Sample Room

NIRO Report – Geometry, Positions & Treatments
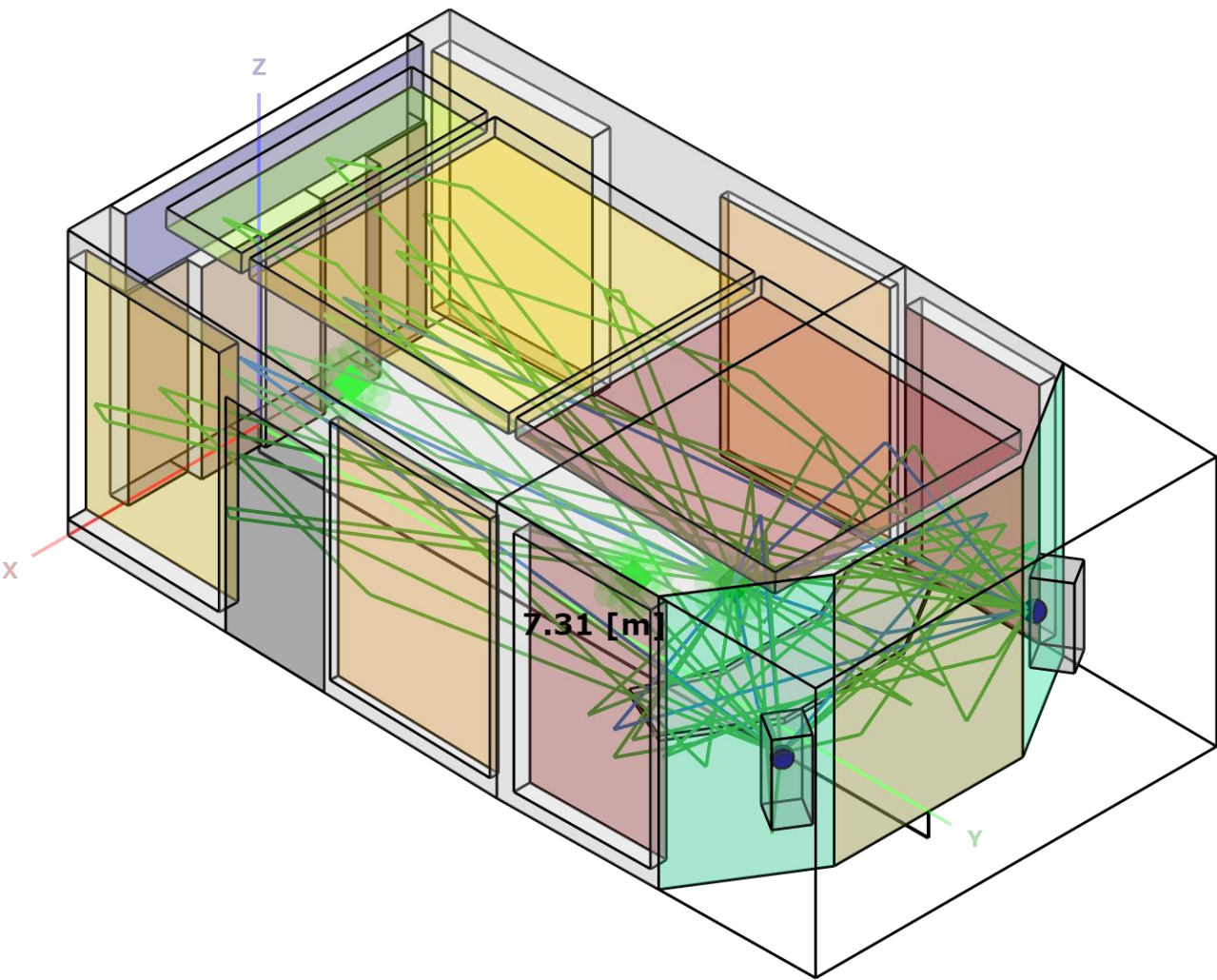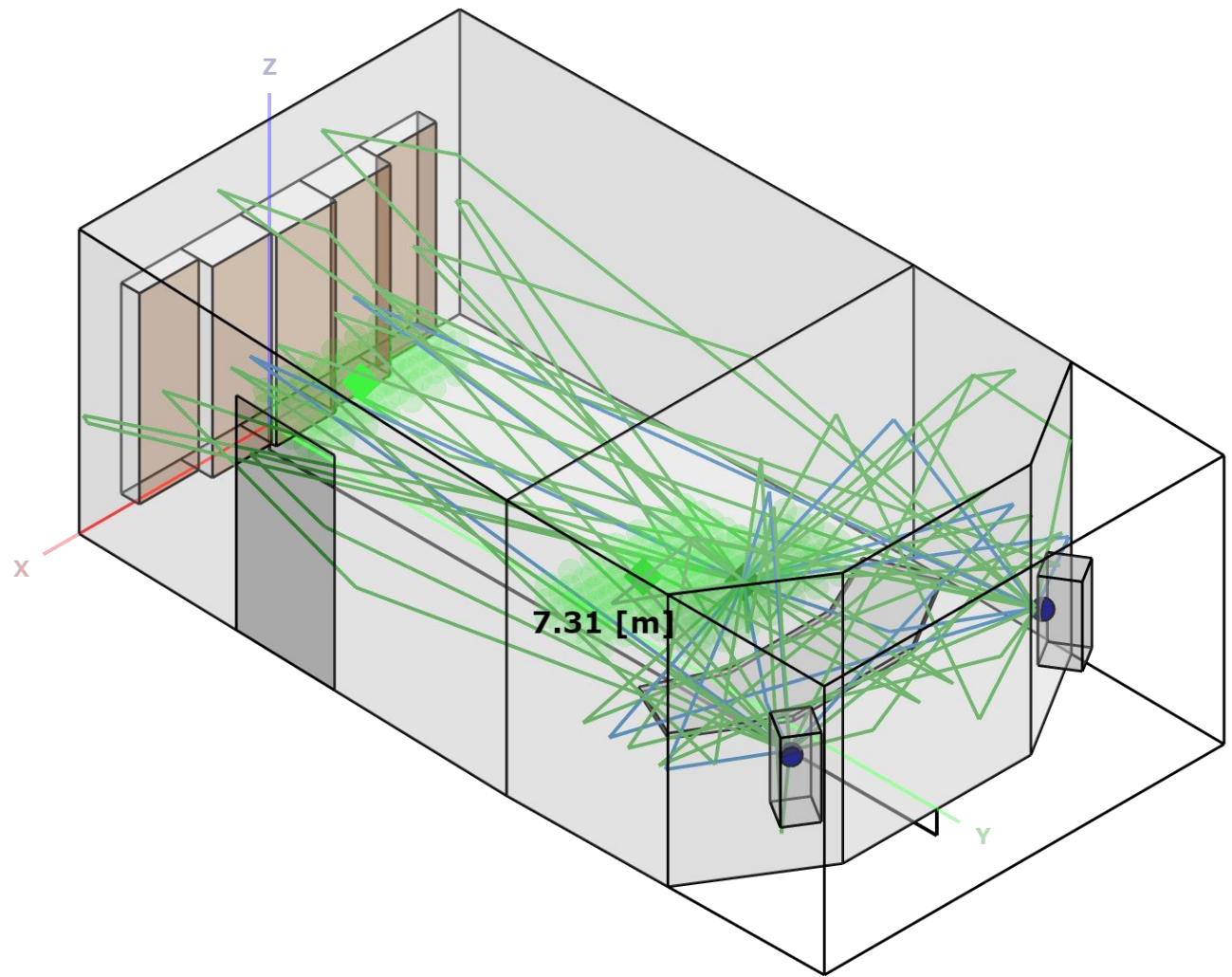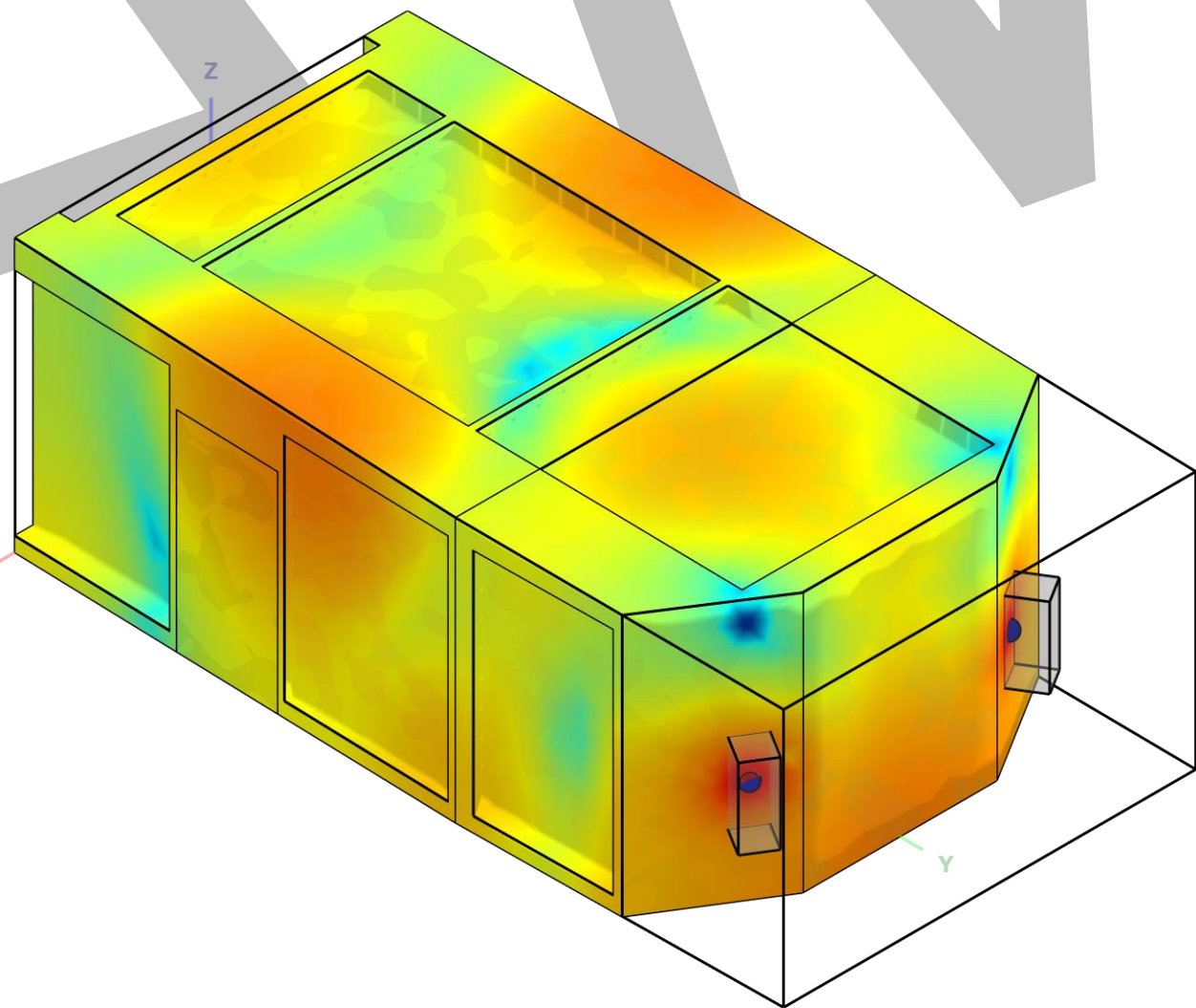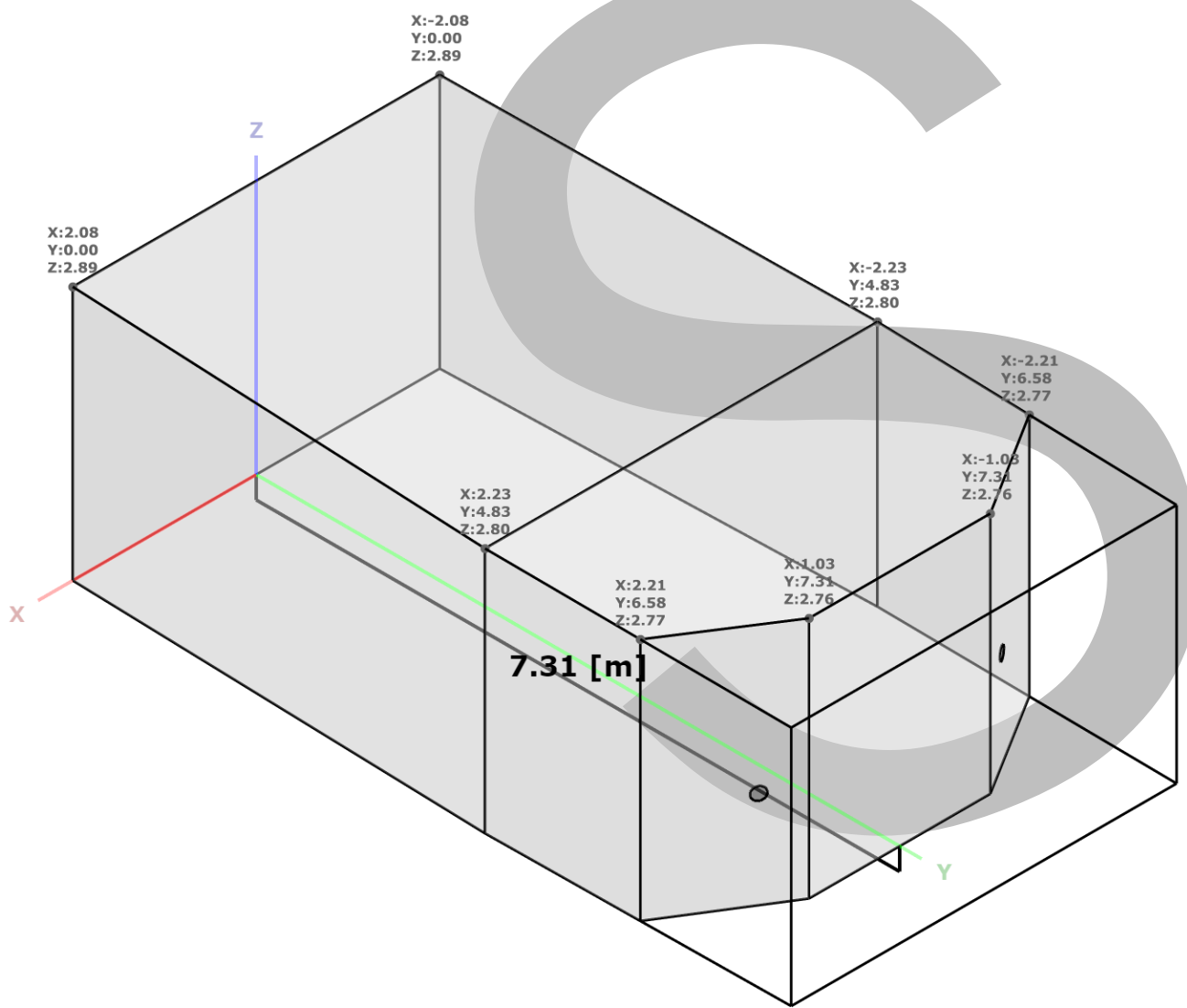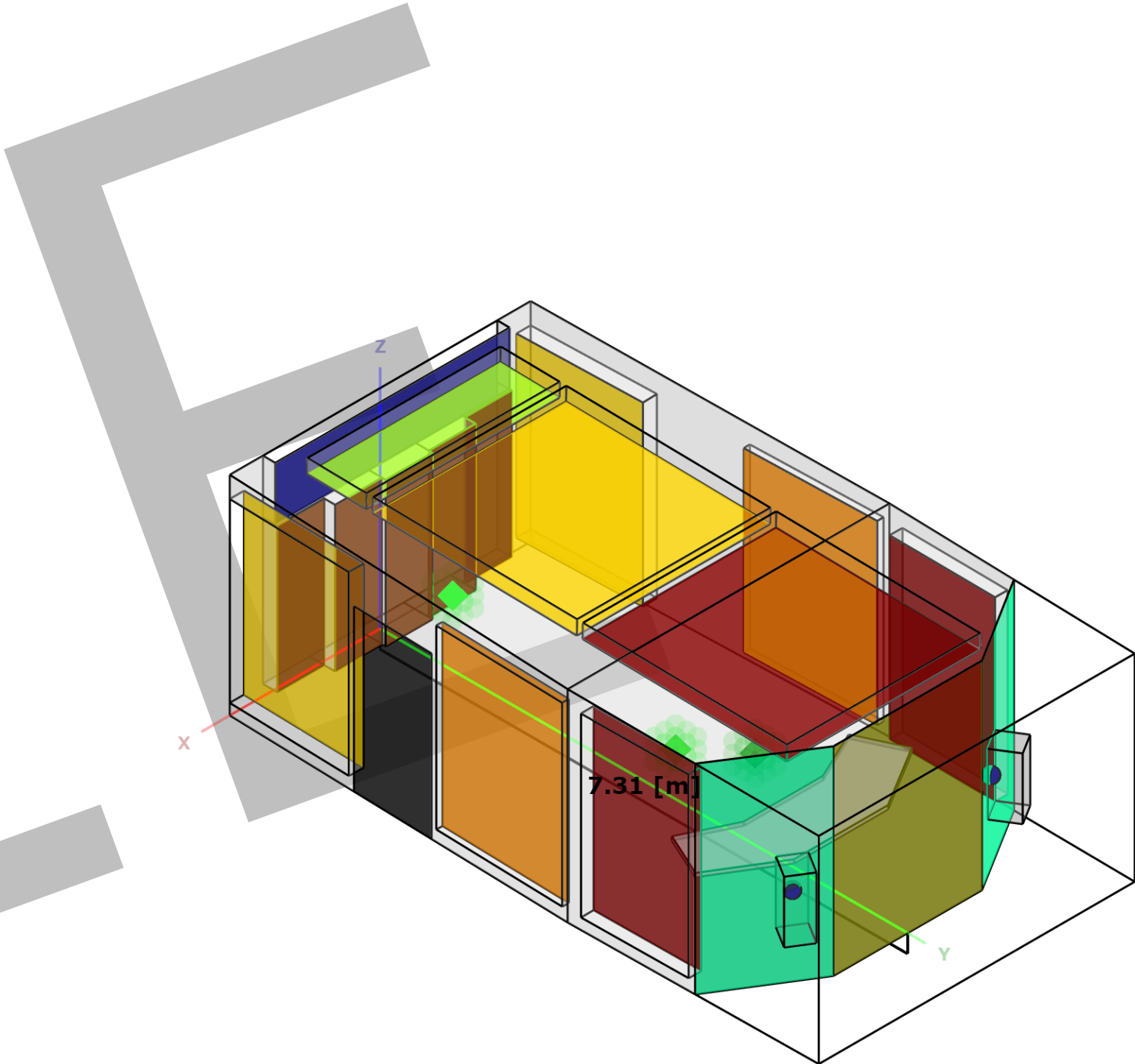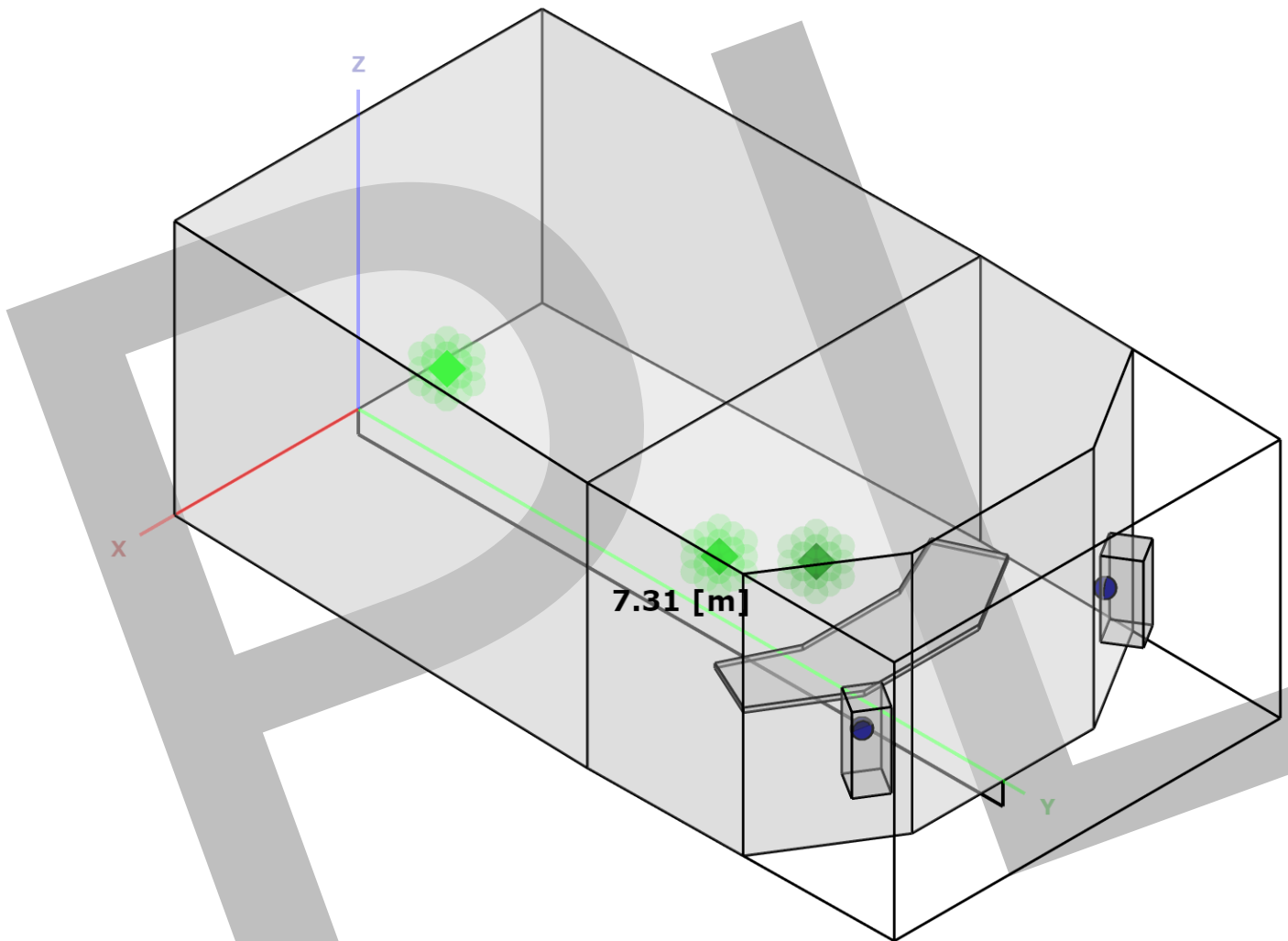
Listening positions:

