation (scale 1:100)

Elevation D



Item list:

Resp	No	Description	Qty	Detail	Text ref
B	1	Opening helium gas exhaust pipe	1	XD-5	§ 2.4
B	2	Scanner gantry transfer opening	1	-	§ 1.7

Responsibilities

- A Delivered and installed by Philips
- B Delivered and installed by customer/contractor
- C (Pre) Delivered by Philips, installed by customer
- D (Pre) Delivered by customer and installed by Philips
- E Existing

Works symbology

- Construction works
- Electrical works
- ◇ Mechanical works
- Equipment works

Project
MR7700
Typical Site Preparation drawings

Sheet Subject
Wall provisions 3
(all disciplines)

0

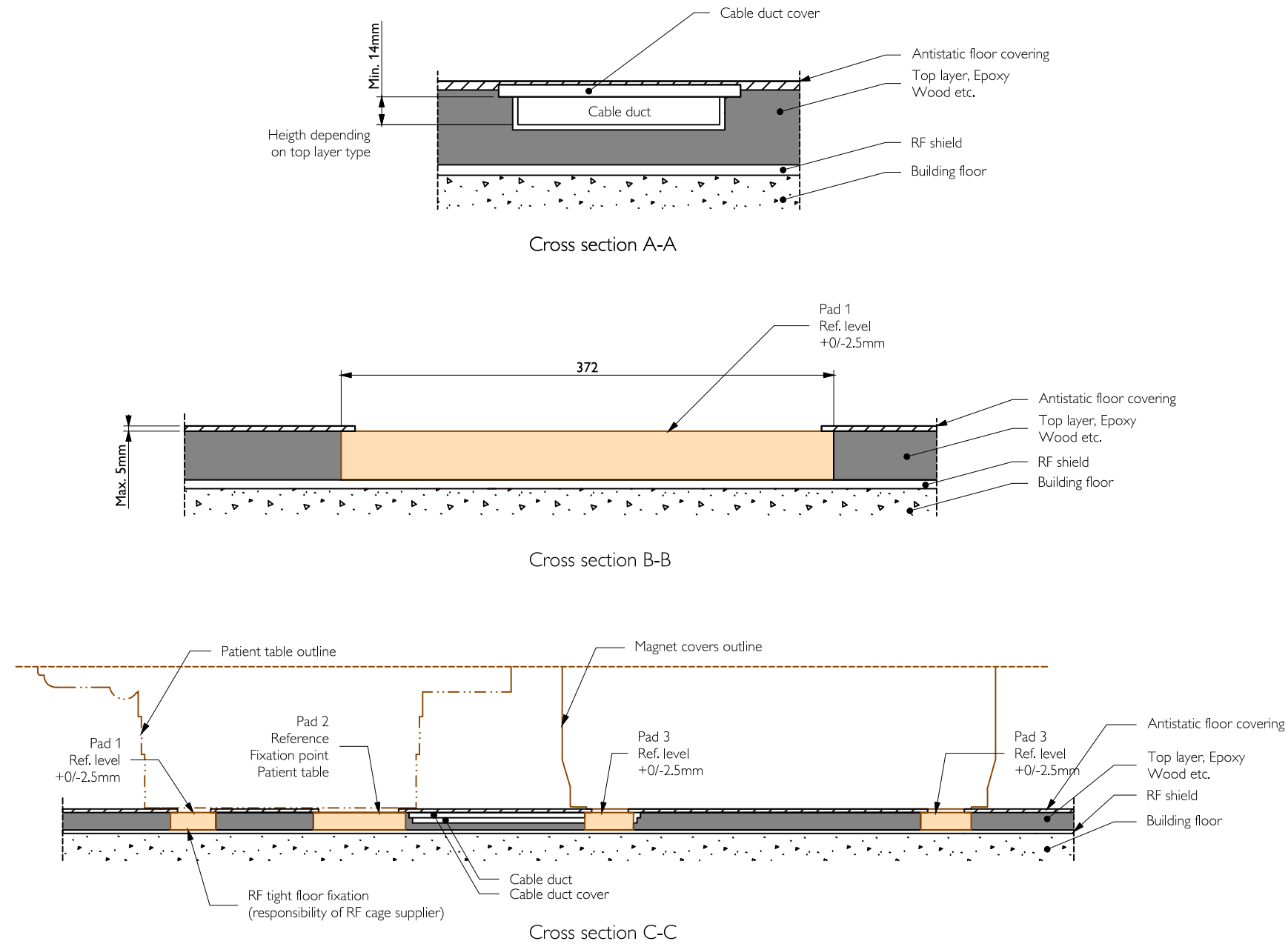
Drawing
20-Feb-2023

Quote No
Order No
Technical ID

A3 1 : 50 mm

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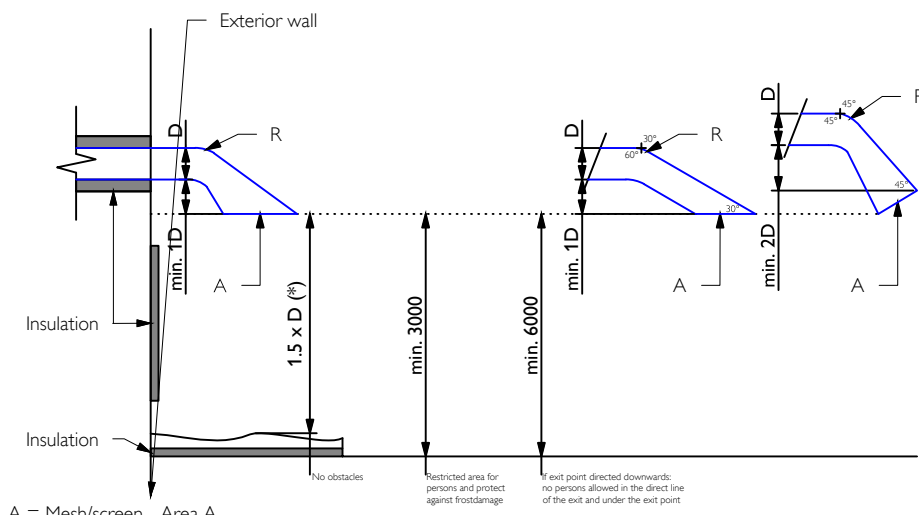


Detail - Scanner gantry/patient table pads (not to scale)

Vertical discharge options

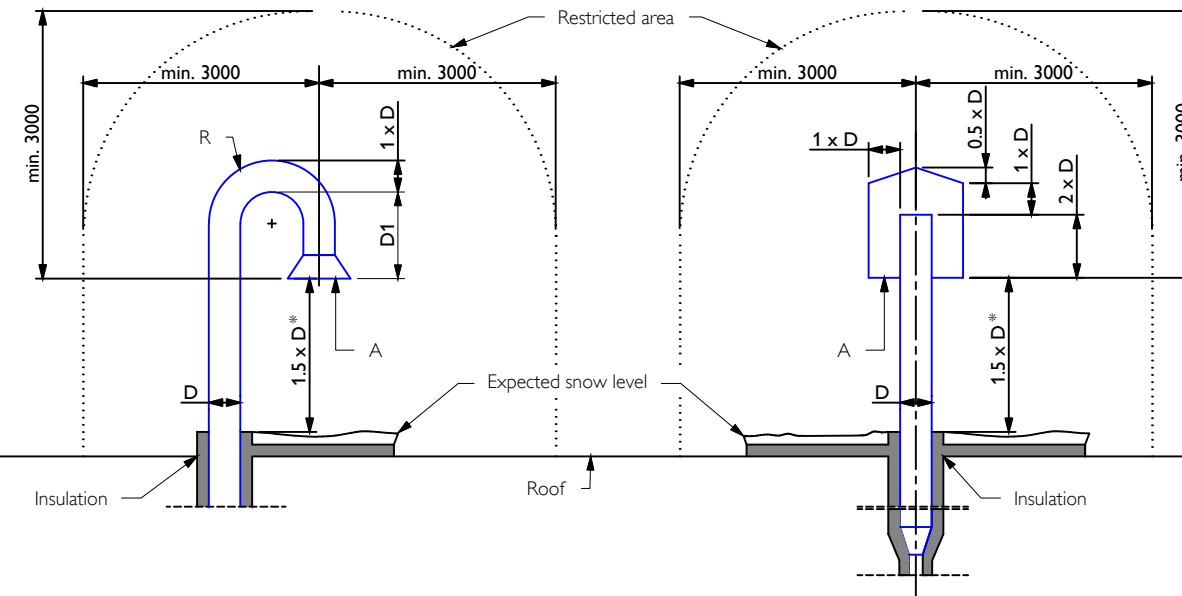
Horizontal discharge options

Exiting an exterior wall:

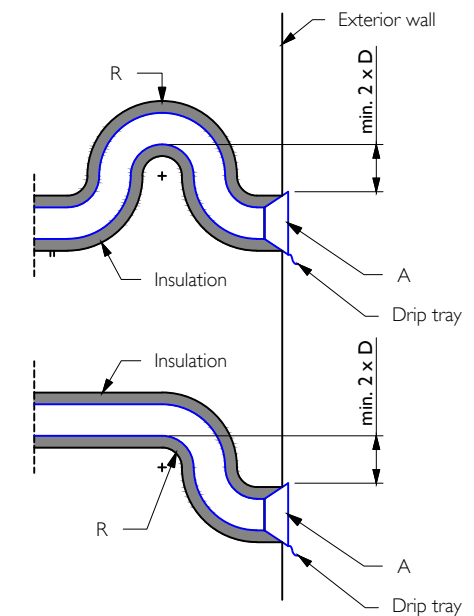


A = Mesh/screen - Area A
D = Pipe Diameter
D1 = min. 1 x D (A = level), min. 2 x D (A not level)
R = min. 1.5 x D
* Minimum distance above maximum expected snow level.

