

# MODULUM

Floating Constructions for the Next Century of Adaptation

**LOCATION**



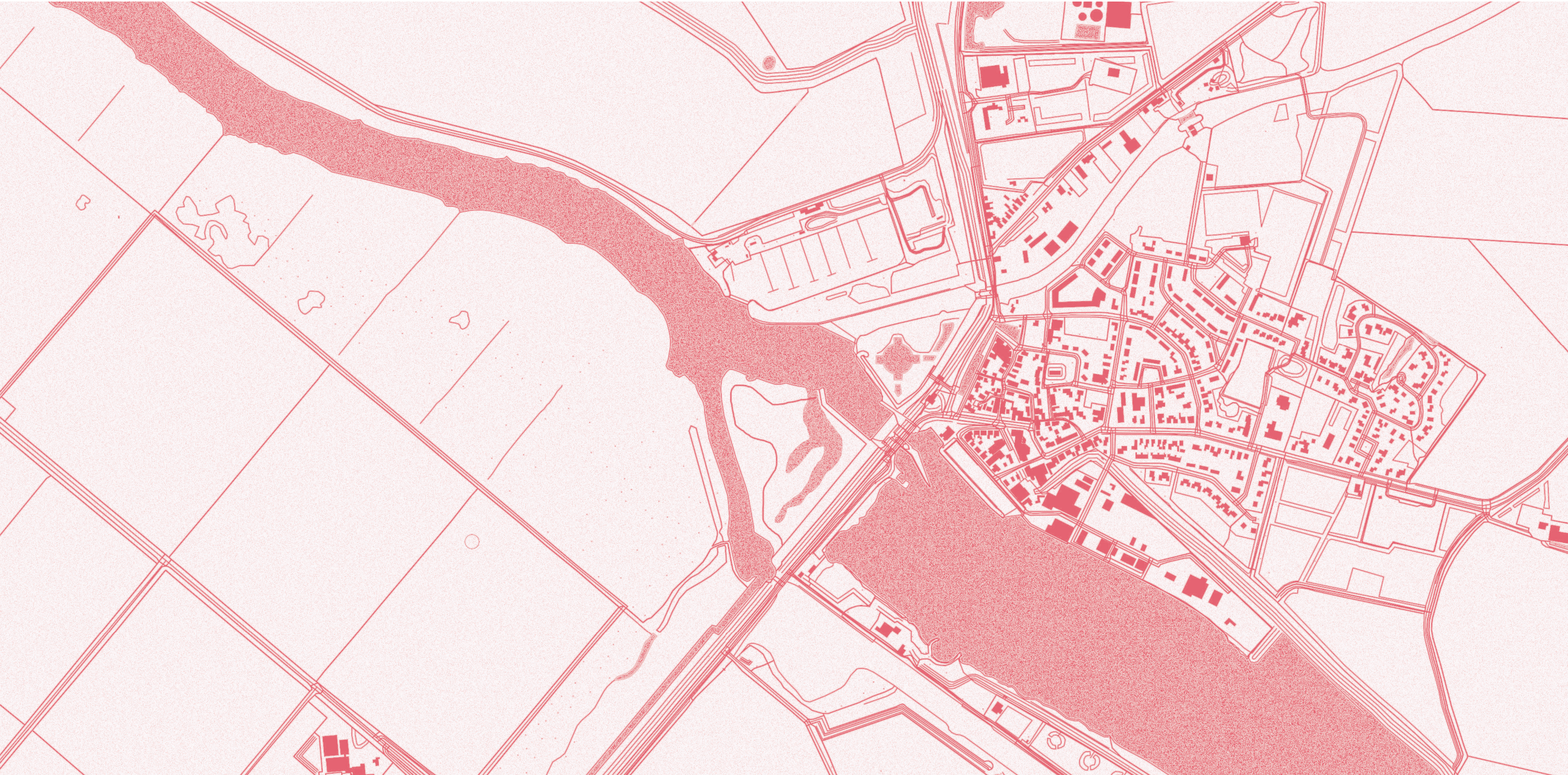








## ZOUTKAMP









## ZOUTKAMP





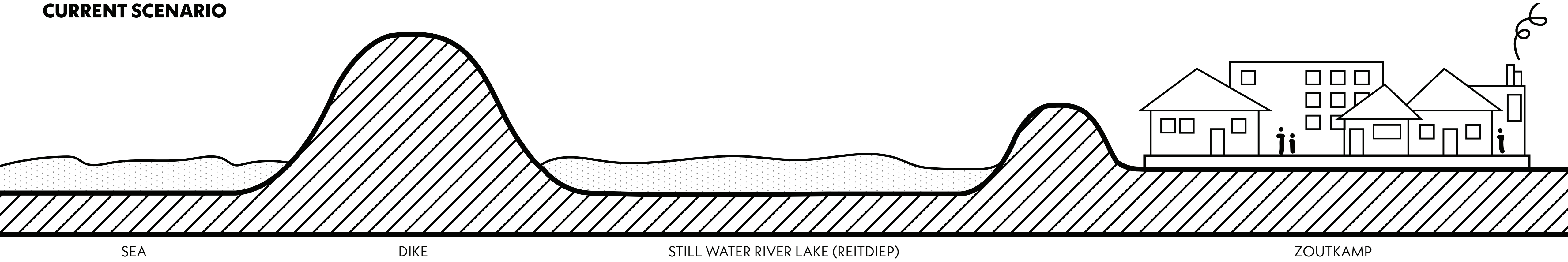
## ZOUTKAMP





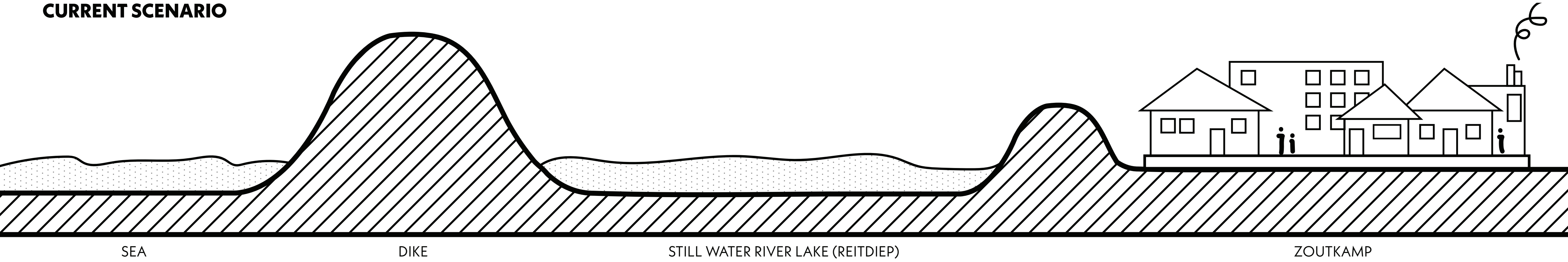
SCENARIOS

CURRENT SCENARIO

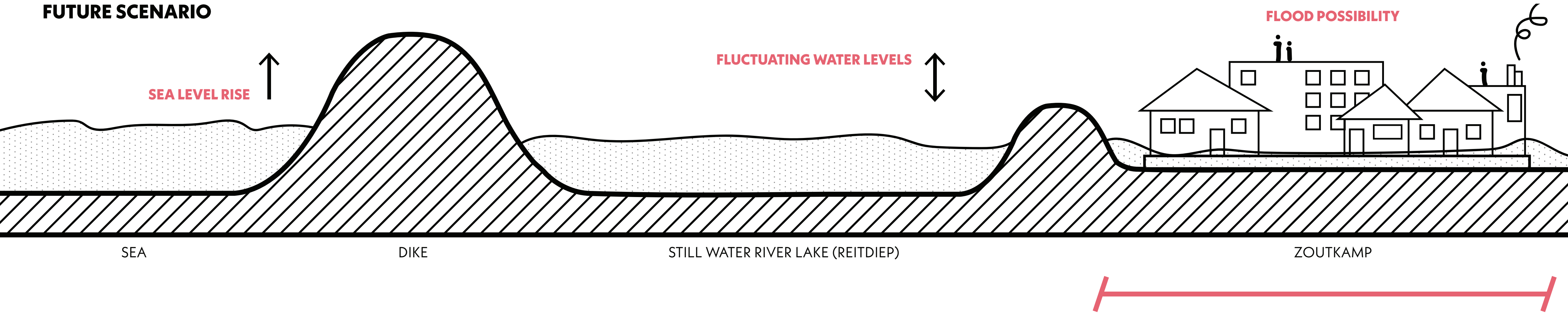


SCENARIOS

CURRENT SCENARIO



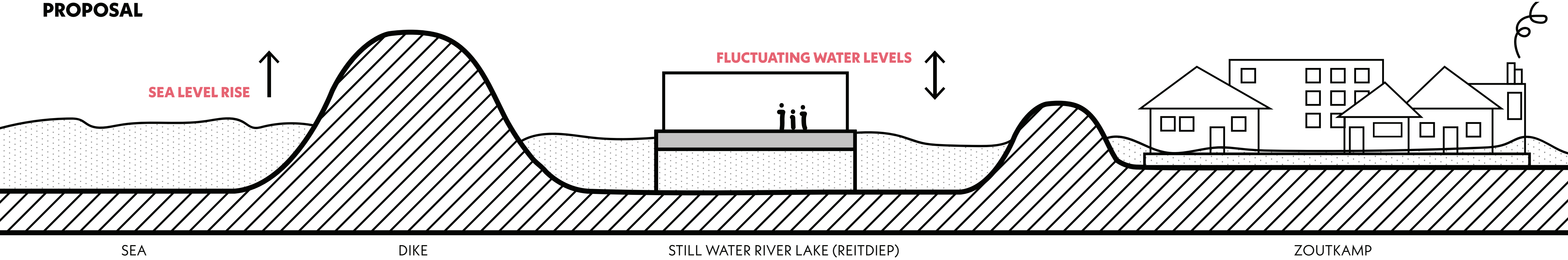
FUTURE SCENARIO





SCENARIOS

PROPOSAL











FLOATING

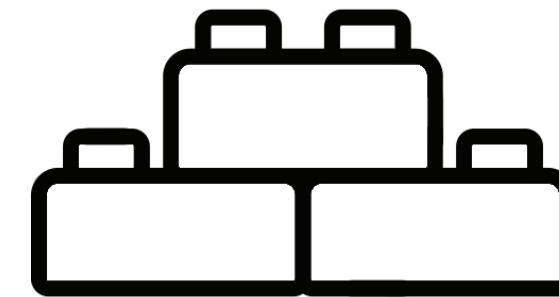
FUNCTION IN AN ENVIRONMENT  
WITH FLUCTUATING WATER LEVELS  
AND FLOODS

# PROPOSAL



## FLOATING

FUNCTION IN AN ENVIRONMENT  
WITH FLUCTUATING WATER LEVELS  
AND FLOODS



## MODULAR

EASY ASSEMBLY  
FAST CONSTRUCTION  
STRUCTURE MULTIPLICATION



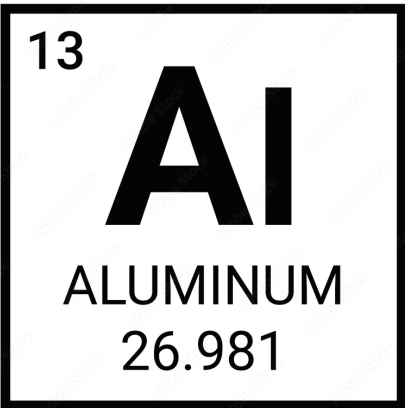
FLOATING

FUNCTION IN AN ENVIRONMENT  
WITH FLUCTUATING WATER LEVELS  
AND FLOODS



MODULAR

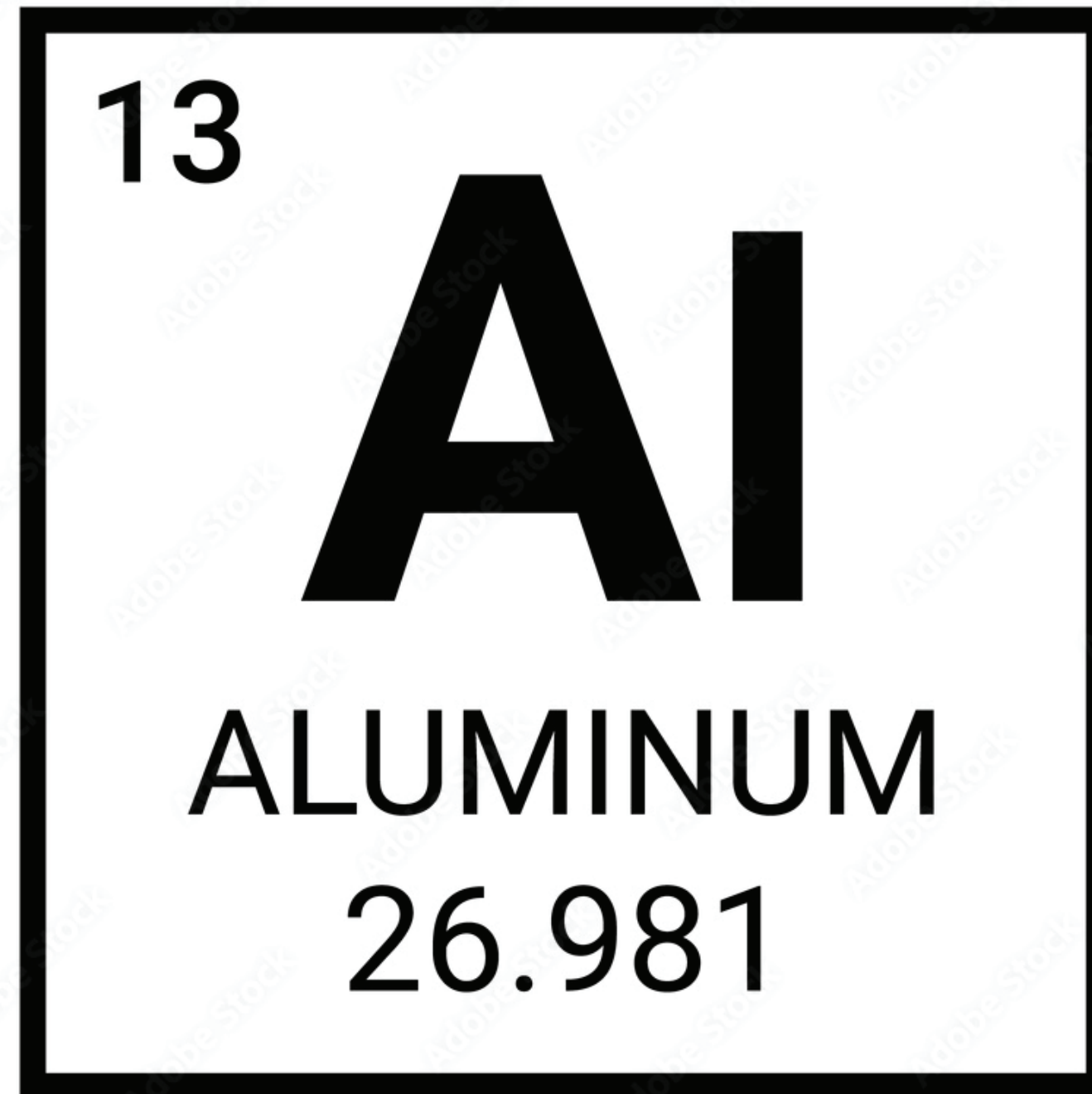
EASY ASSEMBLY  
FAST CONSTRUCTION  
STRUCTURE MULTIPLICATION



MATERIAL

LIGHTWEIGHT  
CORROSION RESISTANT  
EASY HANDLING  
DURABLE  
RECYCLABLE

**MATERIAL**

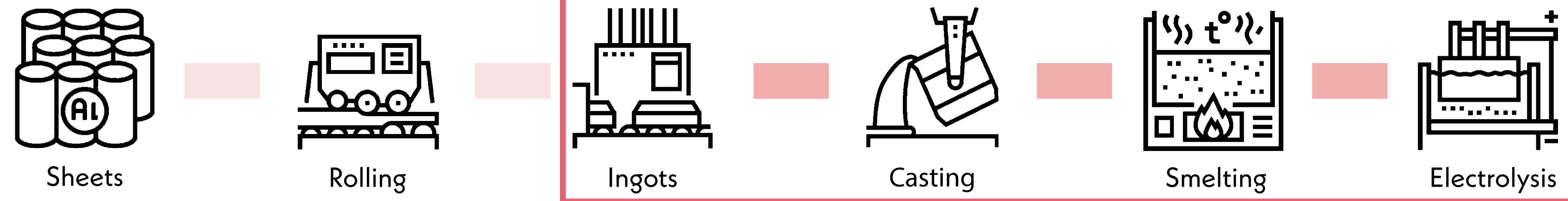


## PRODUCTION

Aluminium production begins with the mining of bauxite, which contains 15-20% alumina



## HALL-HÉROULT PROCESS



Additionally, cast ingots may be moved to a rolling mill where they are rolled out into sheets of aluminium



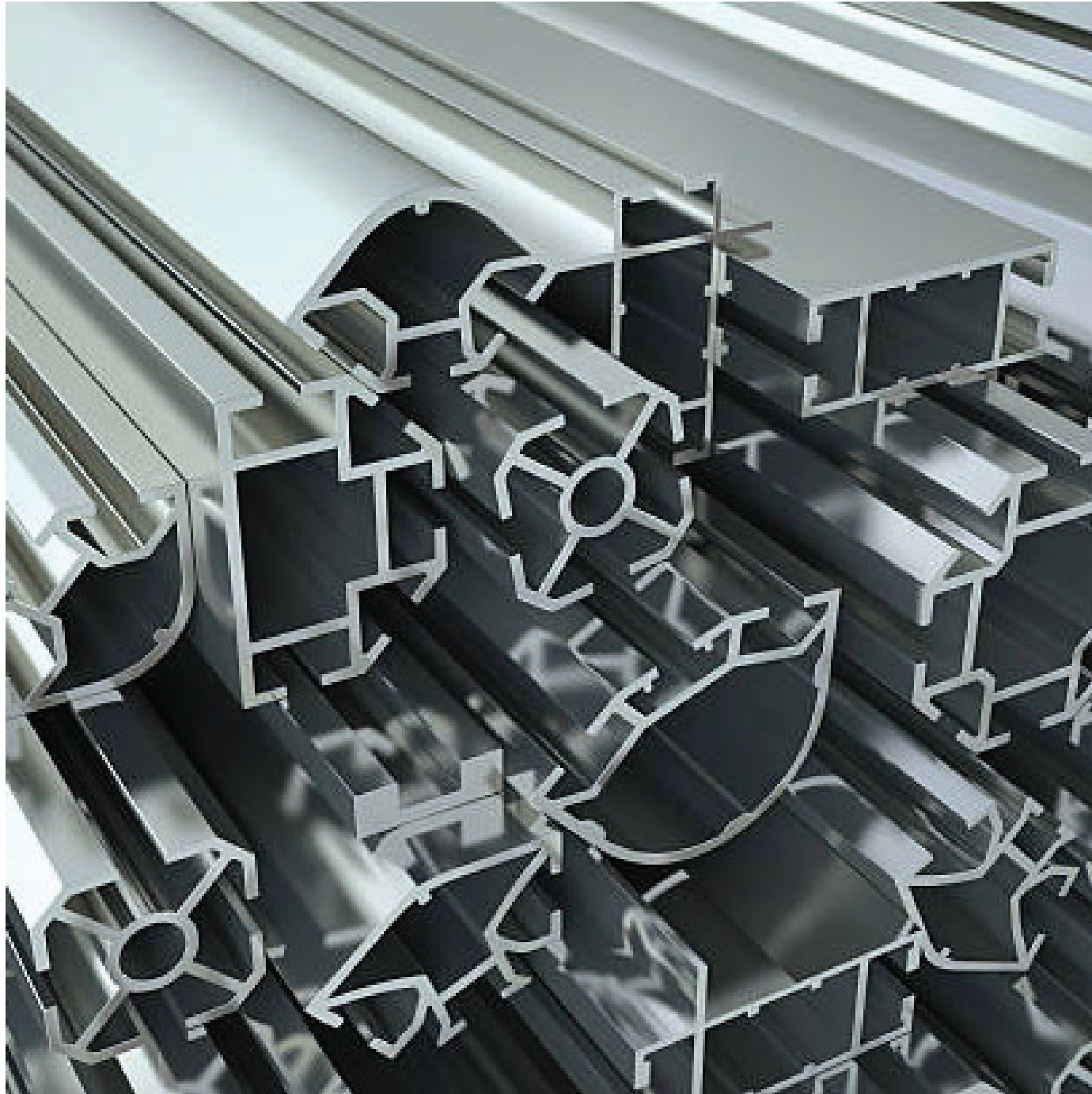
Manufacturers utilise rolled aluminium, alloys or ingots which can be remelted again and made into different products