- **Mix 1 Pos.:** X: x.xx, Y: x.xx, Z: x.xx [m]
- **Mix 2 Pos.:** X: x.xx, Y: x.xx, Z: x.xx [m]
- **Producer Pos.:** X: x.xx, Y: x.xx, Z: x.xx [m]

Loudspeaker positions:

- **Mains:** X: ± x.xx, Y: x.xx, Z: x.xx [m] | Polarity: (+, +)

① Positions
   Listener and speaker positions

② Front View

7.31 [m]

③ Floorplan View

7.31 [m]
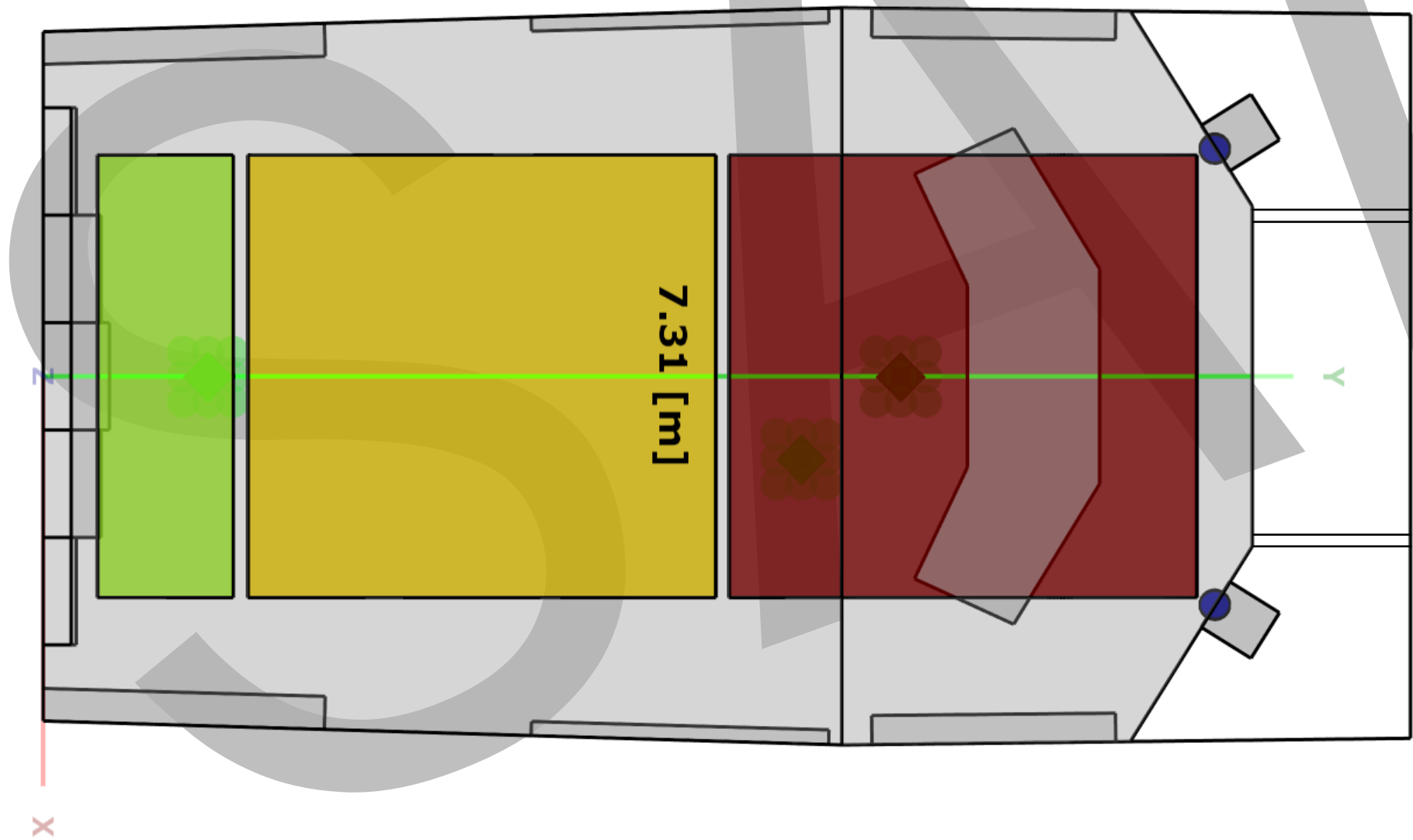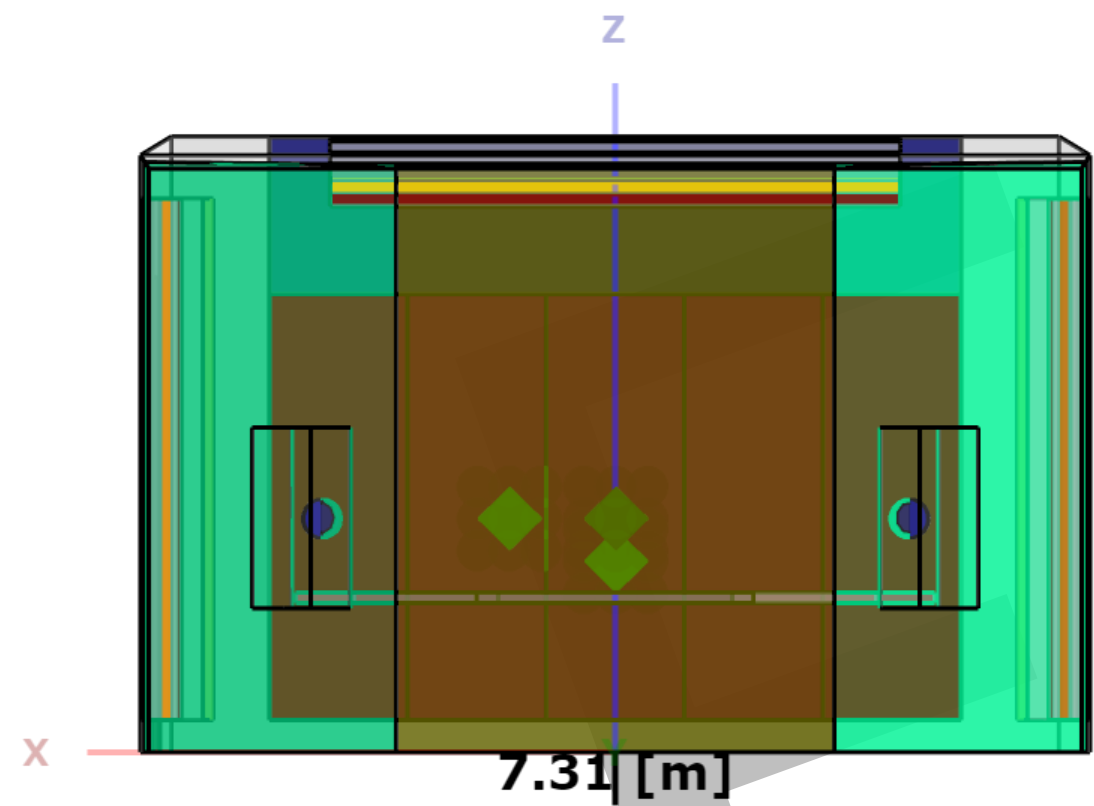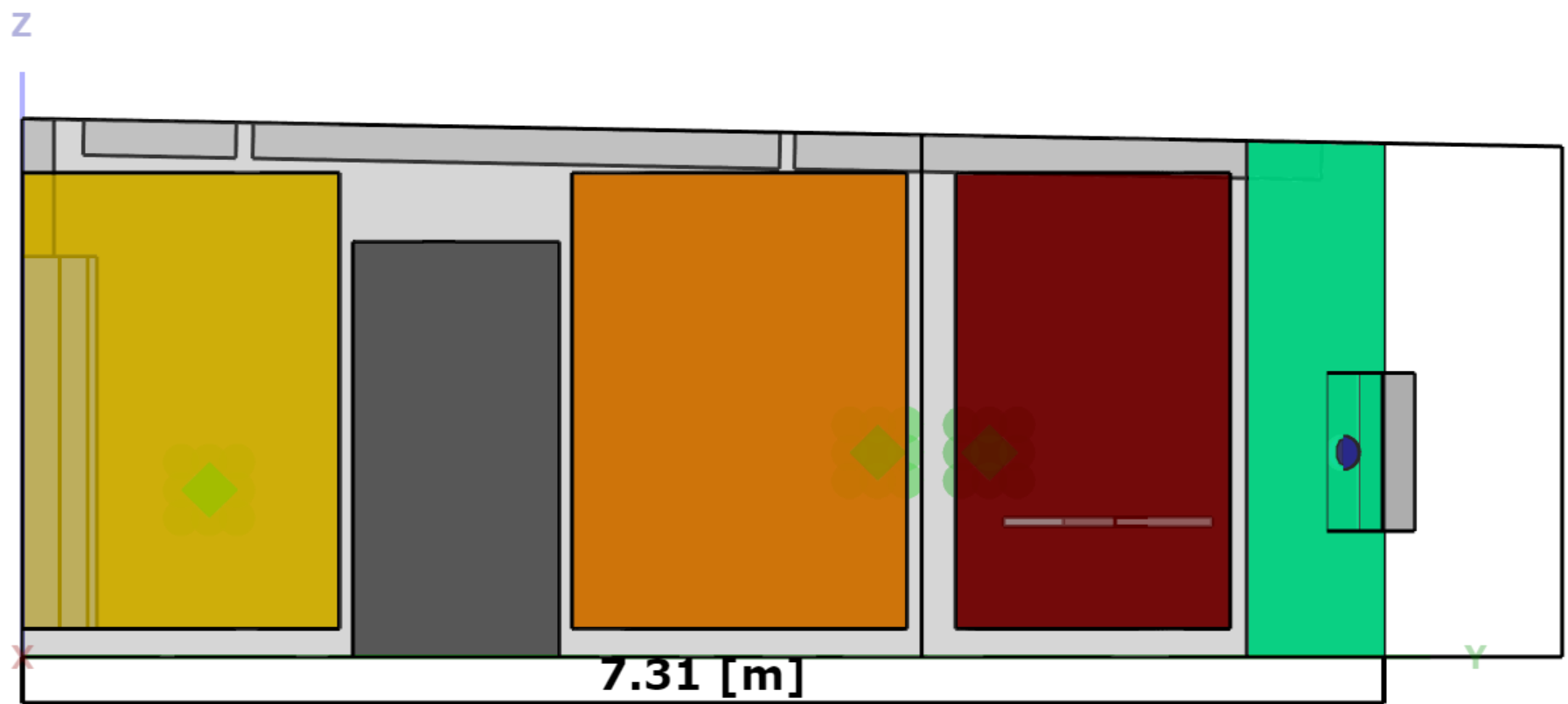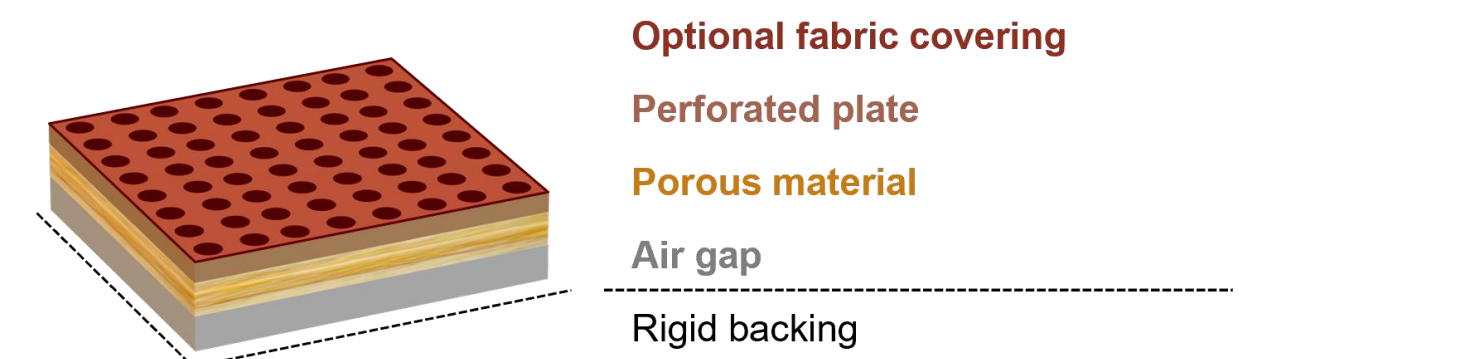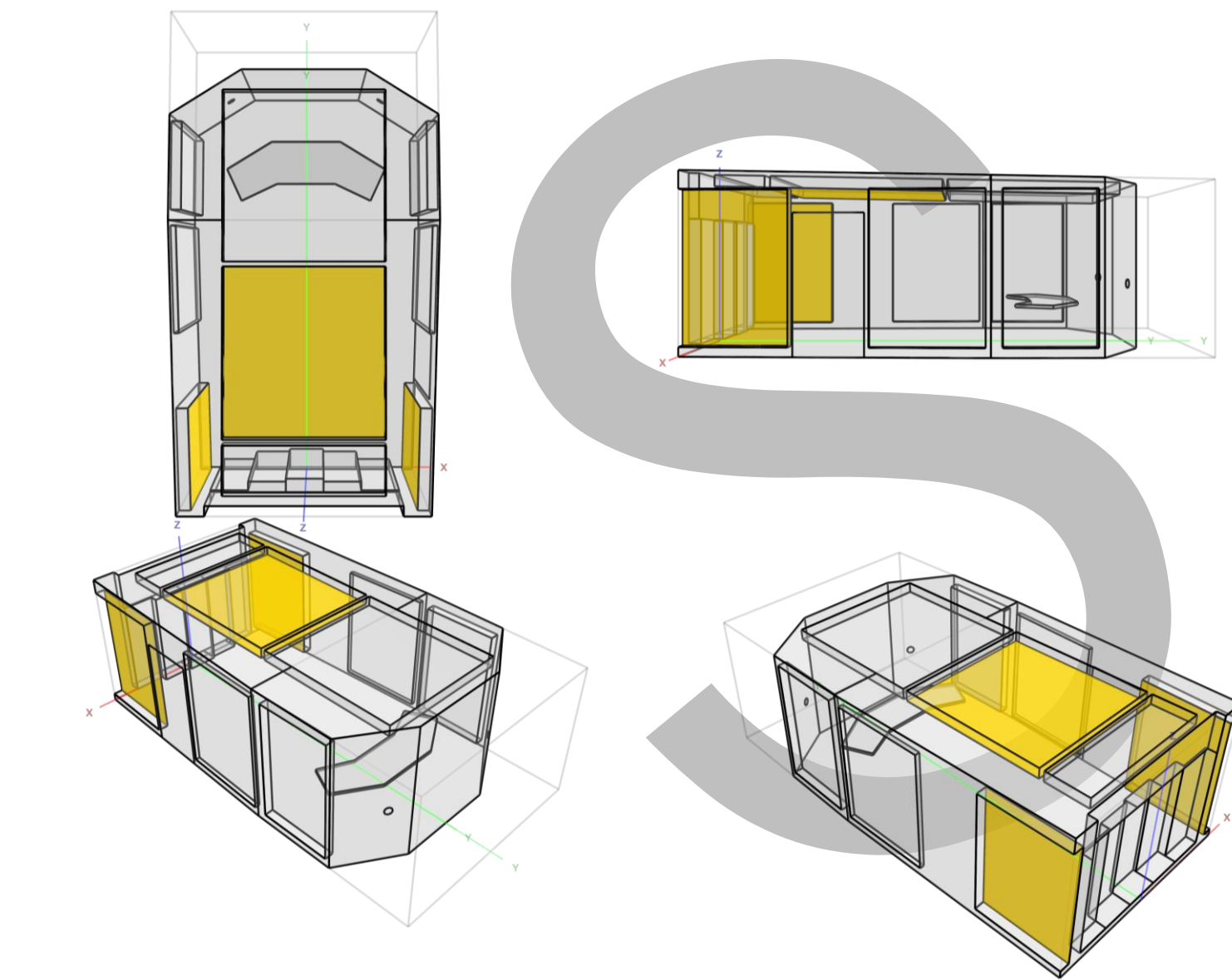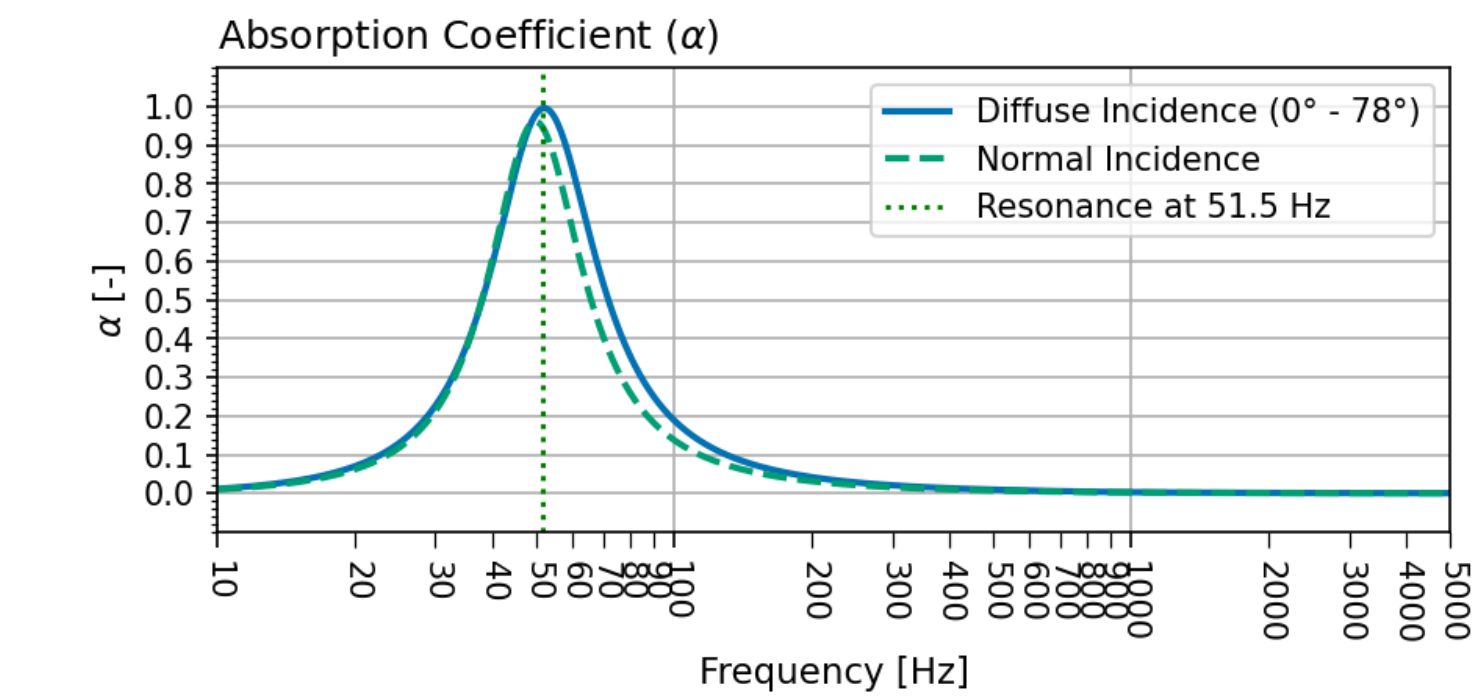
④ Section View