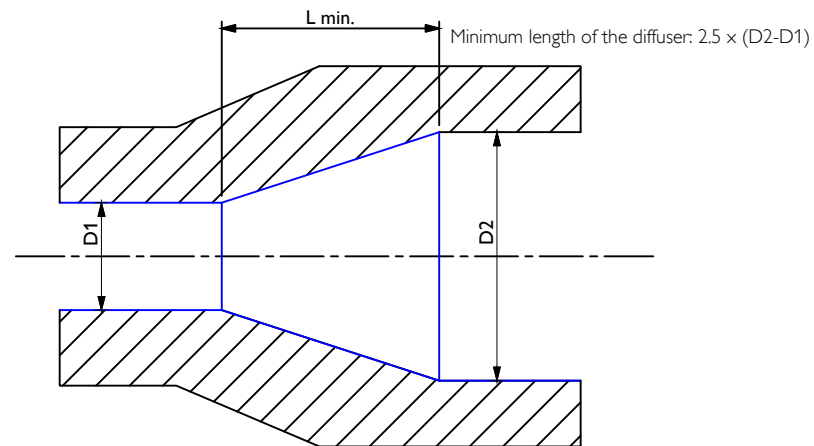
Exiting roof:



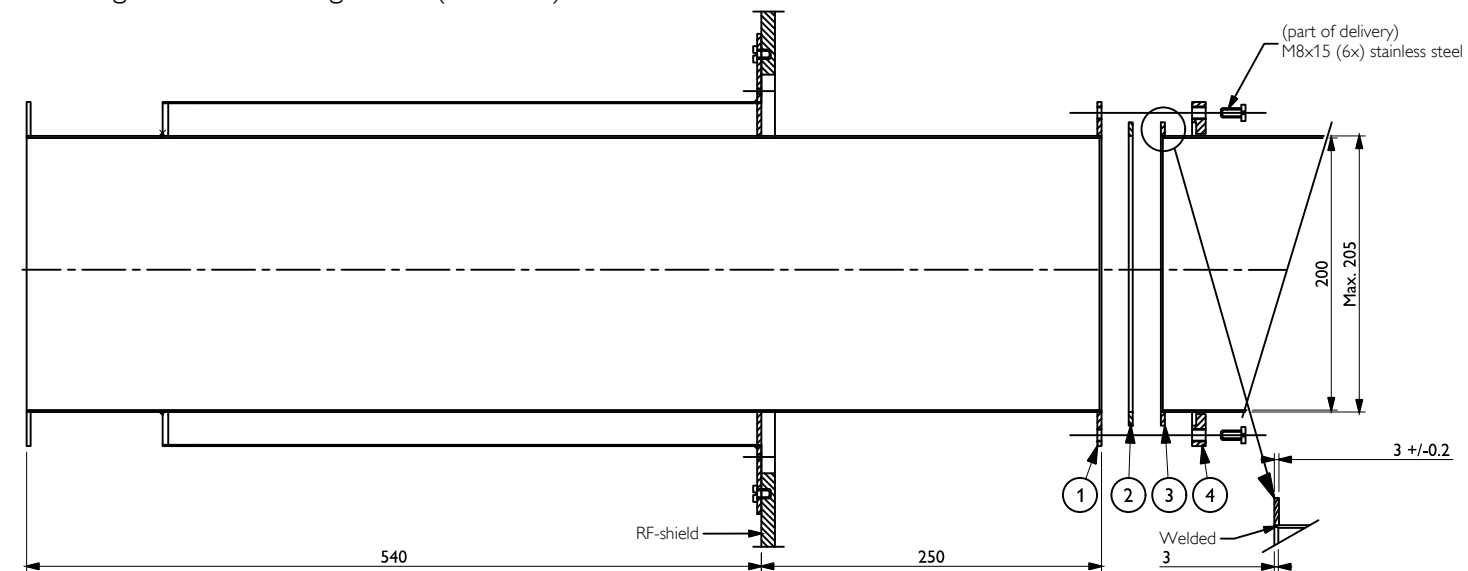
Exiting an exterior wall:



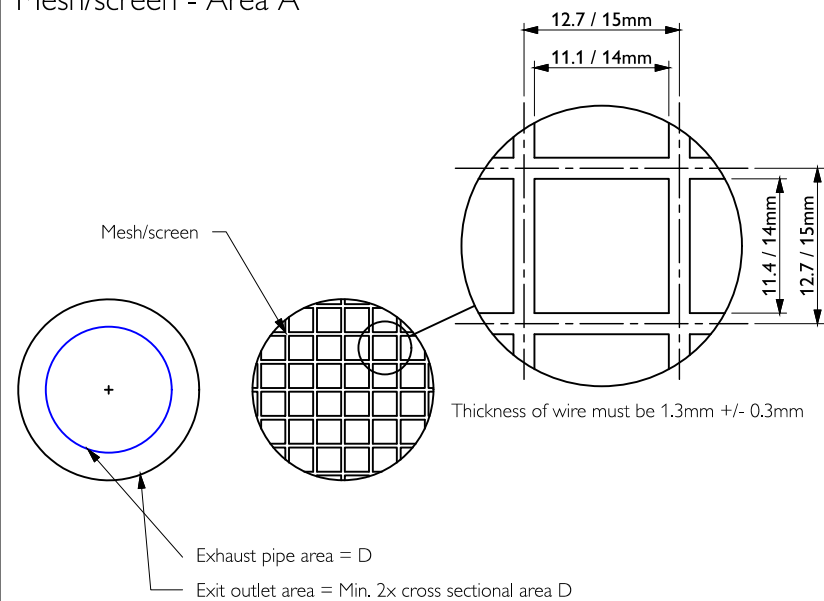
Helium Exhaust Diffuser



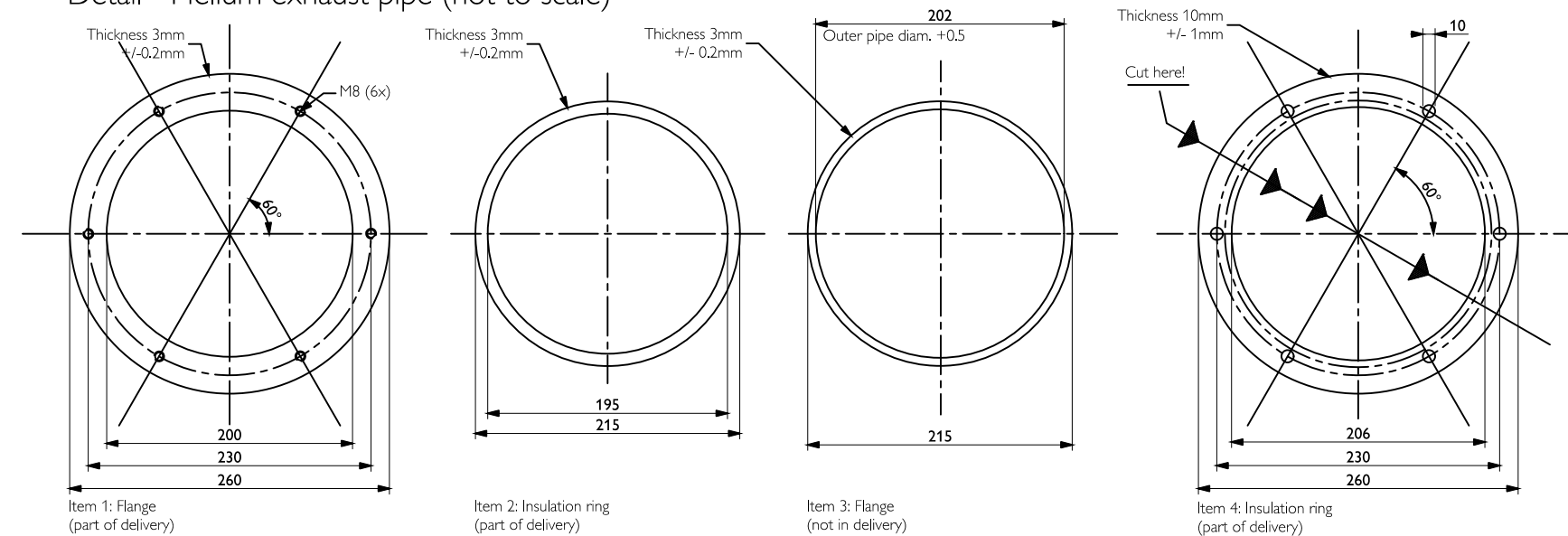
Detail - Helium gas RF-feedthrough 3.0T (scale 1:5)



Mesh/screen - Area A



Detail - Helium exhaust pipe (not to scale)



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Project
MR7700
Typical Site Preparation drawings

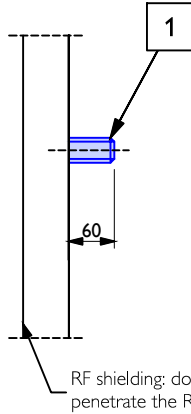
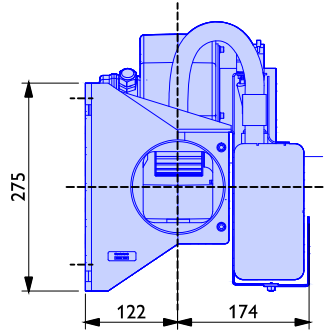
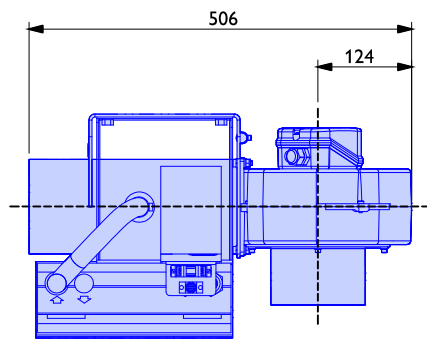
Sheet Subject
Details 2
(all disciplines)

0

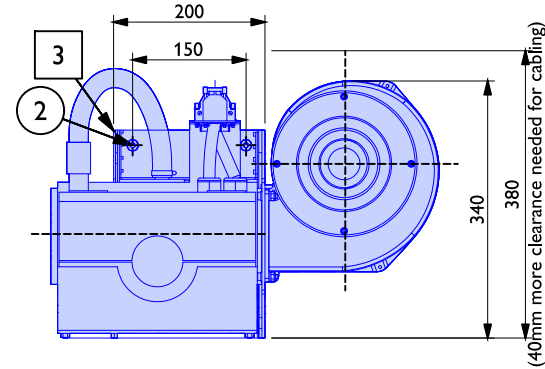
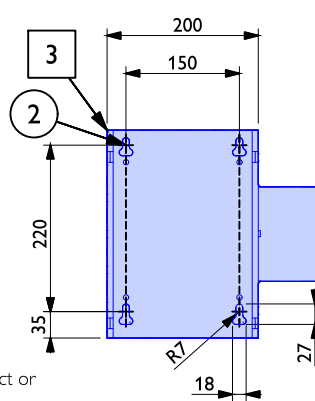
Drawing
20-Feb-2023