Used aluminium is collected by recycling facilities and sorted in a processing plant

The scrap metal is then melted and treated to give it new life

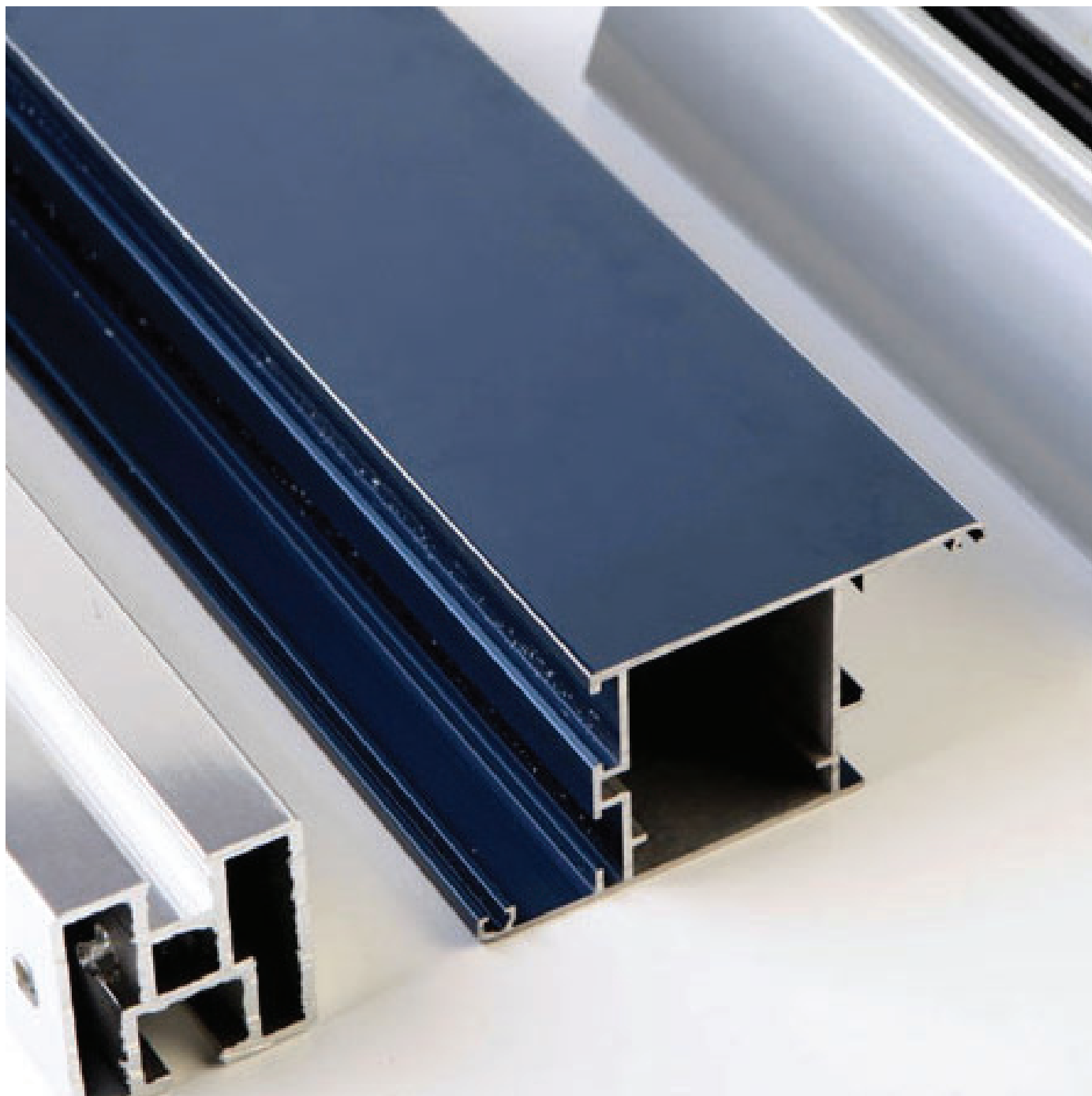


## VARIETY





COLORS

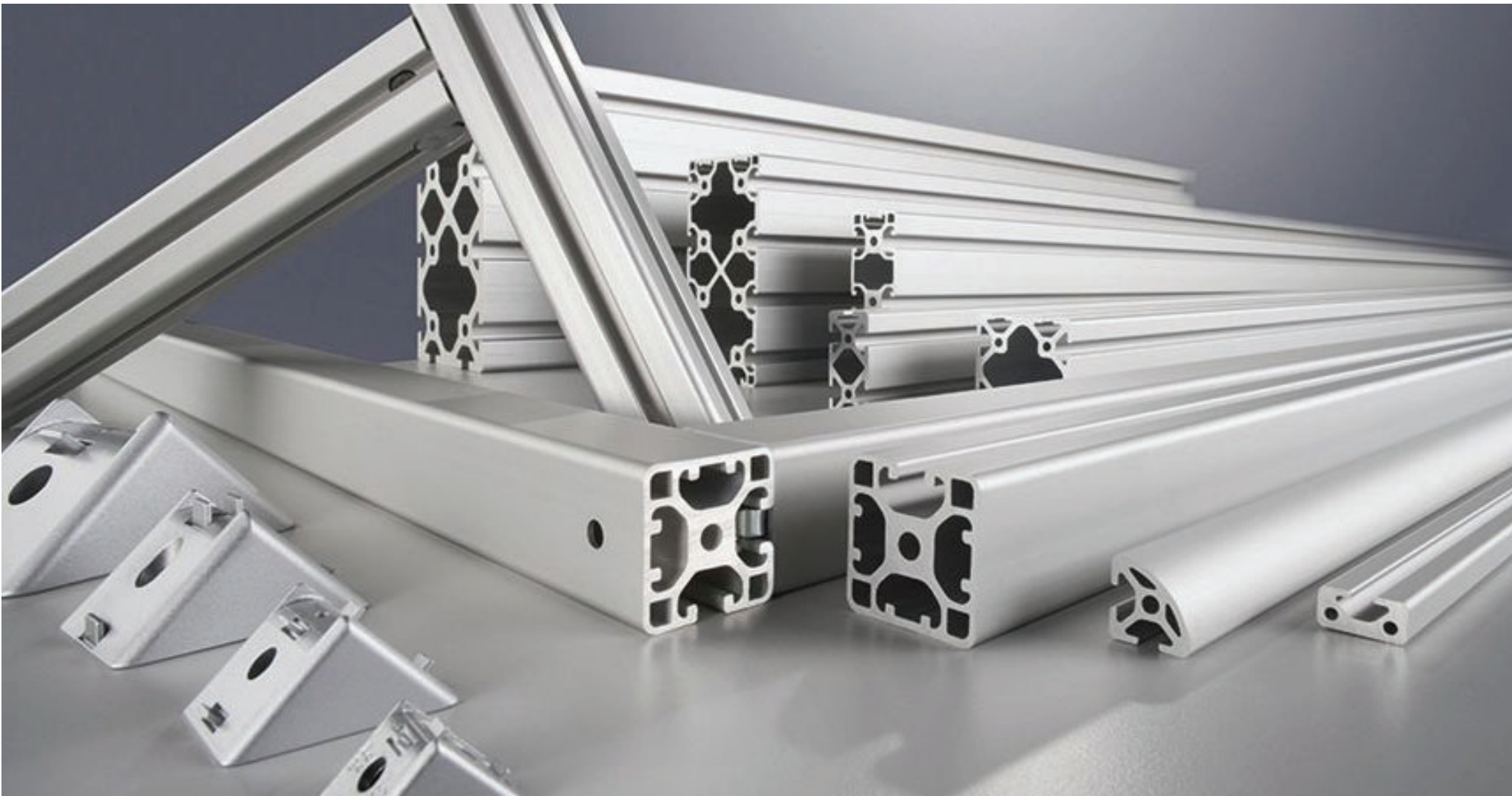
















## SHAPES





item24

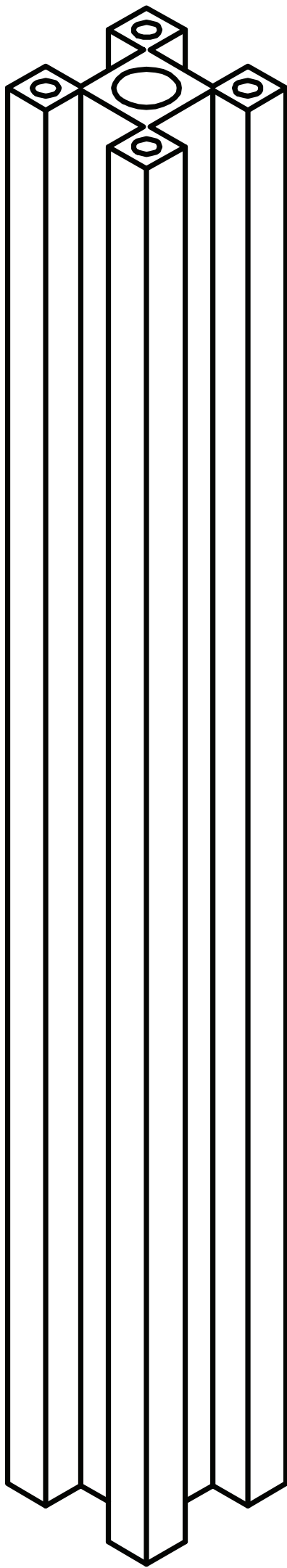


| LINE  | MODULAR DIMENSION                    | NUMBER AND POSITION OF CLOSED GROOVES  | DESIGN  | ANODIZING   |
|---|--------------------------------------|--|---|---|
| <br><br><br><br> | 20mm<br>30mm<br>40mm<br>50mm<br>60mm | <br>3N<br><br>2N180<br><br>4NO (openable) | <br>standard<br><br>light<br><br>economy | <br>natural<br><br>black<br><br>not anodized |



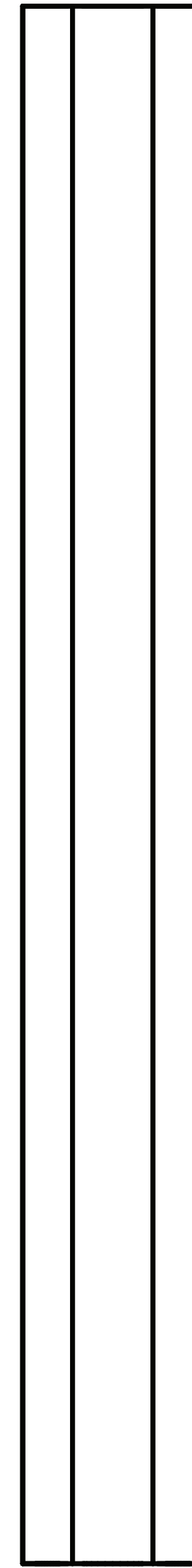
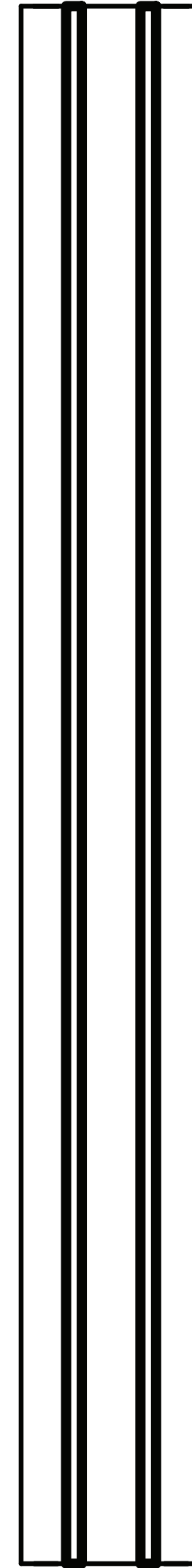
What design principles can be applied to develop a **floating, modular, aluminium** structure that is both easy to assemble and resilient in flood-affected landscapes?

# ELEMENTS AND ASSEMBLIES



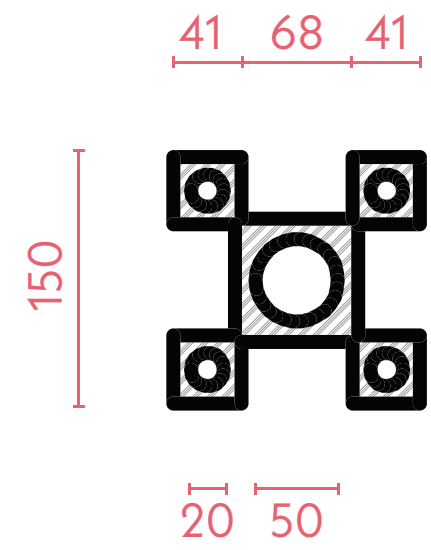
COLUMNS

700 - 2300

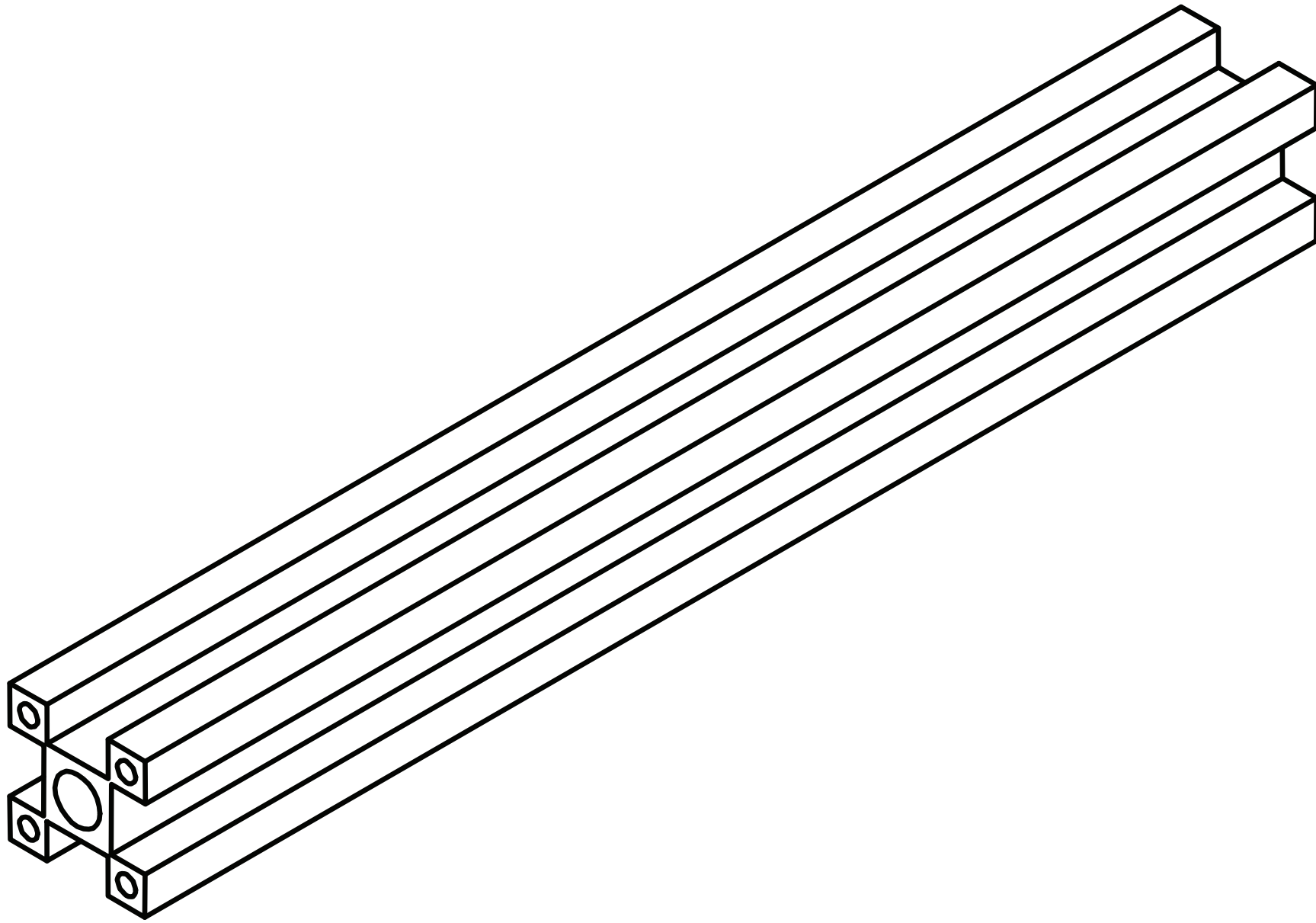


VERTICAL SECTION

ELEVATION

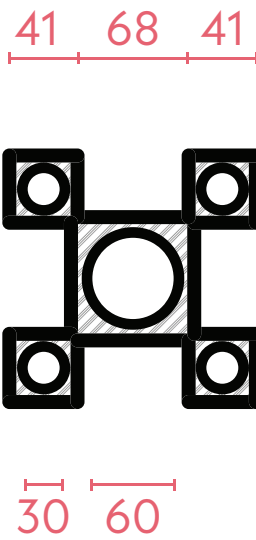
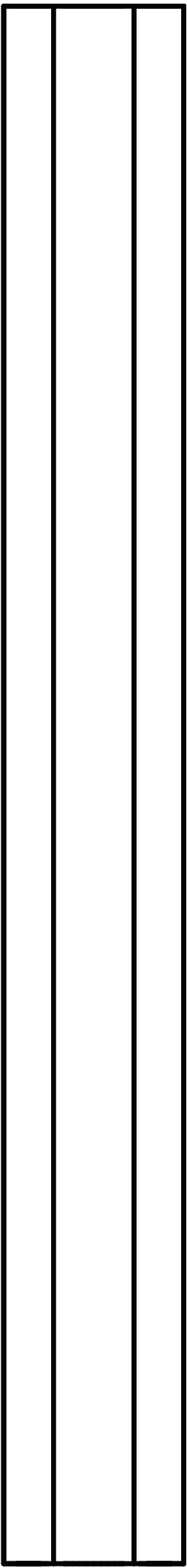
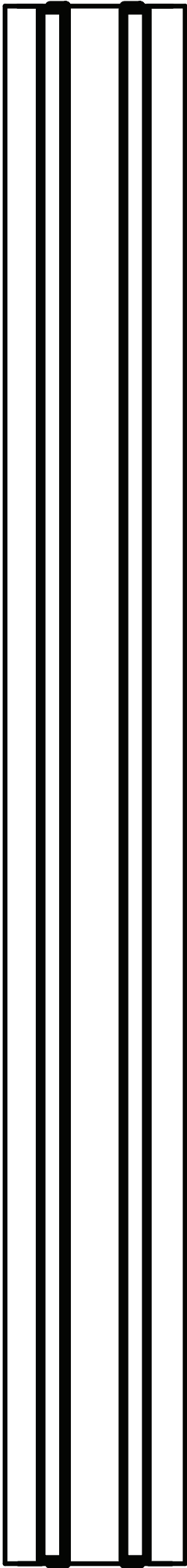


