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Crematorium Climate Schemes & Energy Power Transmission

When there is wind current, a natural pressure ventilation of 1m/s flow is naturally entering the fresh air pipe. When not enough wind current to enter the pipe a mechanical fan is turned on to let a flow of 6m/s fresh air to enter the pipe to create and over pressure to allow the taller pipe to suck the stale air out. The pipe is sized for the natural ventilation scheme as this scheme requires a larger pipe diameter.
Size of pipe:

30 people x 50m3/h= 1500m3/h of fresh air is needed.

1500m3/h /3600s= 0.4m3/s of fresh air per second.

0.4m3/s / 1m/s = 0.4m2 diameter

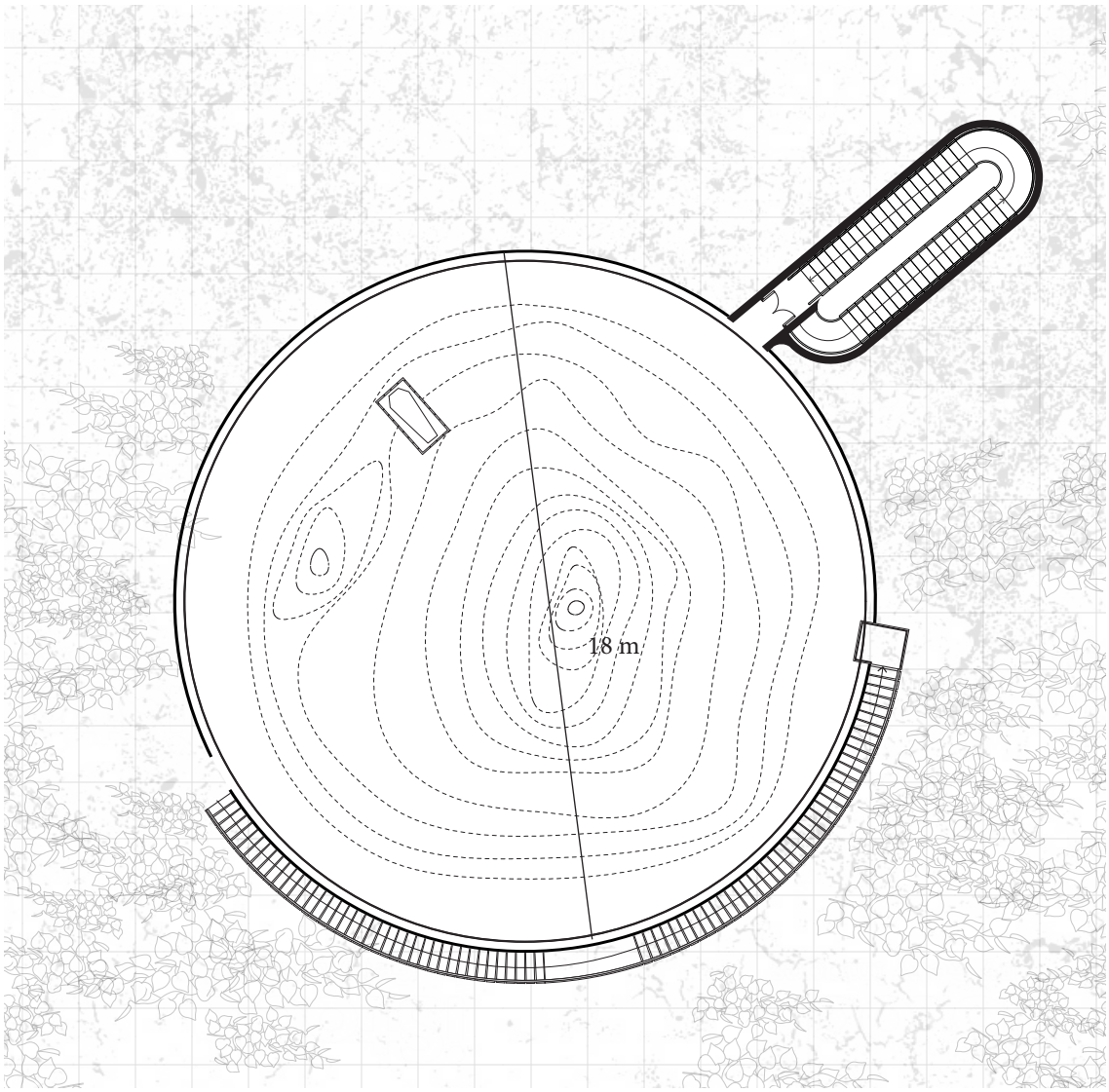
For summer ventilation: The warm fresh air comes in from the lower pipe to reach the heat exchanger which in summer has ground water passing through it at 10 degrees constantly; allowing the warm air to cool down to 13, 15 before getting pushed through the false ceiling to the public space.

Heated air is released through roosters at bottom of walls connected to false ceiling pipe that goes out of building. 0.4 x 1 x (25°-15°)= 4 W of heat released per person

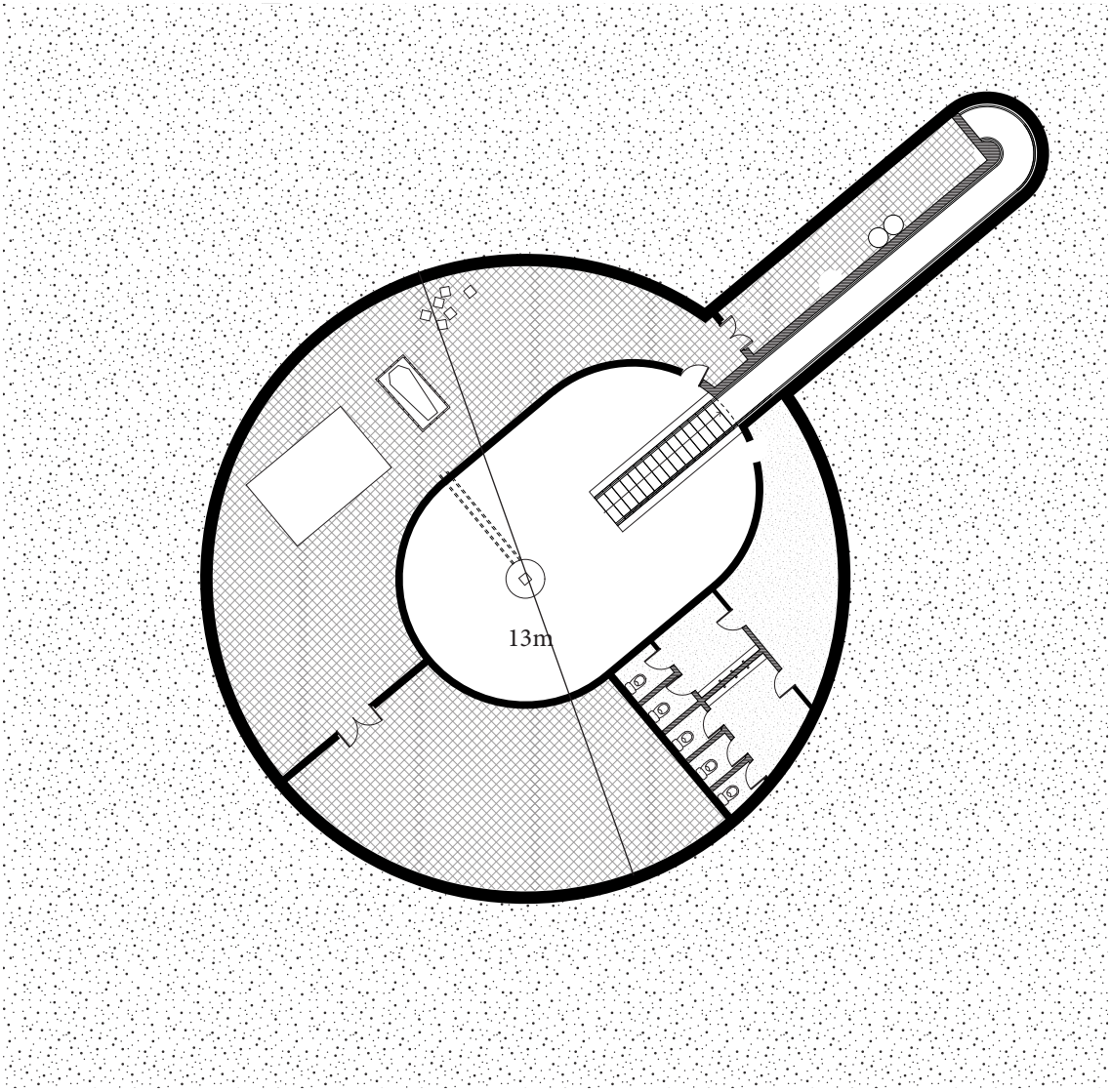
For winter Ventilation: The cold fresh air at -3° or -5° air comes in from the lower pipe to reach the heat exchanger which in winter time it will have warm water running through it to warm the incoming air to 10°. The warm water is coming from a closed water tank that is heated from the residual heat of the previous cremations stored in batteries or if not present, wind energy from wind turbines in the land tongue is used to charge the batteries to heat the water.

For winter heating: Radiant floor heating is used to heat the space. Underfloor pipping are passed under the epoxy floor. Warm water is provided from a closed water tank that is heated from the residual heat of the previous cremations stored in batteries or if not present, wind energy from wind turbines in the land tongue is used to charge the batteries to heat the water.