A3 mm
XD-2
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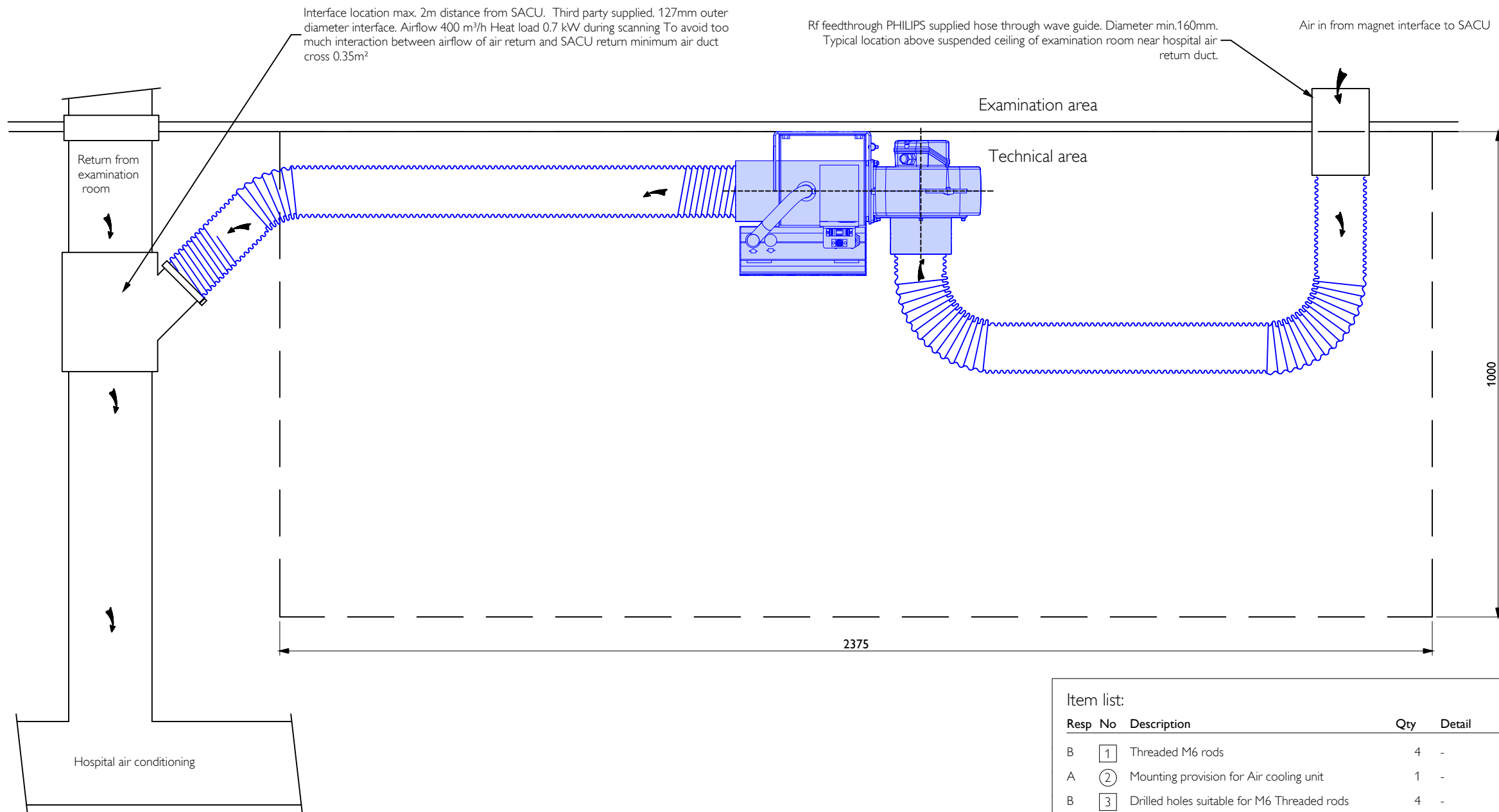
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RF shielding: do not make contact or penetrate the RF shielding



Detail - System air cooling including smoke detection unit mounting (scale 1:10)



Detail - connection diagram SACU incl Smoke detection (scale 1:10)

Item list:

Resp	No	Description	Qty	Detail	Text ref
B	1	Threaded M6 rods	4	-	-
A	2	Mounting provision for Air cooling unit	1	-	-
B	3	Drilled holes suitable for M6 Threaded rods	4	-	-

Responsibilities

- A Delivered and installed by Philips
- B Delivered and installed by customer/contractor
- C (Pre) Delivered by Philips, installed by customer
- D (Pre) Delivered by customer and installed by Philips
- E Existing