HORIZONTAL SECTION



BEAMS

700 - 2300



HORIZONTAL SECTION

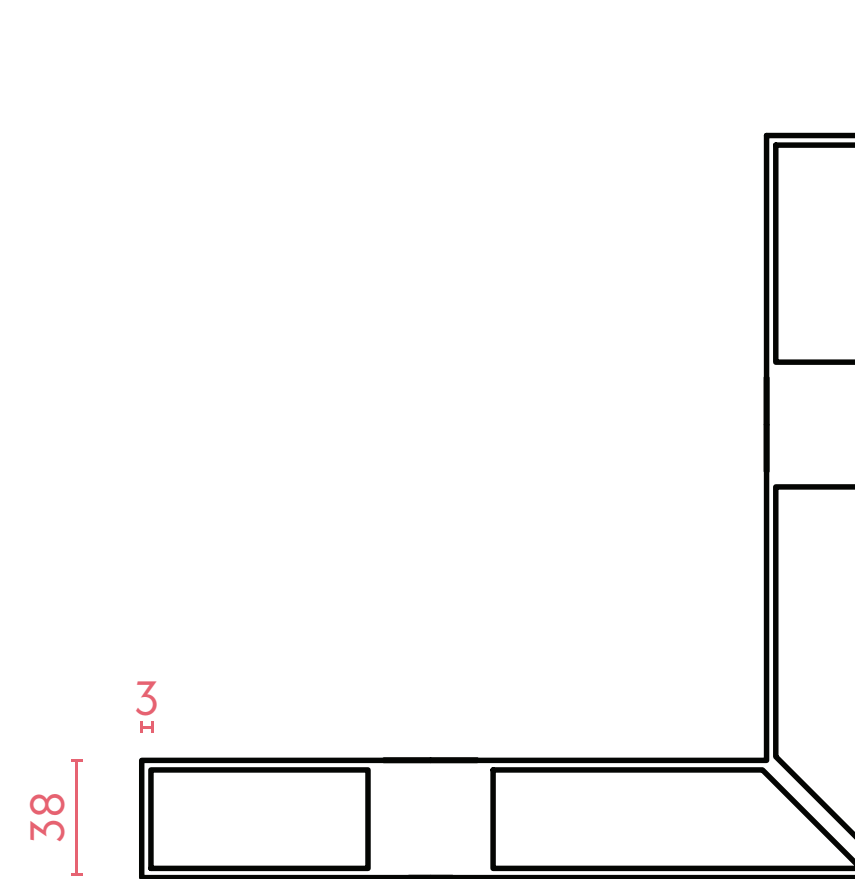
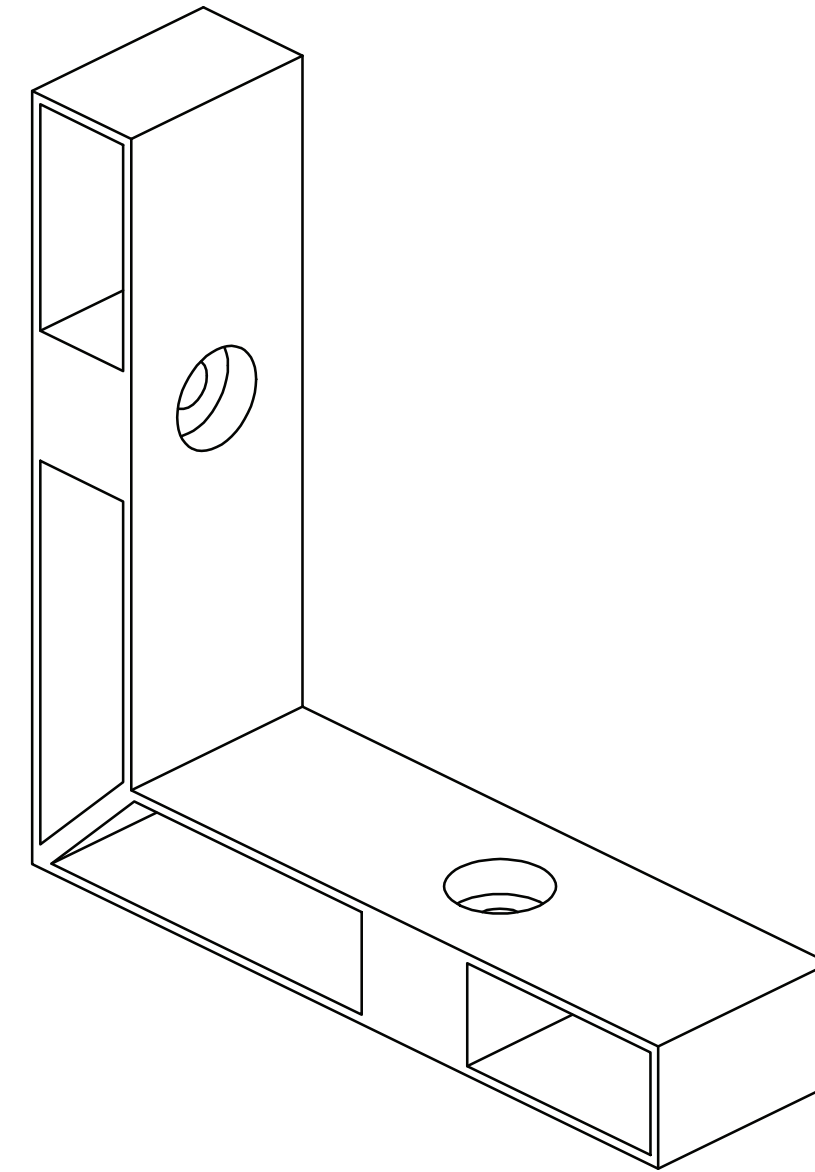
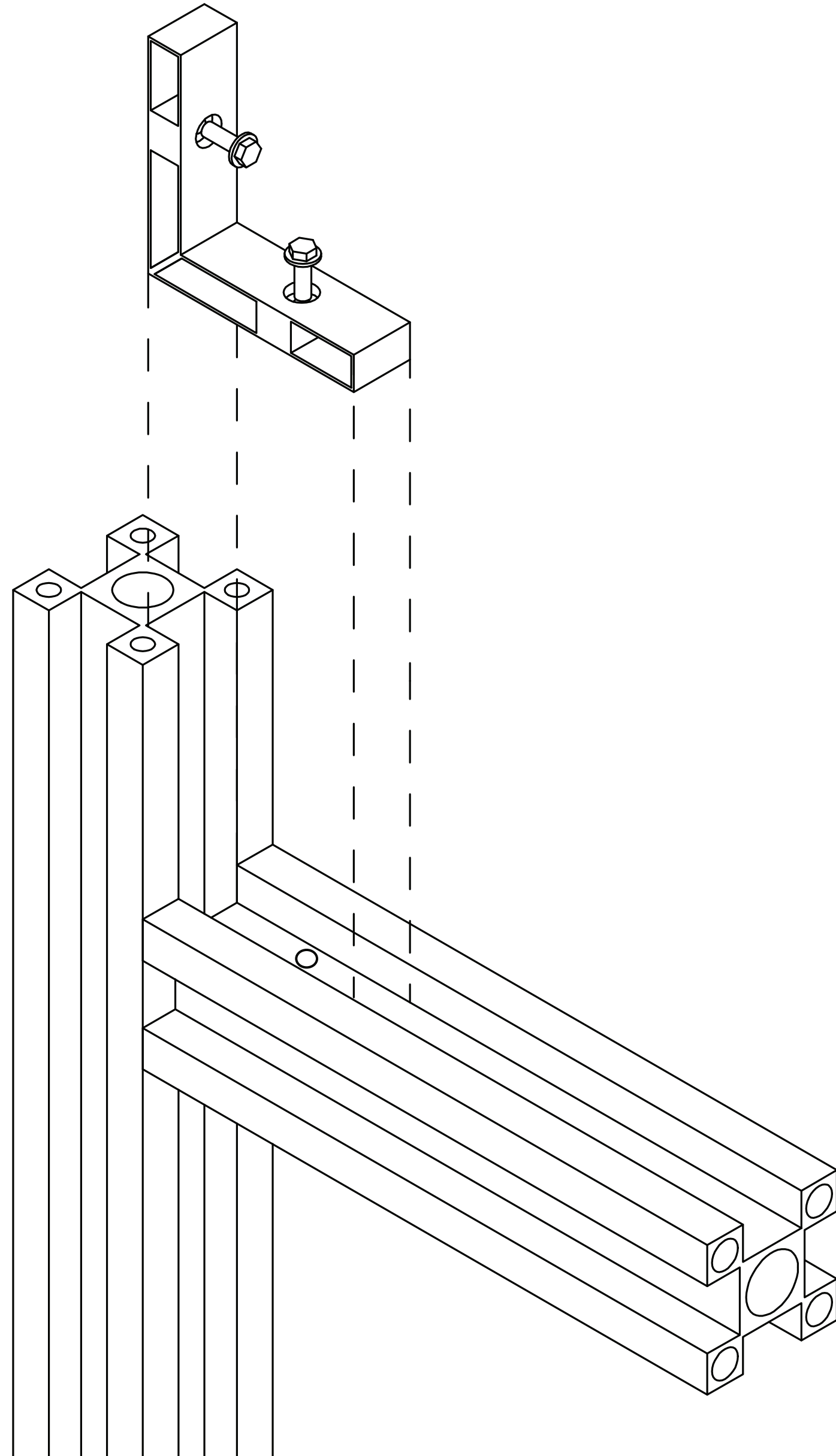
ELEVATION

VERTICAL SECTION

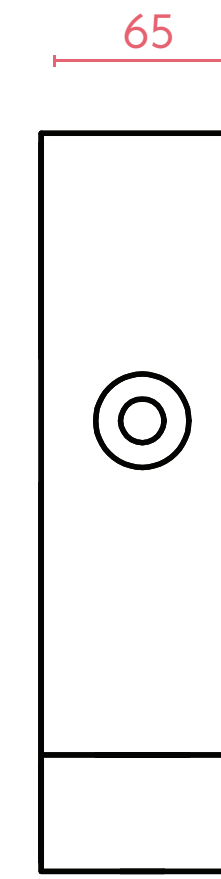


## L - CONNECTORS

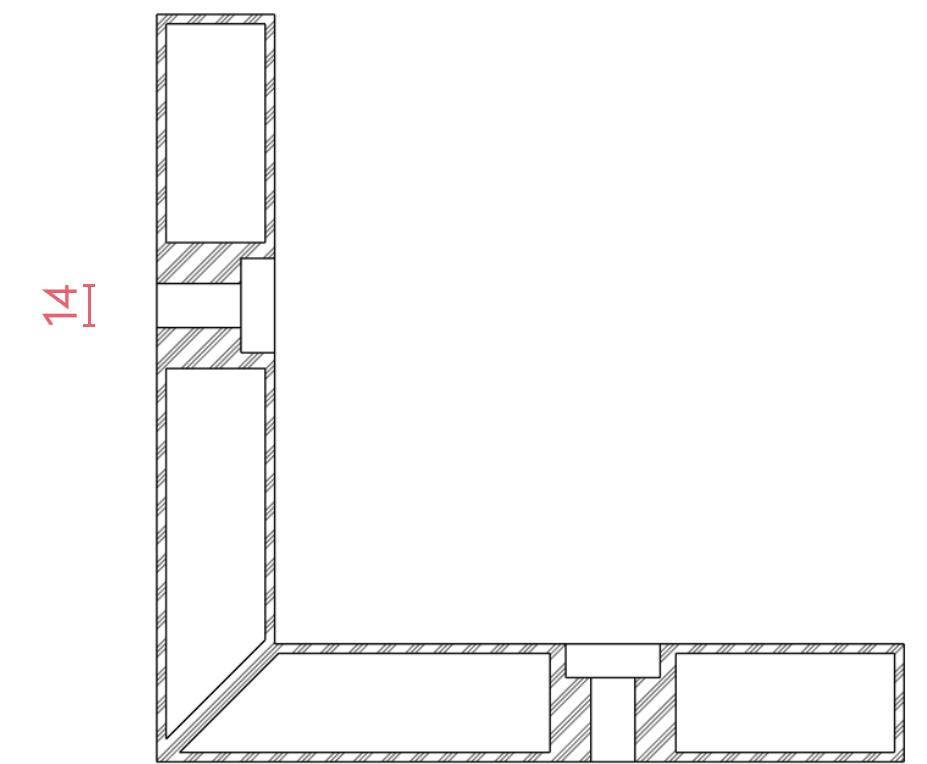
- WORK BOTH HORIZONTALY AND VERTICALLY
- CONNECT BEAM TO COLUMN OR BEAM TO BEAM
- BOLTED CONNECTION



SIDE ELEVATION

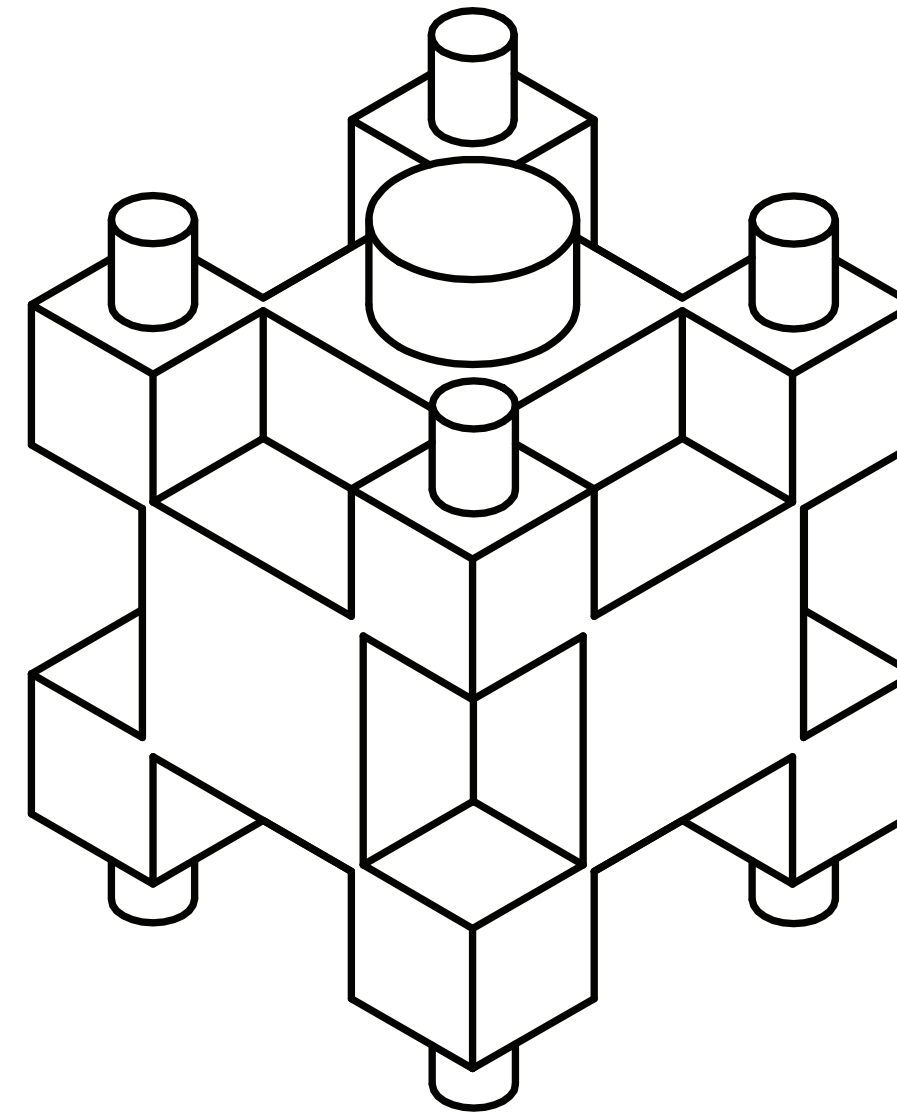
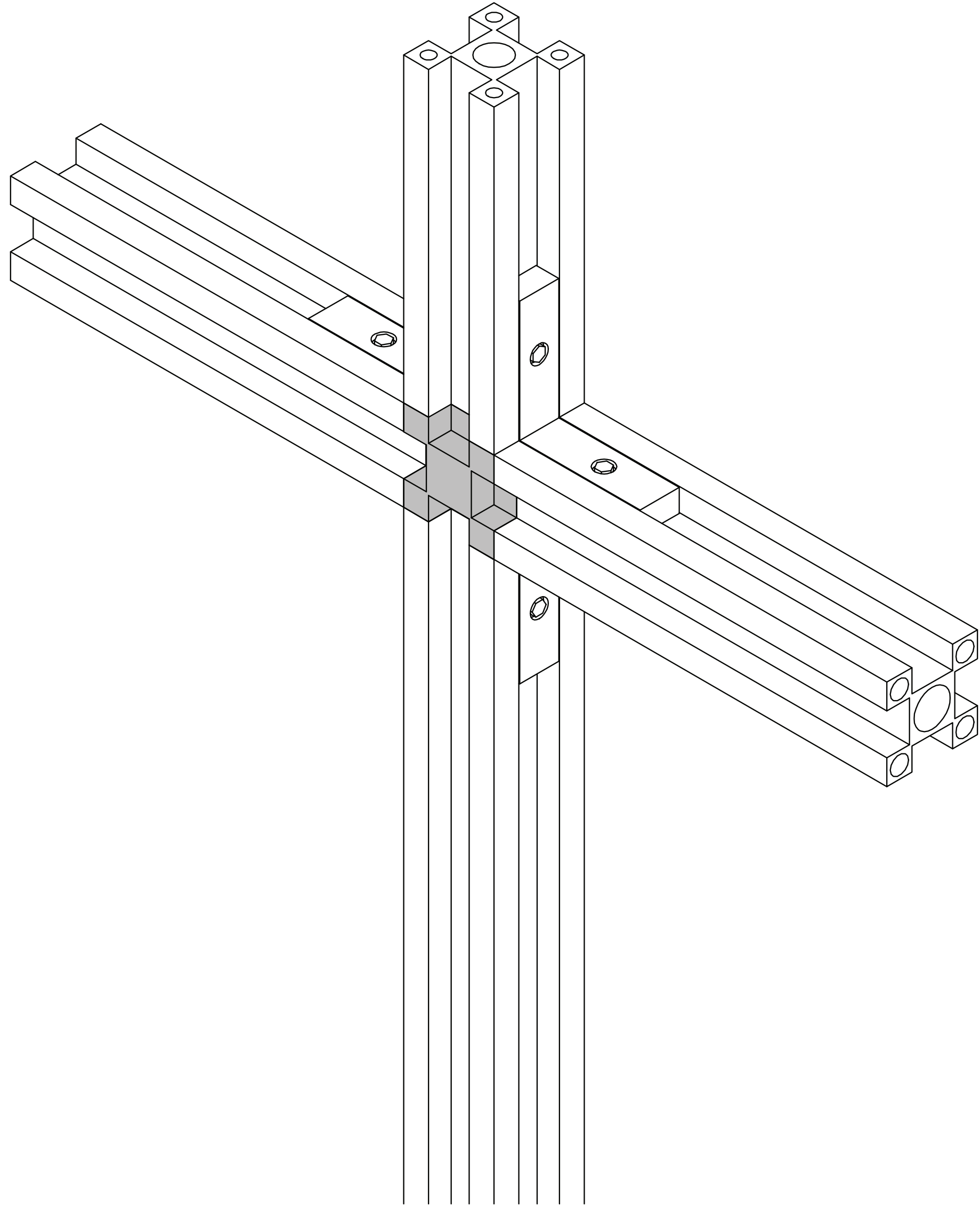