Wind Energy Transmission

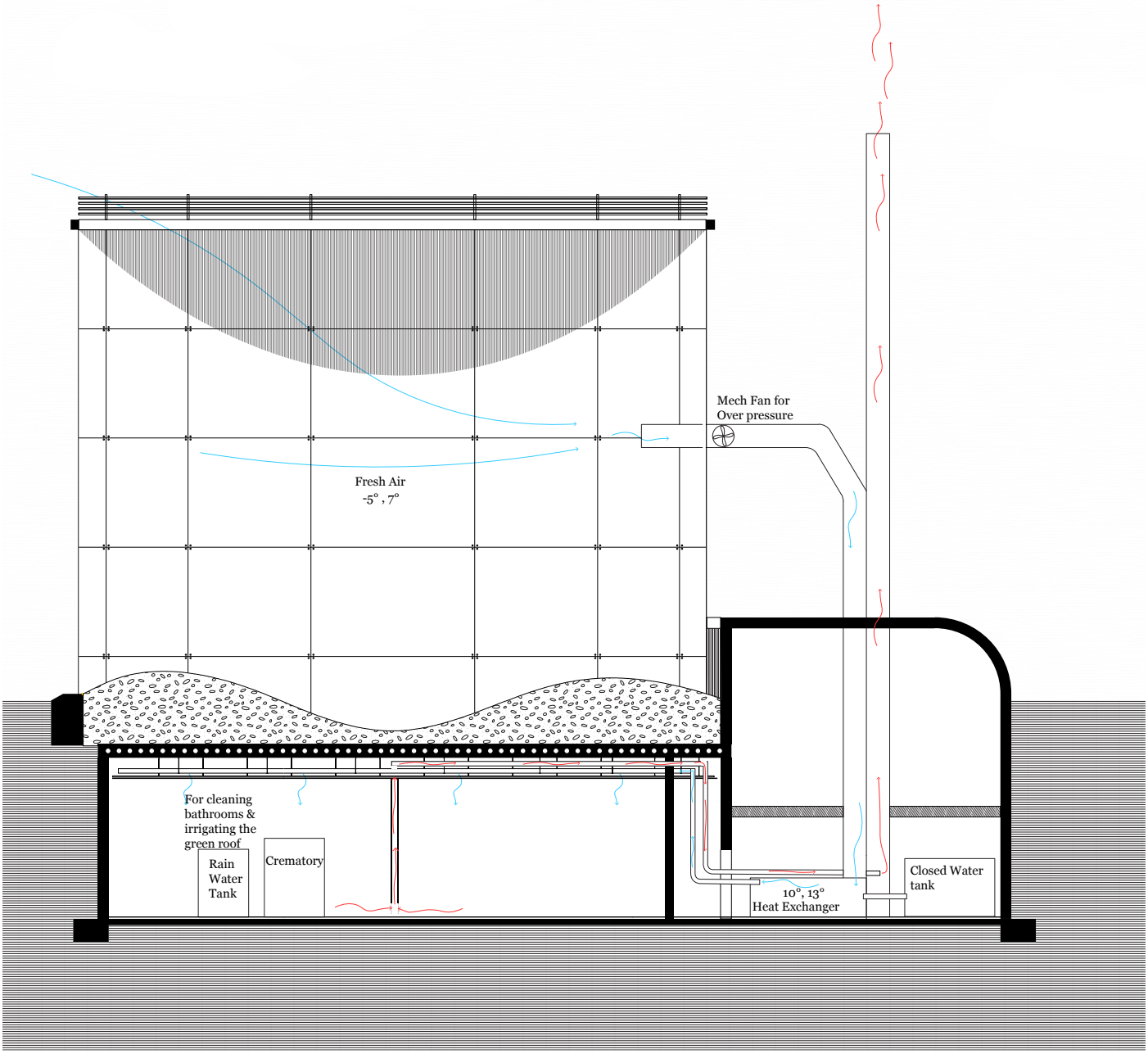


Crematorium Ground Floor Plan



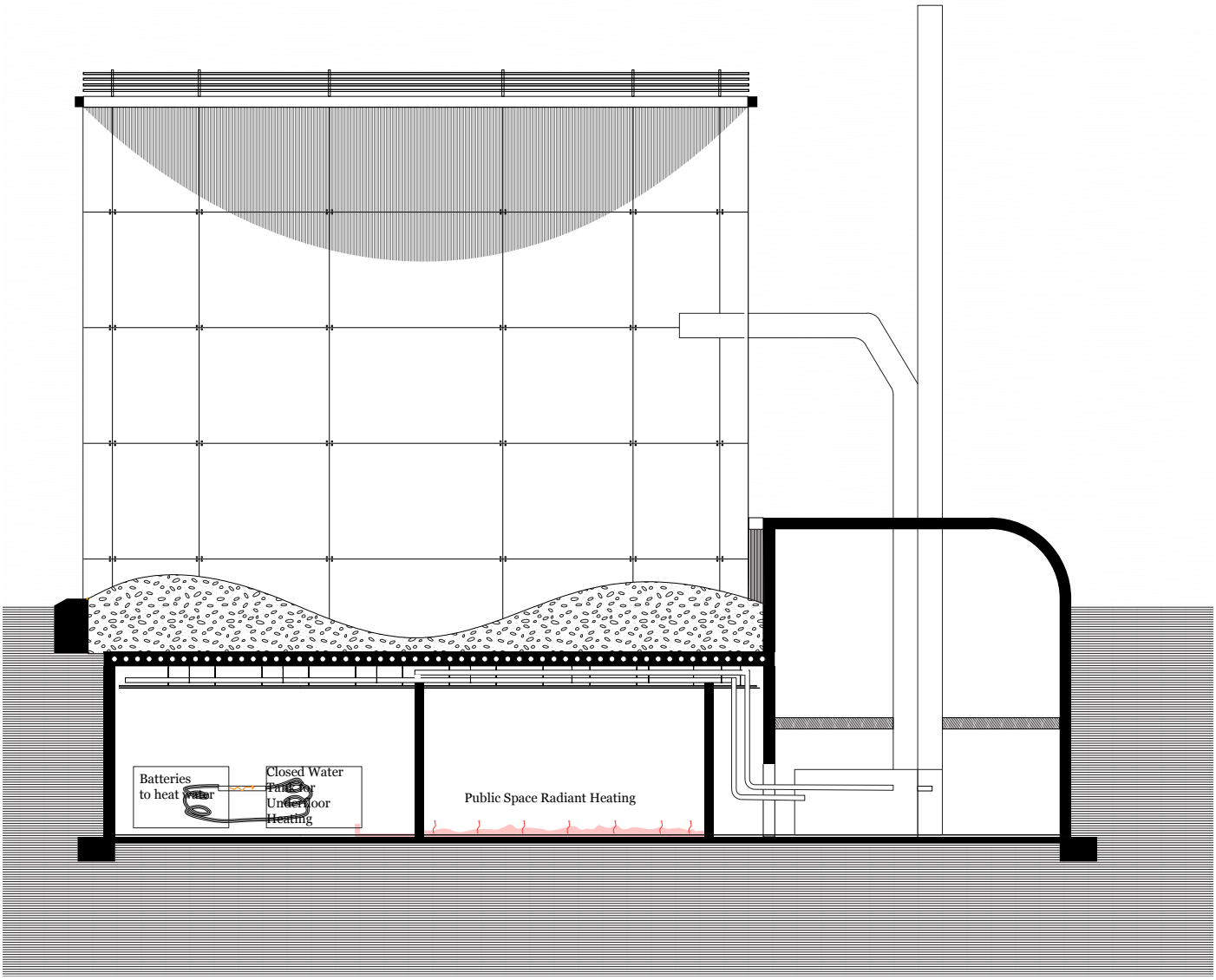
Crematorium Basement Floor Plan -7m

Winter Ventilation Scenario

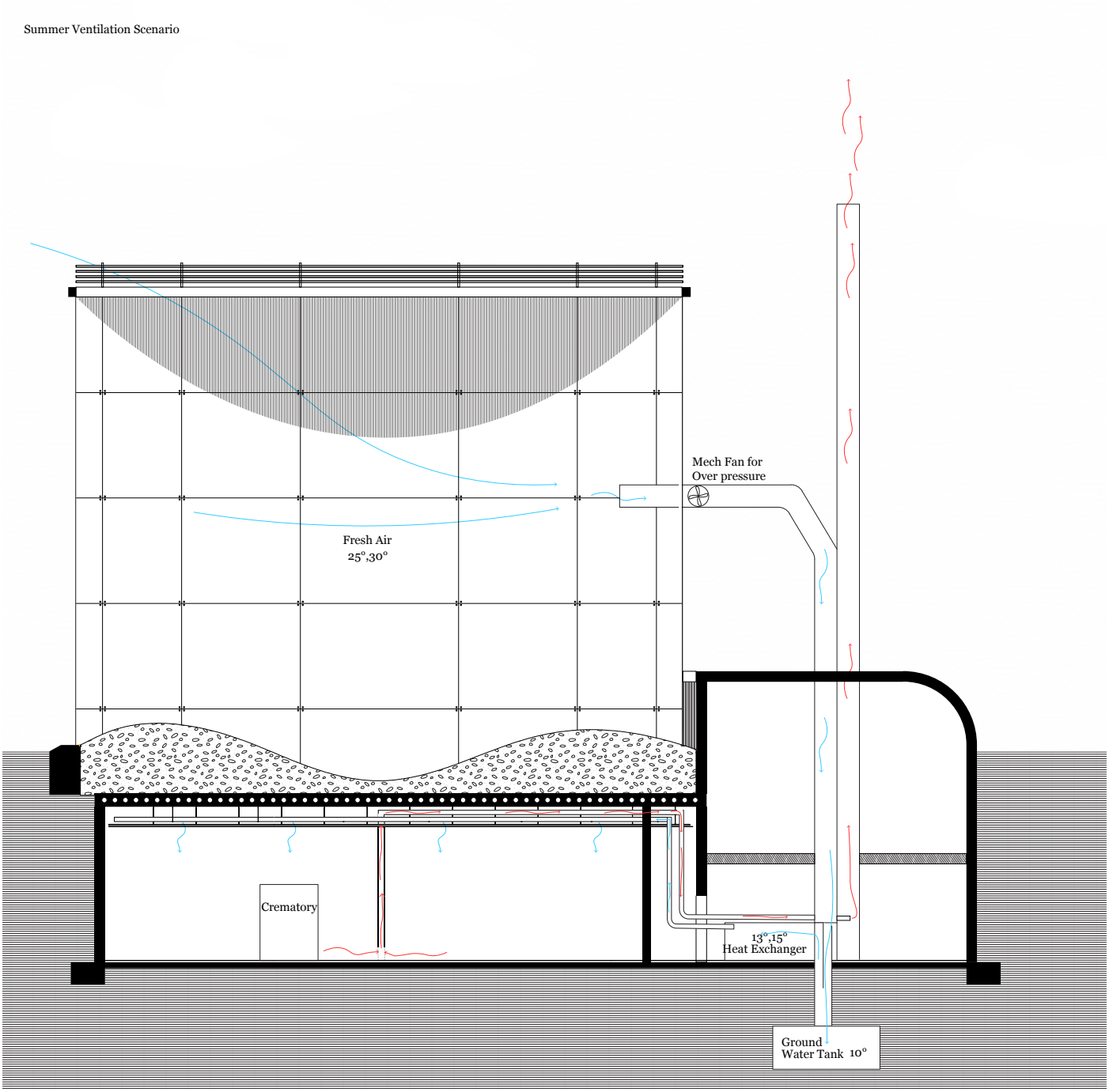


Winter Ventilation Scheme

Winter Heating Scenario

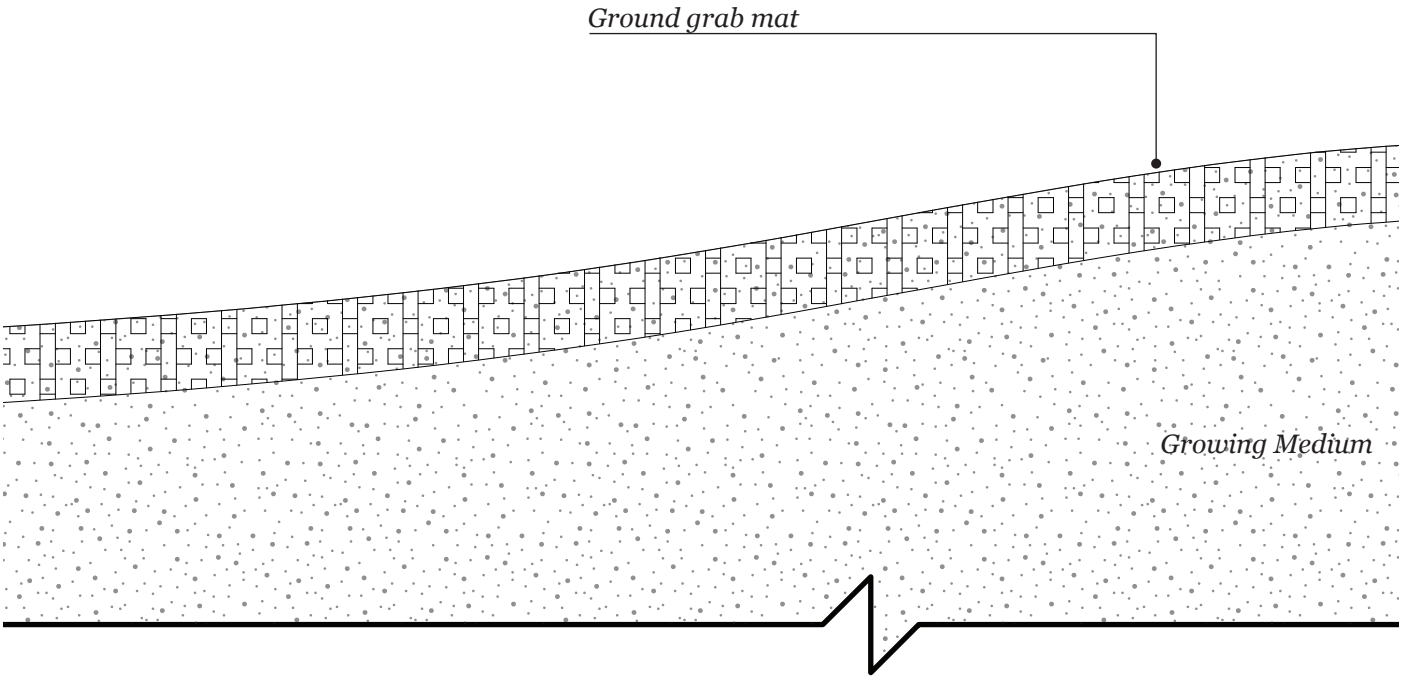