Works symbology

- Construction works
- Electrical works
- Mechanical works
- Equipment works

Project
MR7700
Typical Site Preparation drawings

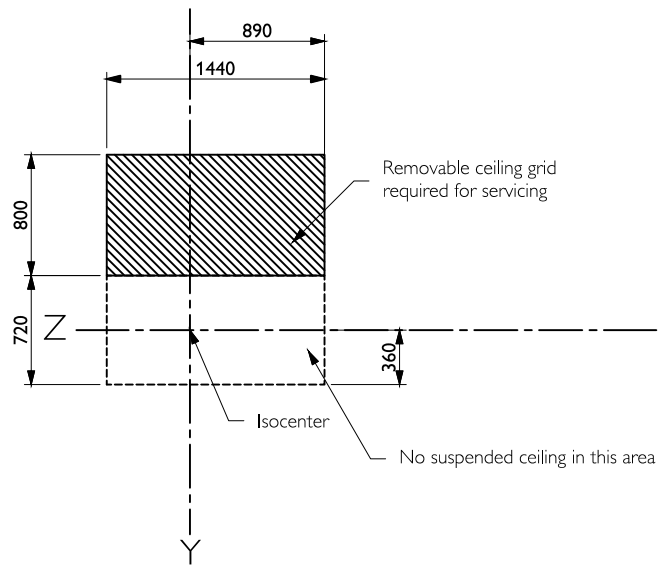
Sheet Subject
Details 3
(all disciplines)

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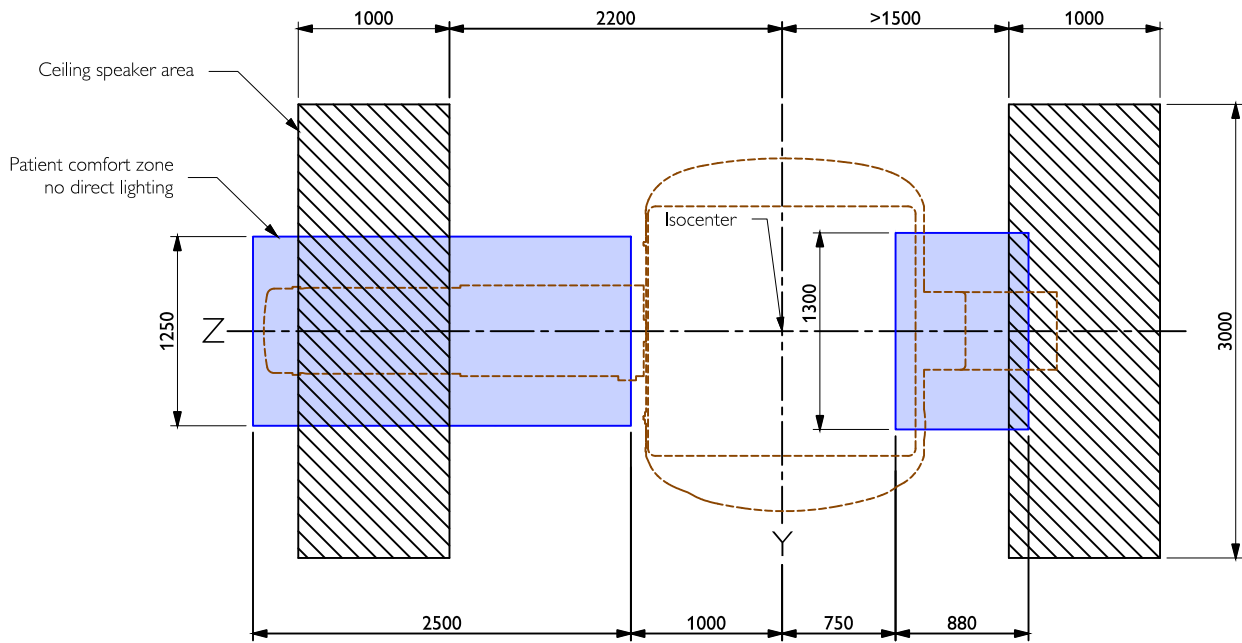
Drawing
20-Feb-2023