FRONT ELEVATION

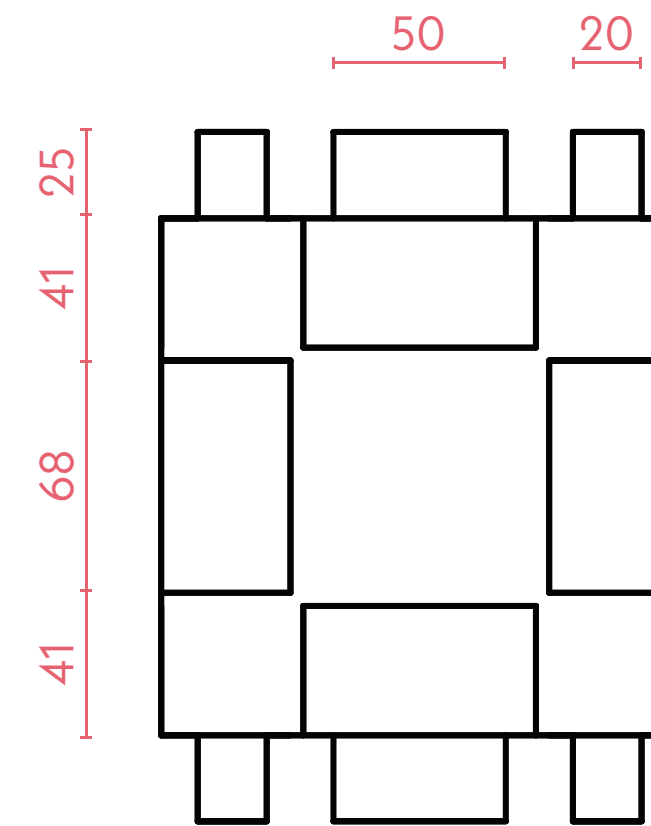


SECTION

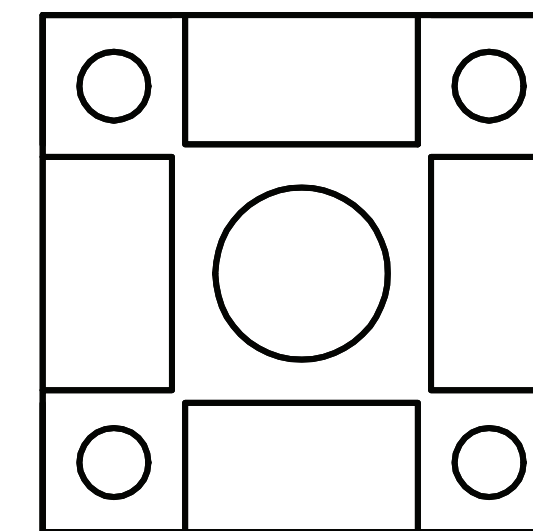
## X - CONNECTORS



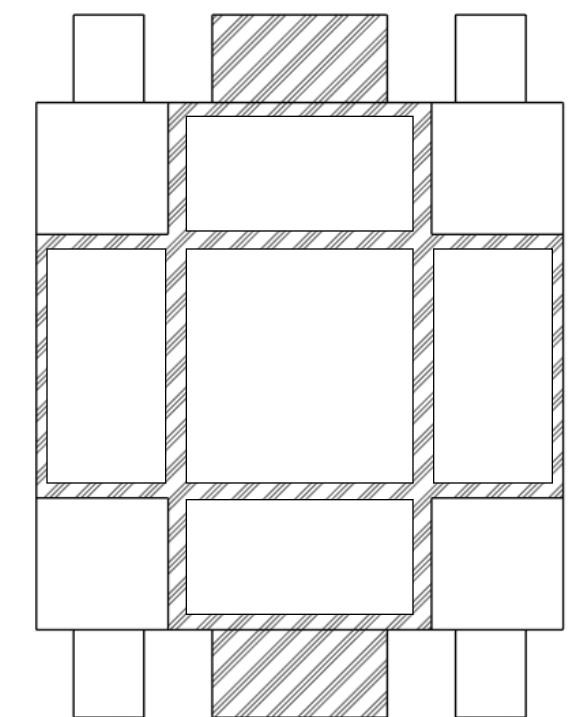
- WORK VERTICALLY WITH COLUMNS
- ALLOW ATTACHMENT OF OTHER CONNECTORS
- HELP SOLVE INTERSECTIONS
- PIN CONNECTION



SIDE ELEVATION

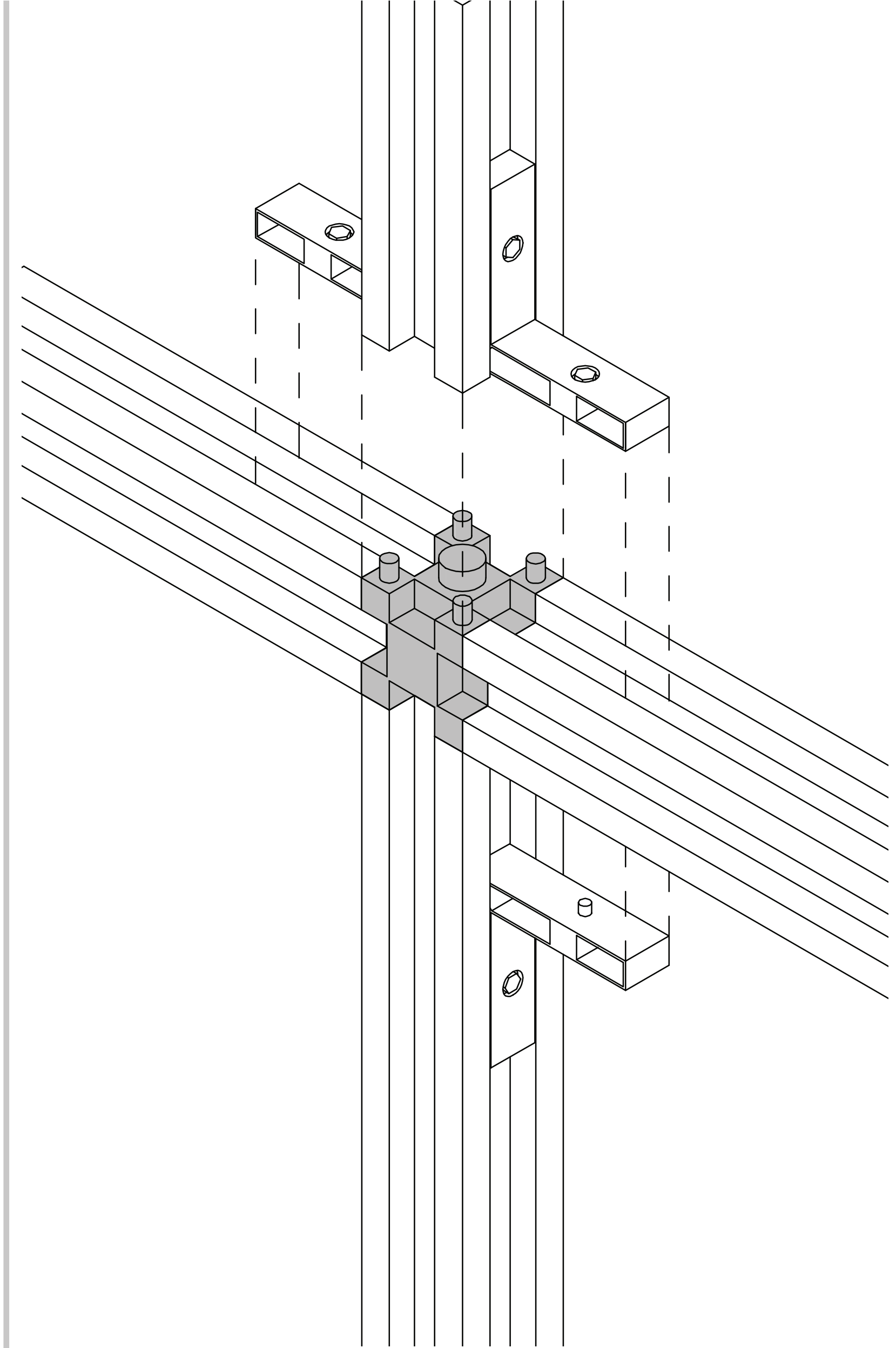
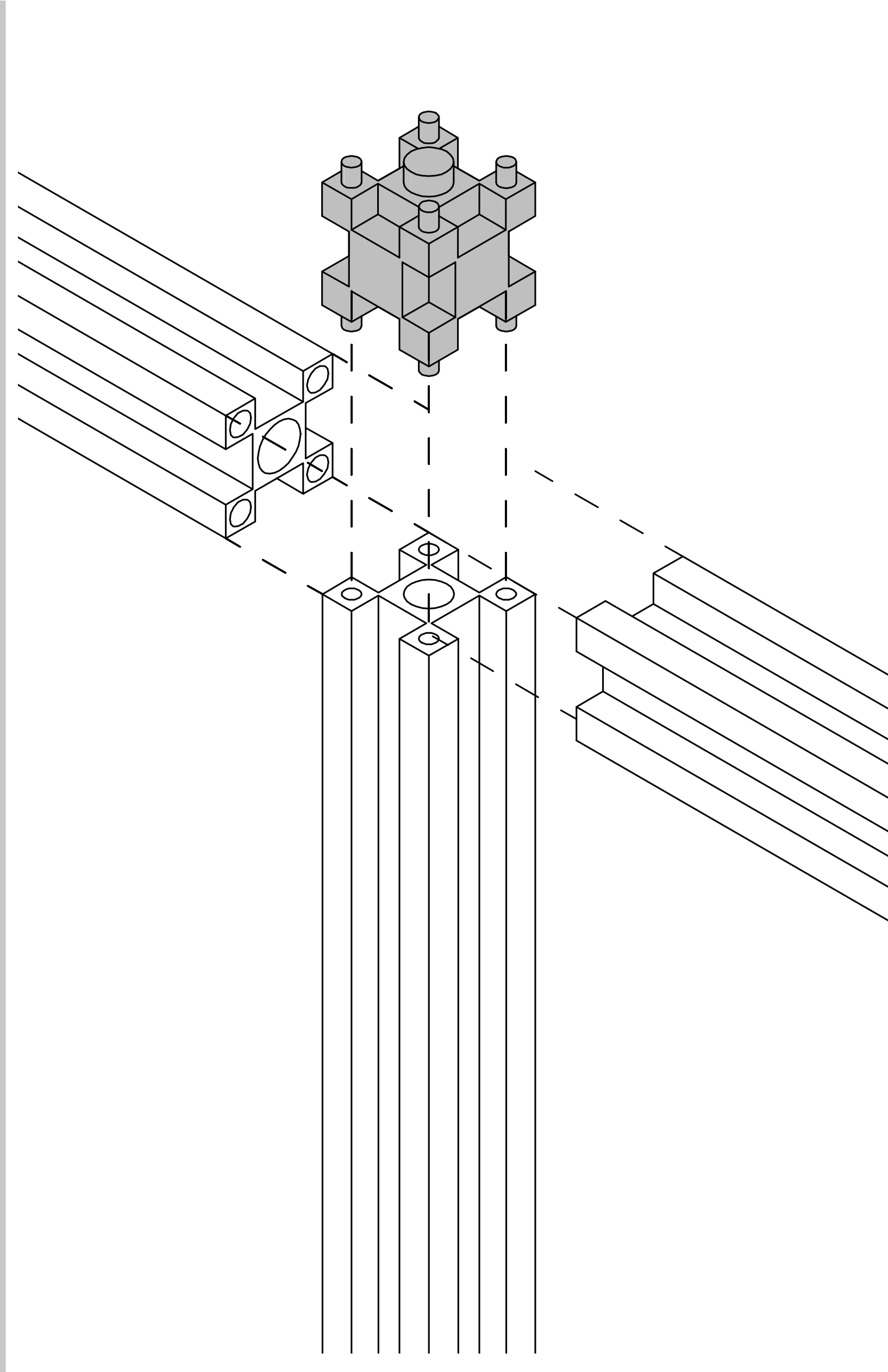
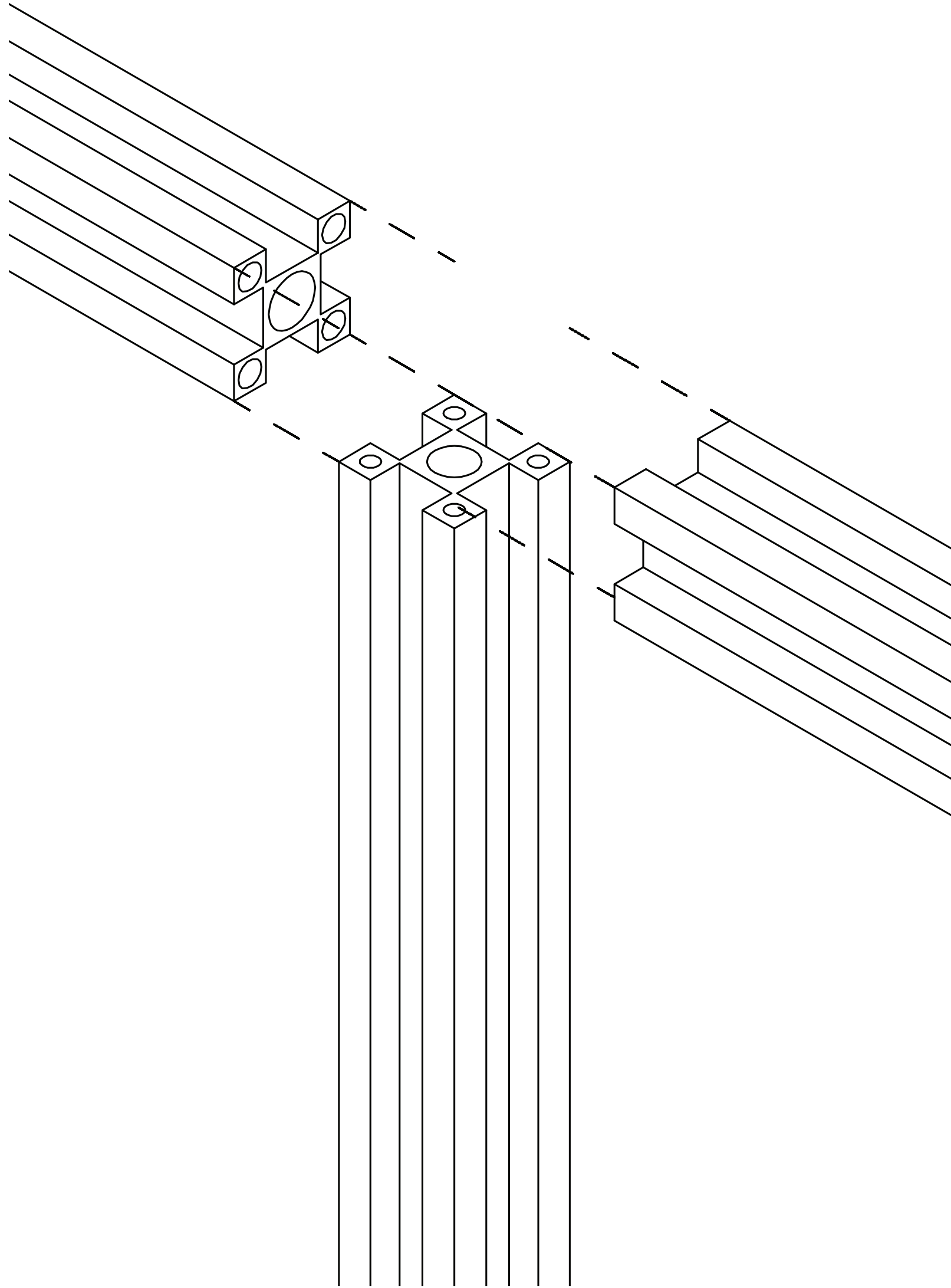