7.31 [m]

Optional fabric covering
Perforated plate
Porous material
Air gap
Rigid backing

Finished face of treatment: XXX
Plate thickness (plywood): x.xx [mm] | x.xx''
Hole diameter/spacing: x.xx [mm] holes spaced x.xx [mm] on-center
Porous material type and thickness: XXX - x.xx [mm]
Flow resistivity of porous material: x.xx [rayls/m]
Air gap depth: x.xx [mm]
Total treatment depth: x.xx [mm]'
Surface Area: x.xx [m²]

Absorption Coefficient (α)
— Diffuse Incidence (0° - 78°)
-- Normal Incidence
···· Resonance at 51.5 Hz

① **Perforated Resonator**

Optional fabric covering
Perforated plate
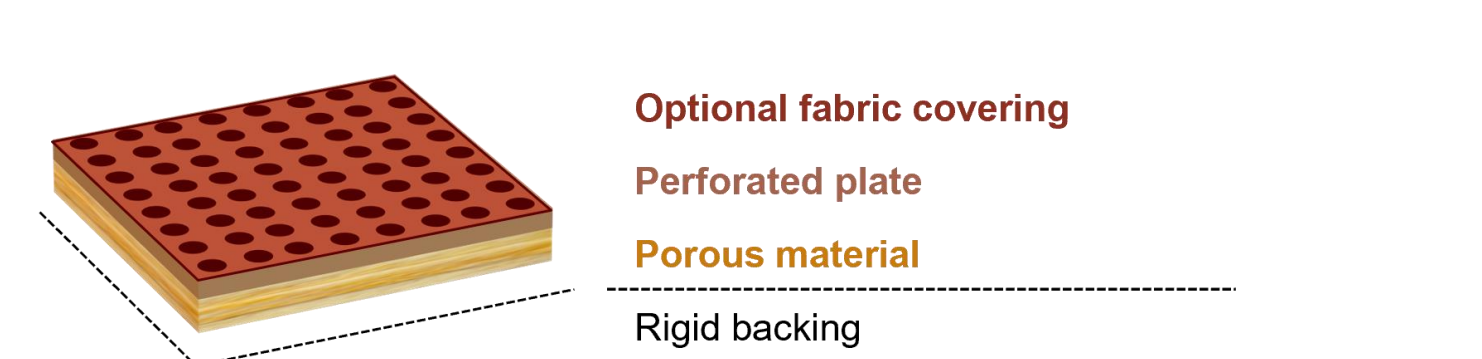**Porous material**
Air gap
Rigid backing

Finished face of treatment: XXX
Plate thickness (plywood): x.xx [mm] | x.xx''
Hole diameter/spacing: x.xx [mm] holes spaced x.xx [mm] on-center
Porous material type and thickness: XXX - x.xx [mm]
Flow resistivity of porous material: x.xx [rayls/m]
Total treatment depth: x.xx [mm]'
Surface Area: x.xx [m²]

Absorption Coefficient (α)
— Diffuse Incidence (0° - 78°)
-- Normal Incidence
···· Resonance at 78.5 Hz

② **Perforated Resonator**

Optional fabric covering
Perforated plate
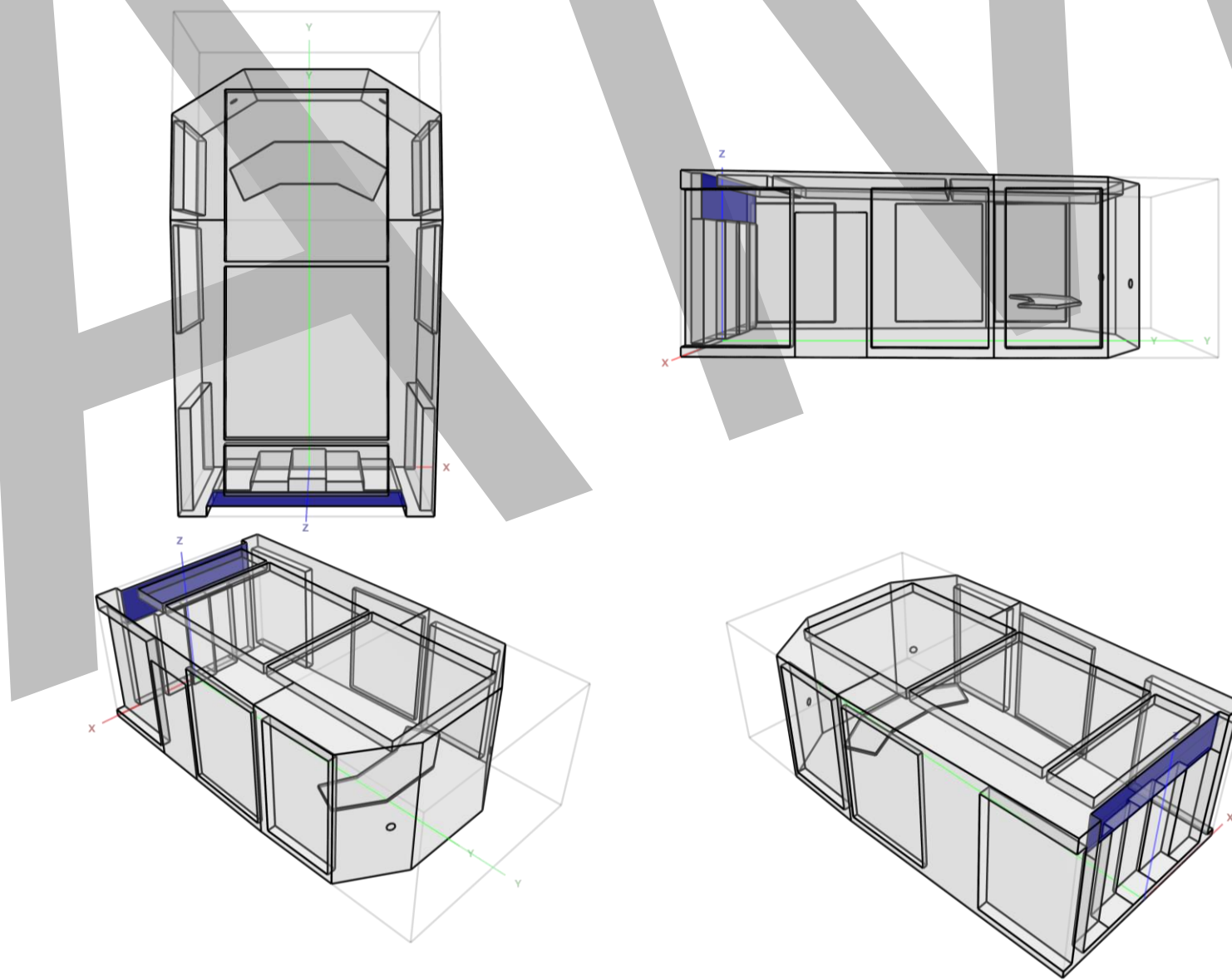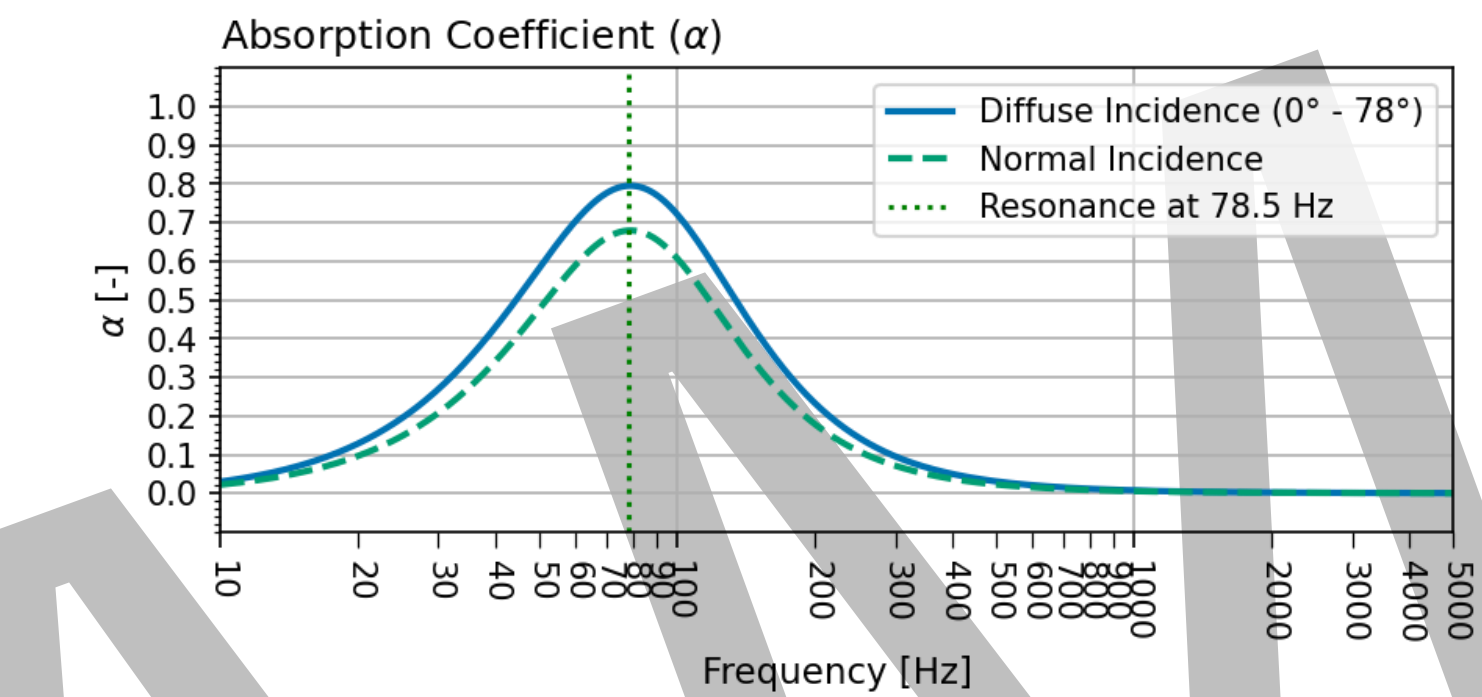**Porous material**
Air gap
Rigid backing