Winter Heating Scheme

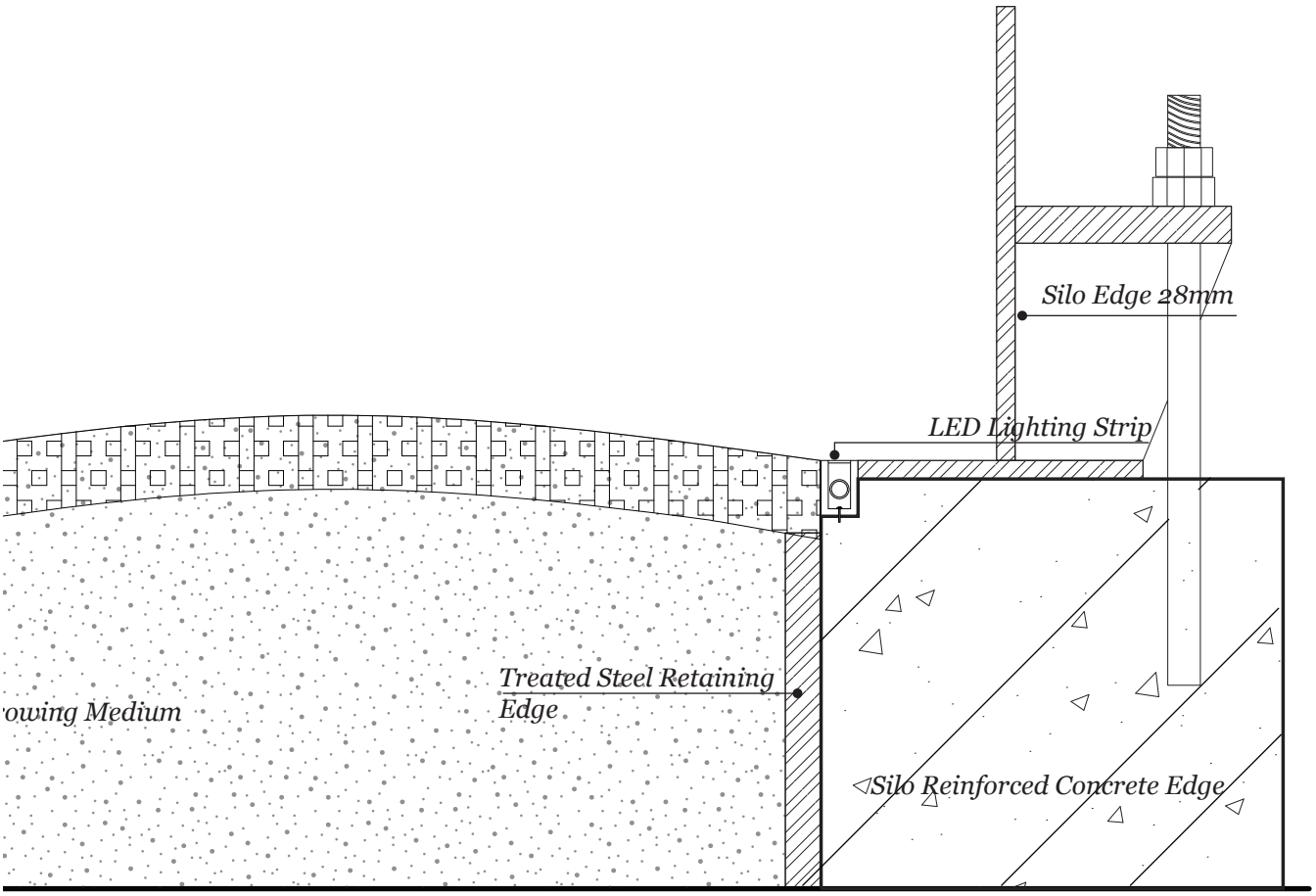


Summer Ventilation Scheme

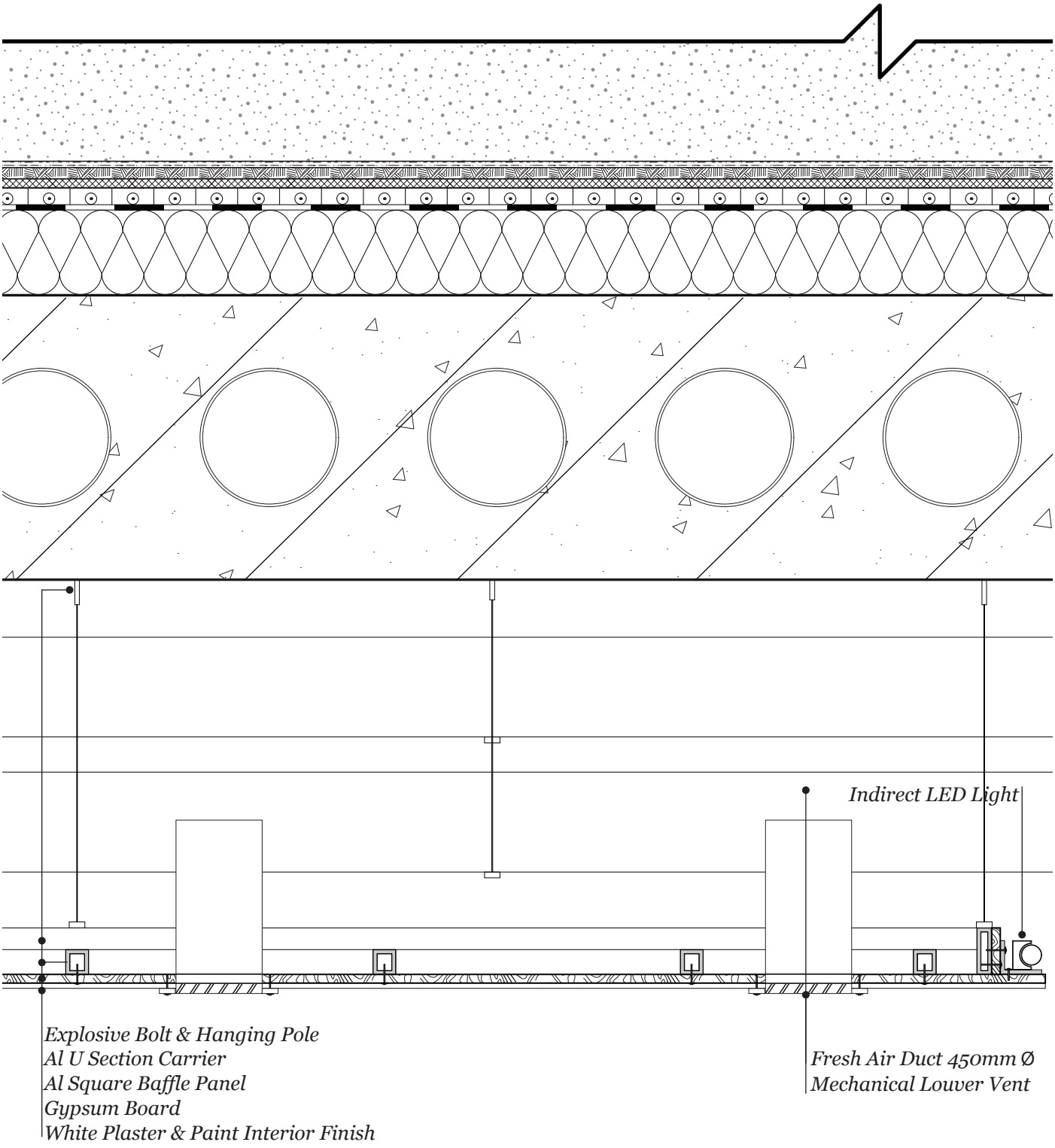
Crematorium
Wall Section Details 1:10



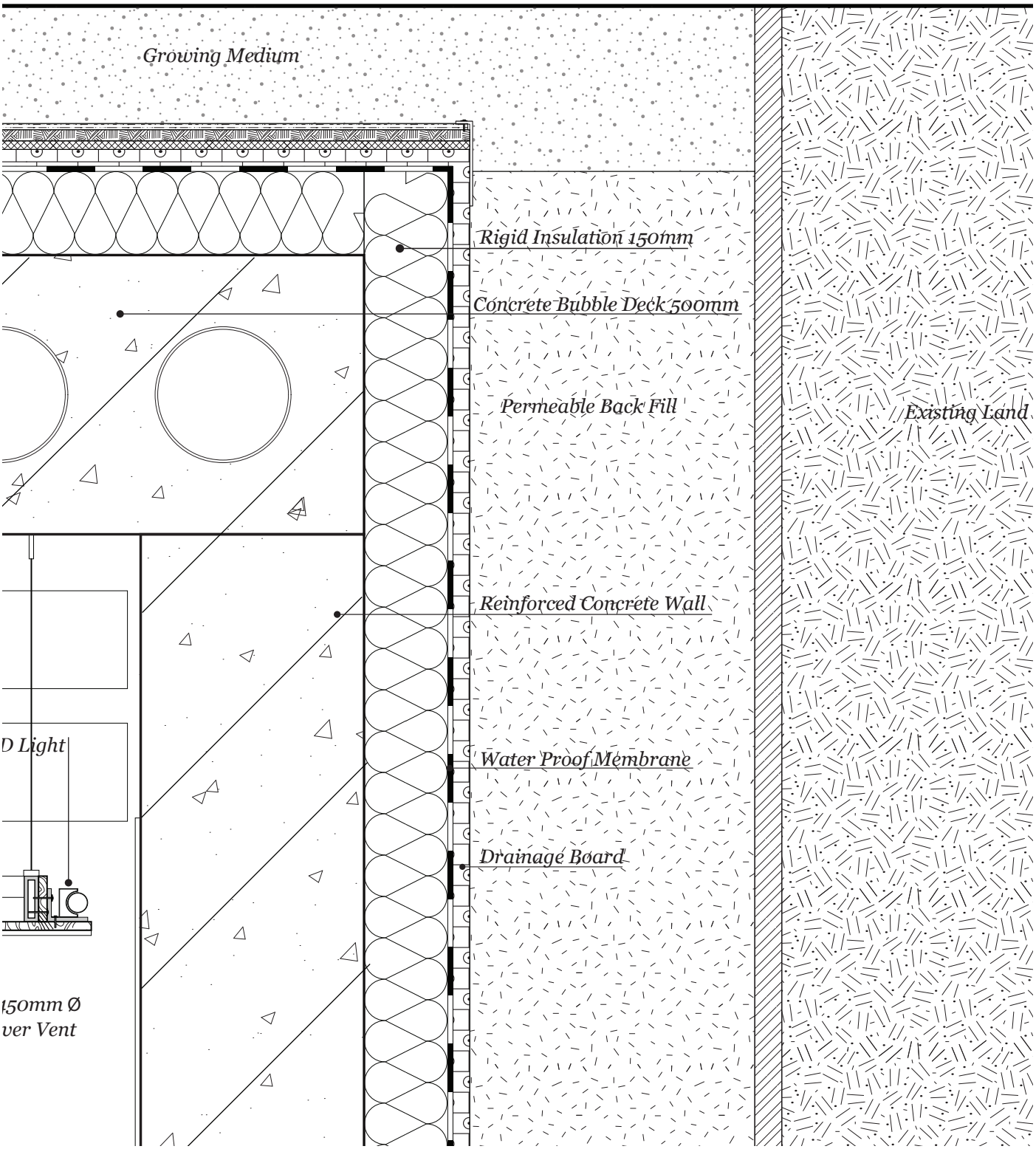
Crematorium Roof Detail 1:10



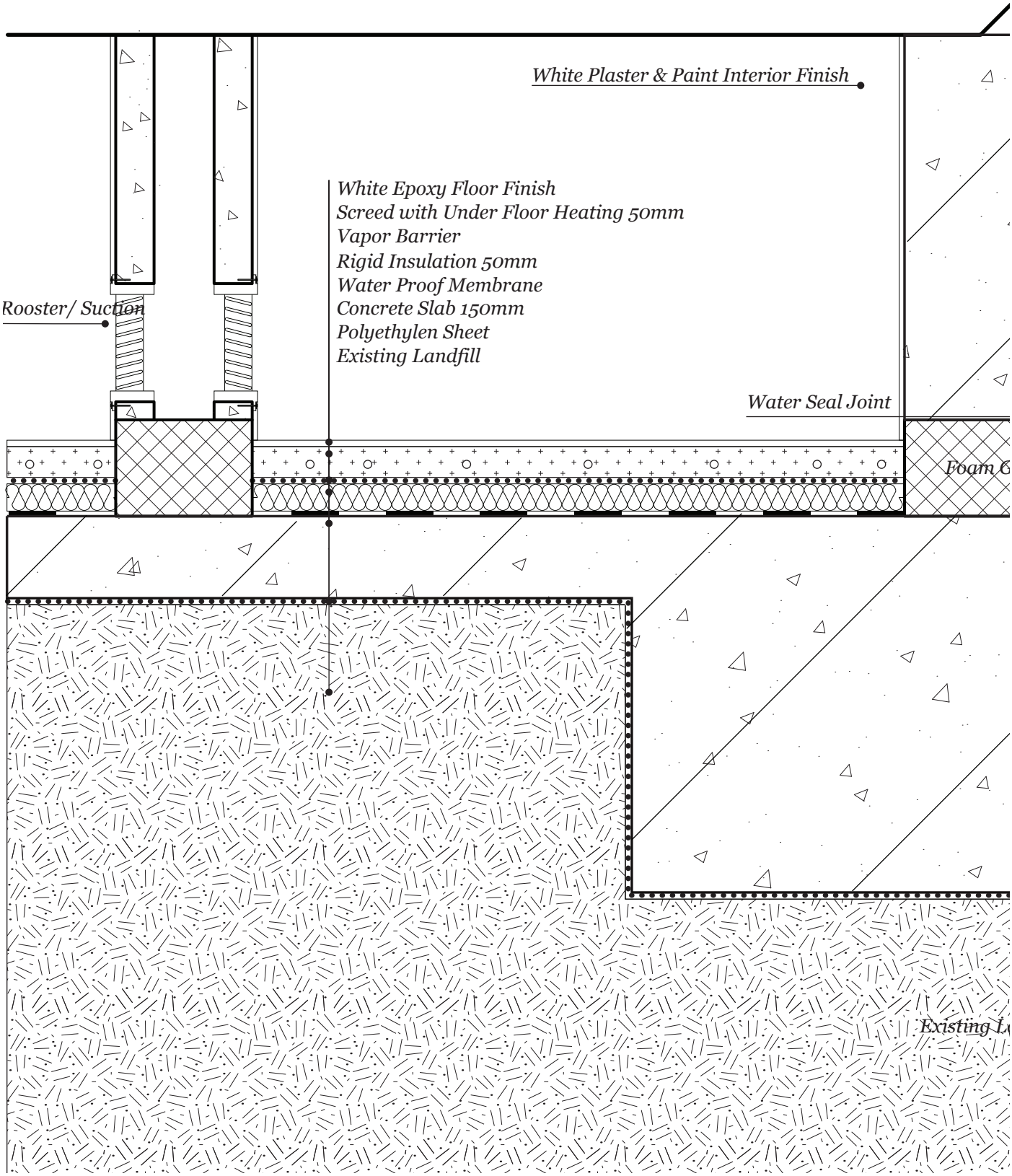
Crematorium Roof Detail 1:10