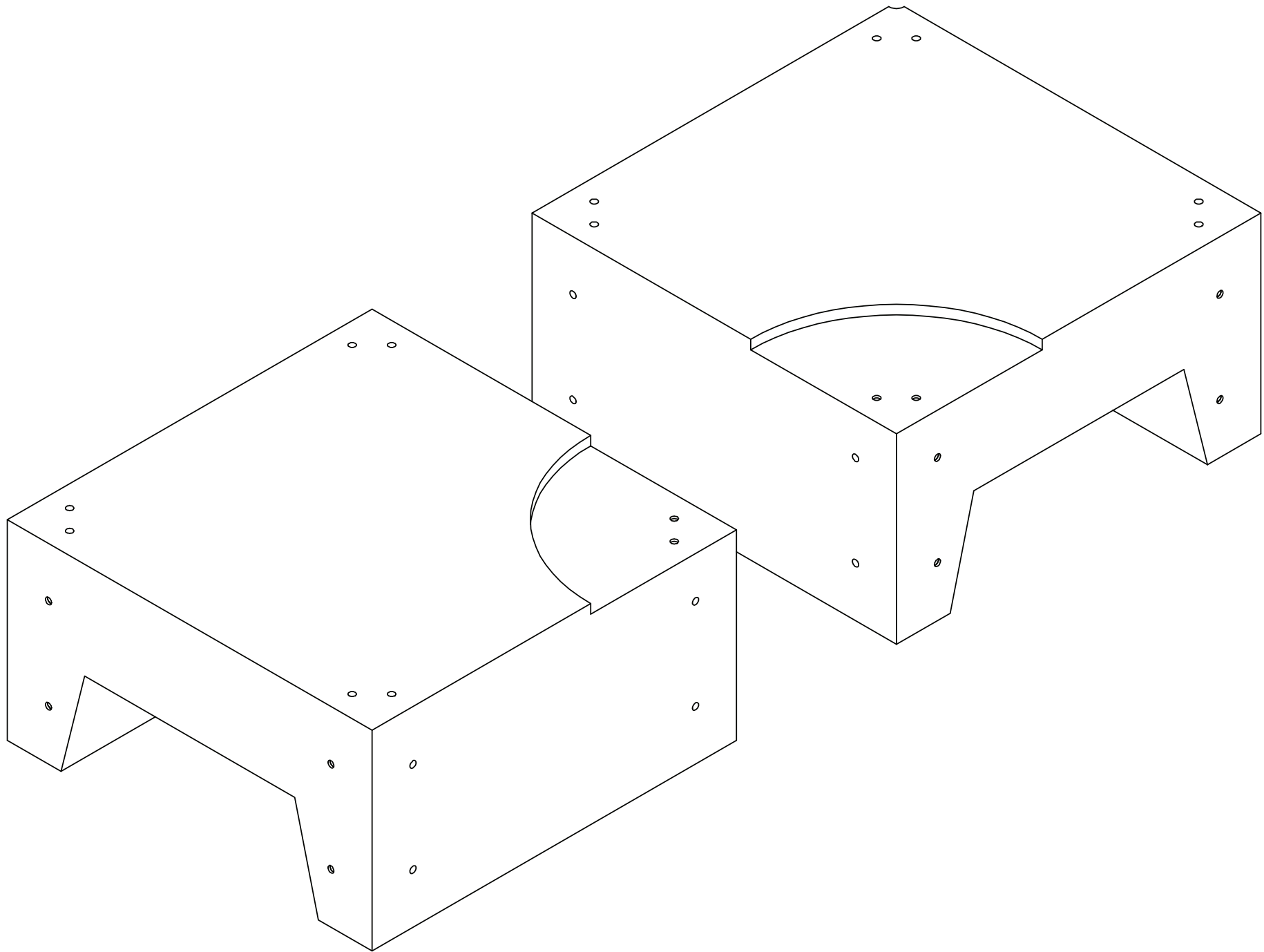
TOP VIEW



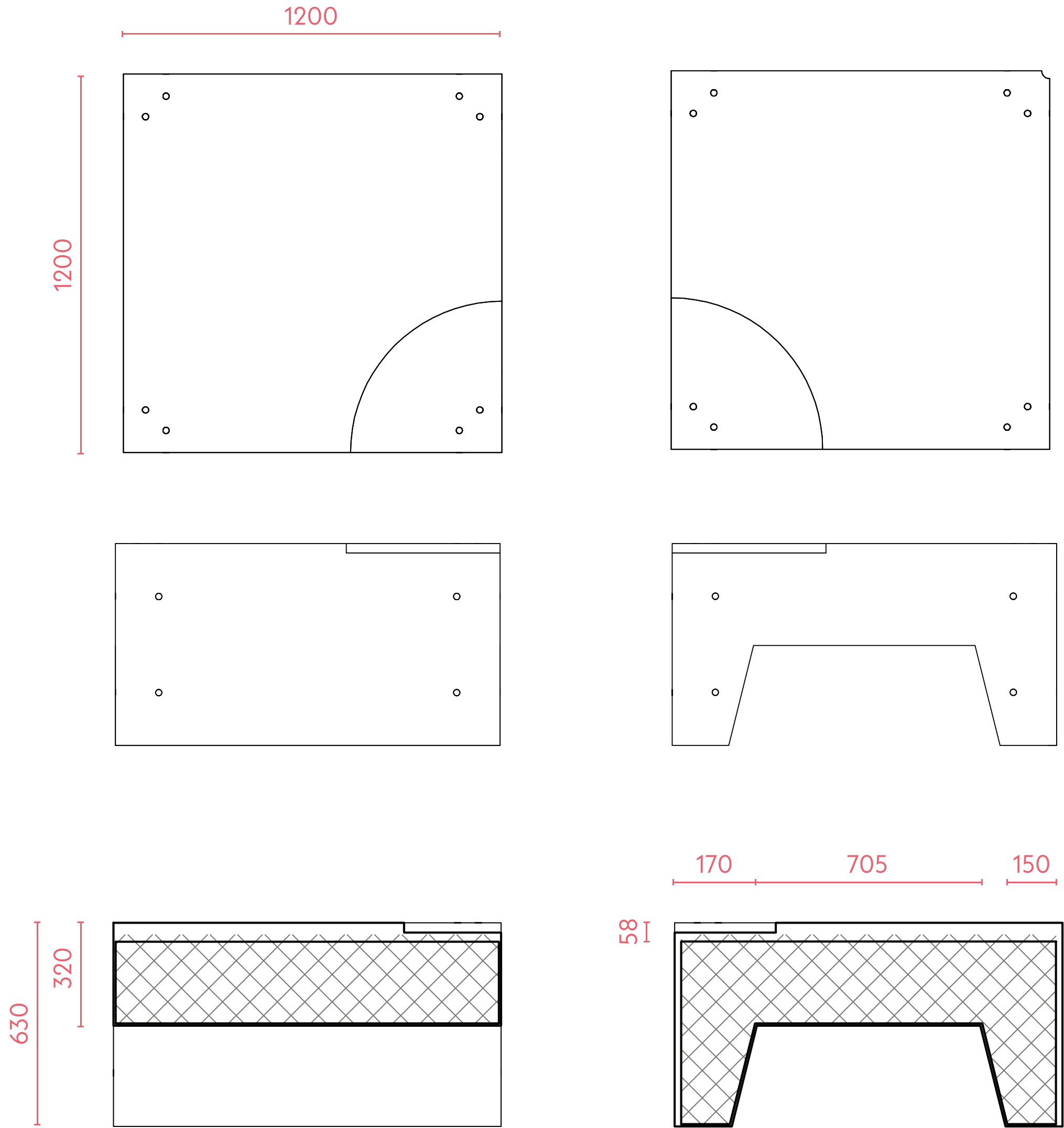
SECTION

## X - CONNECTORS





PONTOONS

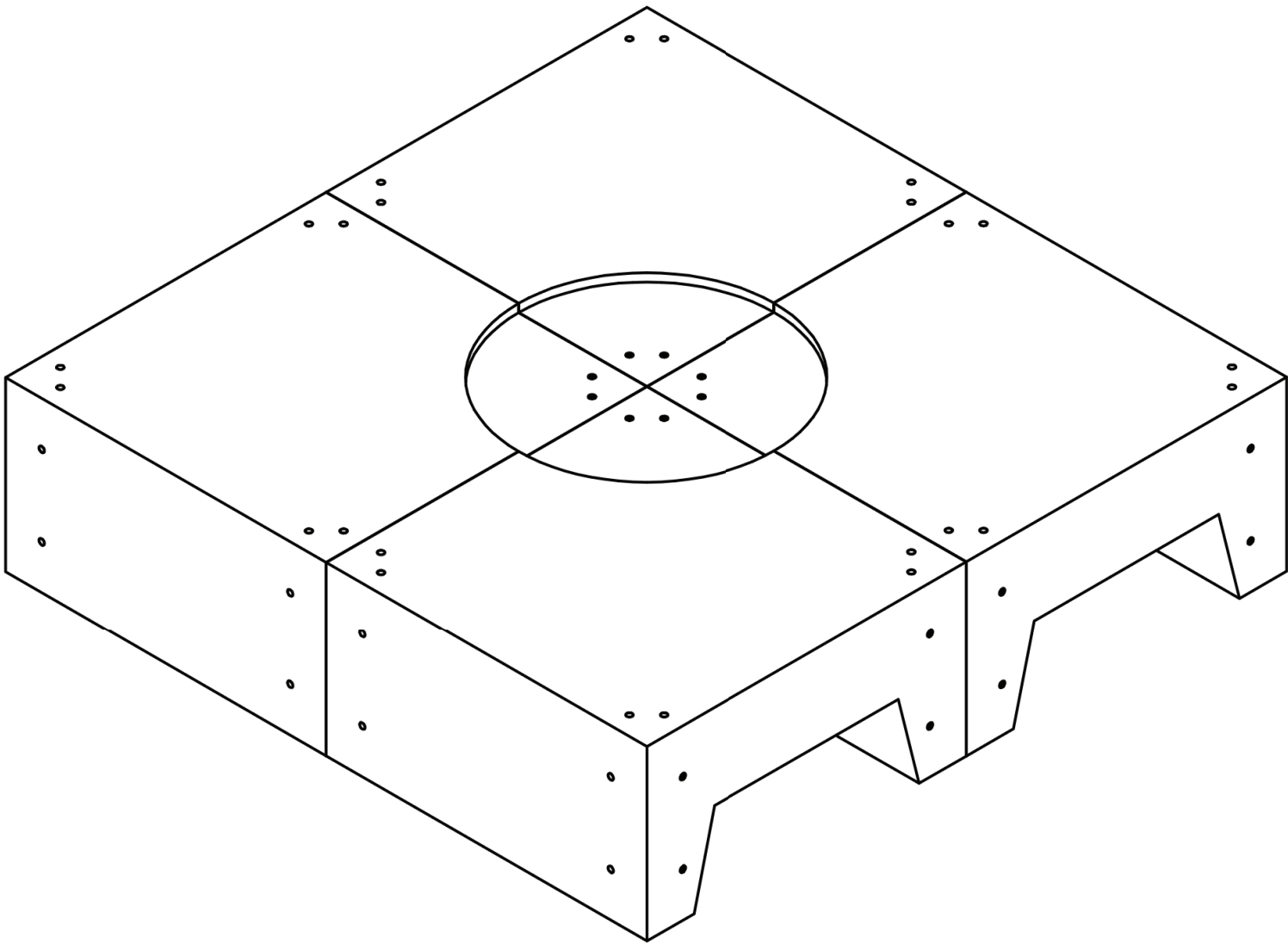
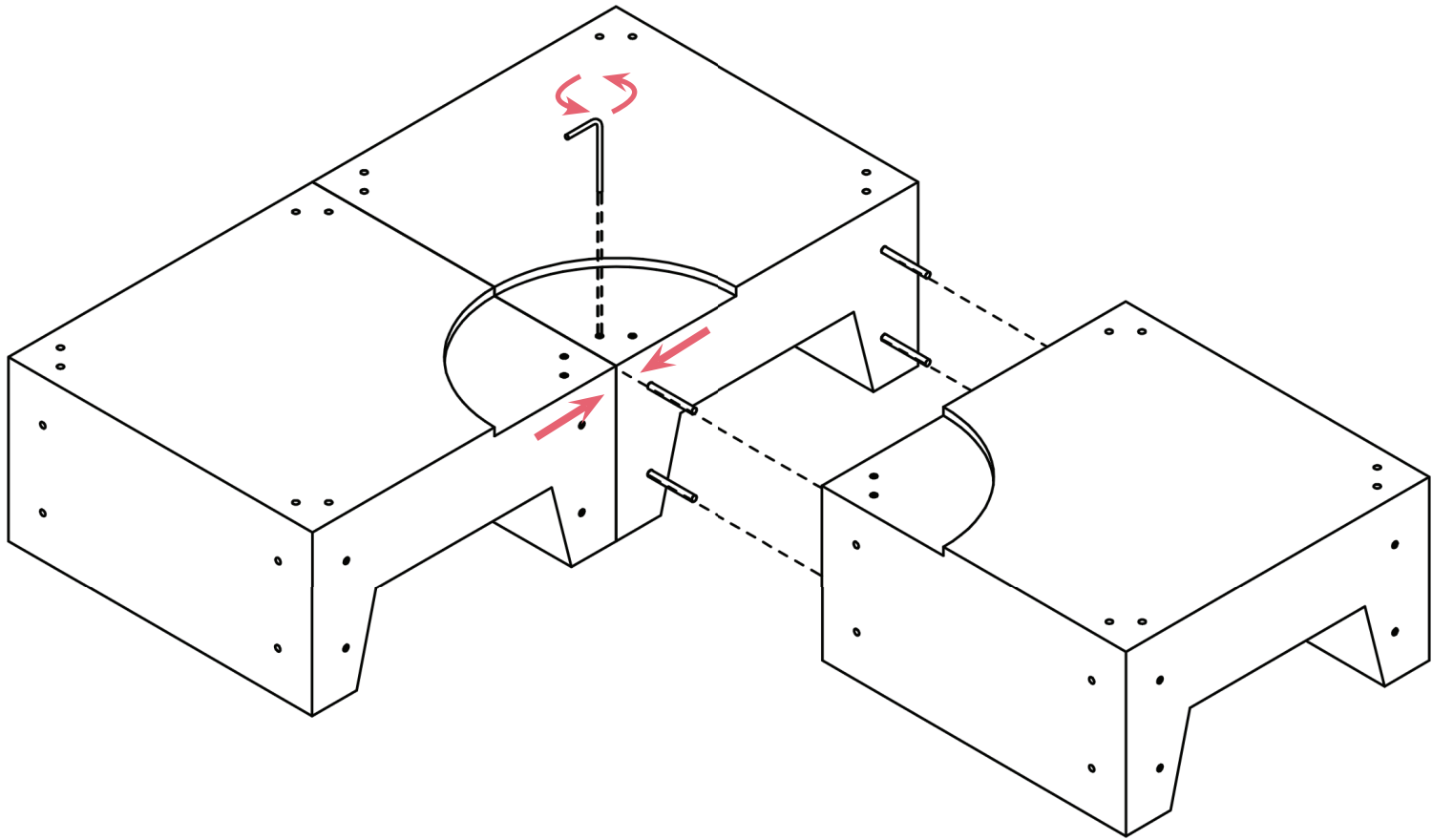
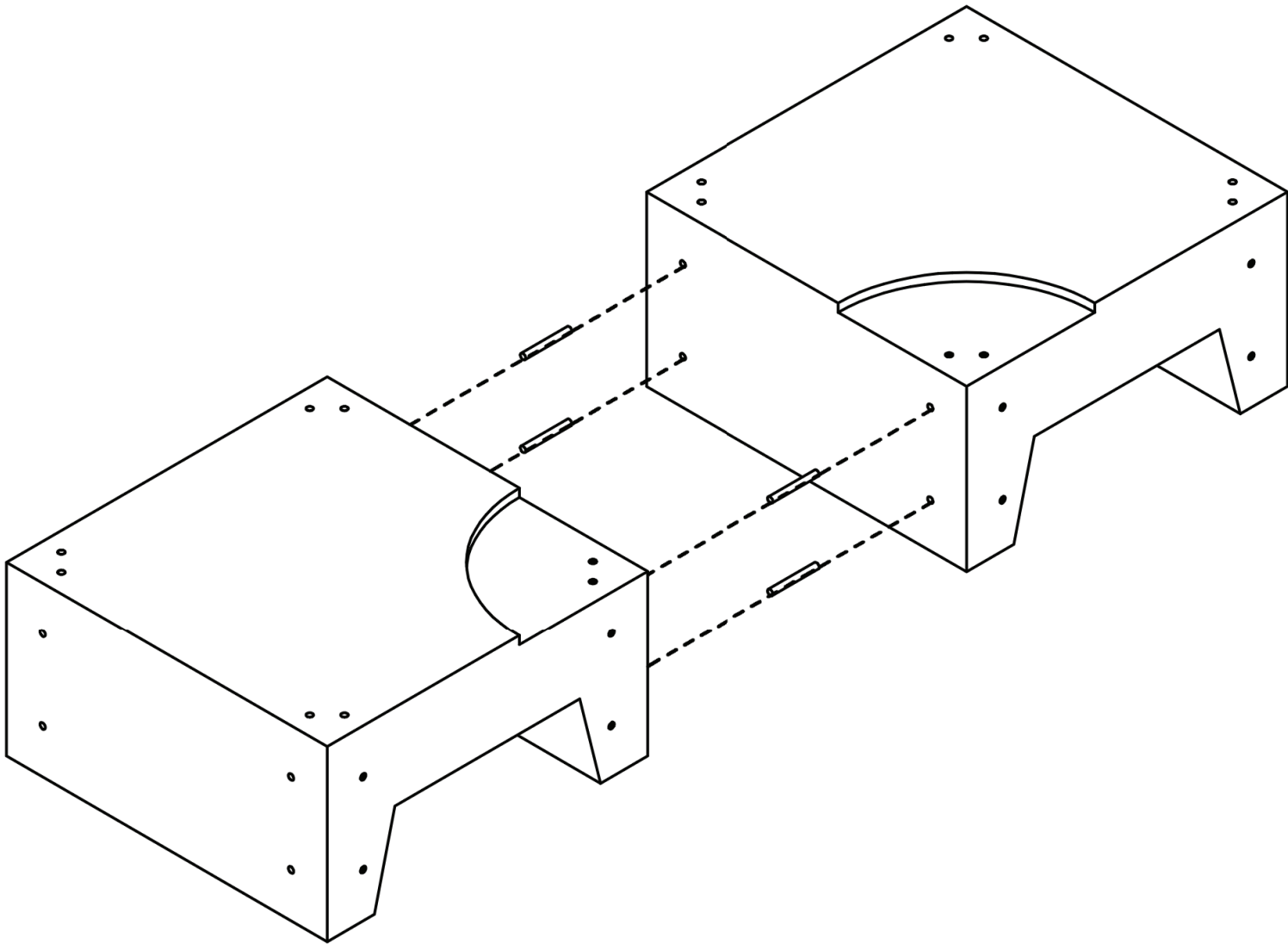