Quote No
Order No
Technical ID
A3 mm
XD-3
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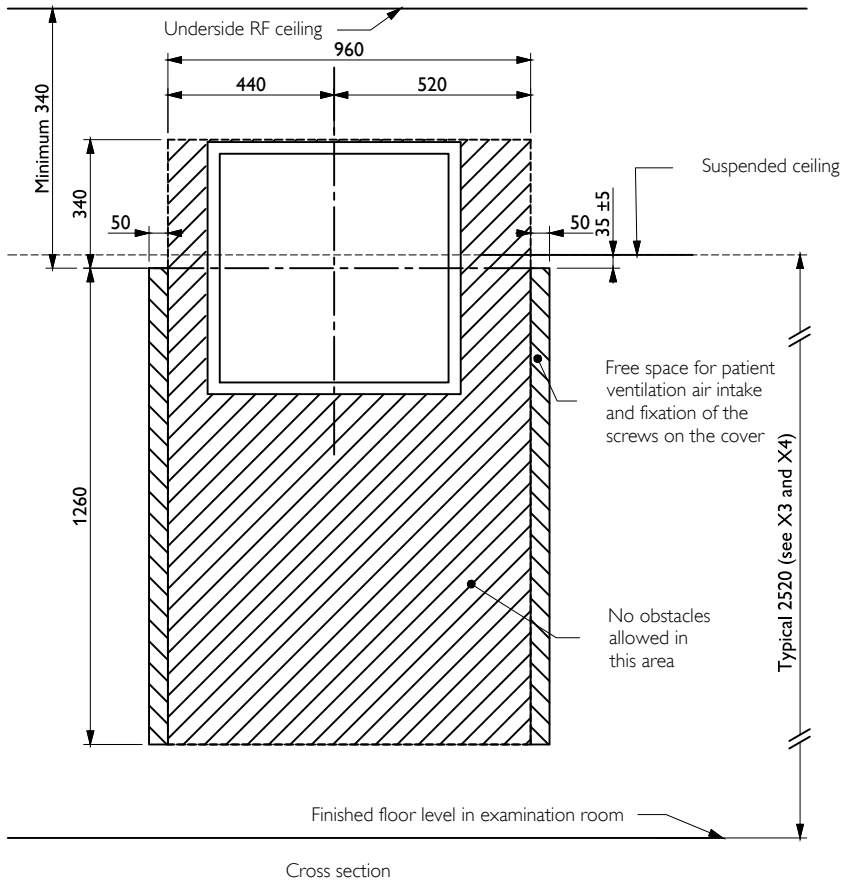
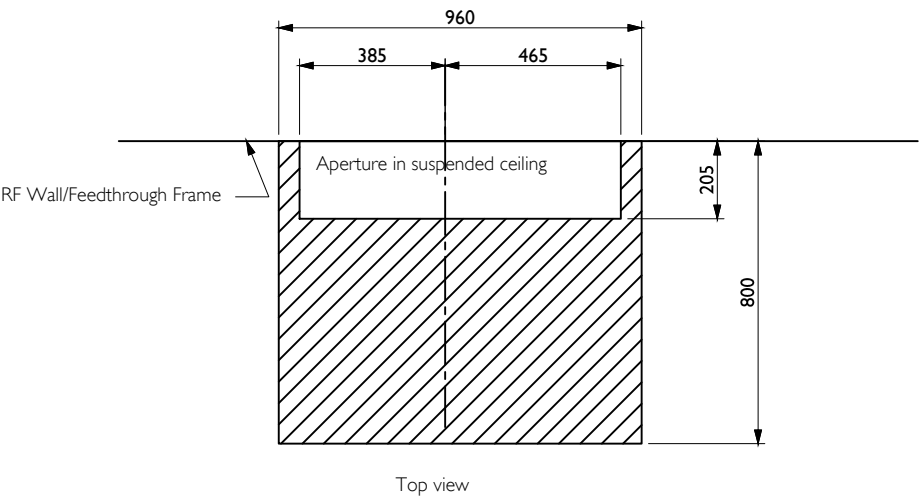
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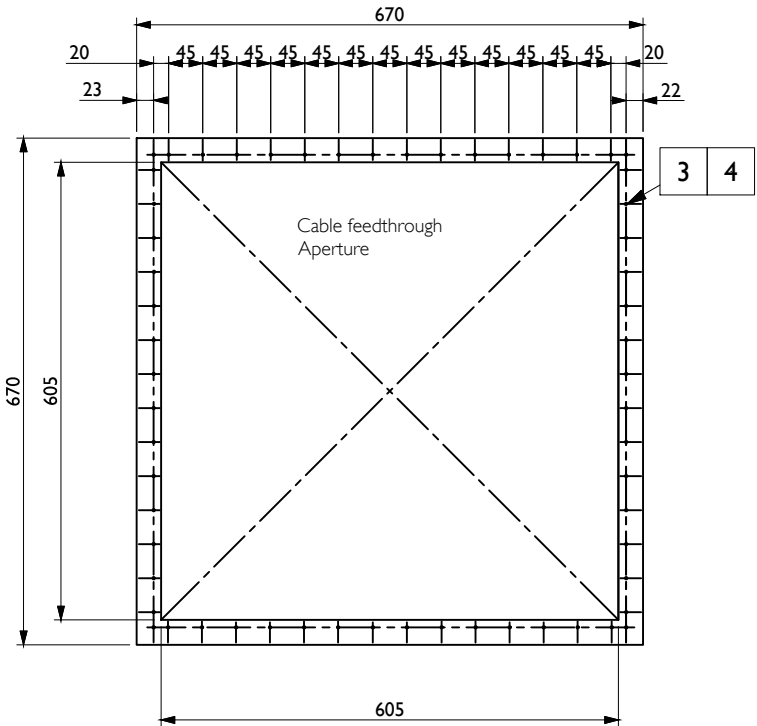
Detail - Suspended ceiling magnet service area (scale 1:50)