Finished face of treatment: XXX
Plate thickness (plywood): x.xx [mm] | x.xx''
Hole diameter/spacing: x.xx [mm] holes spaced x.xx [mm] on-center
Porous material type and thickness: XXX - x.xx [mm]
Flow resistivity of porous material: x.xx [rayls/m]
Air gap depth: x.xx [mm]
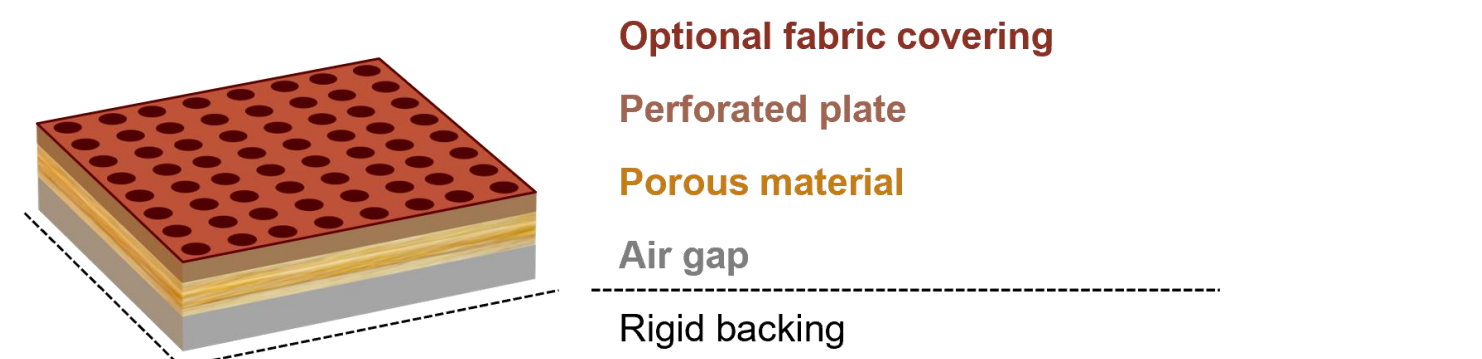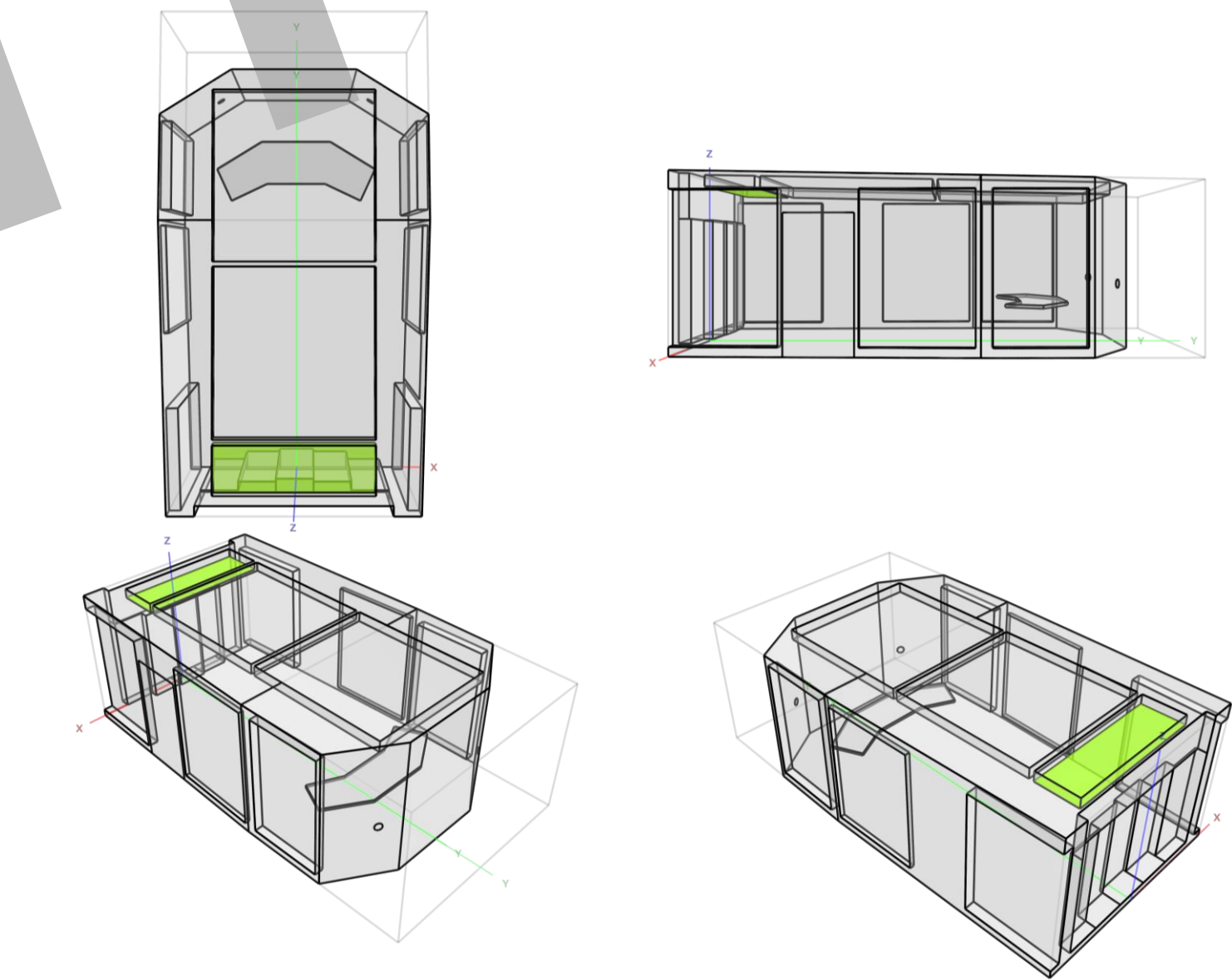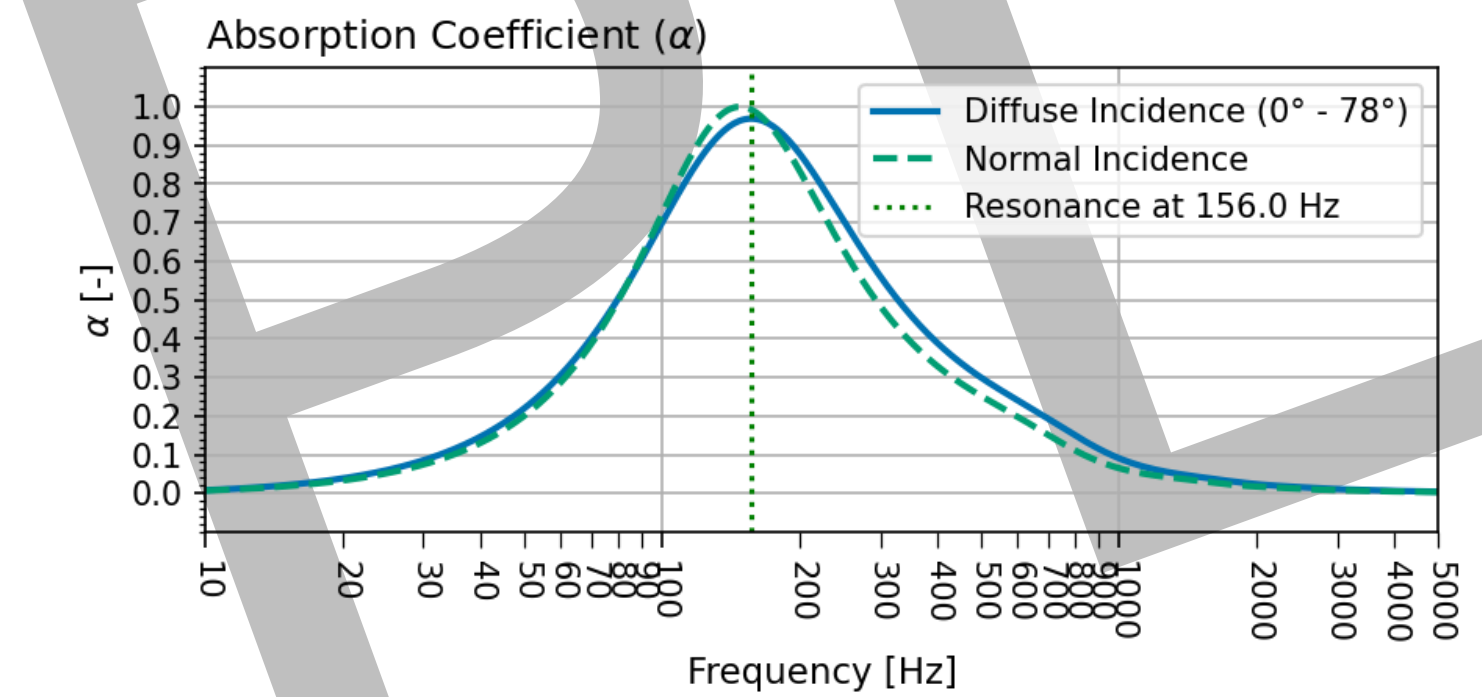**Total treatment depth:** x.xx [mm]'
Surface Area: x.xx [m²]

Absorption Coefficient (α)
— Diffuse Incidence (0° - 78°)
-- Normal Incidence
···· Resonance at 156.0 Hz