TOP VIEW

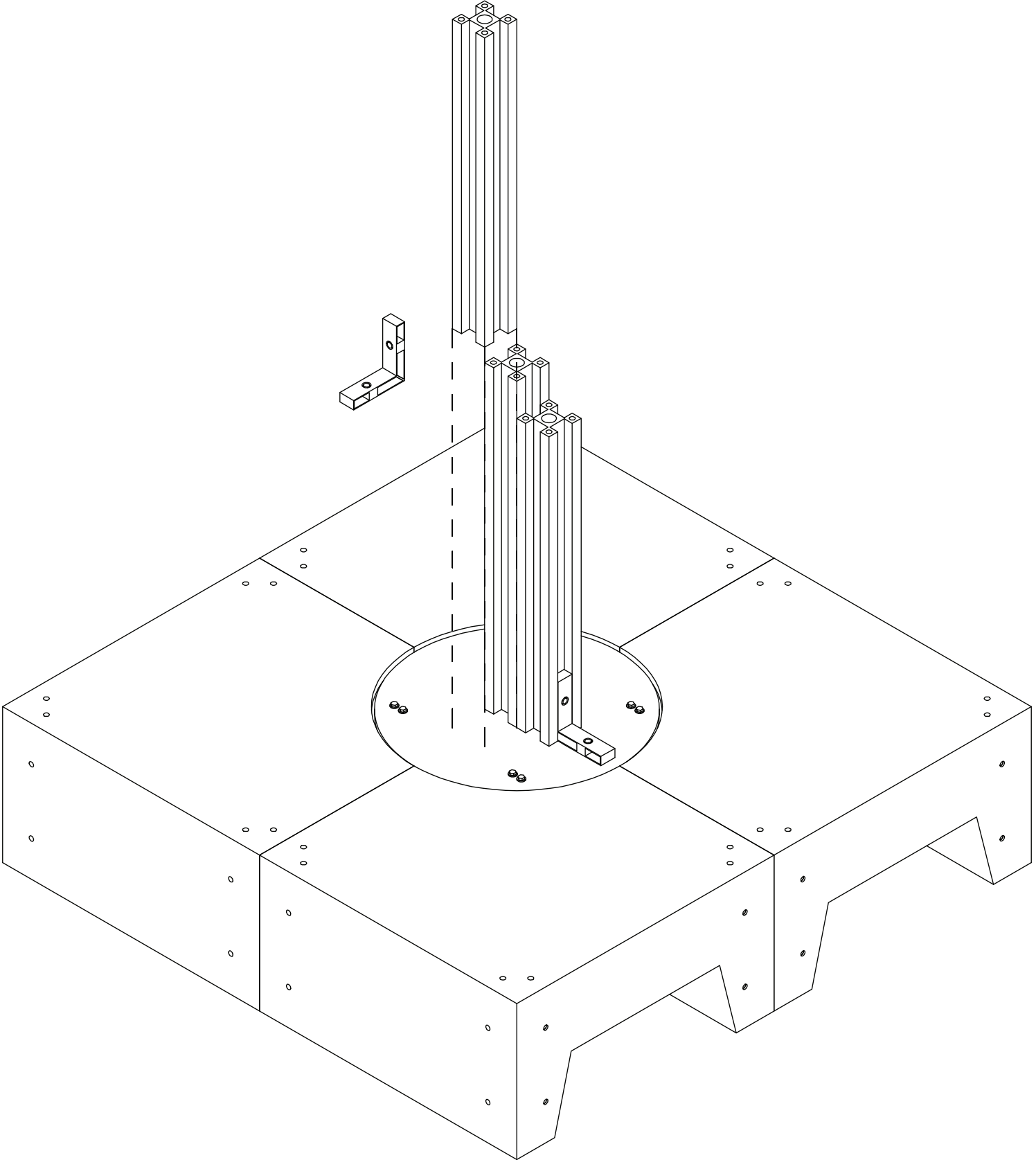
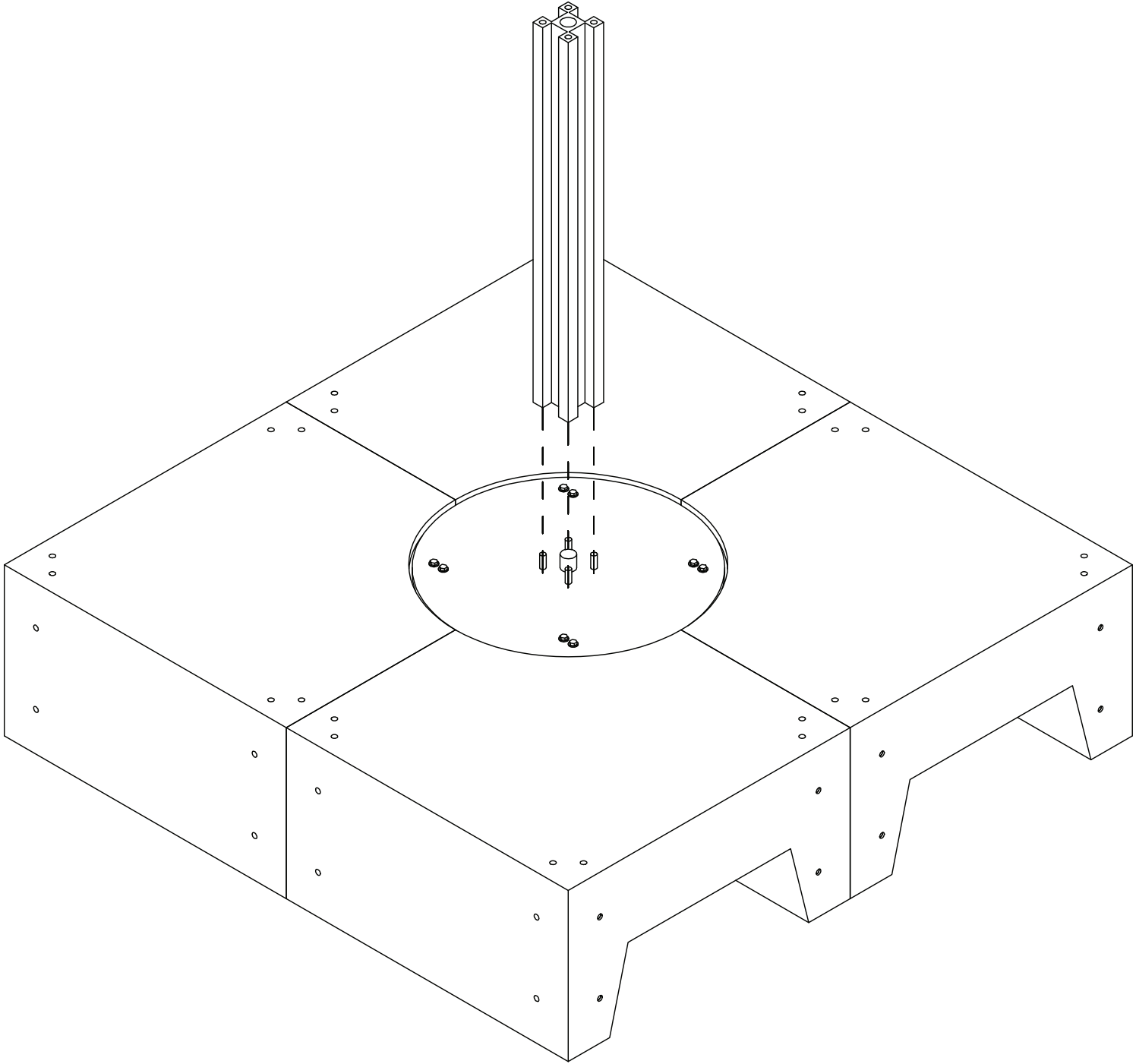
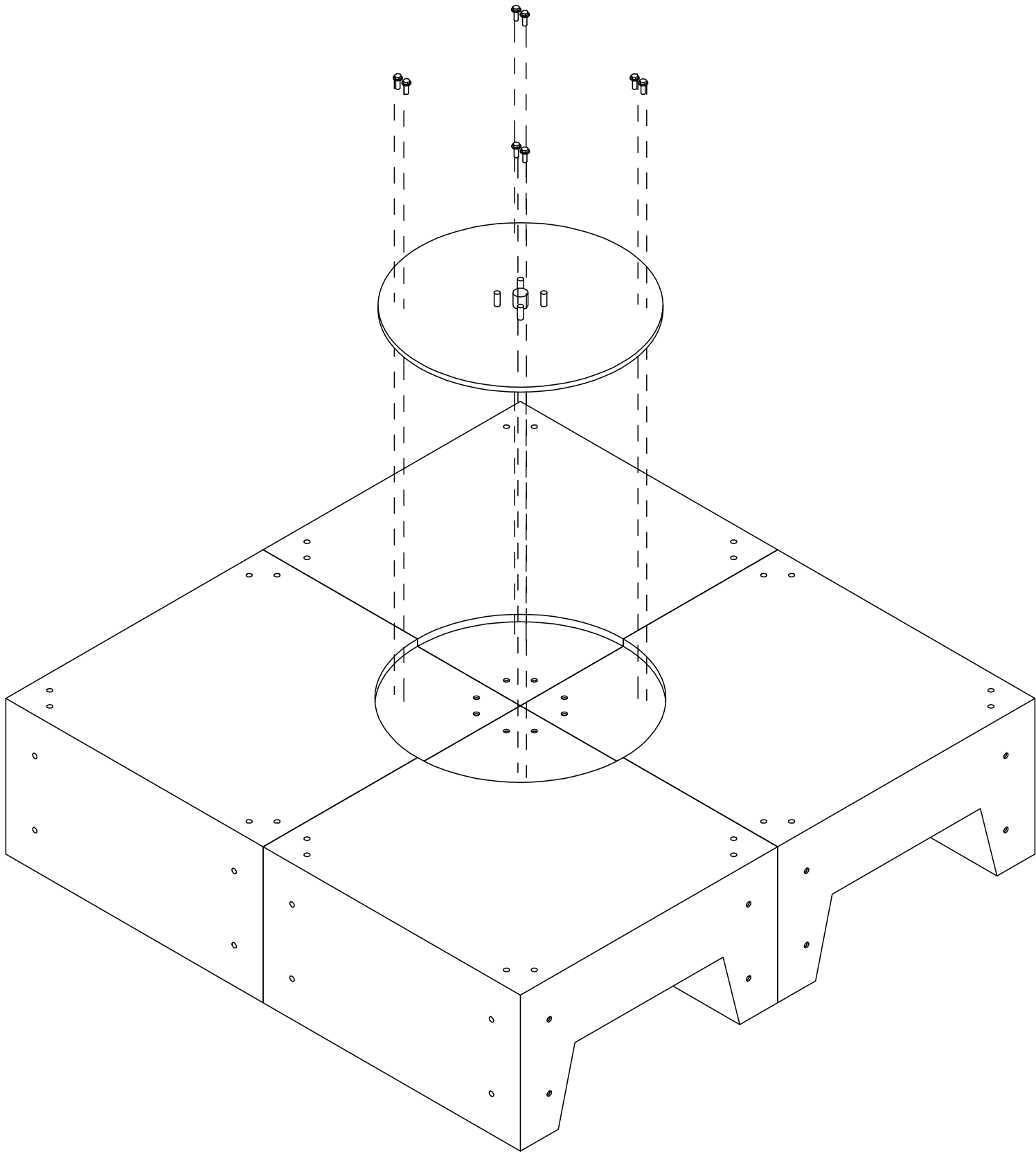
SIDE ELEVATION

SECTION

BASE ASSEMBLY



BASE ASSEMBLY





## FLOOR PANELS

17mm Wood Planks

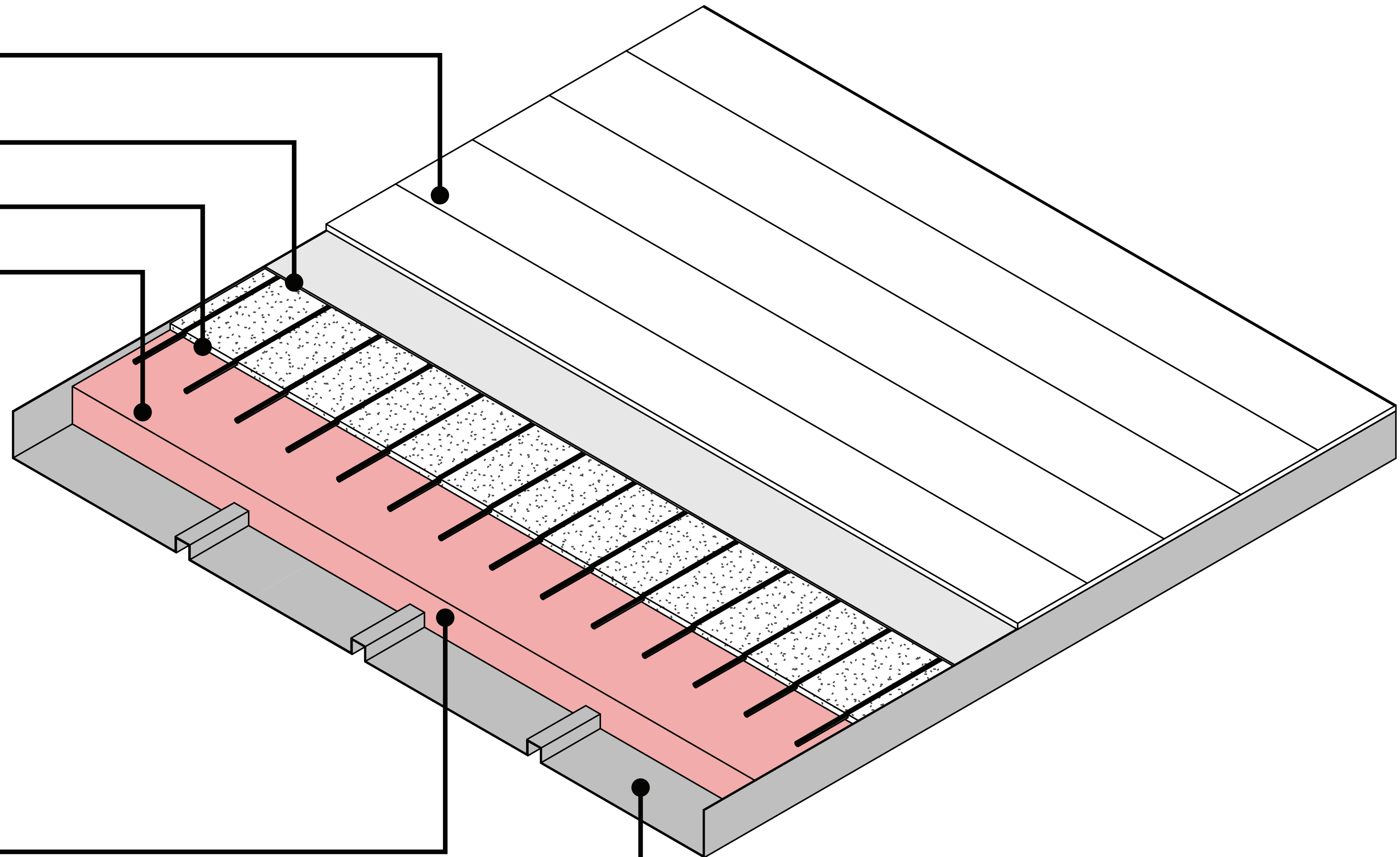
Wood Adhesive

18mm Gypsum Fiber Board

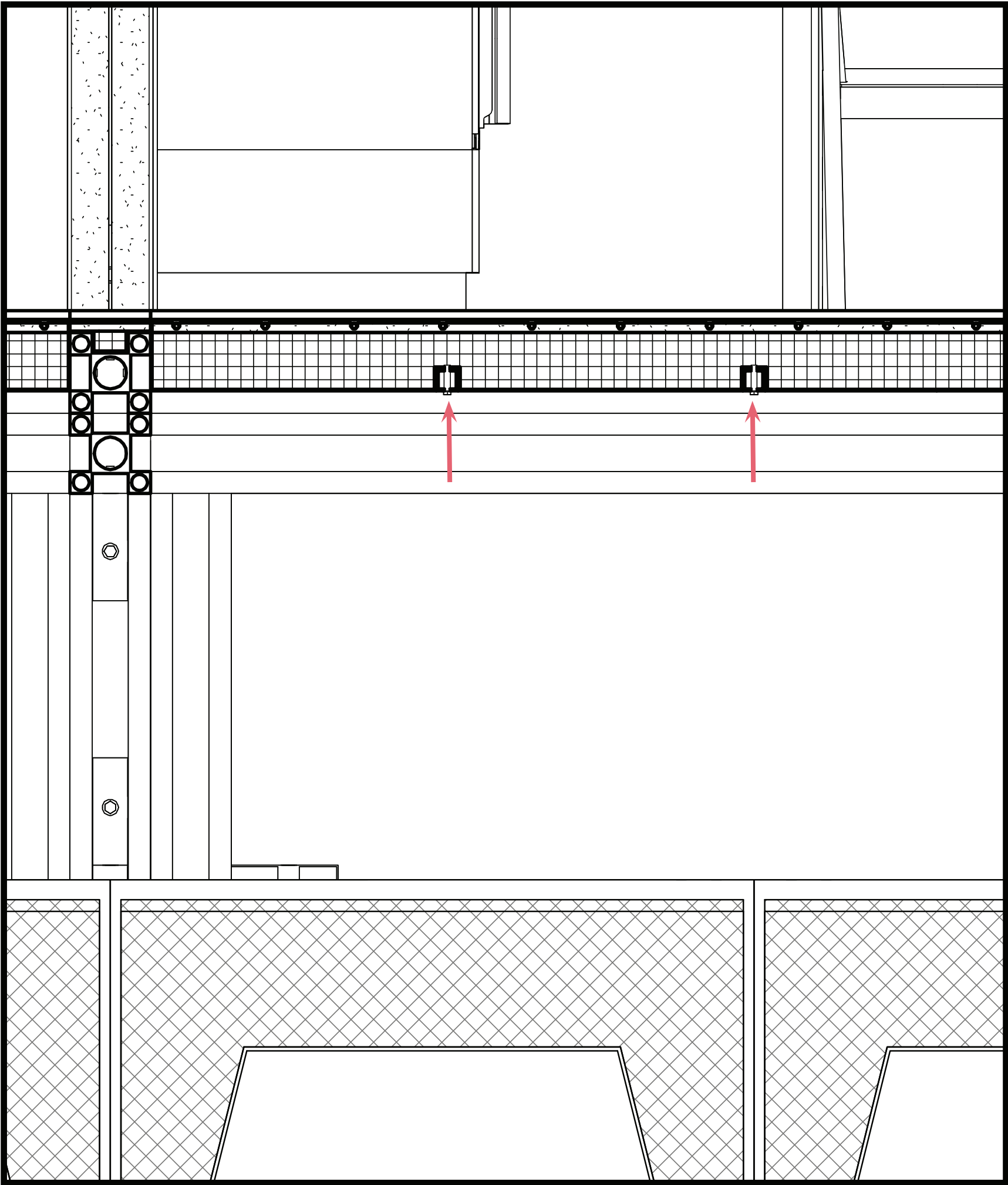
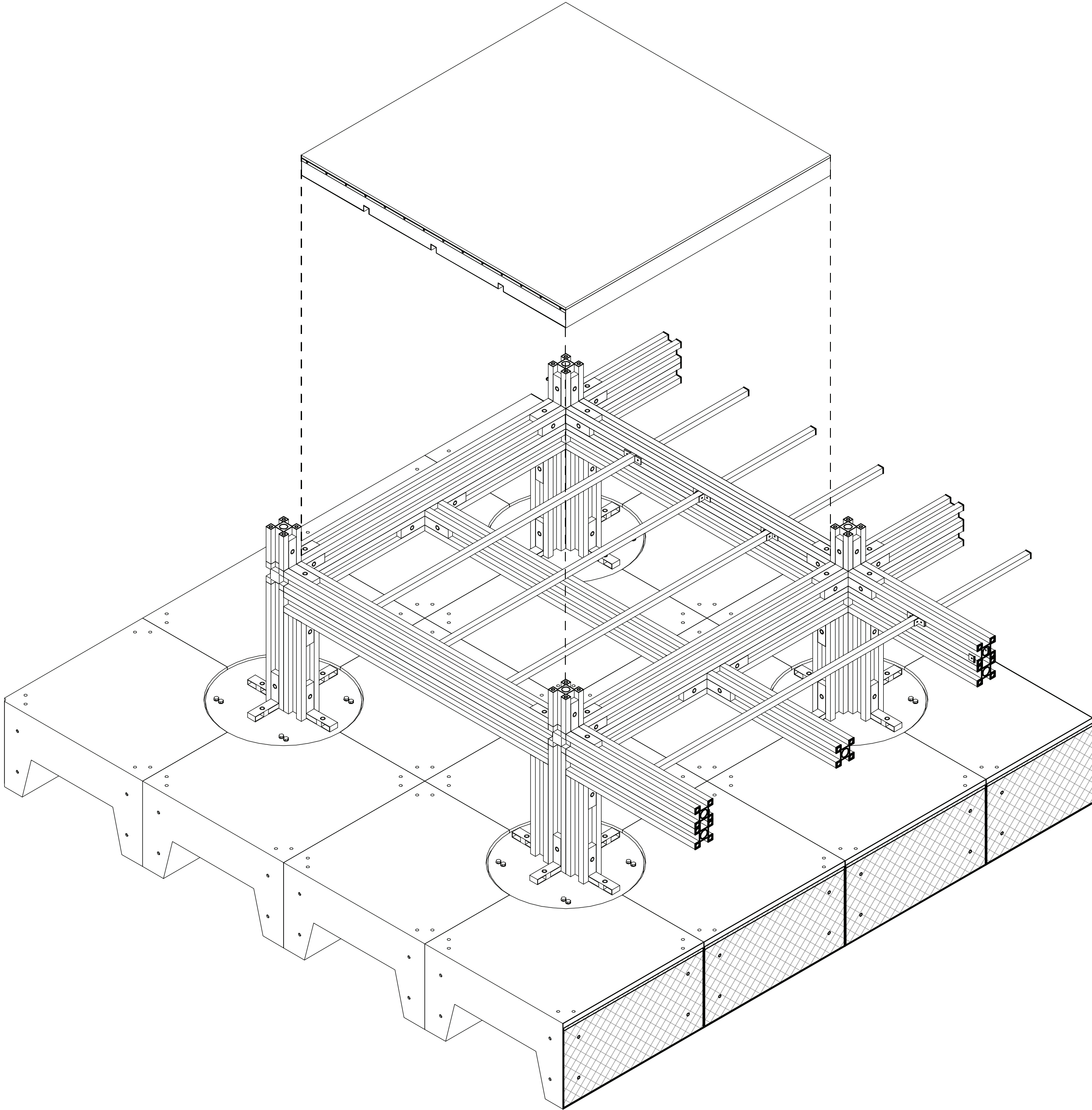
Ø10x1.2mm Floor Heating Pipe