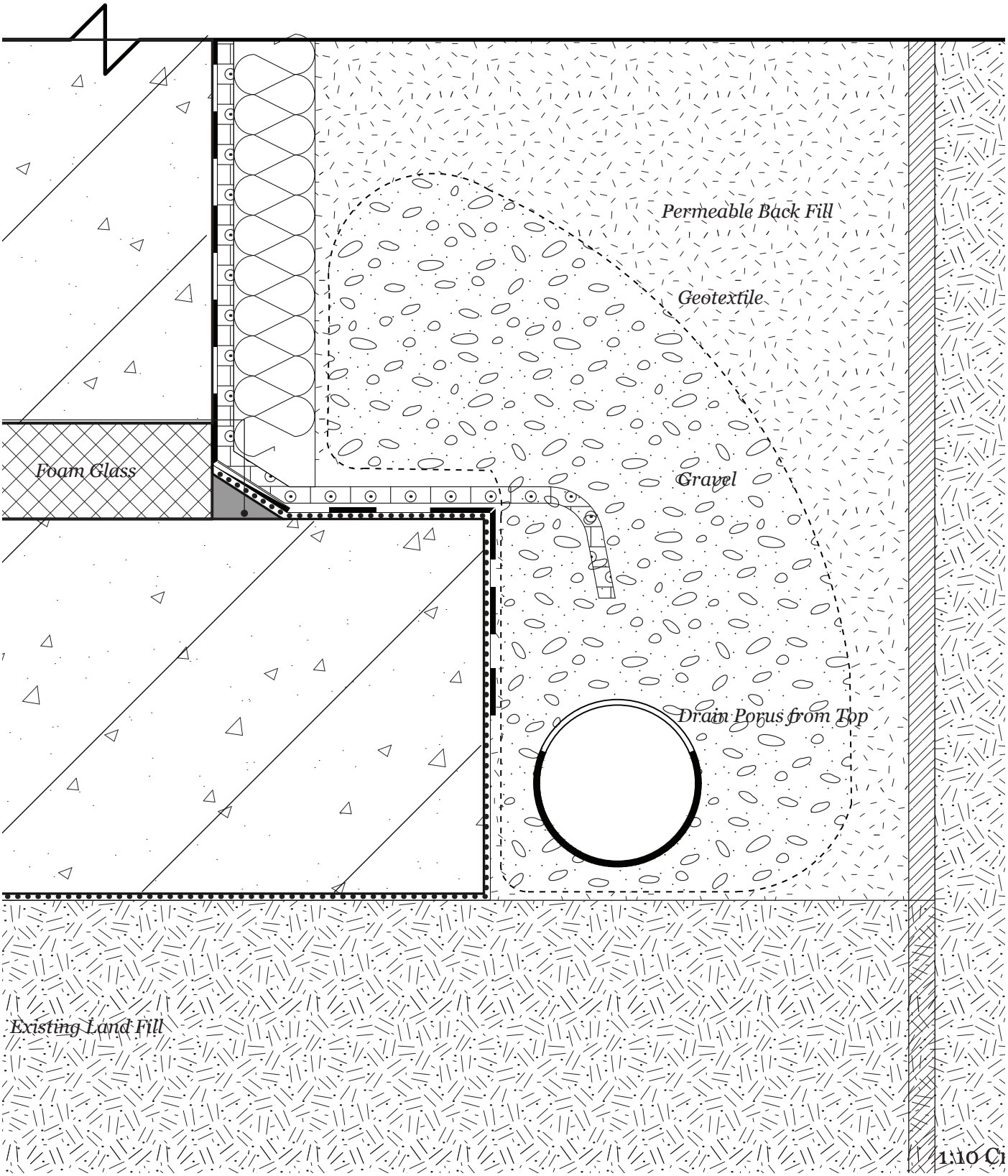
Crematorium Ceiling Detail 1:10



Crematorium Ceiling Detail 1:10

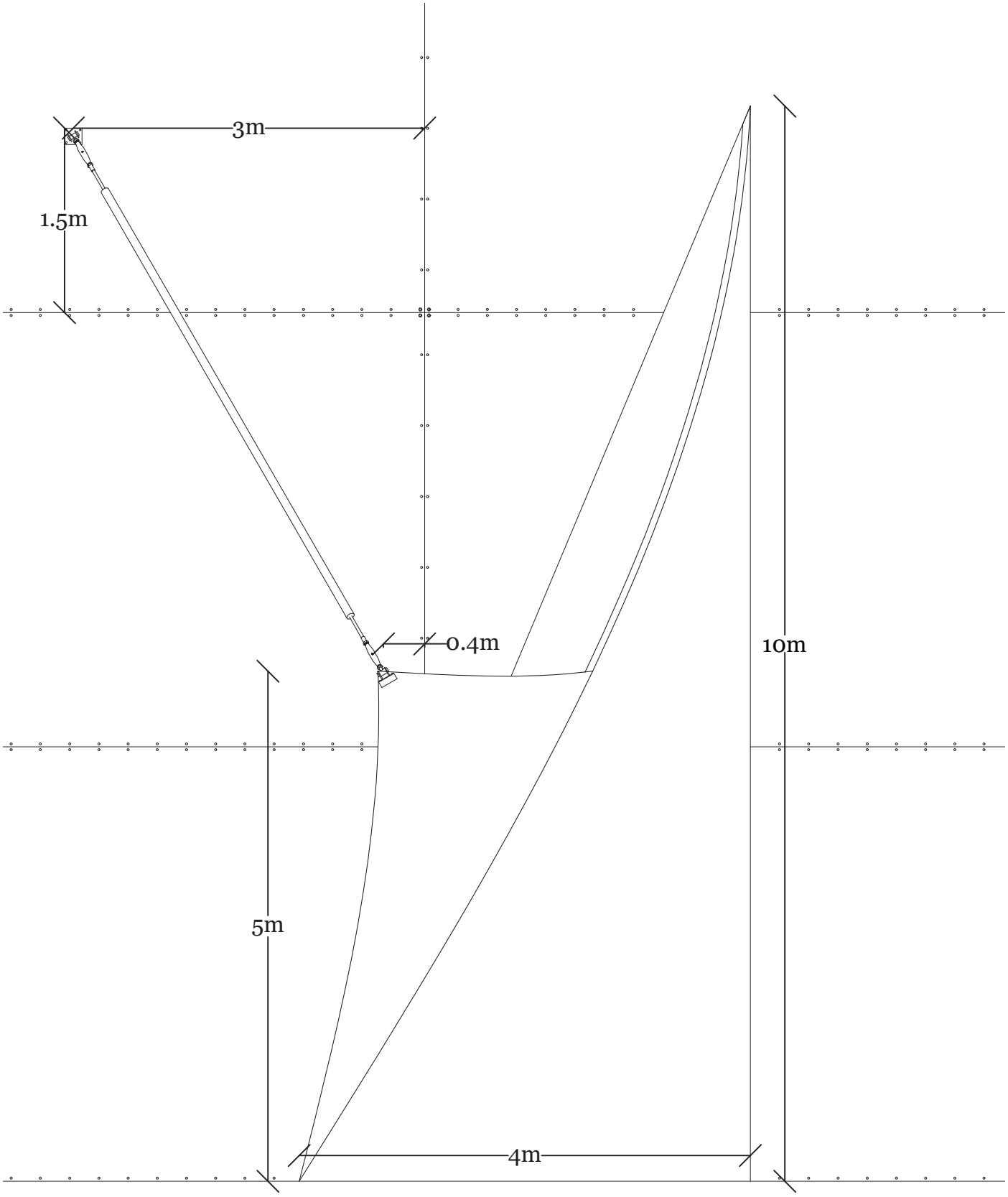


Crematorium Footing Detail 1:10

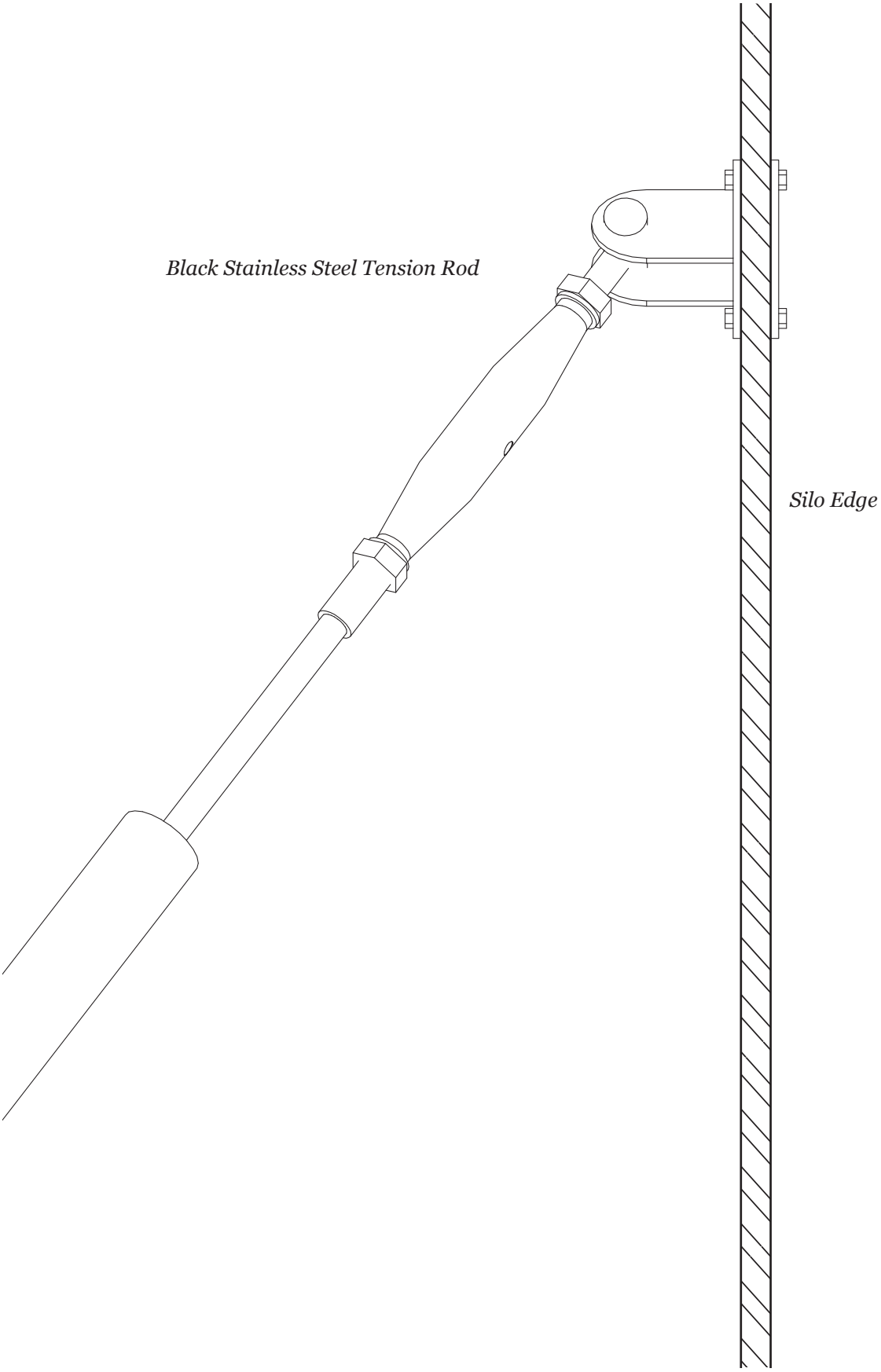


Crematorium Footing Detail 1:10

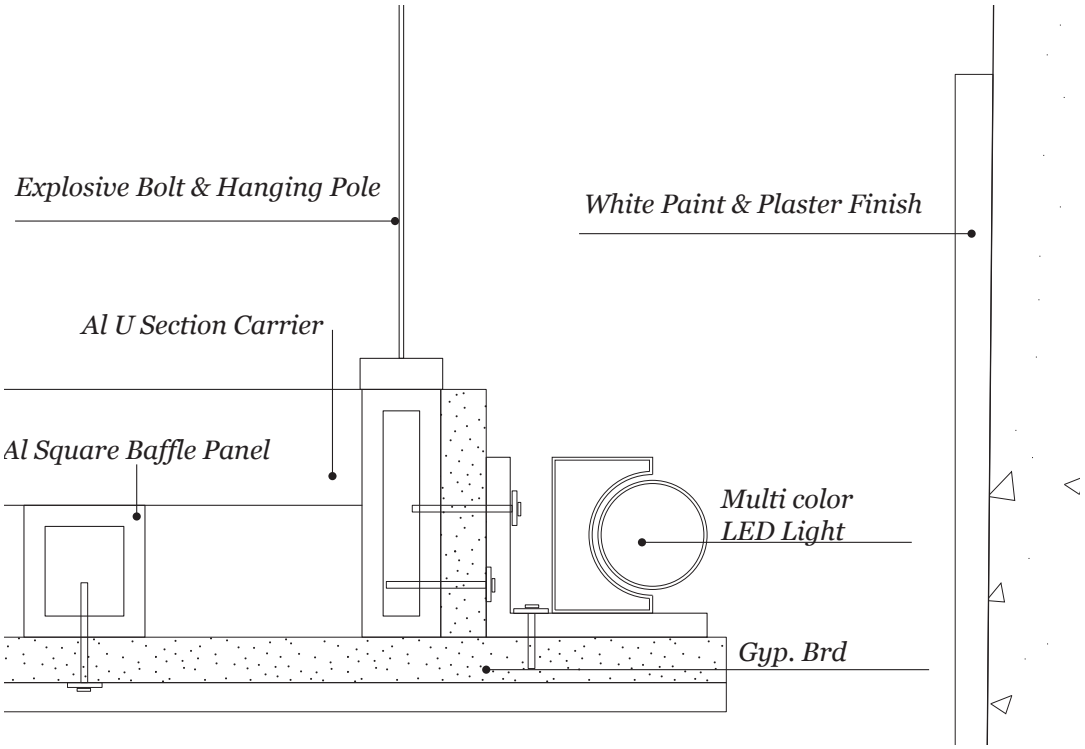
Crematorium
Entrance 1:50 & Inner Space 1:5 Details