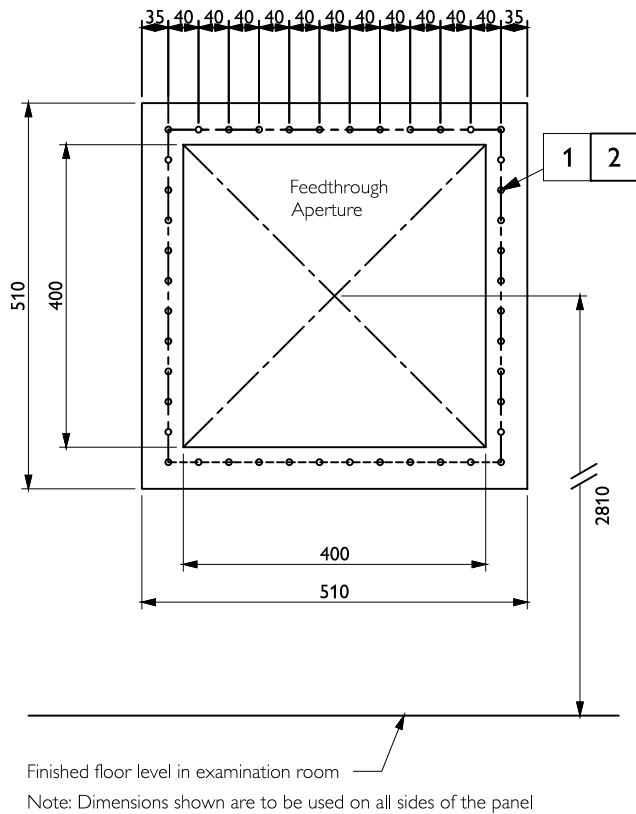
Detail - Ceiling area for lighting and speakers (scale 1:50)



Detail - Service area for System Filter Box (scale 1:20)



Detail - Feedthrough System Filter Box (scale 1:10)



Detail - Helium exhaust pipe (scale 1:10)

Item list:

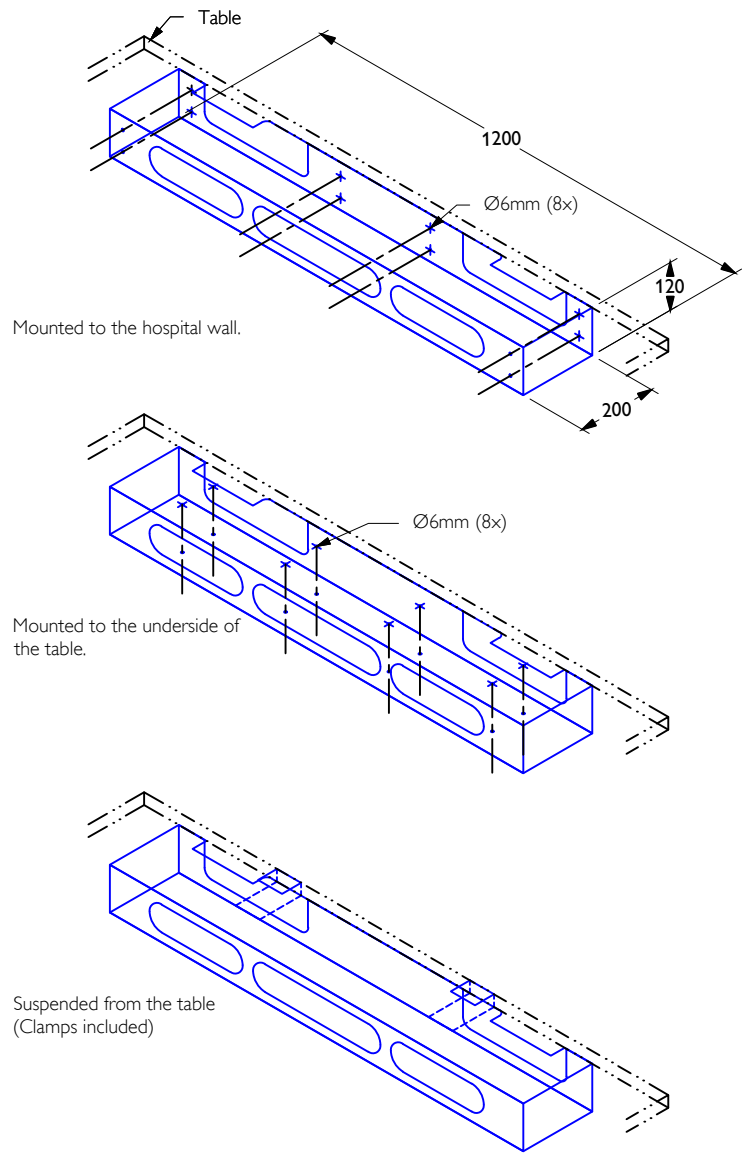
Resp	No	Description	Qty	Detail	Text ref
B	1	Threaded holes	24	-	-
B	2	Suitable fixing system M5	24	-	-
B	3	Threaded holes	60	-	-
B	4	Suitable fixing system M5	60	-	-

Responsibilities

- A Delivered and installed by Philips
- B Delivered and installed by customer/contractor
- C (Pre) Delivered by Philips, installed by customer
- D (Pre) Delivered by customer and installed by Philips
- E Existing

Works symbology

- Construction works
- Electrical works
- Mechanical works
- Equipment works



Detail - Mounting instruction Storage tray
(Not to Scale)