65-100mm High Thermal Resistance Insulation (PIR)

3mm Corrugated Aluminium Sheet case



FLOOR ASSEMBLY

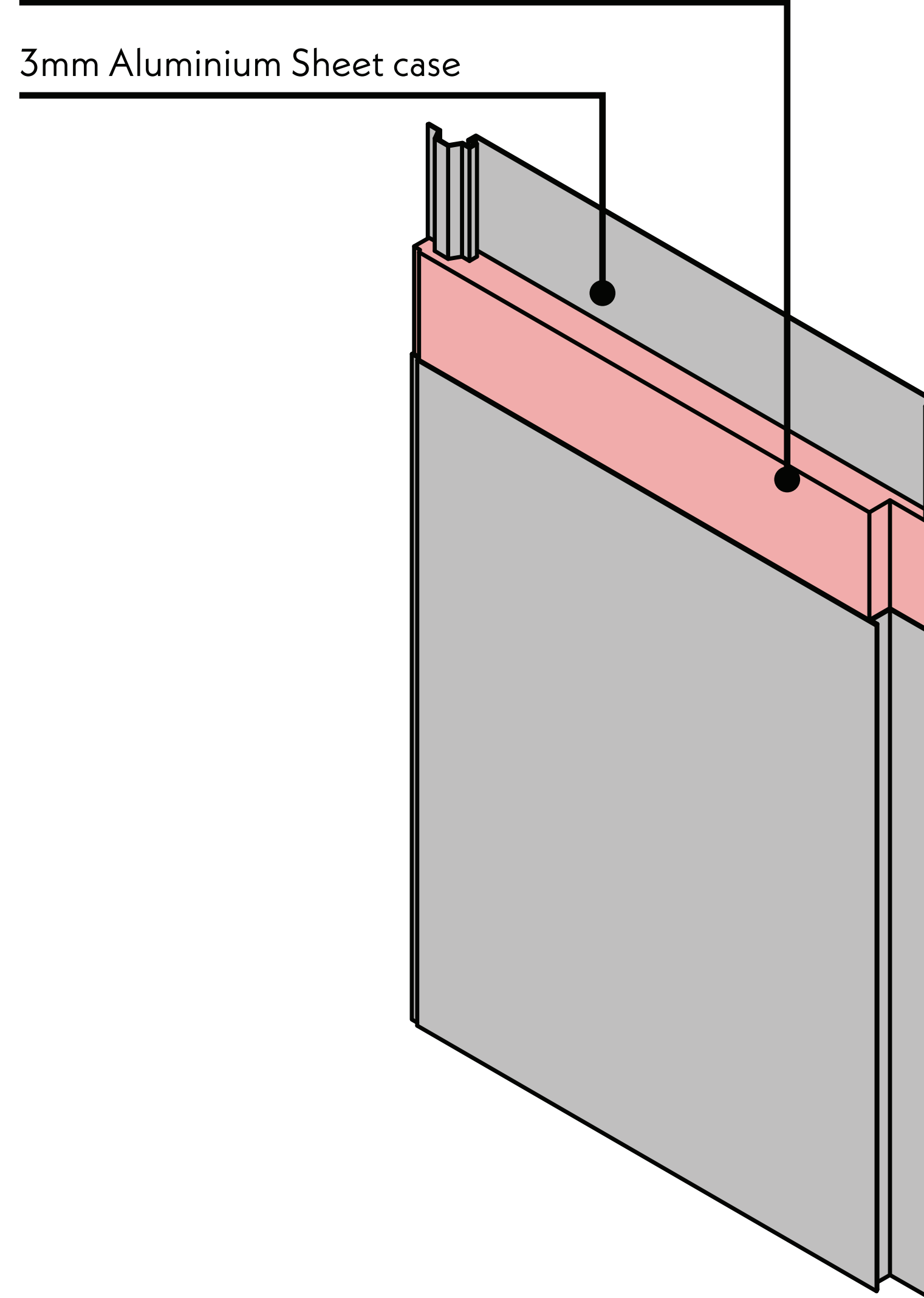




## FACADE PANELS AND CORNERS

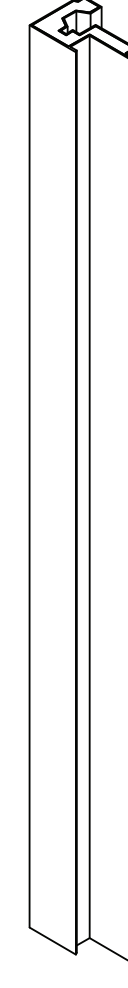
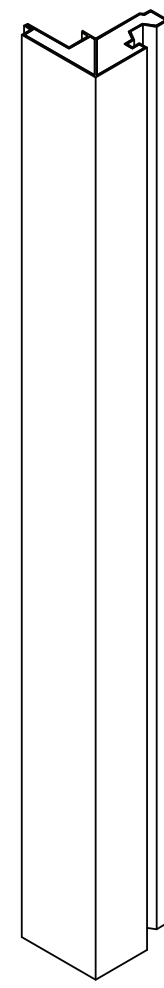
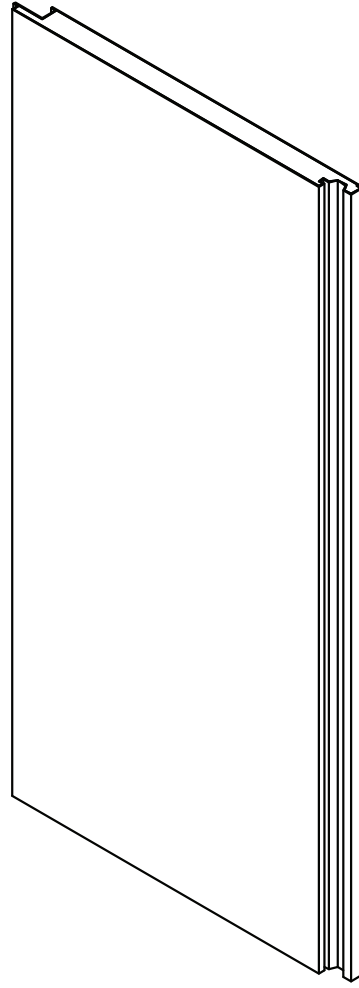
80mm High Thermal Resistance Insulation (PIR)

3mm Aluminium Sheet case

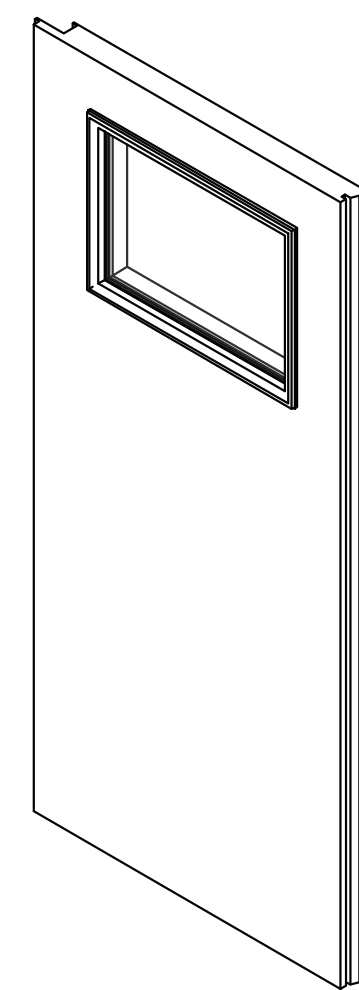
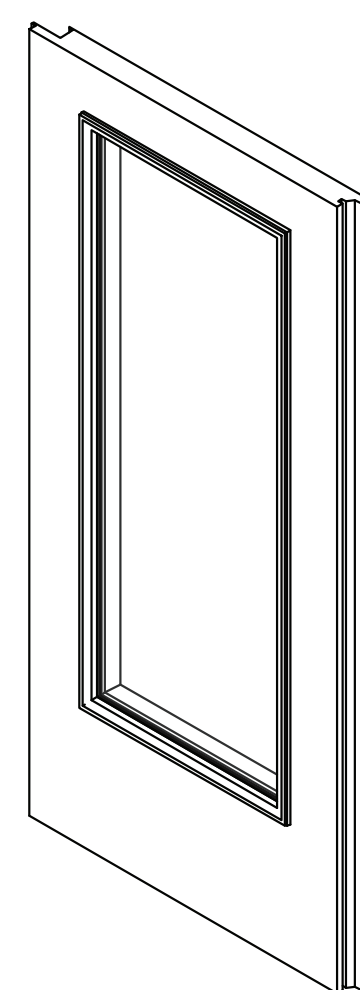
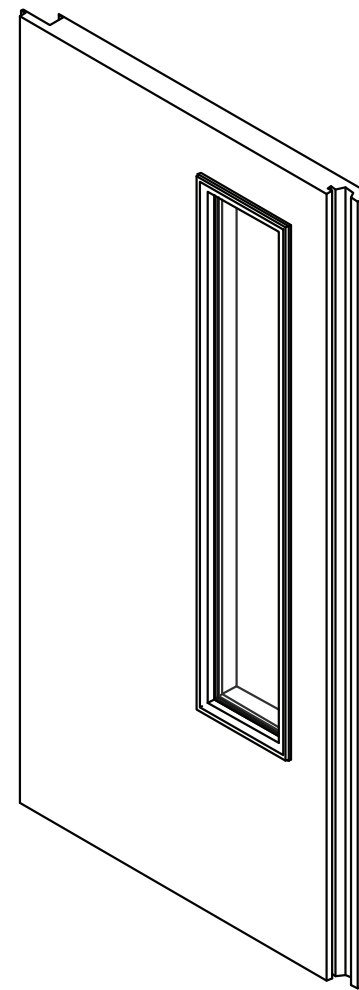
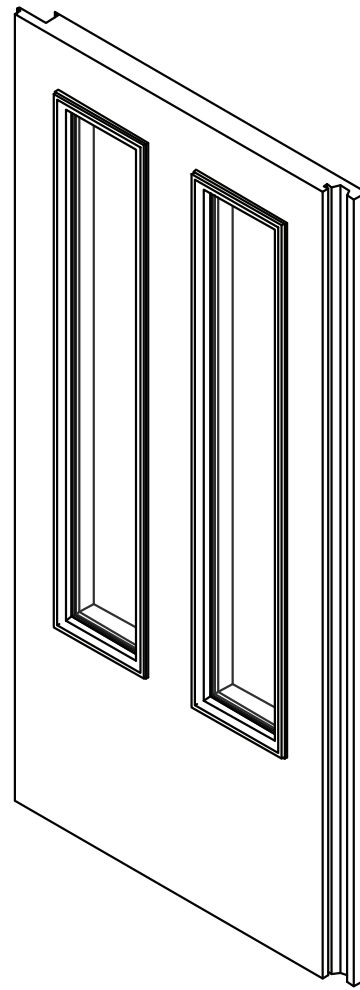


## FACADE PANELS AND CORNERS

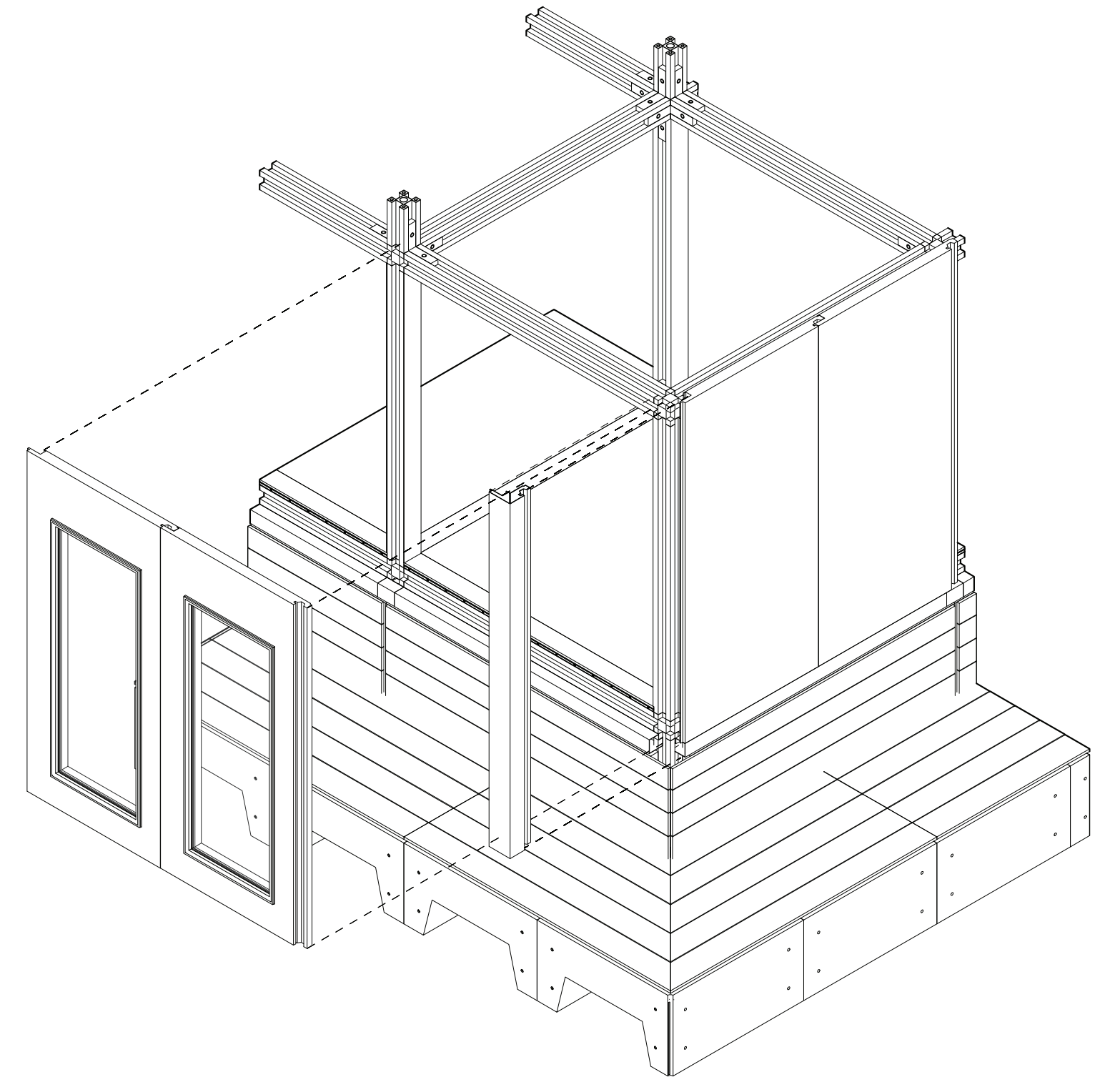
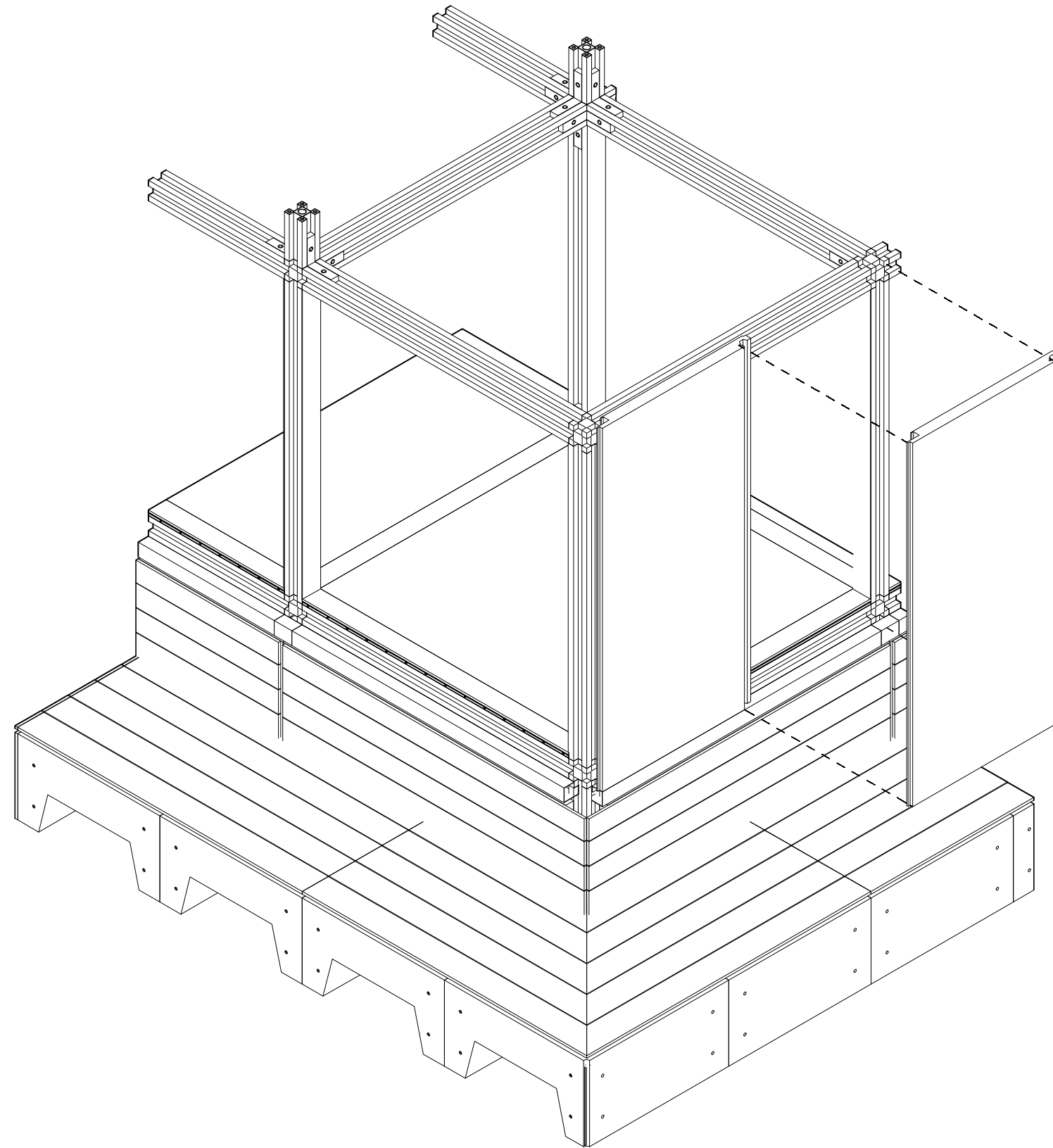
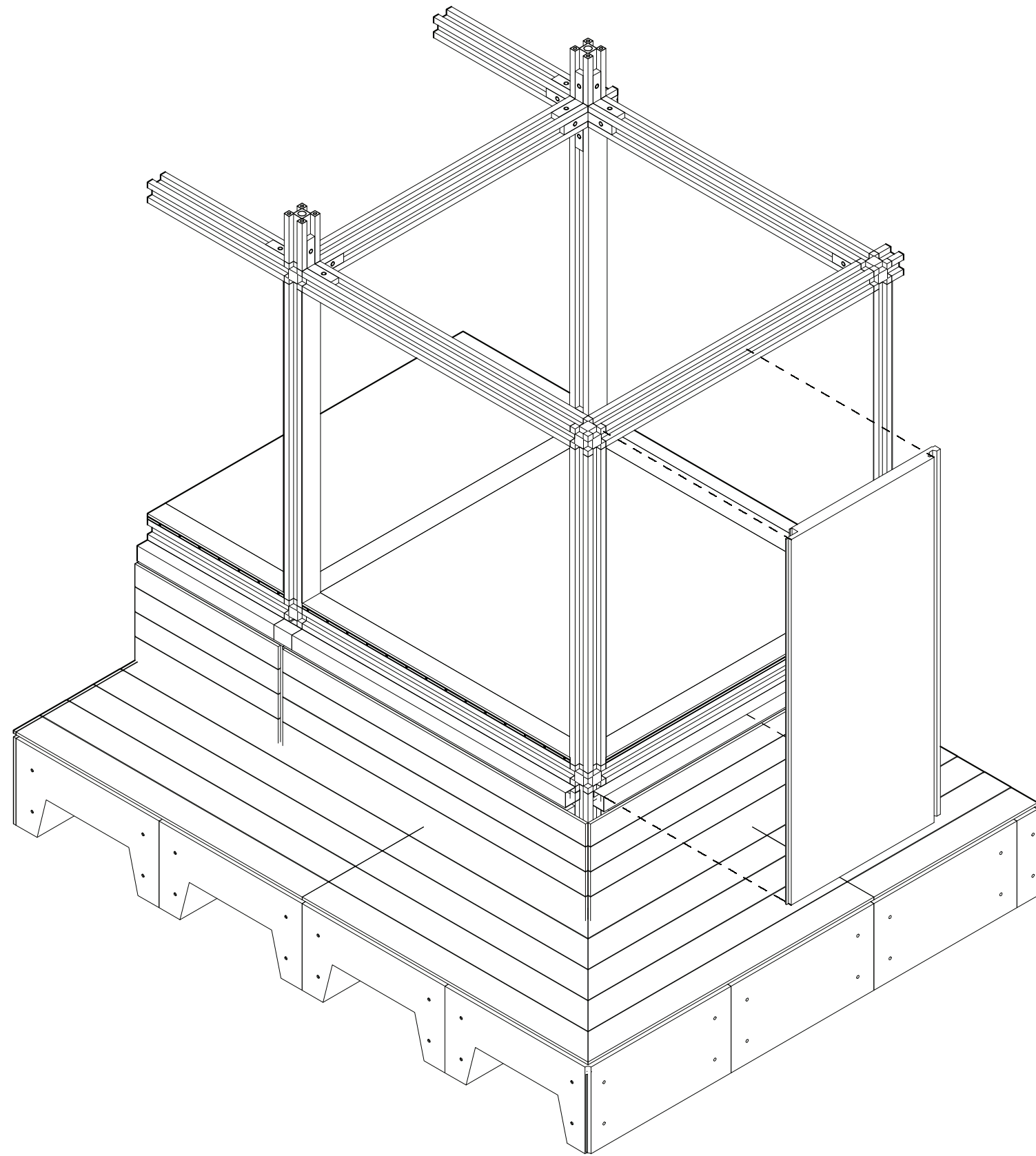
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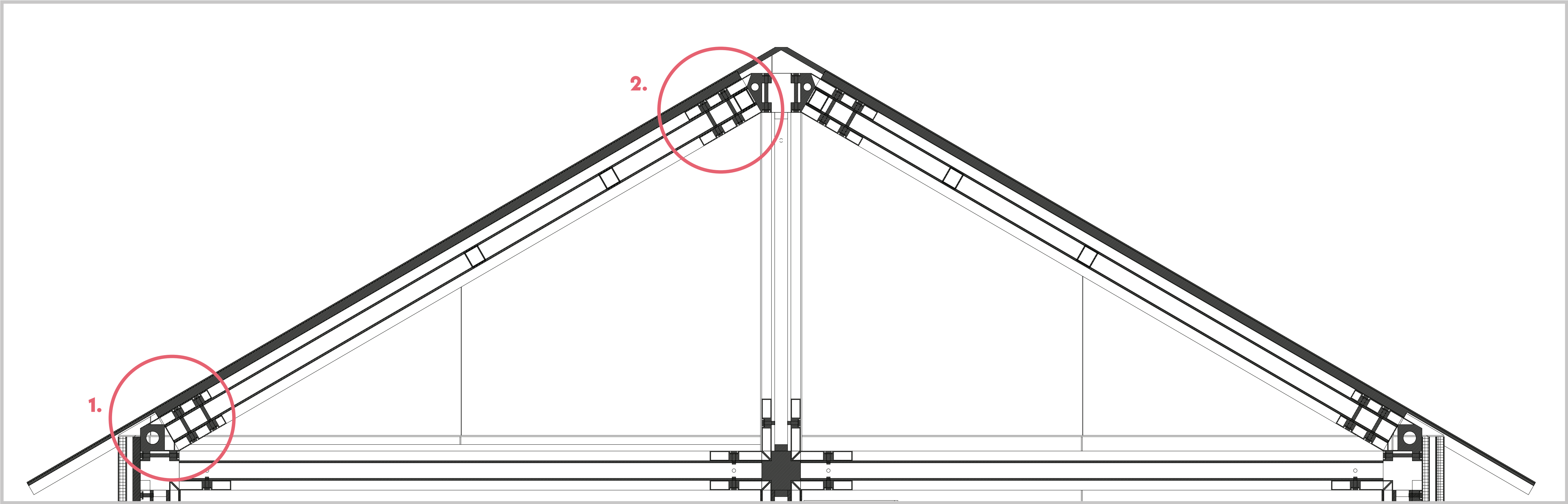
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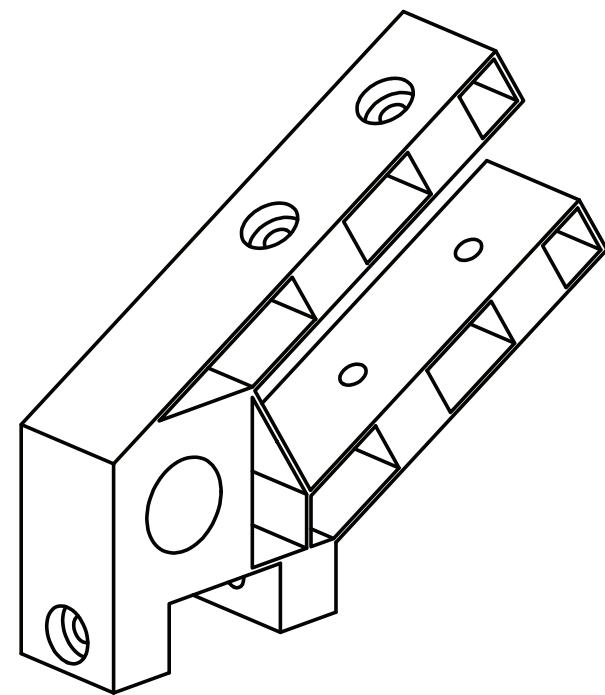
## FACADE PANELS AND CORNERS