Crematorium Entrance Elevation Detail 1:50

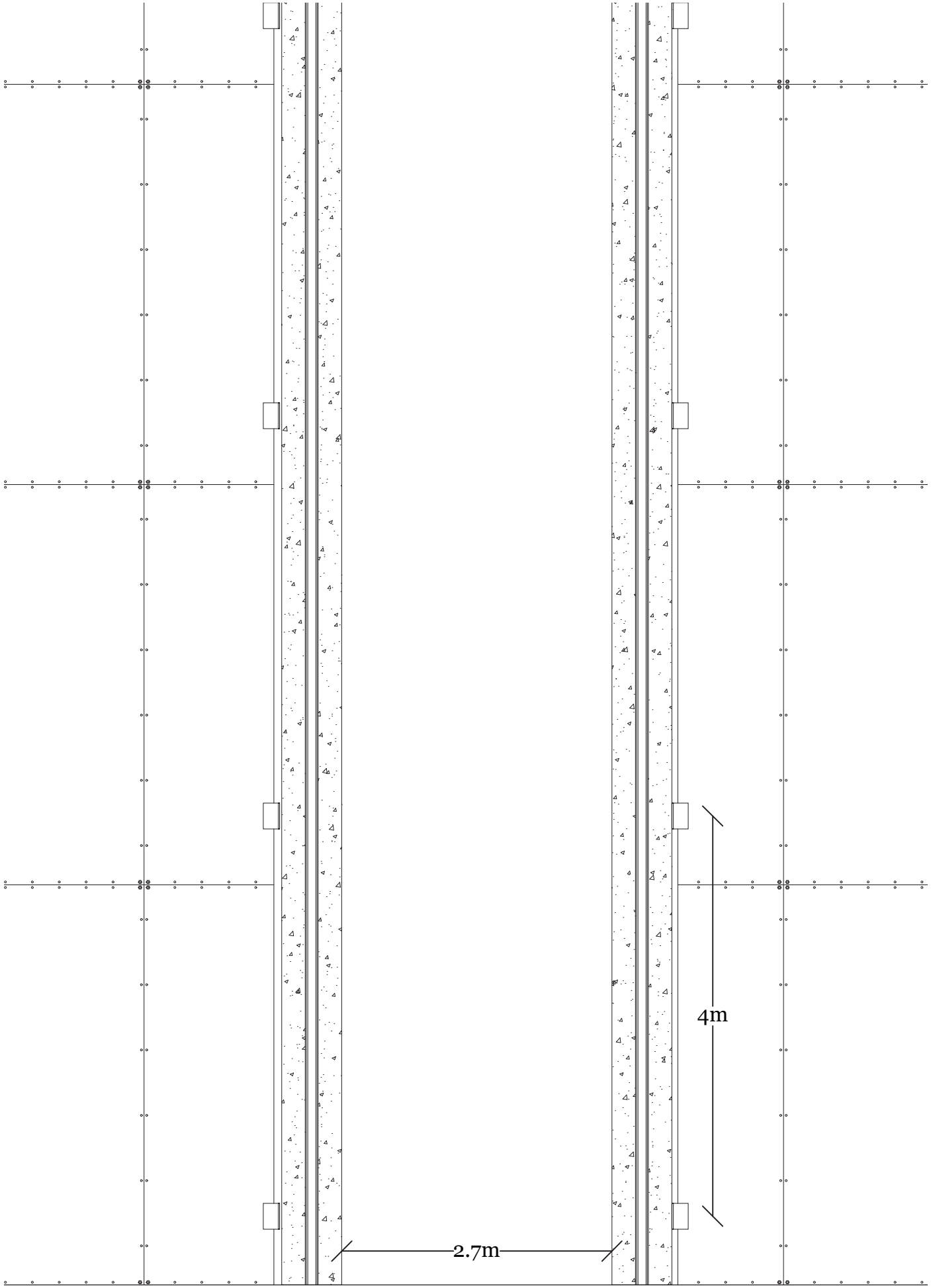


Crematorium Entrance Detail 1:5

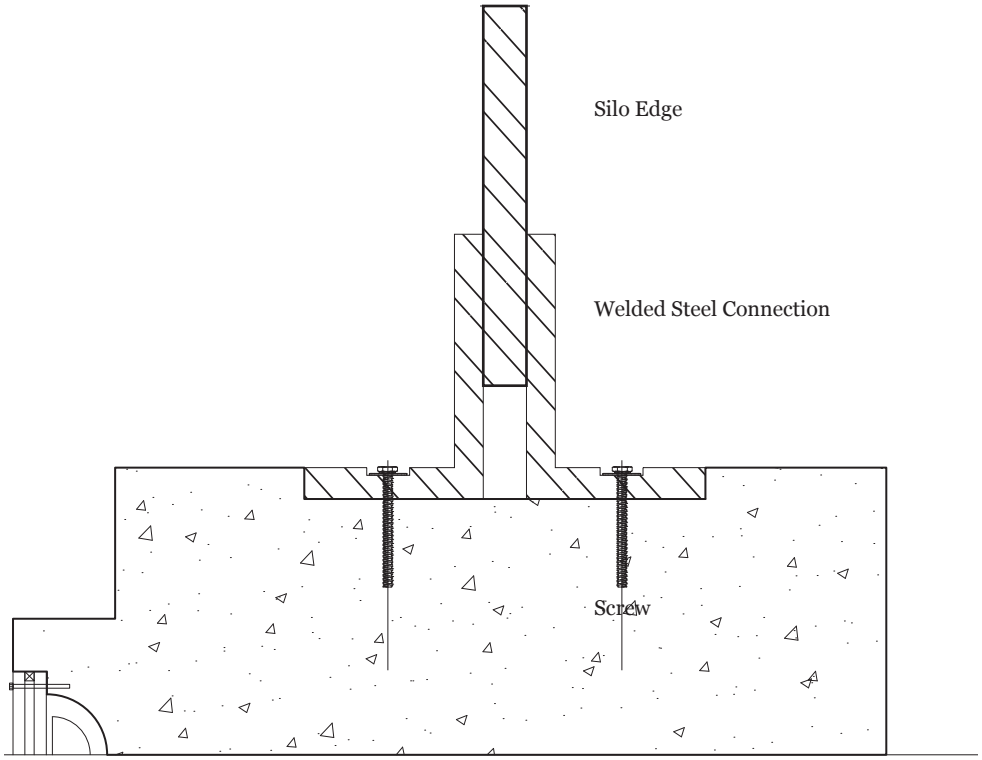


Crematorium False Ceiling indirect lighting Detail 1:5

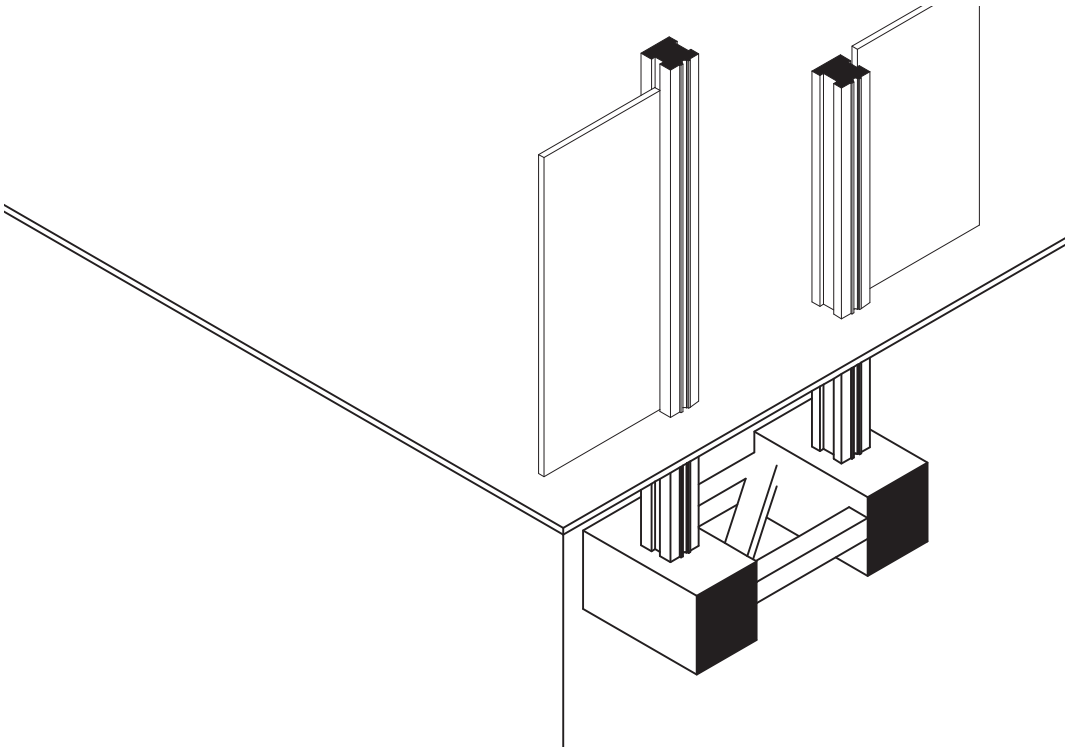
Reception Gate 1:50 & 1:5
Details



Reception Entrance Elevation Detail 1:50



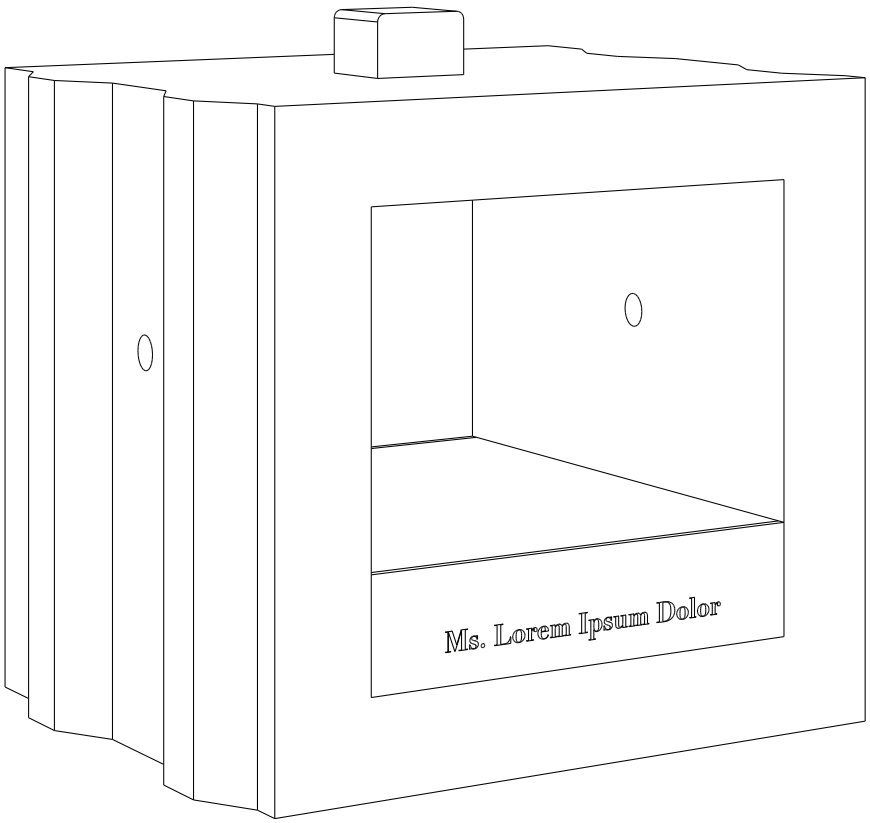
Reception Gate Plan



Footing 10m Below Ground

Reception Entrance Detail 1:5 & Footing Scheme

Urn Details

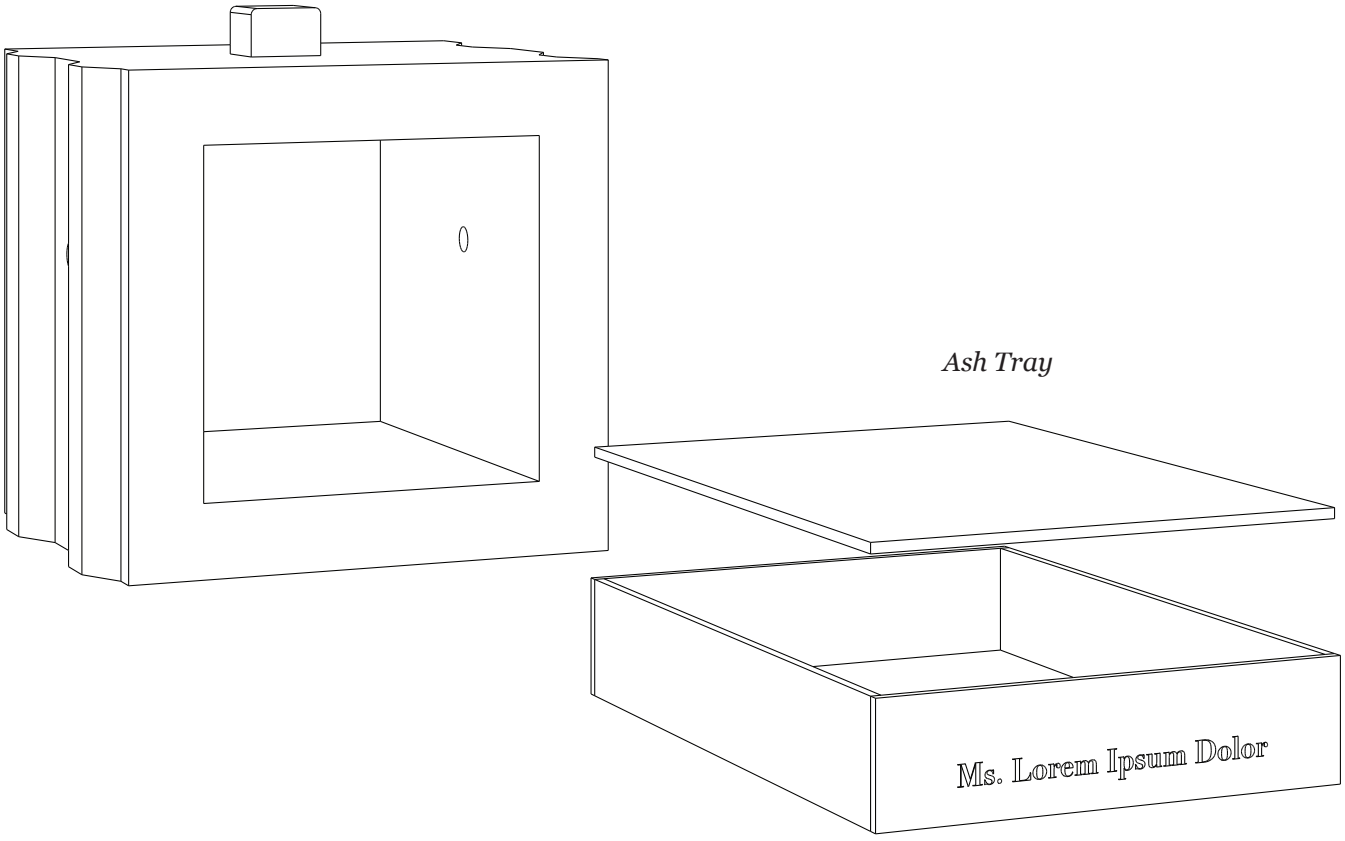


Steel Urn from Silo Steel

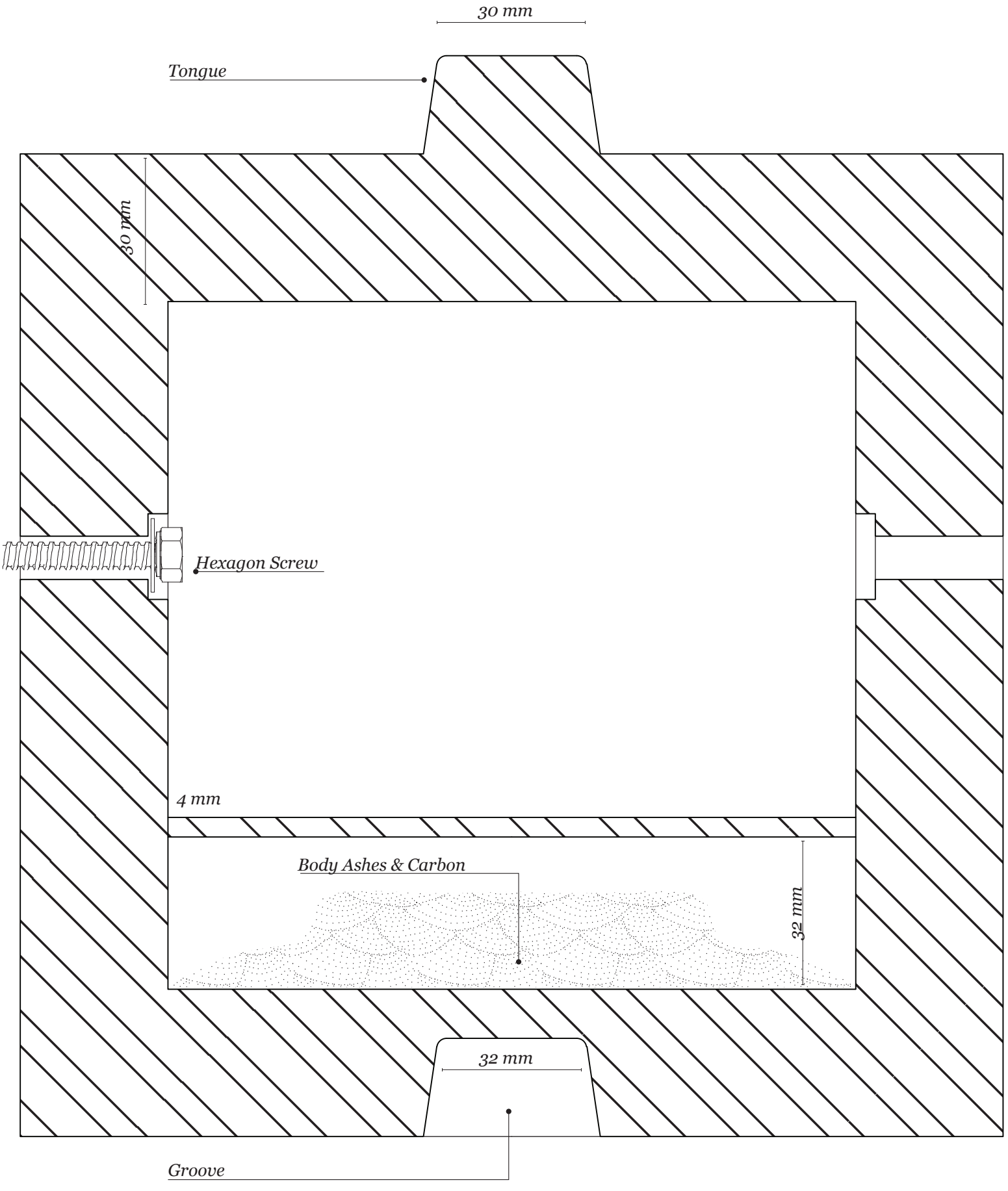
Iso View

Casing