③ **Perforated Resonator**

Optional fabric covering
Perforated plate
Porous material
Rigid backing

Finished face of treatment: XXX
Plate thickness (plywood): x.xx [mm] | x.xx''
Hole diameter/spacing: x.xx [mm] holes spaced x.xx [mm] on-center
Porous material type and thickness: XXX - x.xx [mm]
Flow resistivity of porous material: x.xx [rayls/m]
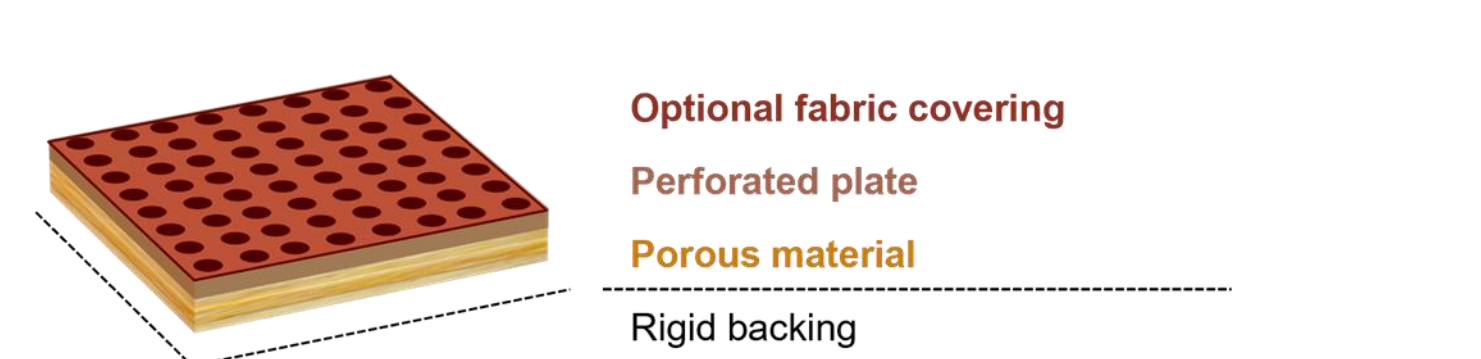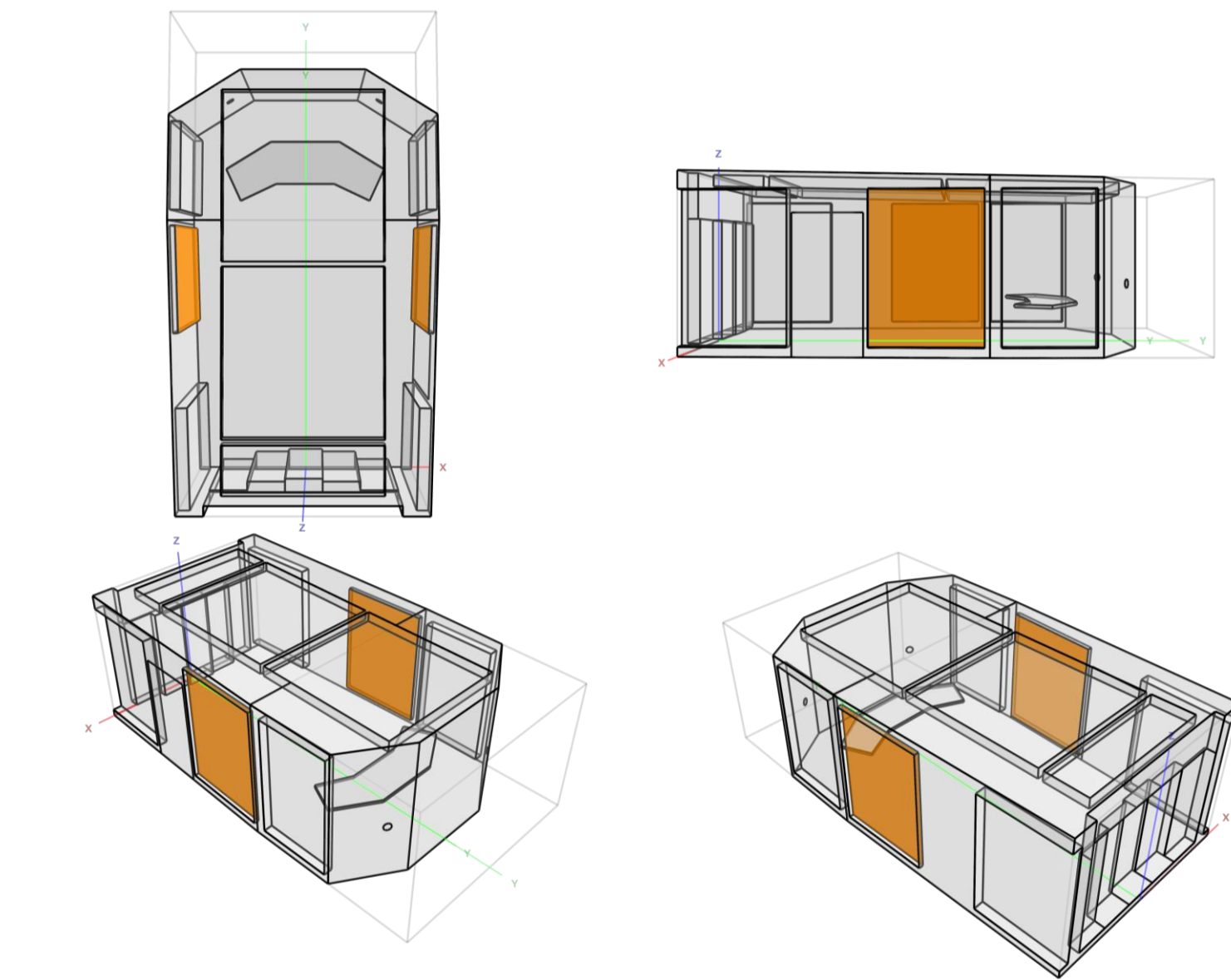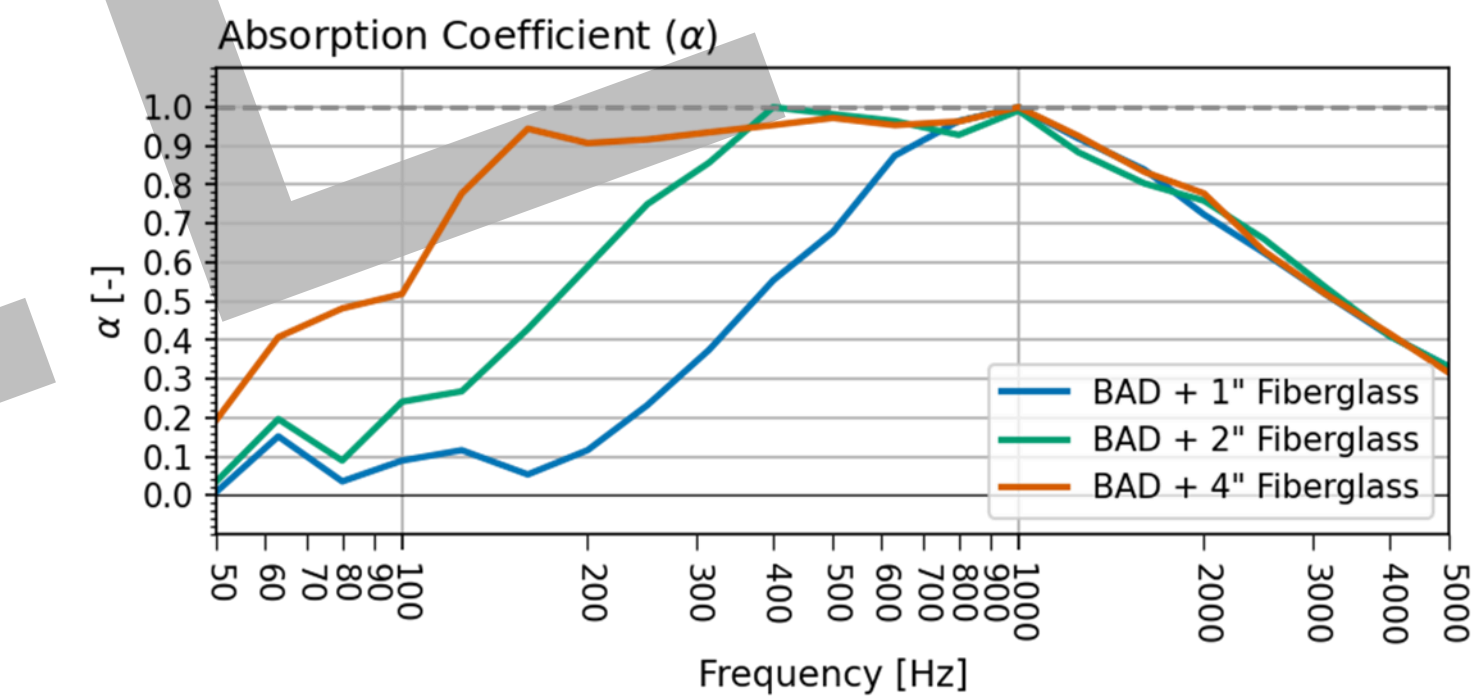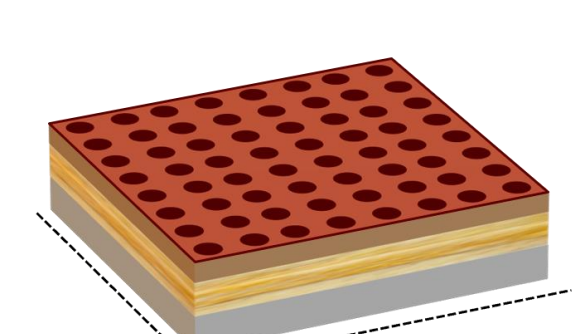**Total treatment depth:** x.xx [mm]'
Surface Area: x.xx [m²]

Absorption Coefficient (α)
— BAD + 1" Fiberglass
— BAD + 2" Fiberglass
— BAD + 4" Fiberglass

④ **Perforated Resonator**

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Treatment Recommendation

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⑤ Perforated Resonator

Optional fabric covering
Perforated plate
Porous material
Air gap
Rigid backing

Finished face of treatment: XXX
Plate thickness (plywood): x.xx [mm] | x.xx''
Hole diameter/spacing: x.xx [mm] holes spaced x.xx [mm] on-center
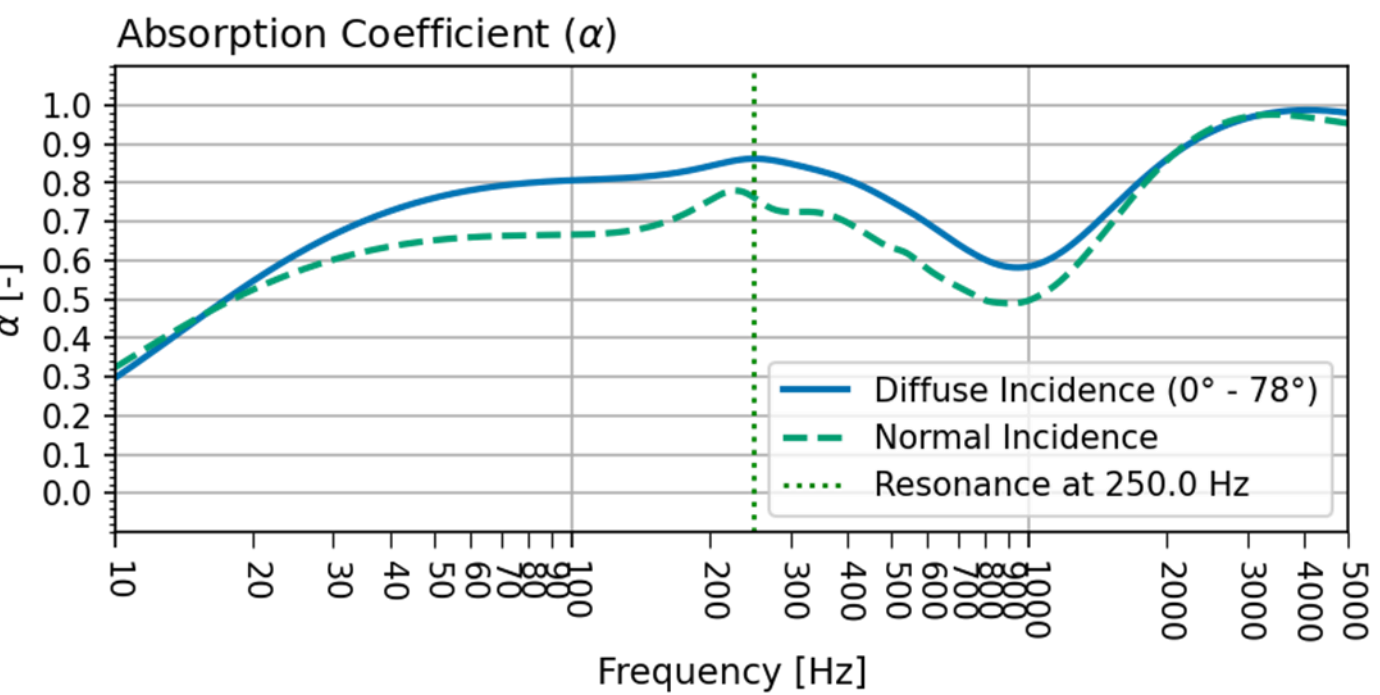**Porous material type and thickness:** XXX - x.xx [mm]
Flow resistivity of porous material: x.xx [rayls/m]
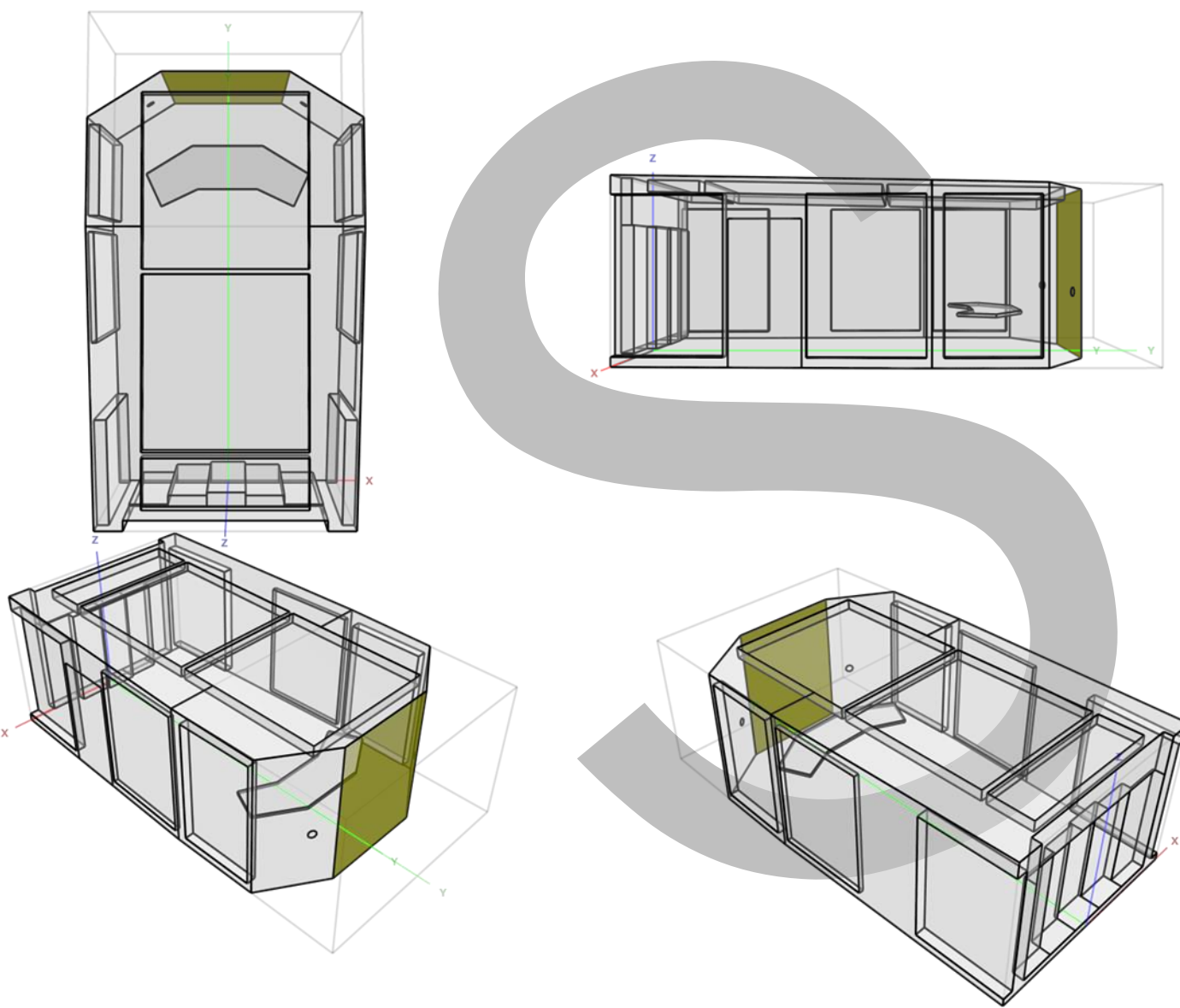**Air gap depth:** x.xx [mm]
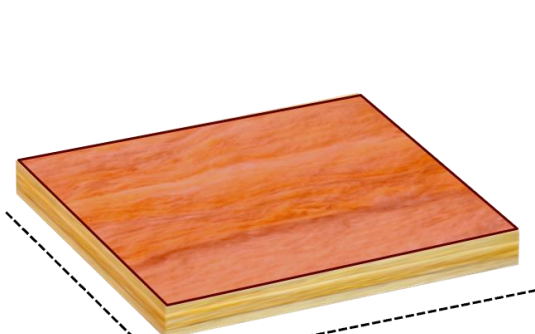**Total treatment depth:** x.xx [mm]'
Surface Area: x.xx [m²]

Absorption Coefficient (α)
— Diffuse Incidence (0° - 78°)
-- Normal Incidence
···· Resonance at 250.0 Hz

⑥ Fabric Panel

Fabric covering
Porous material
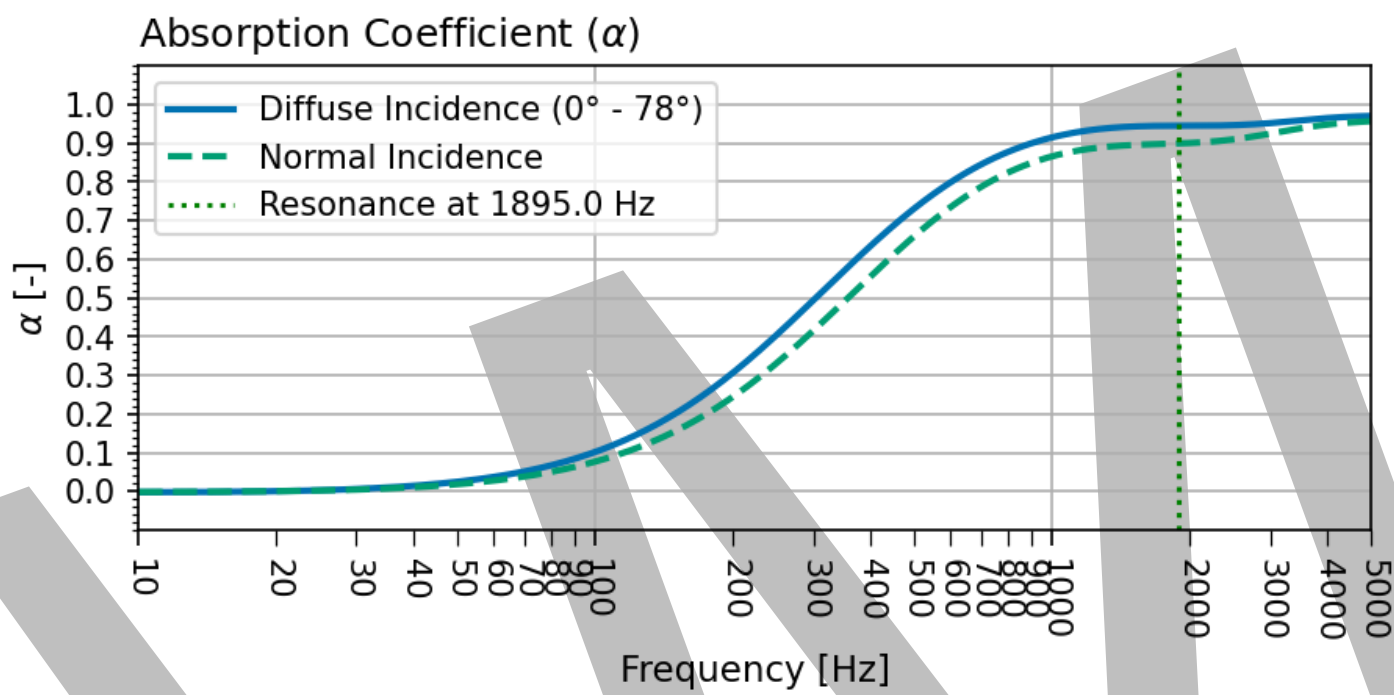**Rigid backing**