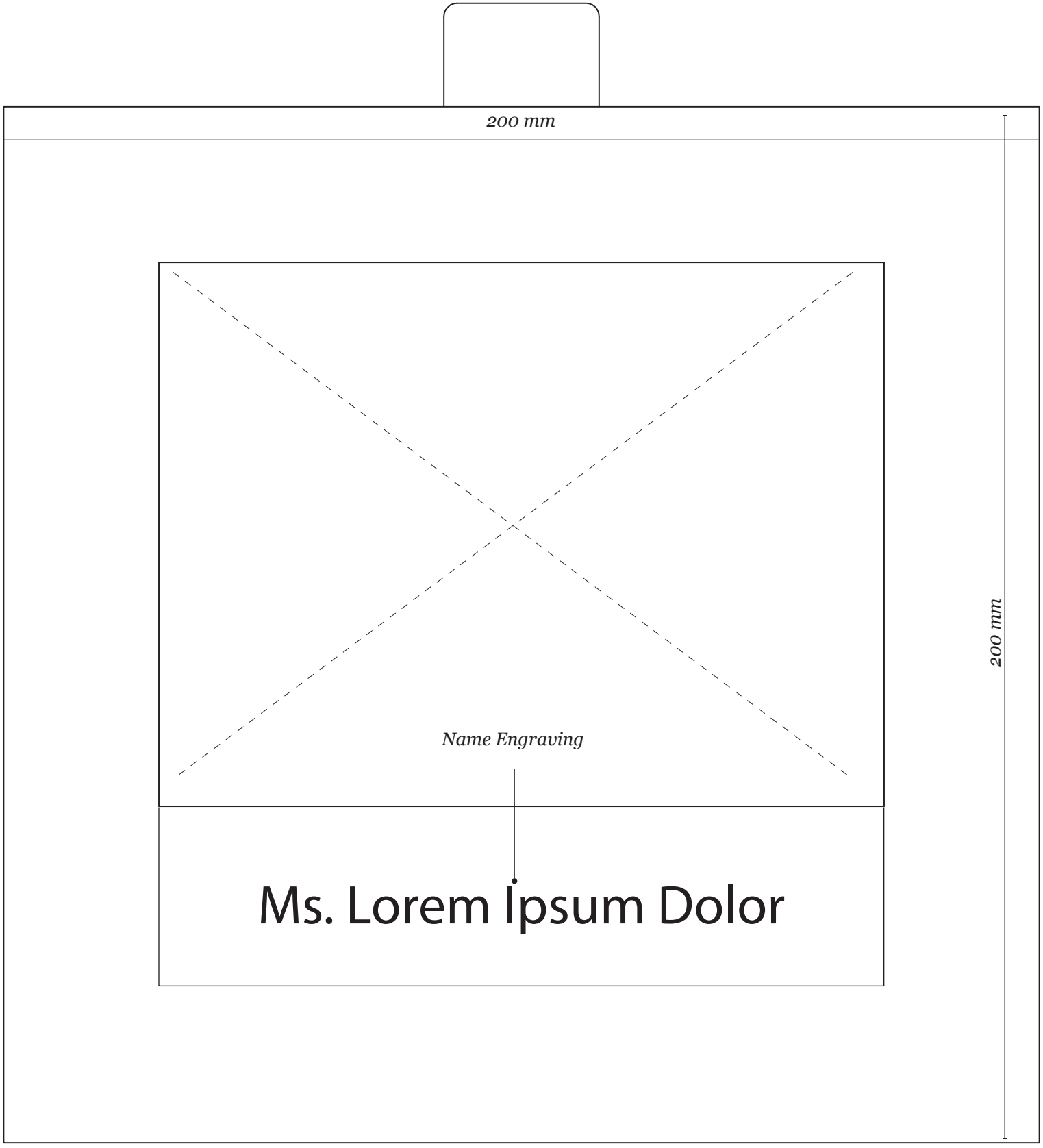
Ash Tray



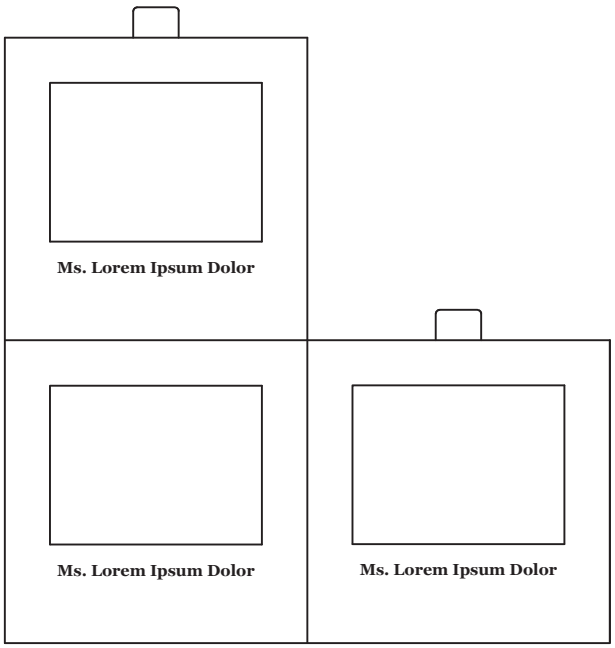
Assemblage

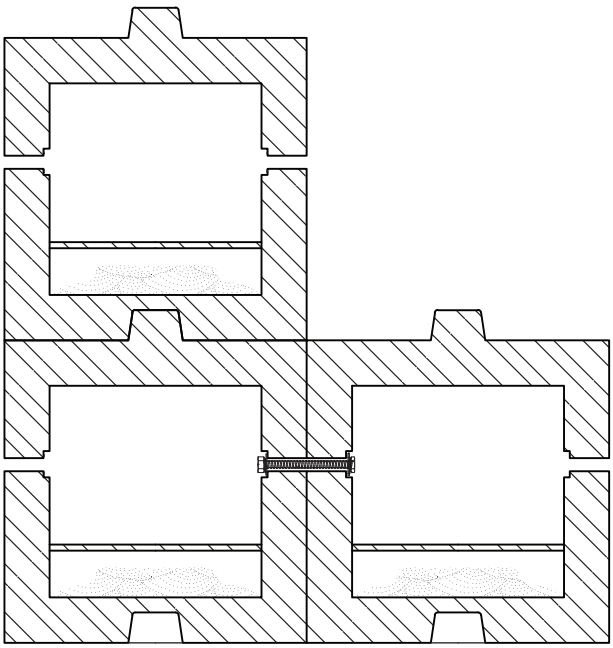


1:1 Memory Box Section

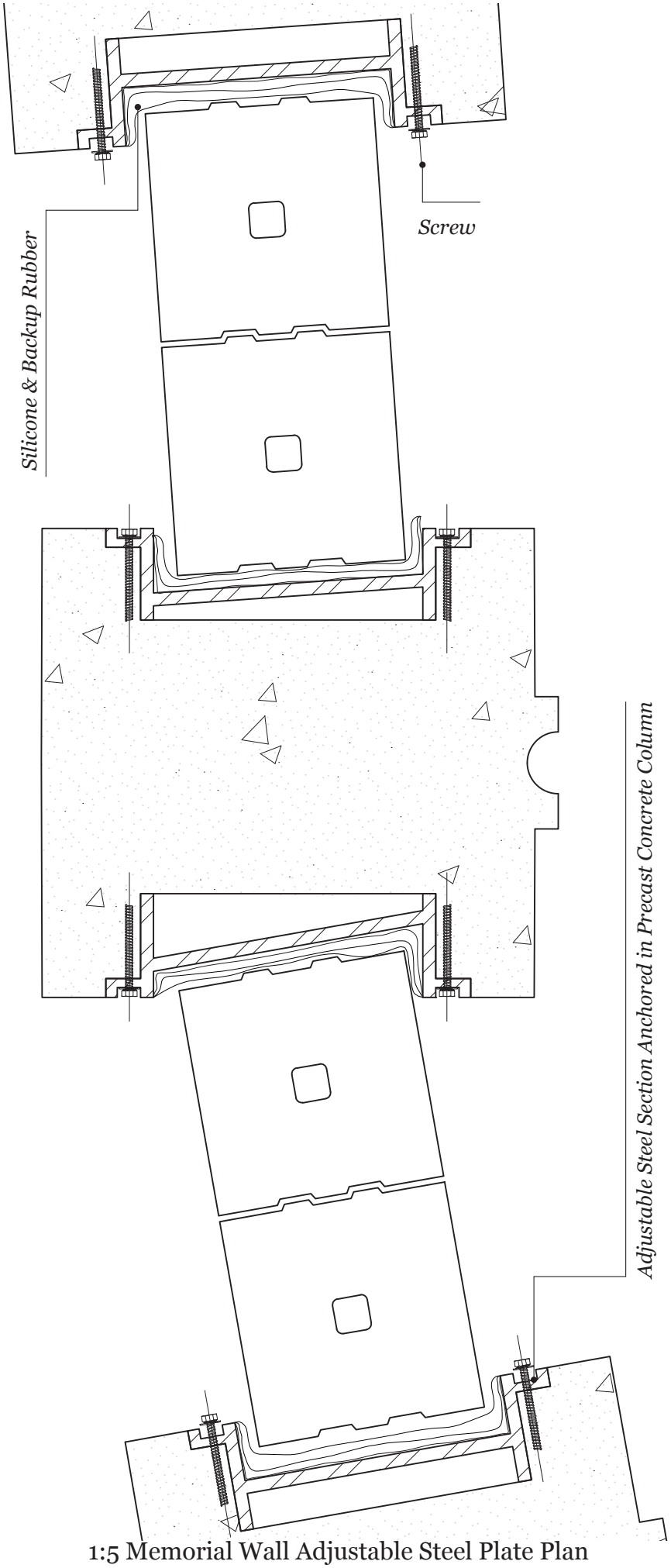


1:1 Memory Box Elevation



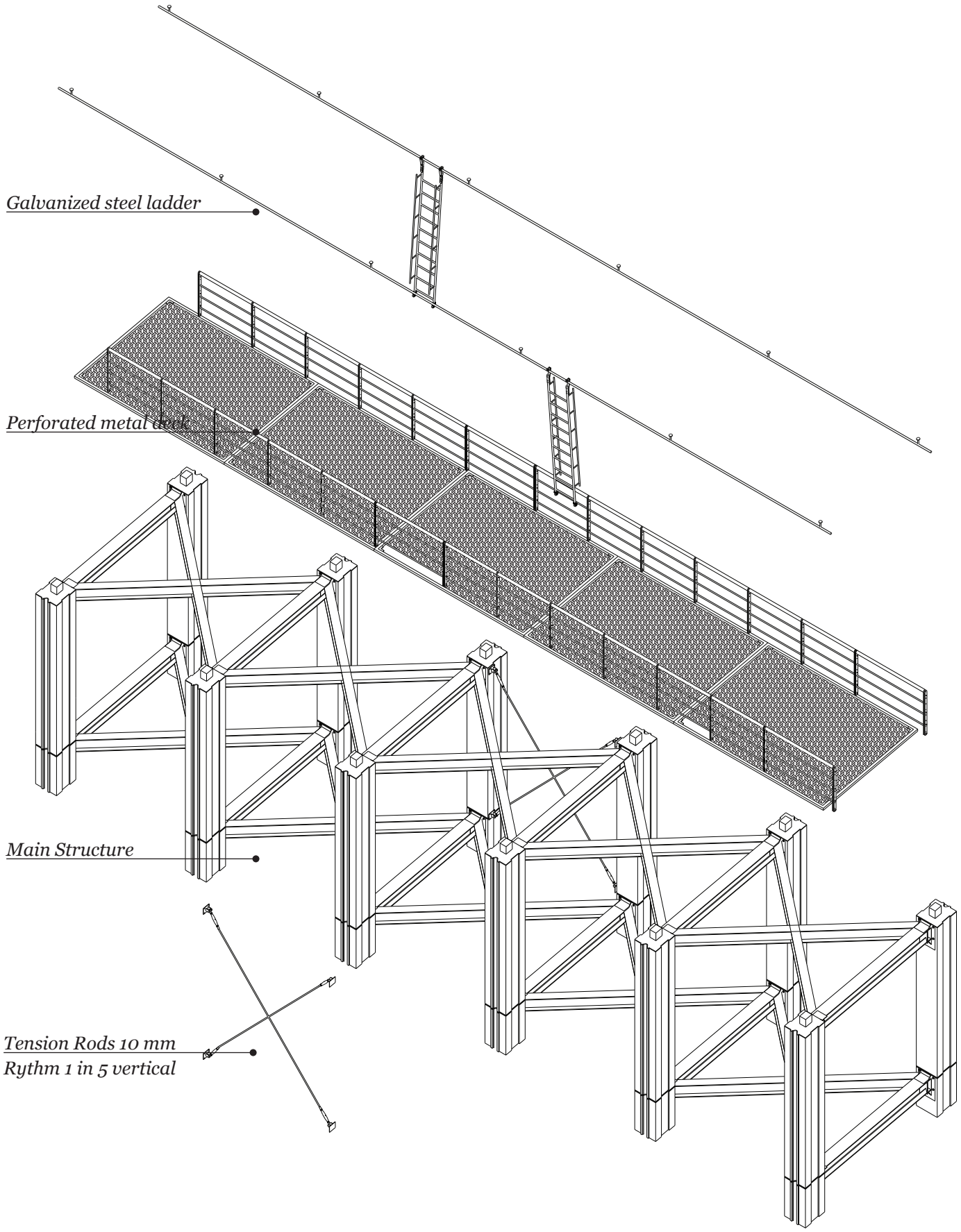


1:5 Memory Box Stacking Elevation & Section

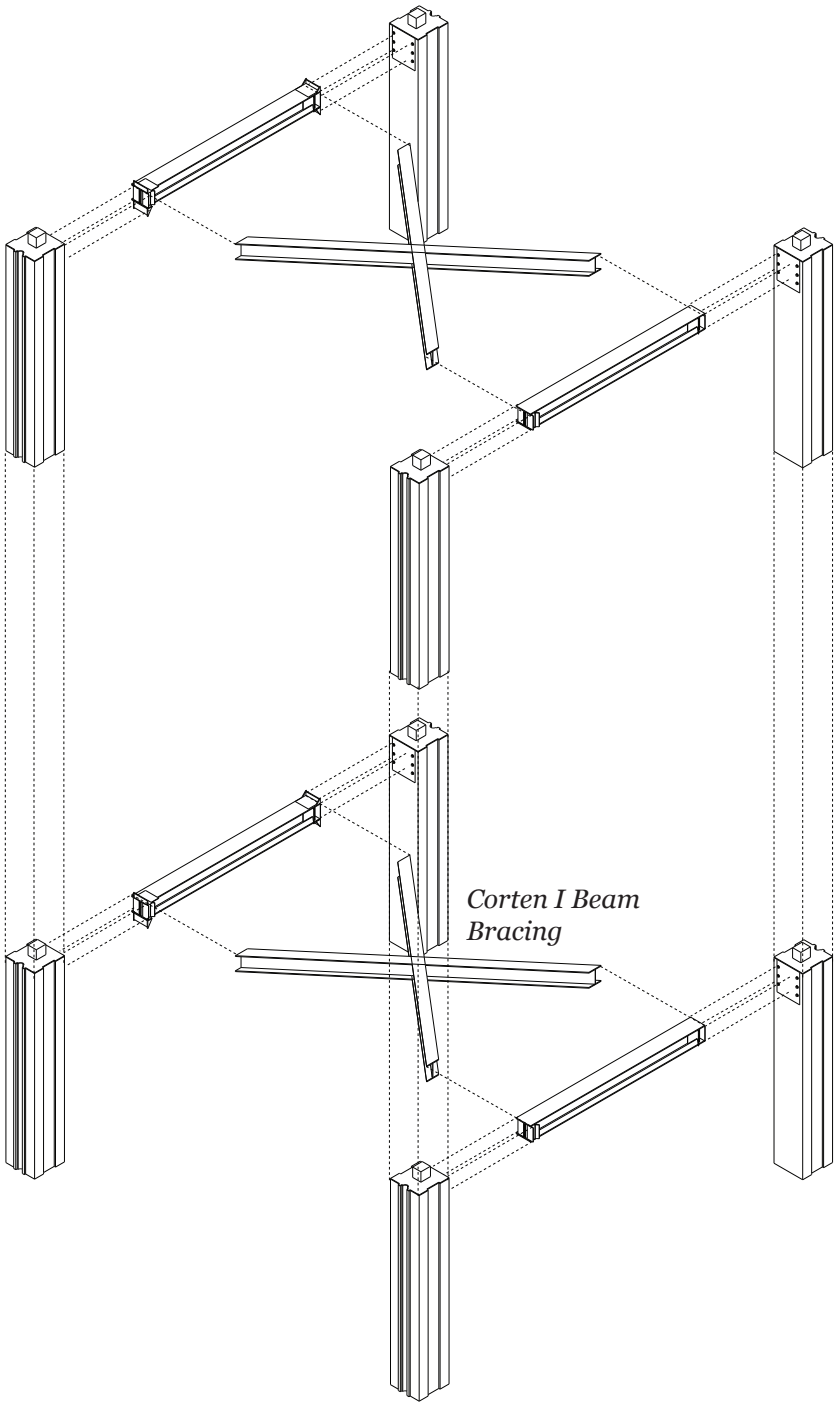


1:5 Memorial Wall Adjustable Steel Plate Plan

Memorial Wall Structural Scheme



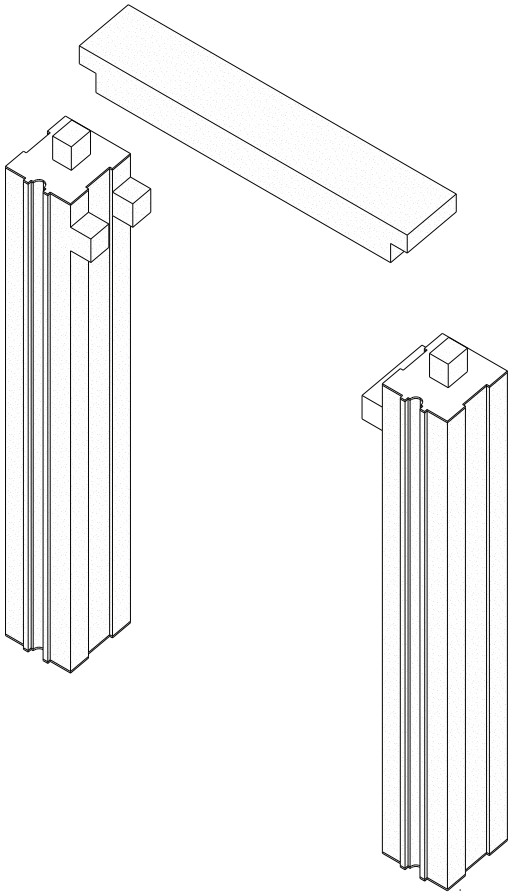
Repetitive Floor Level Scheme



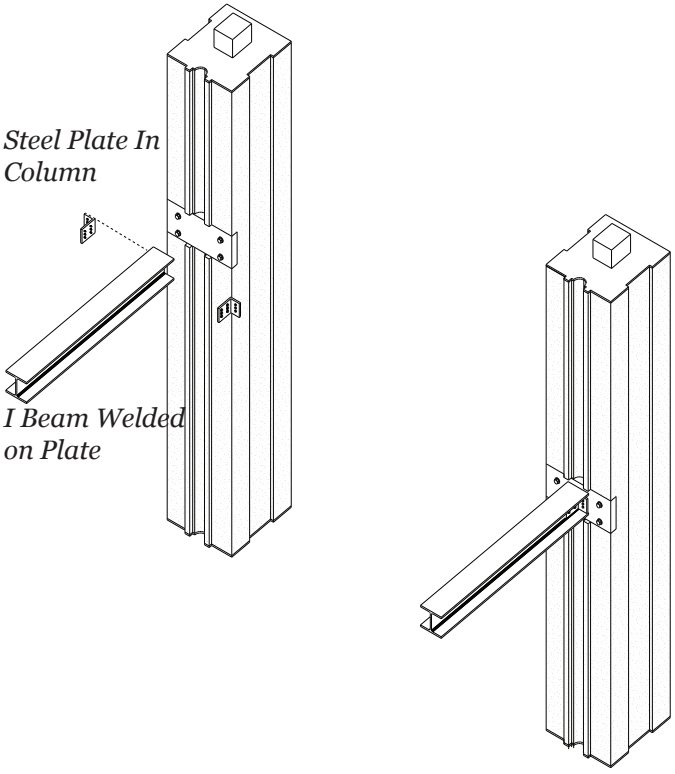
Assembly of Prefabricated Units

Memorial Wall Structure

Column

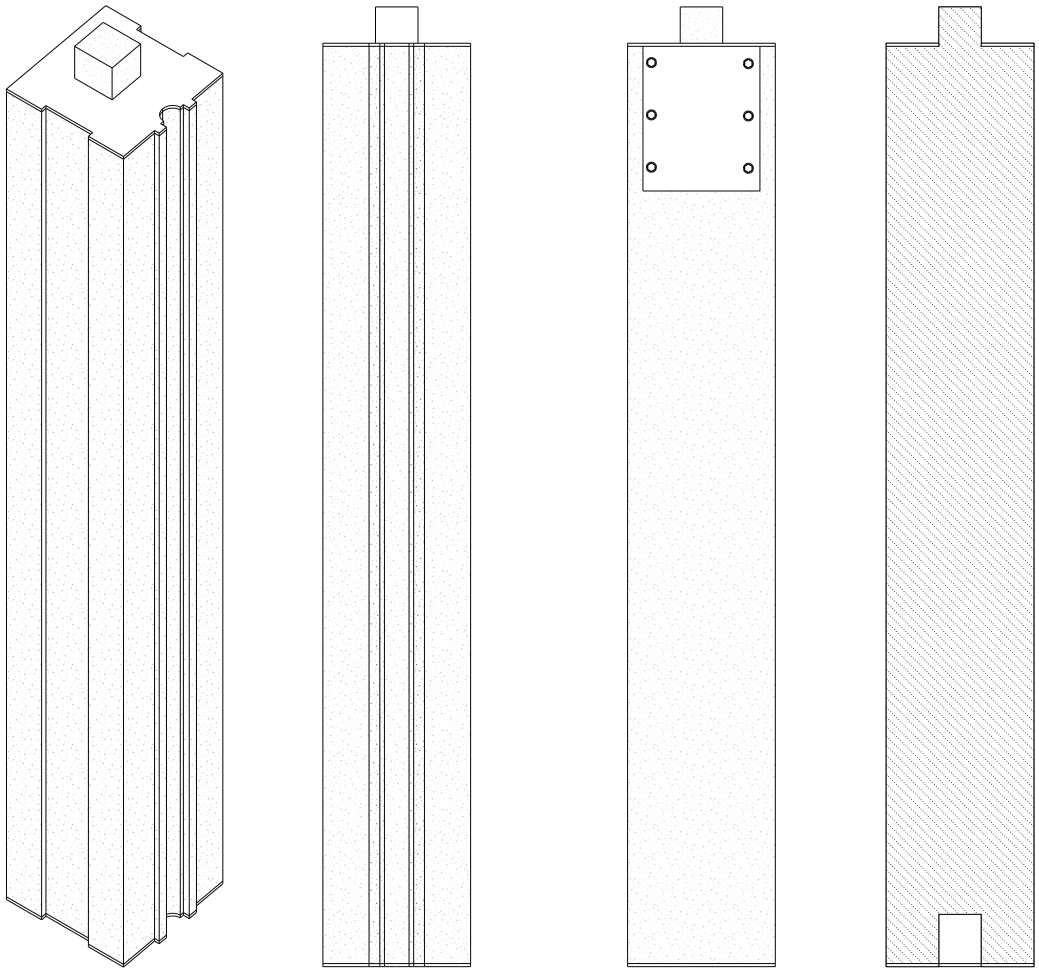


Pre-Cast Pre-Stressed Lintel



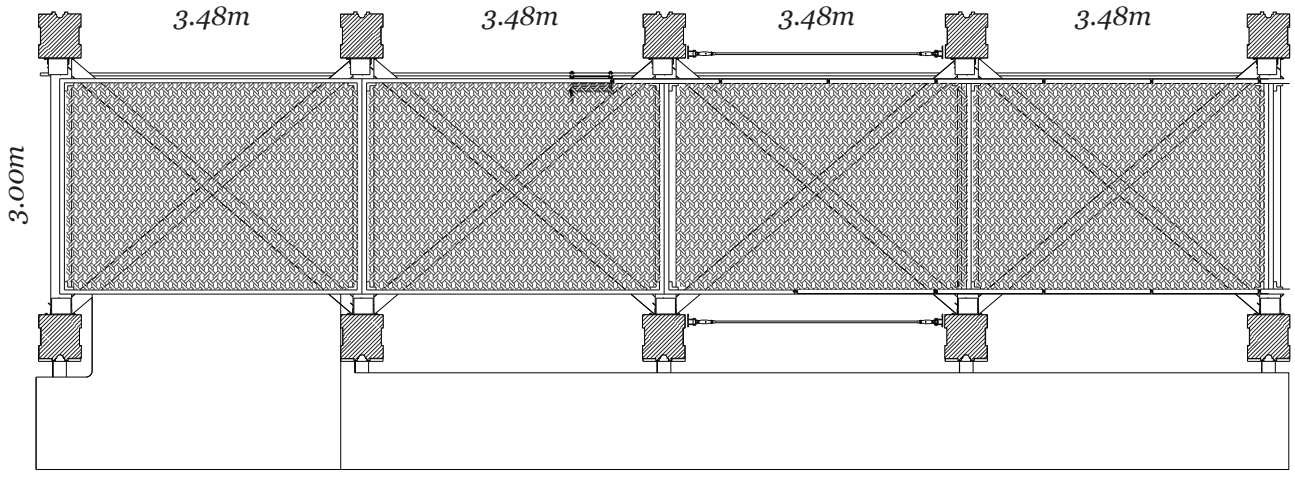
Ramp Assembly

Memorial Wall Structure



Axo *Font Elevation* *Back Elevation* *Section Tongue & Groove*

Pre Cast Reinforced Concrete Columns



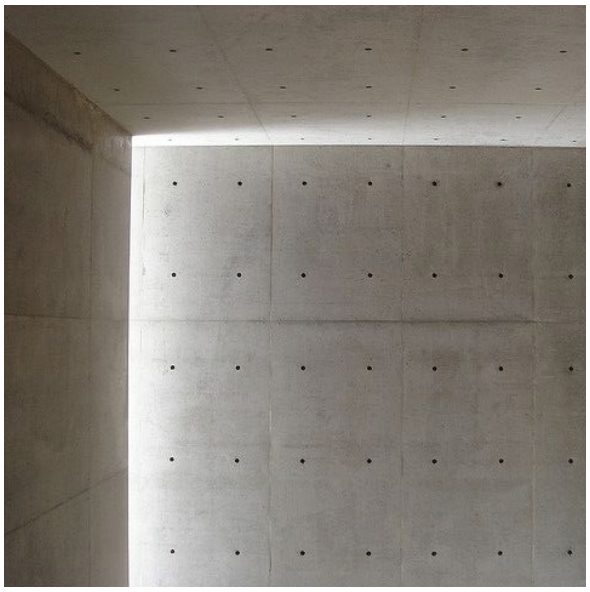
Column Composition

Materials & Life Span

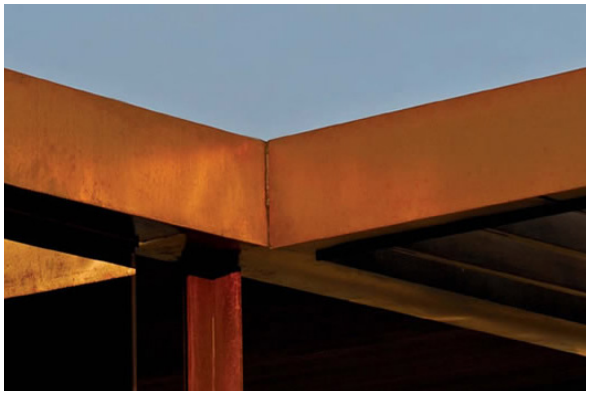
Concrete is a durable material that can last nearly a lifetime. The term durability means that something can last for a long period of time without significantly deteriorating. The structural material of concrete is used as it will withstand the elements of nature, including regular weather and natural disasters.