Finished face of treatment: XXX
Porous material type and thickness: XXX - x.xx [mm]
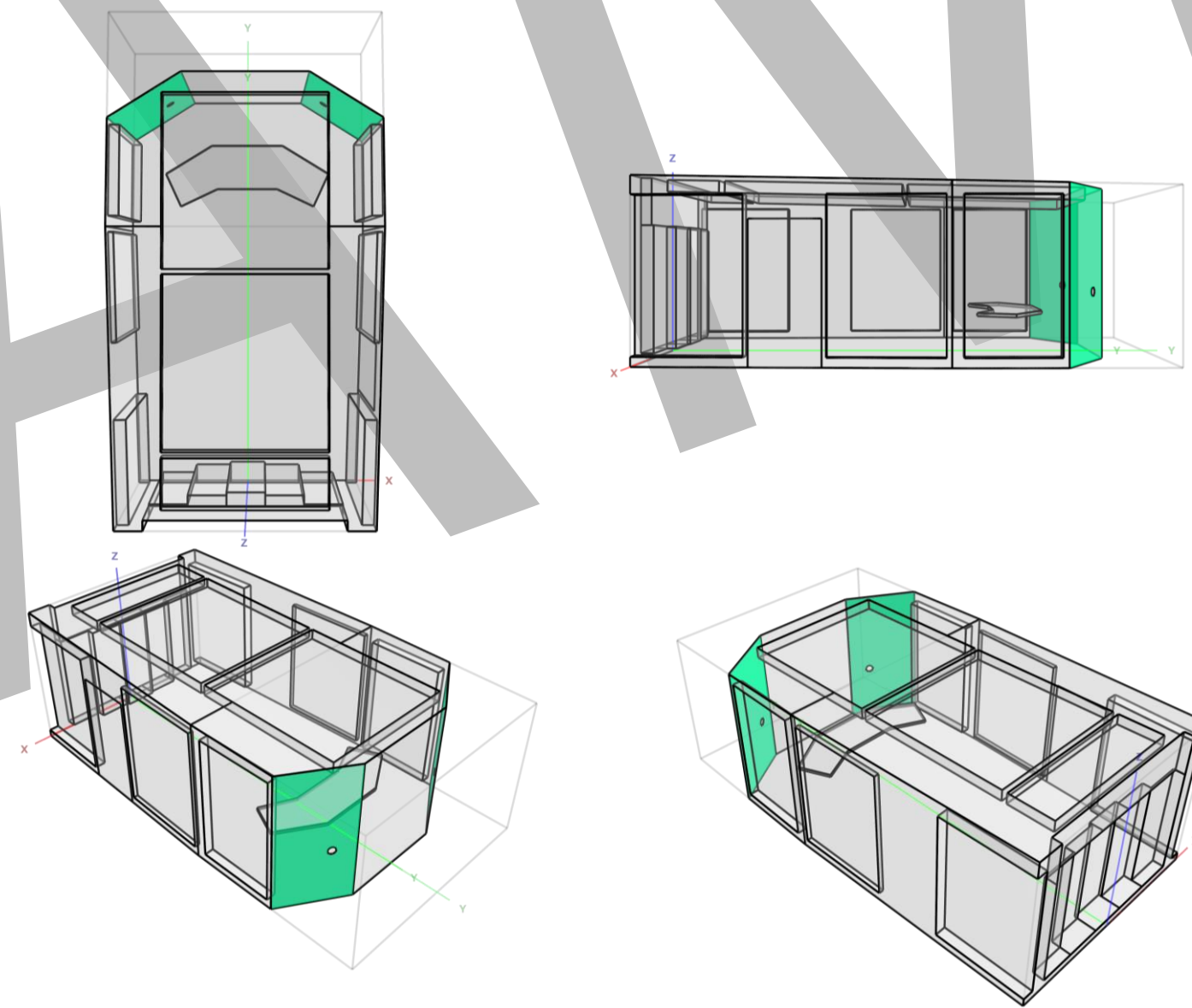**Flow resistivity of porous material:** x.xx [rayls/m]
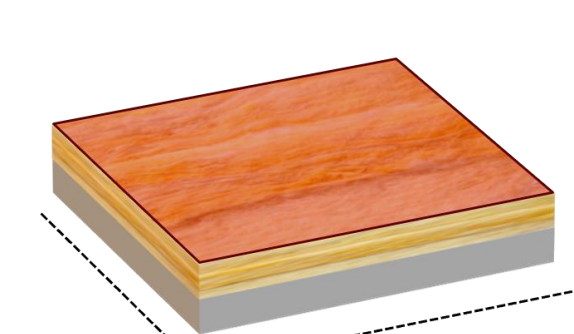**Total treatment depth:** x.xx [mm]'
Surface Area: x.xx [m²]

Absorption Coefficient (α)
— Diffuse Incidence (0° - 78°)
-- Normal Incidence
···· Resonance at 1895.0 Hz

⑦ Fabric Panel

Fabric covering
Porous material
Rigid backing

Finished face of treatment: XXX
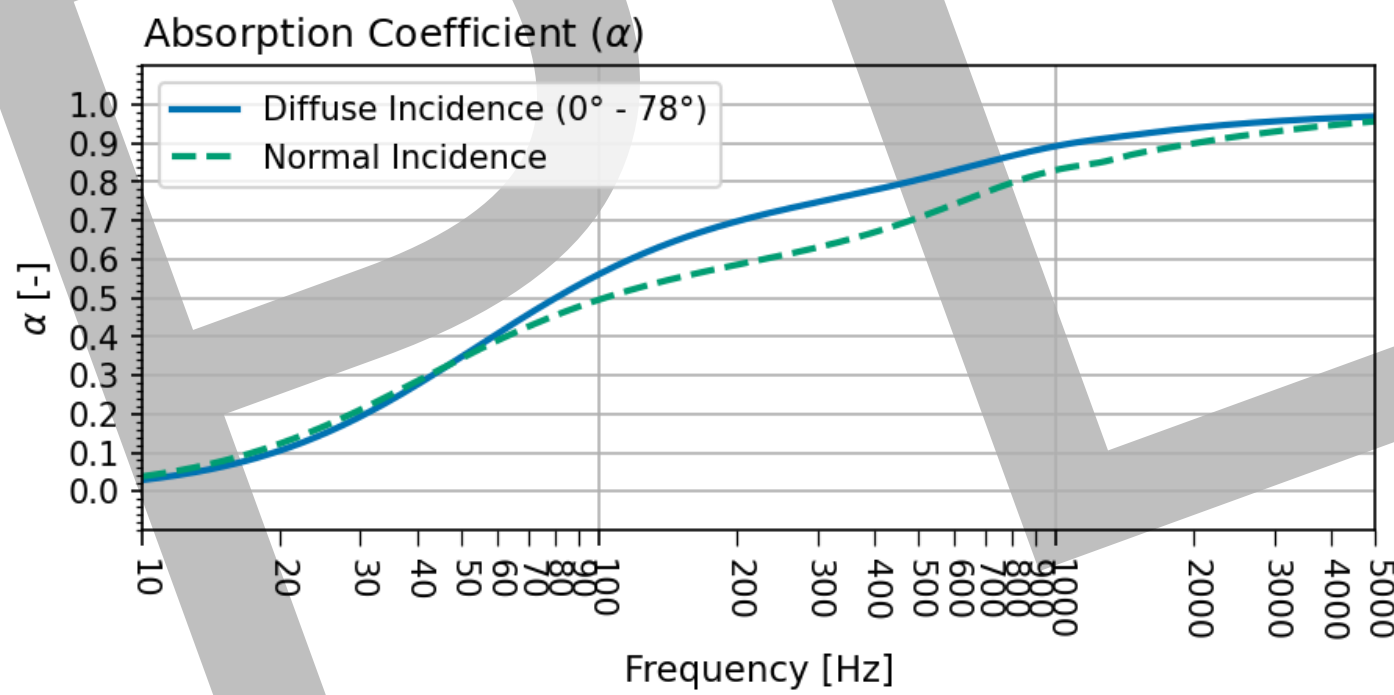**Porous material type and thickness:** XXX - x.xx [mm]
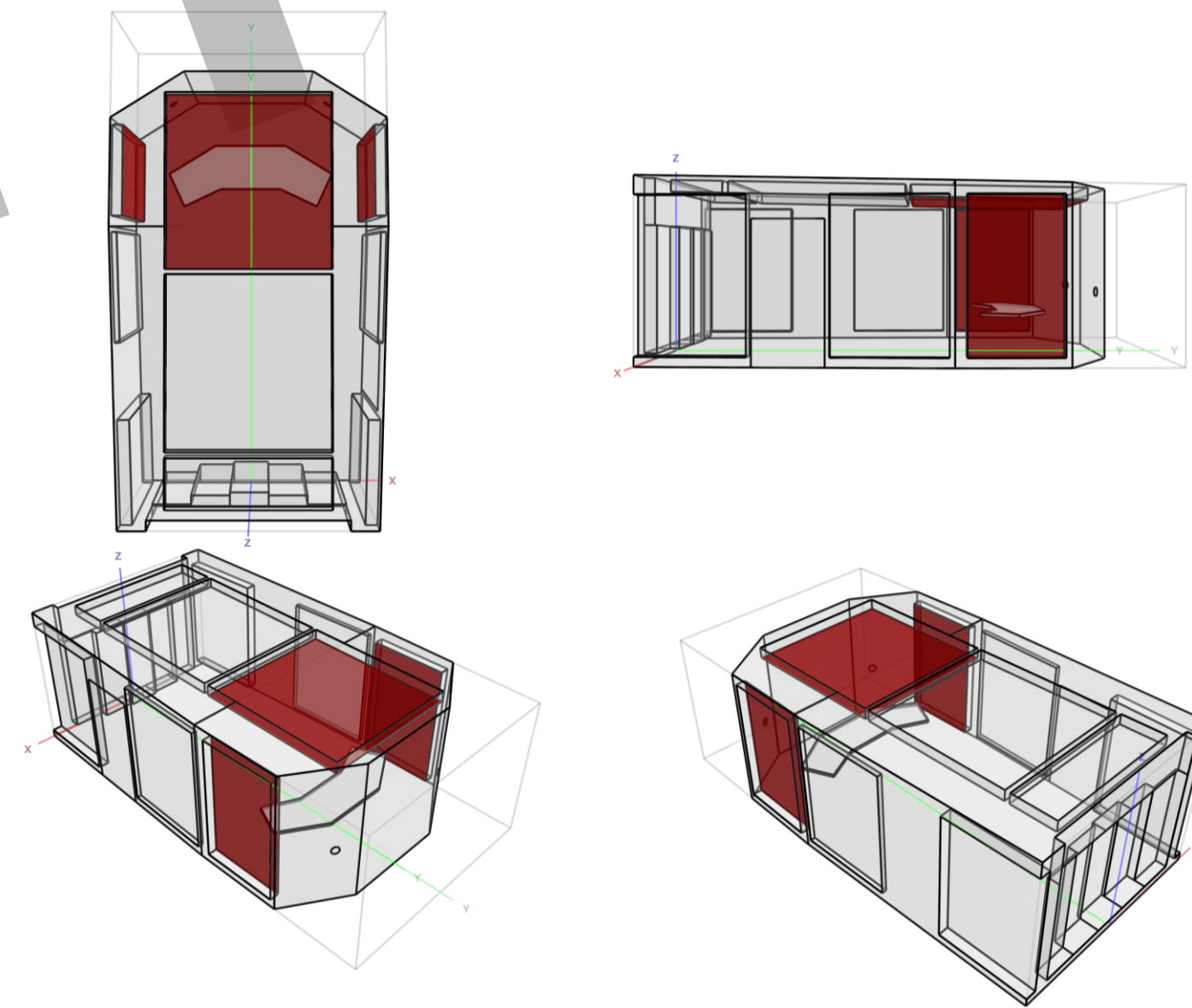**Flow resistivity of porous material:** x.xx [rayls/m]
Air gap depth: x.xx [mm]
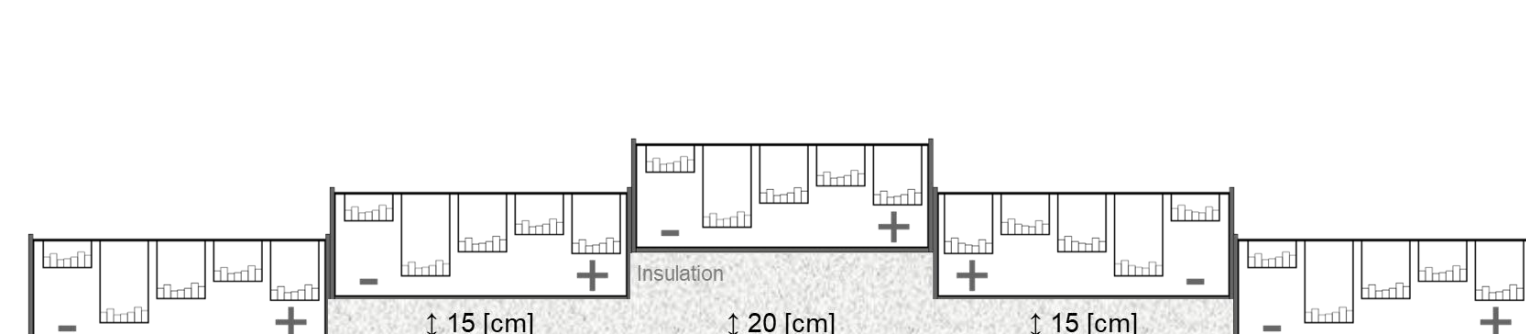**Total treatment depth:** x.xx [mm]'
Surface Area: x.xx [m²]