Stainless steel or threaded steel bar has a long lasting life. Generally, it goes around 30 - 50 years. 316 stainless steel is estimated to last for 1200 years in a "rule" environment before heavy pitting. In the marine environment such as the port of Rotterdam this is reduced to a mere 260 years.

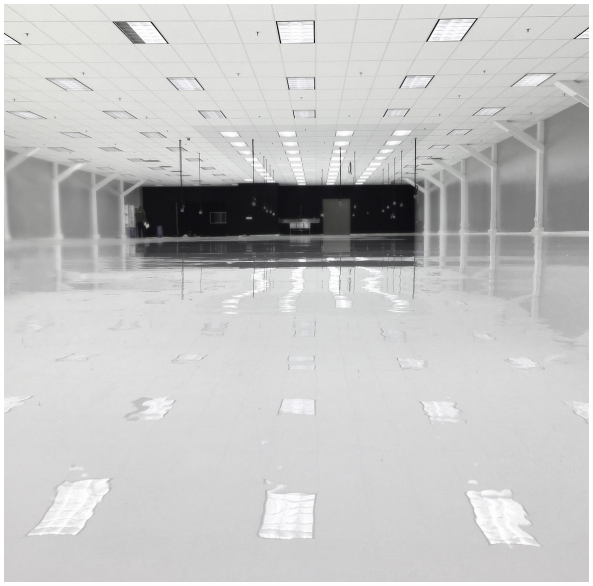
Hence the mounting of the concrete depends on how much the steel is maintained and re galvanized every few years.



Pre-Cast Concrete Columns



Corten Steel Connections



Glossy White Epoxy Interior

Materials