Absorption Coefficient (α)
— Diffuse Incidence (0° - 78°)
-- Normal Incidence

⑧ Diffusor

15 [cm]   20 [cm]   15 [cm]
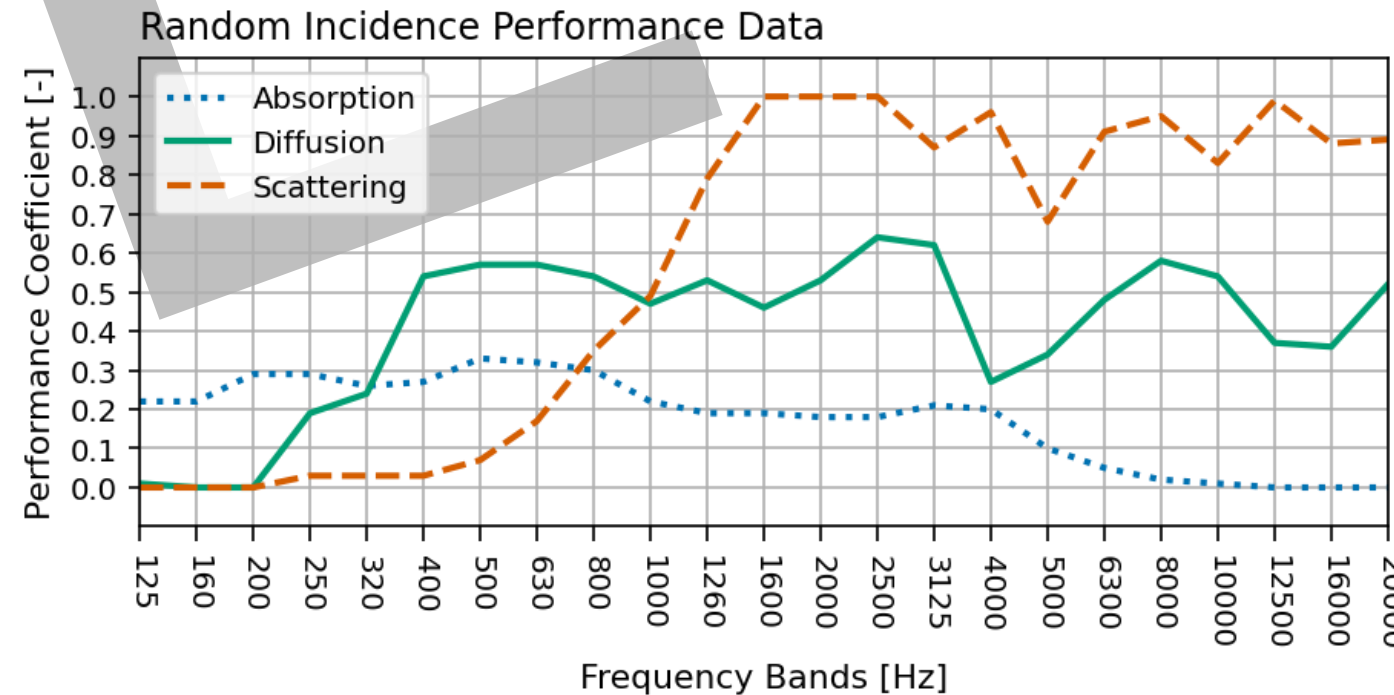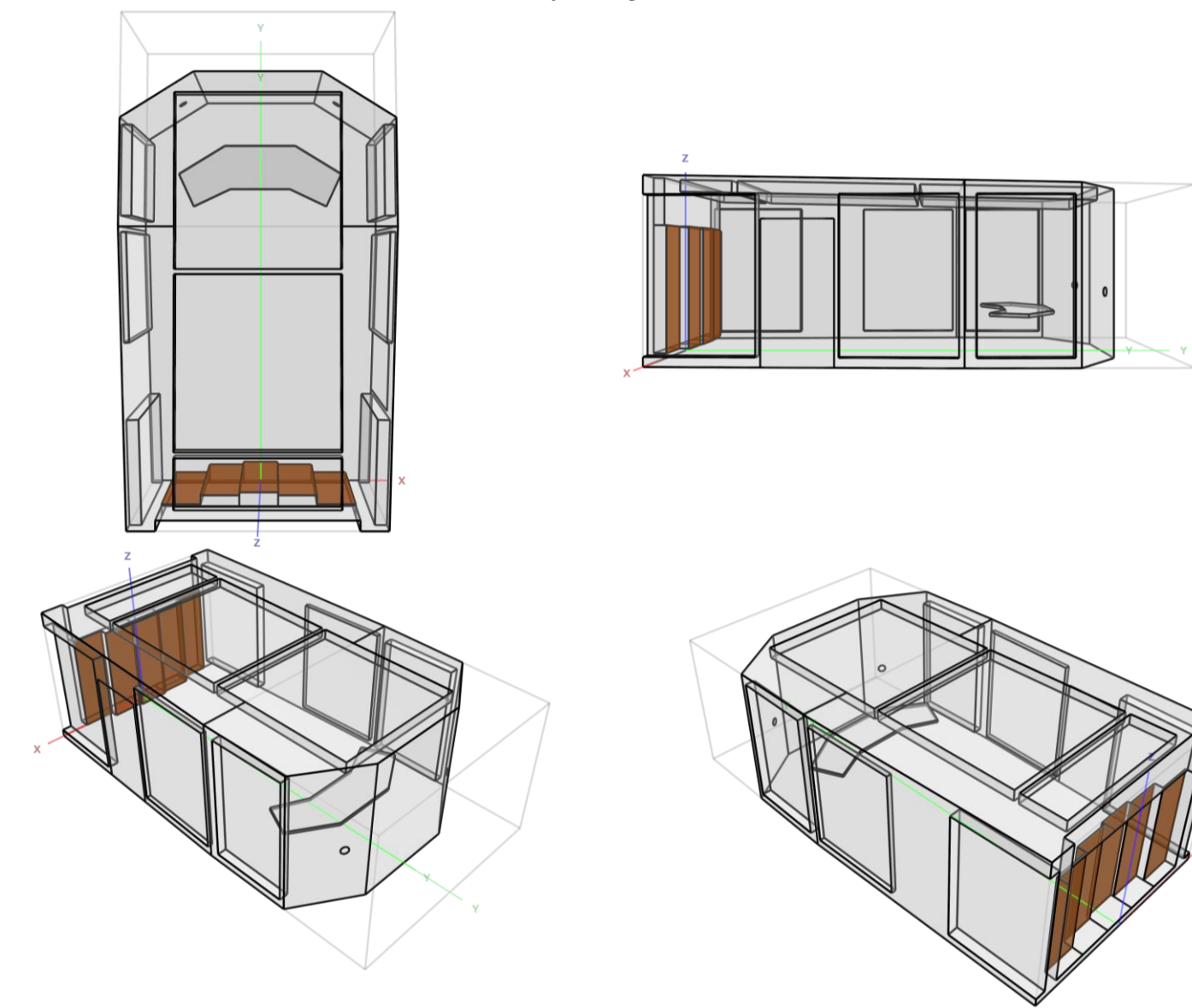Insulation
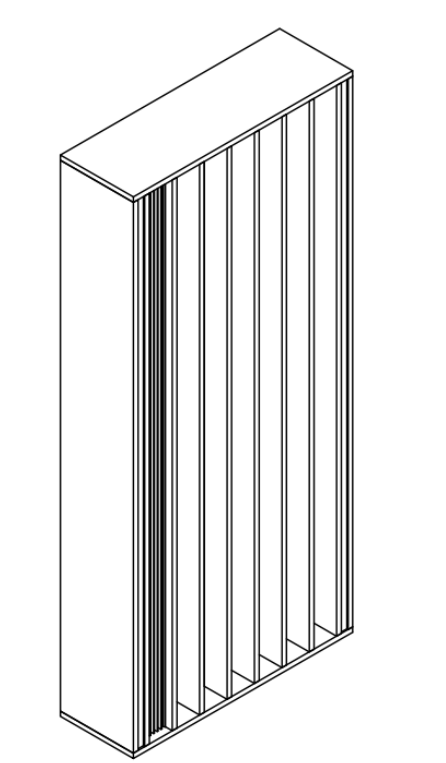
Model:
Units:
Total width:
Height:
Depth:

Random Incidence Performance Data
···· Absorption
— Diffusion
-- Scattering

Treatment Recommendation
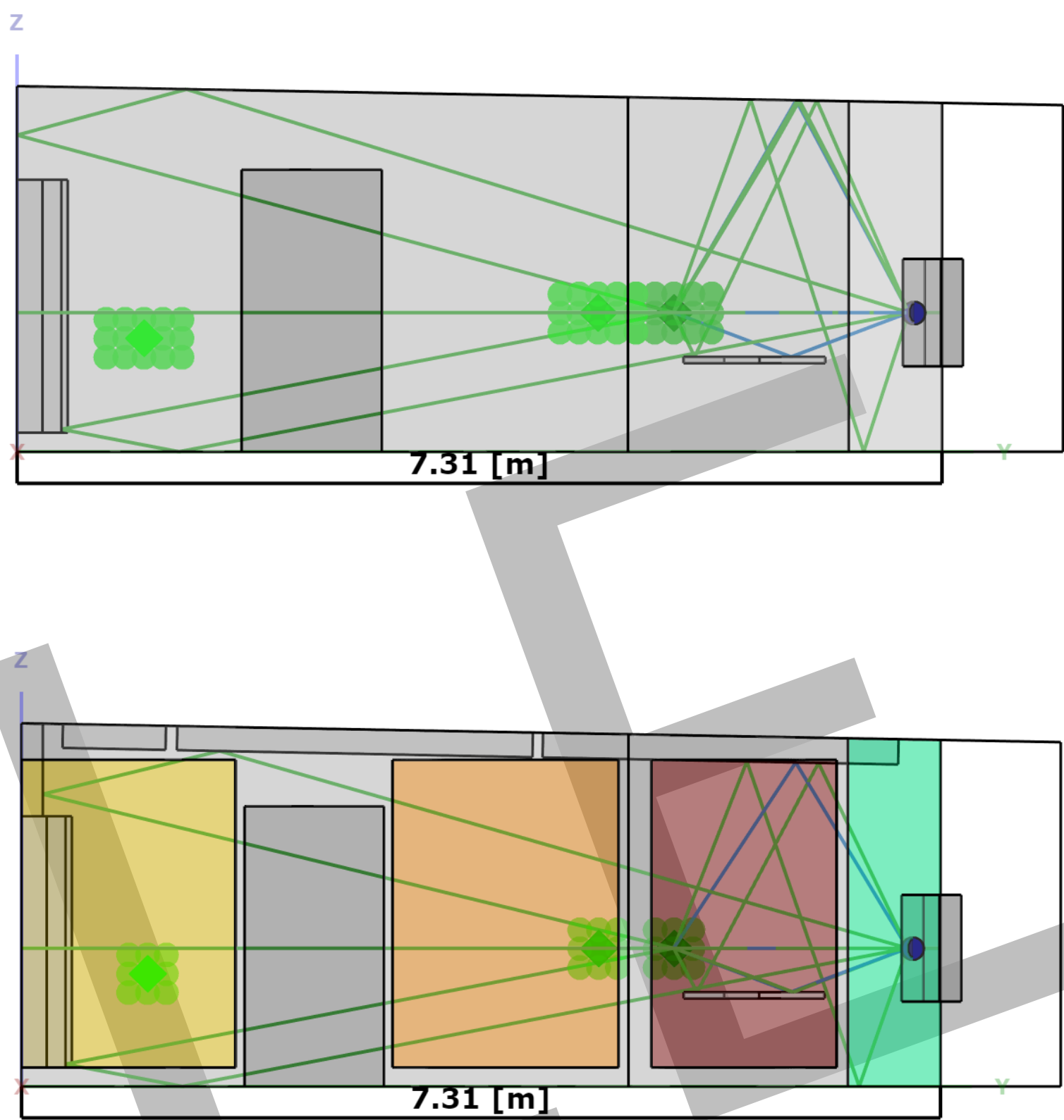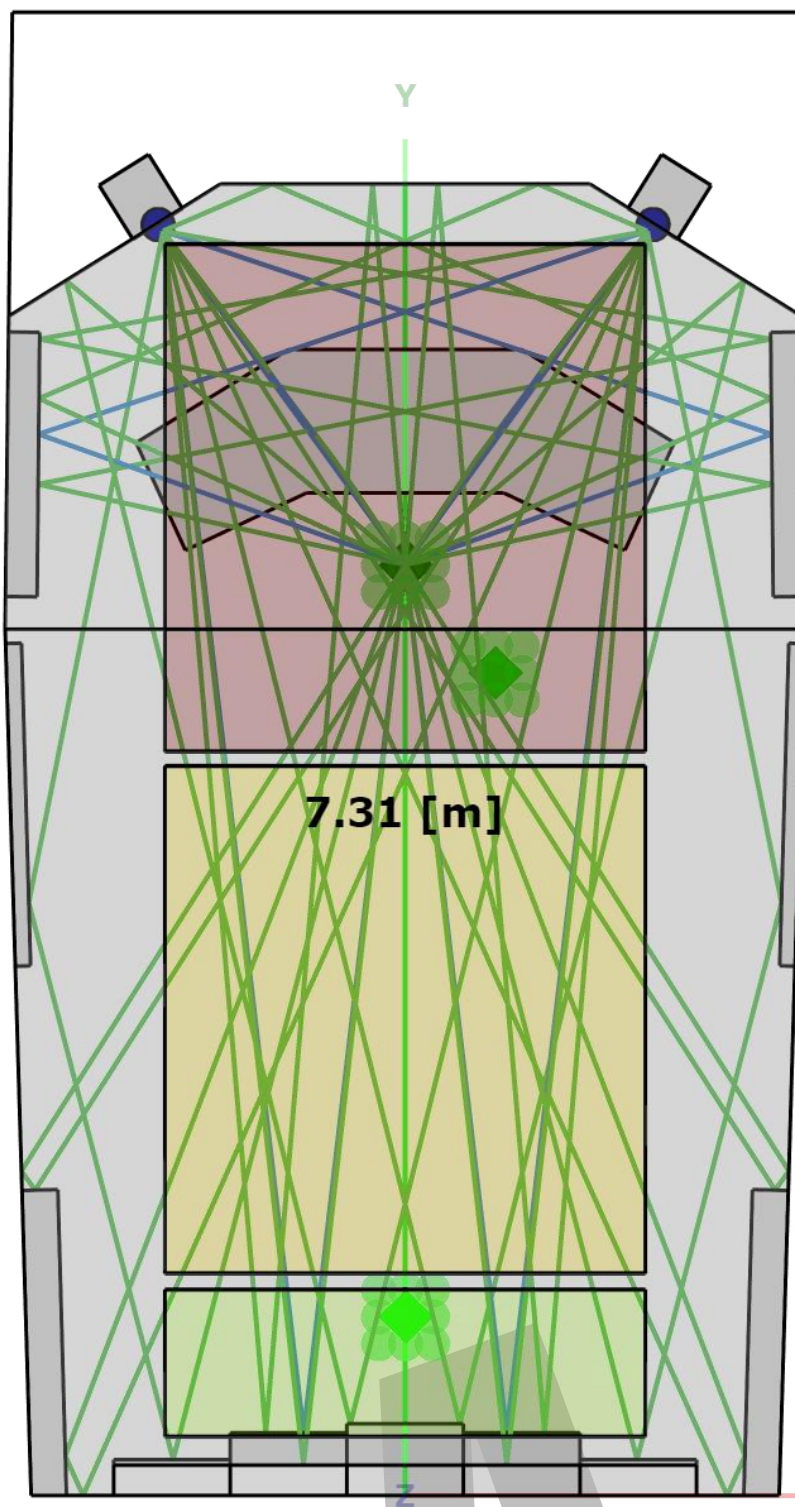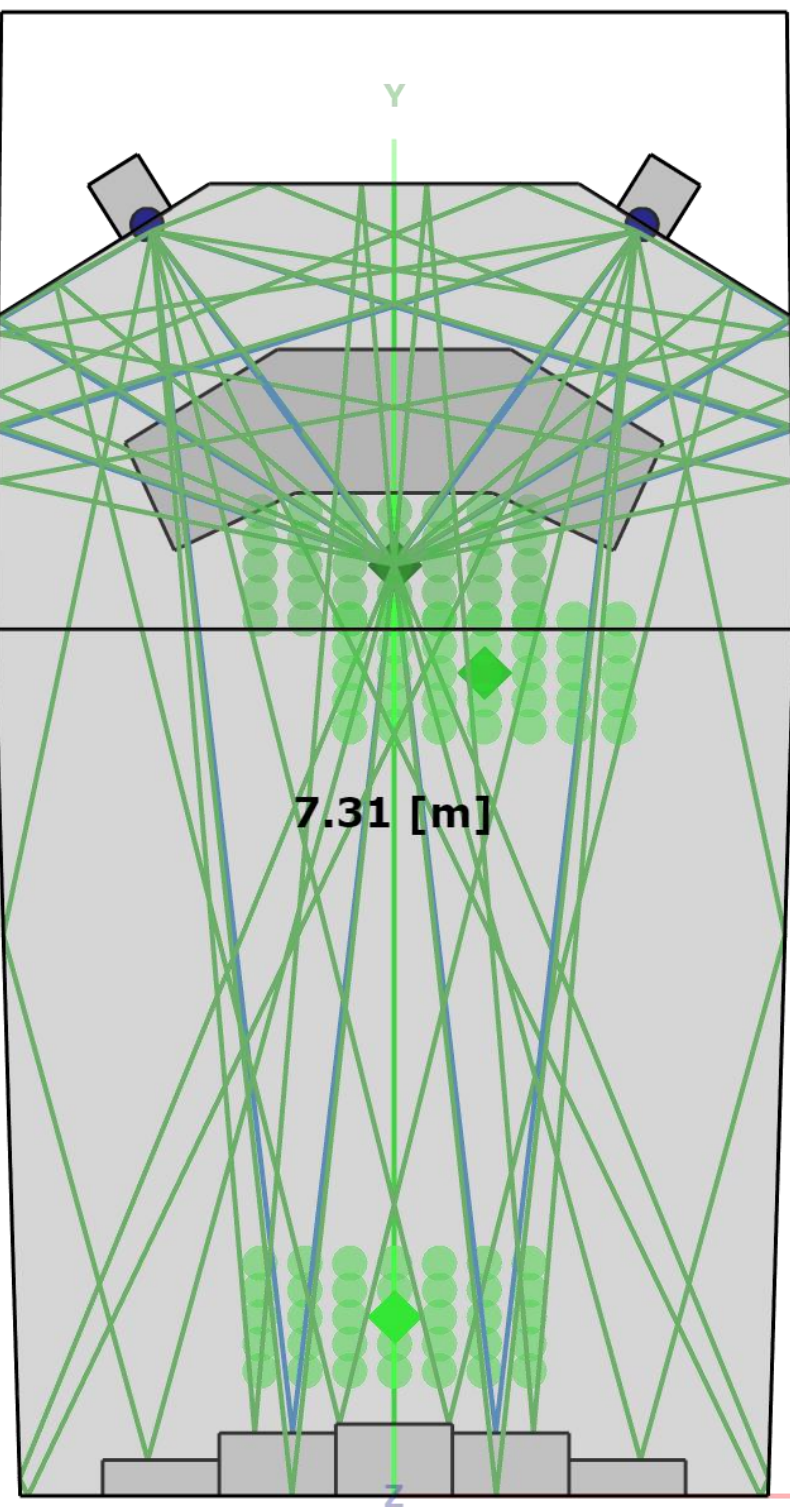
① **Specular Reflections**
1st and 2nd order
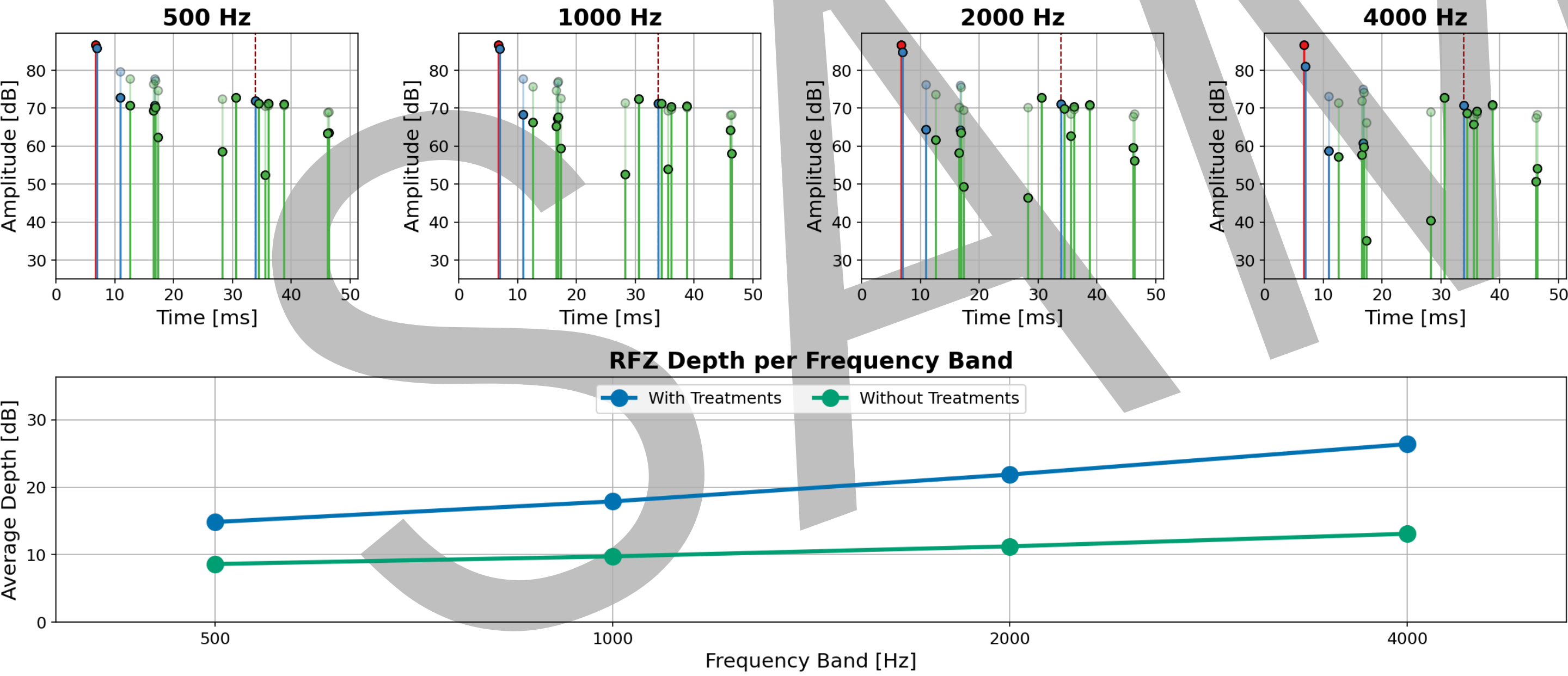
② **Reflection-Free Zone**
Frequency dependent reflectogram & RFZ Depth

③ **Reverberation Time**

500 Hz · 1000 Hz · 2000 Hz · 4000 Hz

RFZ Depth per Frequency Band
With Treatments · Without Treatments

Ray Tracing Reverberation Time
With treatments · Without treatments · ITU-R Lim. (101m³)

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Reflection Analysis & Diffusor Recommendation

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Arcturus (Mains) at Mix 1

Arcturus (Mains) at Mix 2

Arcturus (Mains) at Producer

① Low-frequency Response
20 to 200 Hz

LFTD | Arcturus (Mains)

RT | Arcturus (Mains)

LF RT   MHF RT
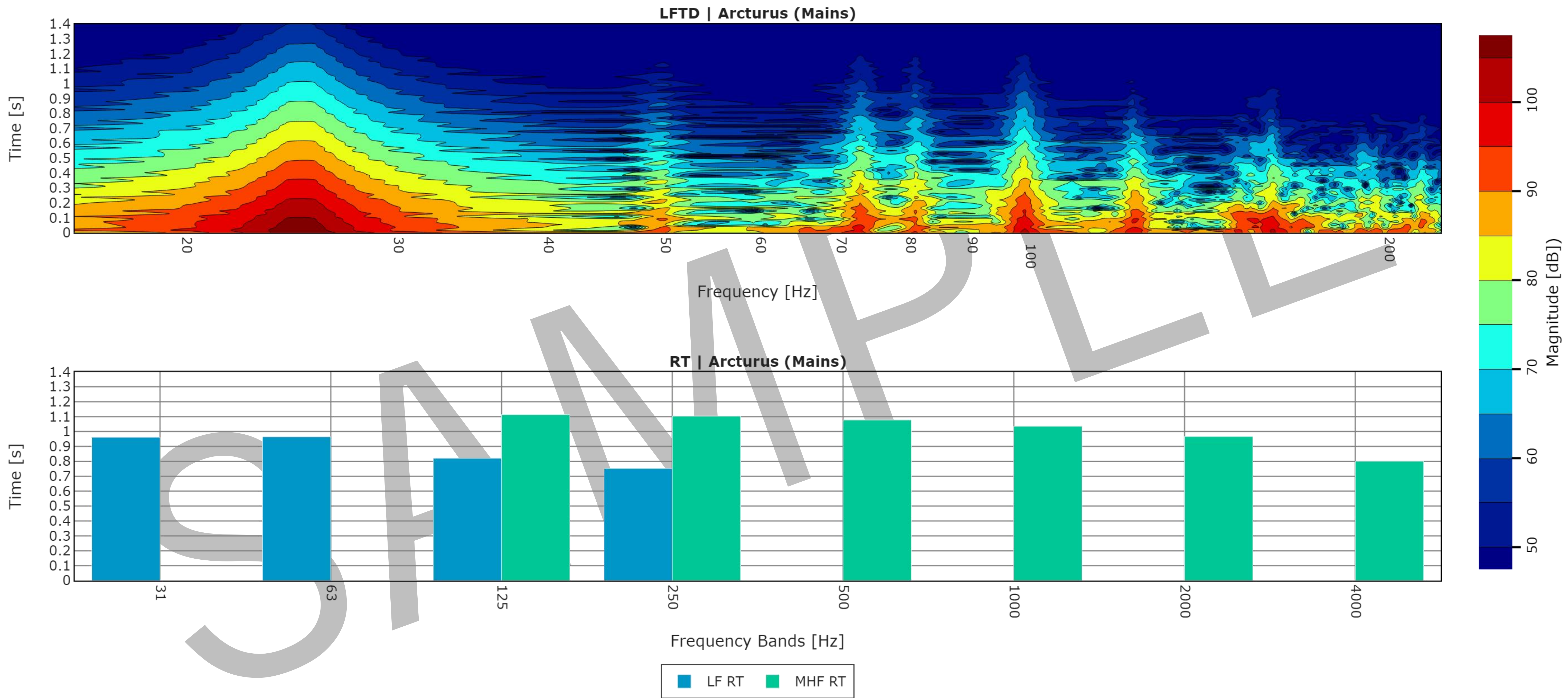
① Low-frequency Temporal Decay & Reverberation Time
Without treatments at Mix 1 Position

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LFTD | Arcturus (Mains)
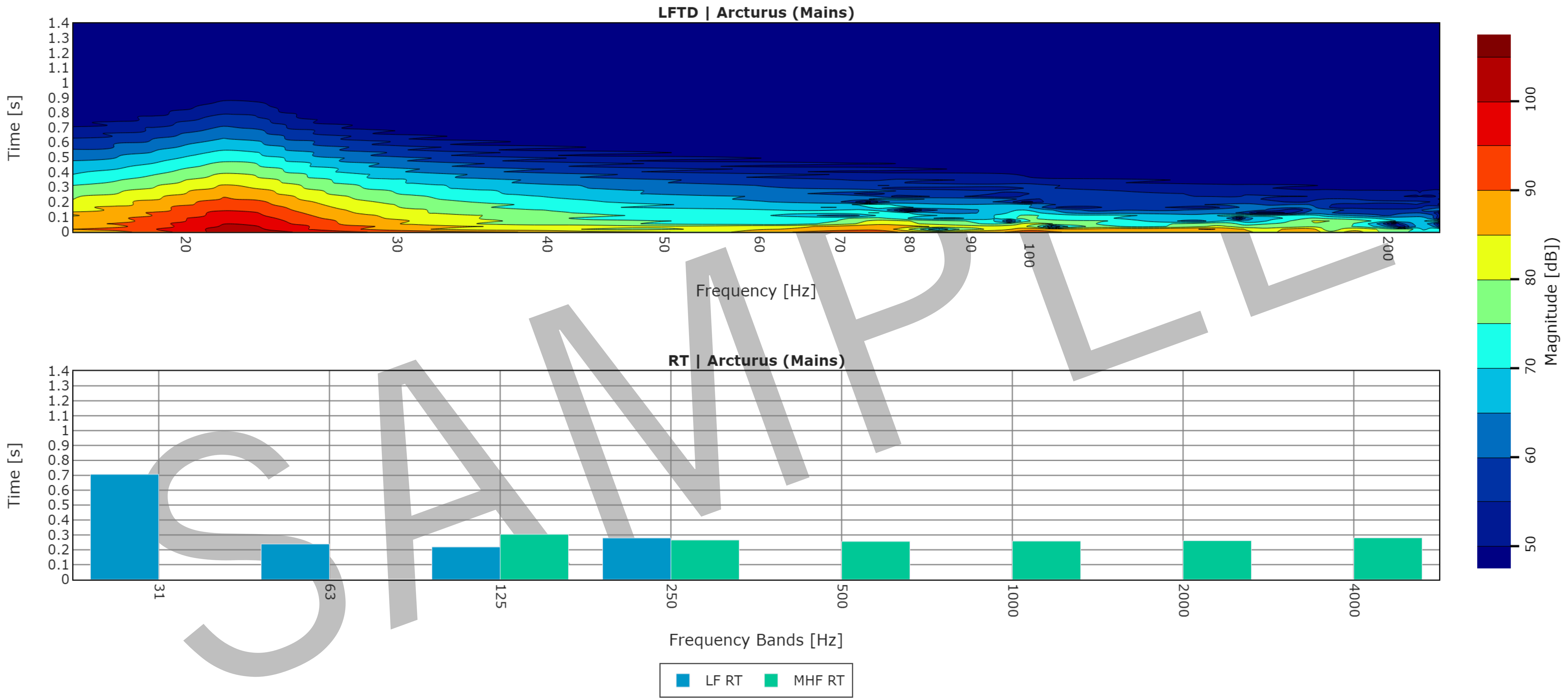
RT | Arcturus (Mains)

① <u>Low-frequency Temporal Decay & Reverberation Time</u>
With treaments at Mix 1 Position

20 Hz | 30 Hz | 40 Hz | 50 Hz | 60 Hz | 70 Hz | 80 Hz | 90 Hz | 100 Hz | 110 Hz | 120 Hz | 130 Hz | 140 Hz | 150 Hz | 160 Hz
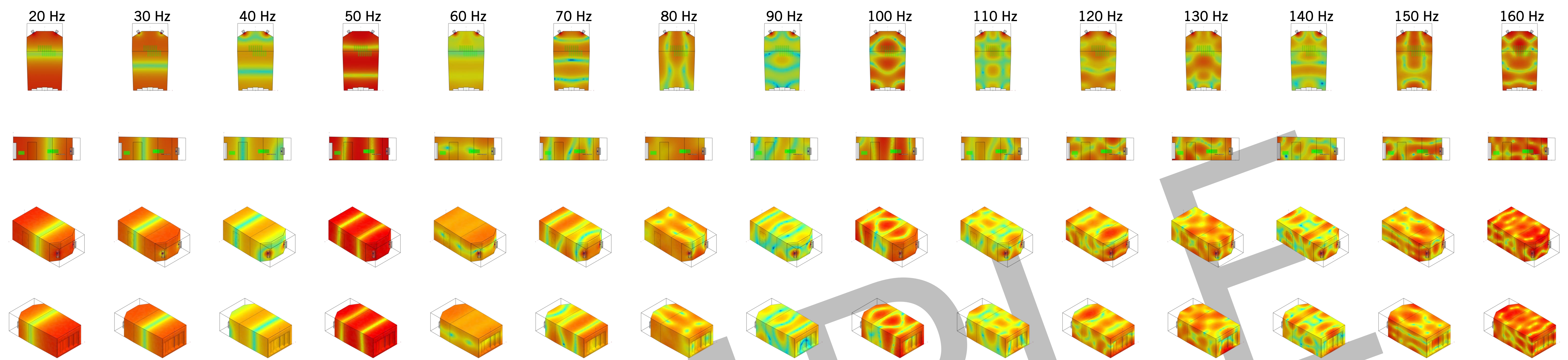
① **Arcturus (Mains)**
Without treatments

SPL [dB]

20 Hz | 30 Hz | 40 Hz | 50 Hz | 60 Hz | 70 Hz | 80 Hz | 90 Hz | 100 Hz | 110 Hz | 120 Hz | 130 Hz | 140 Hz | 150 Hz | 160 Hz
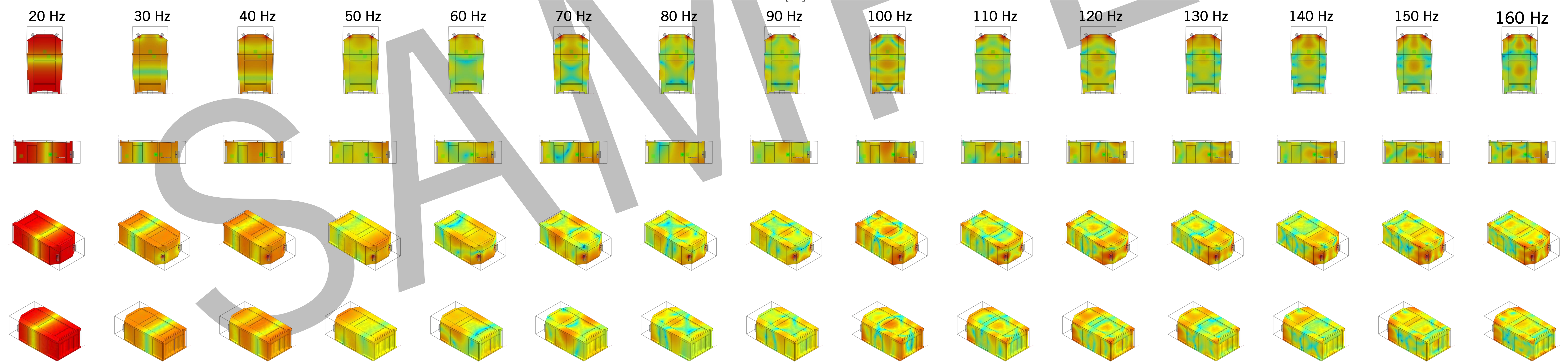
② **Arcturus (Mains)**
With treatments

SPL [dB]

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