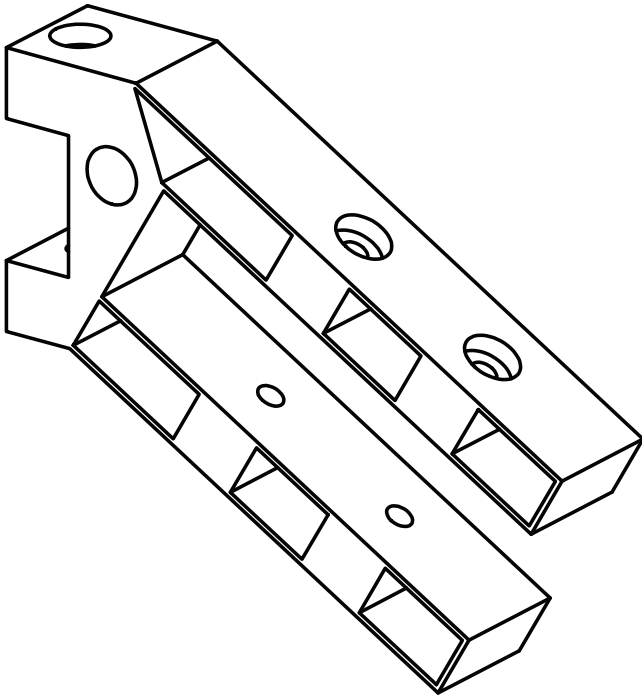
ROOF PANELS AND U - CONNECTORS



30 DEGREE SLOPED ROOF



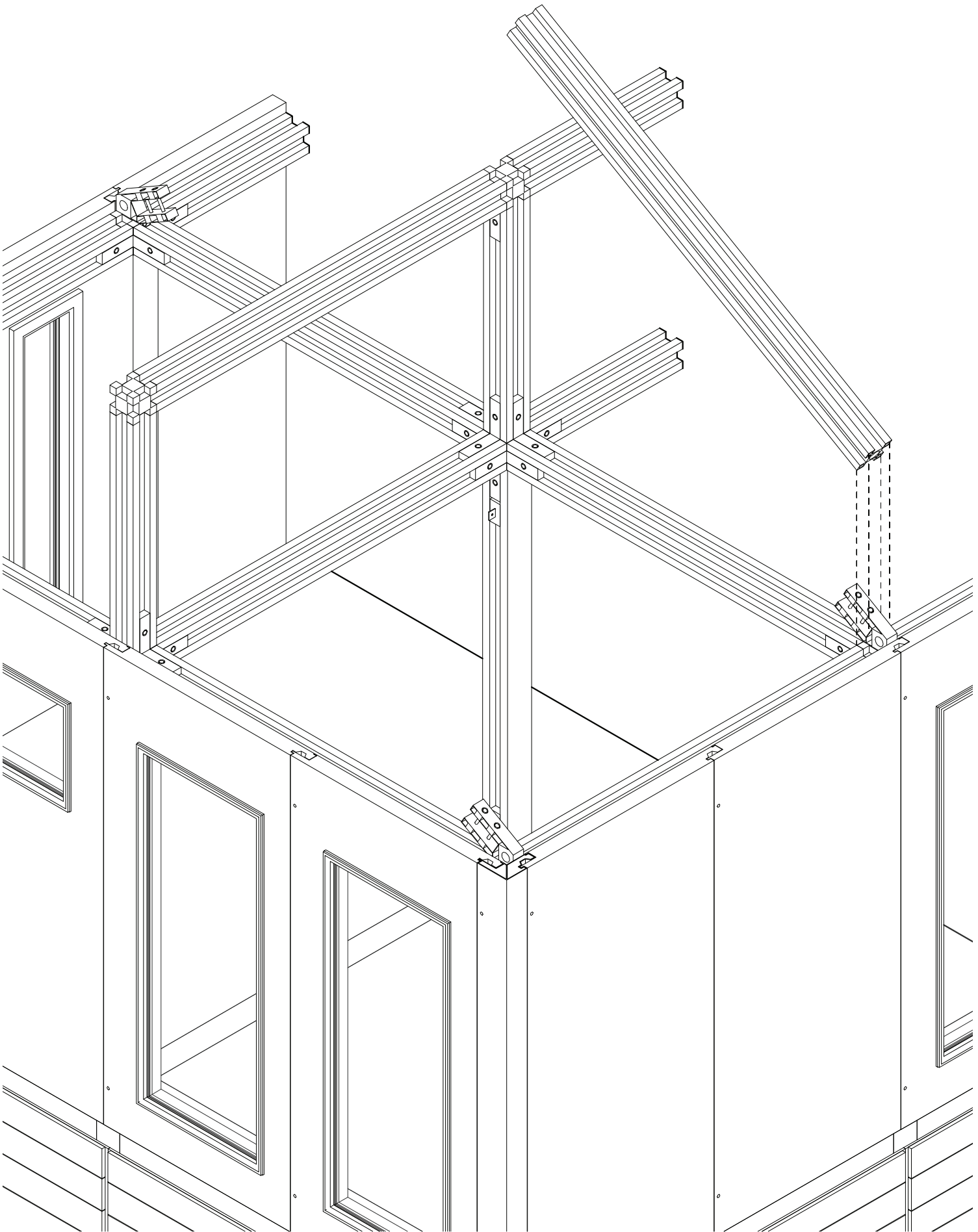
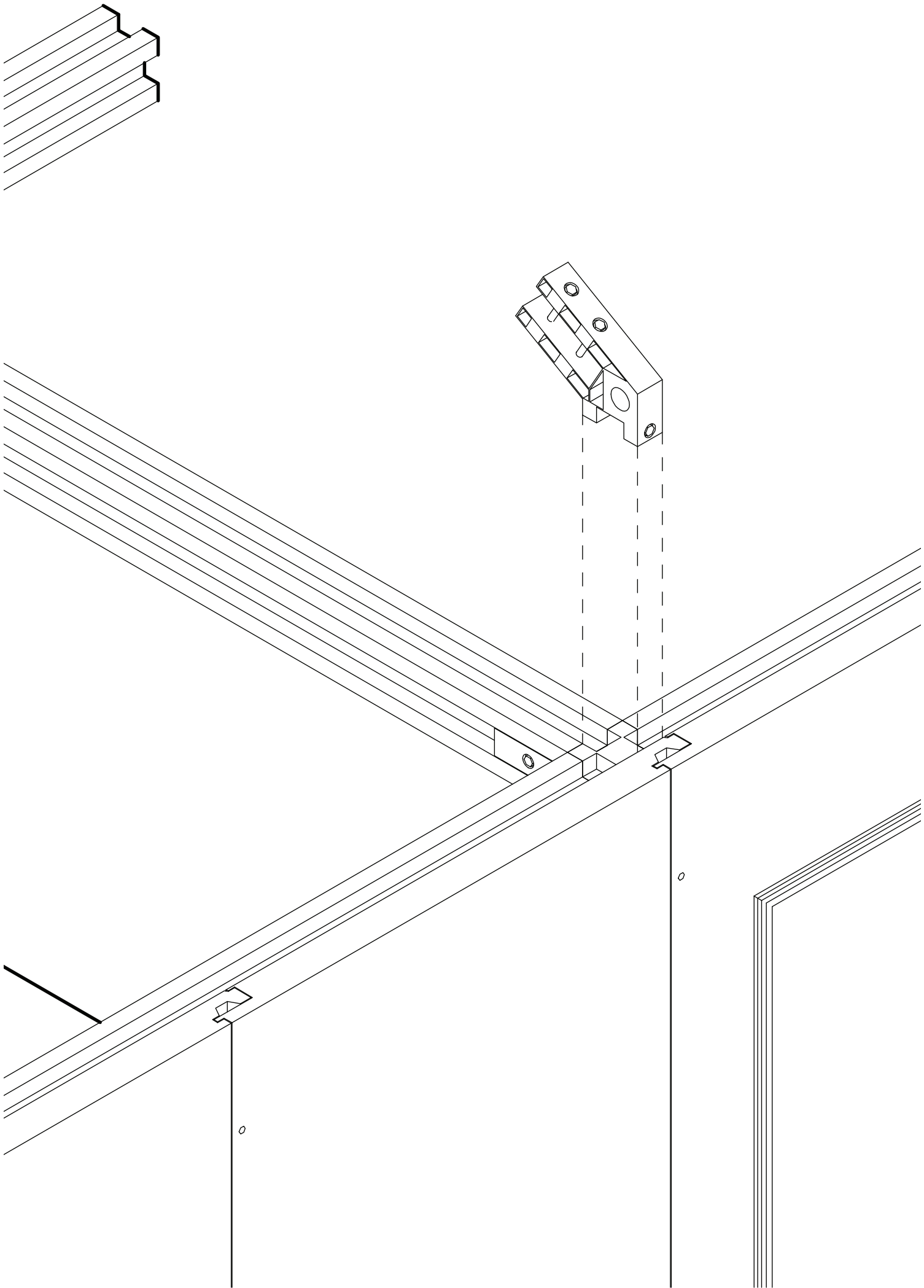
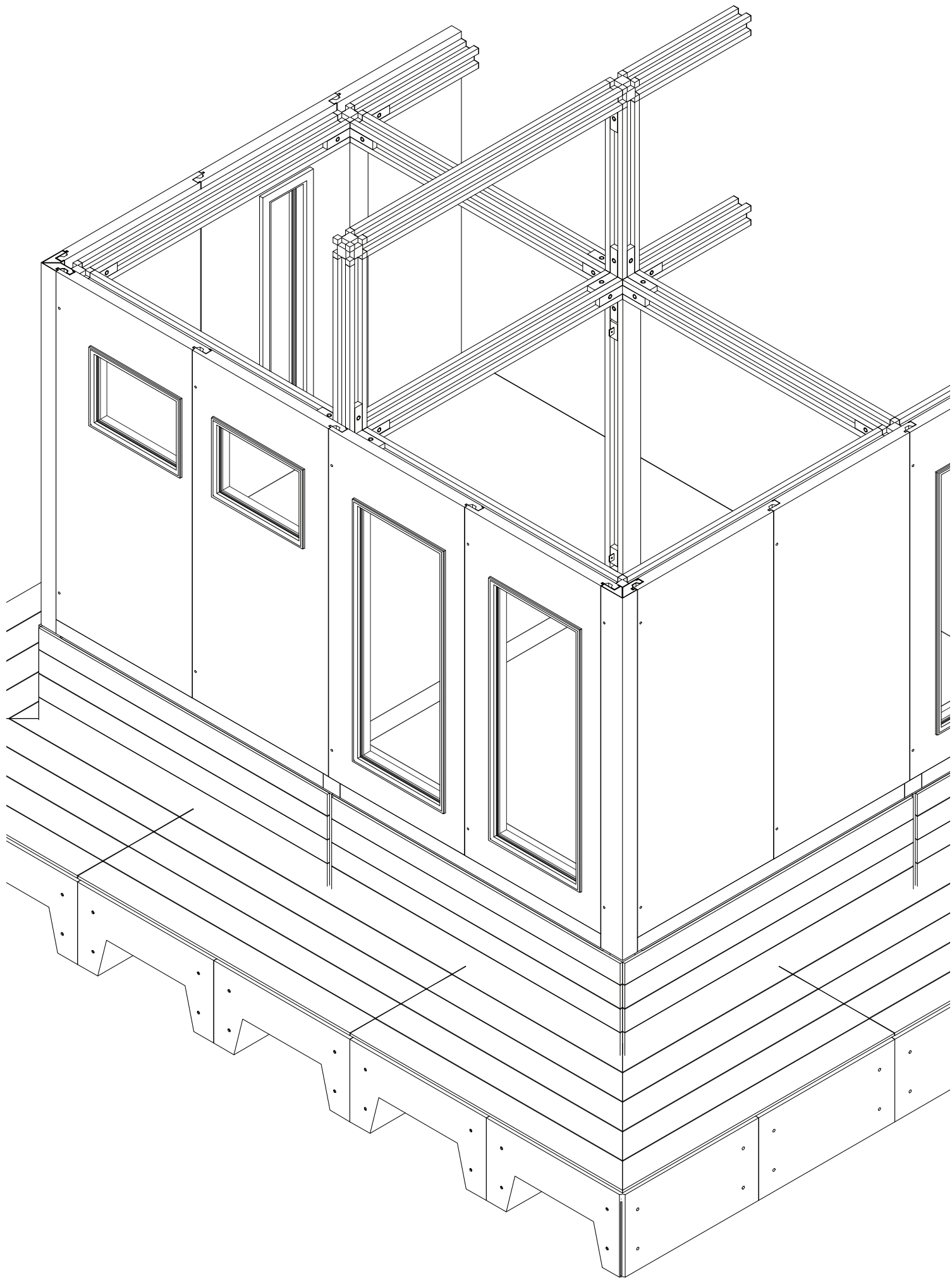
1. BOTTOM U - BEAM CONNECTOR



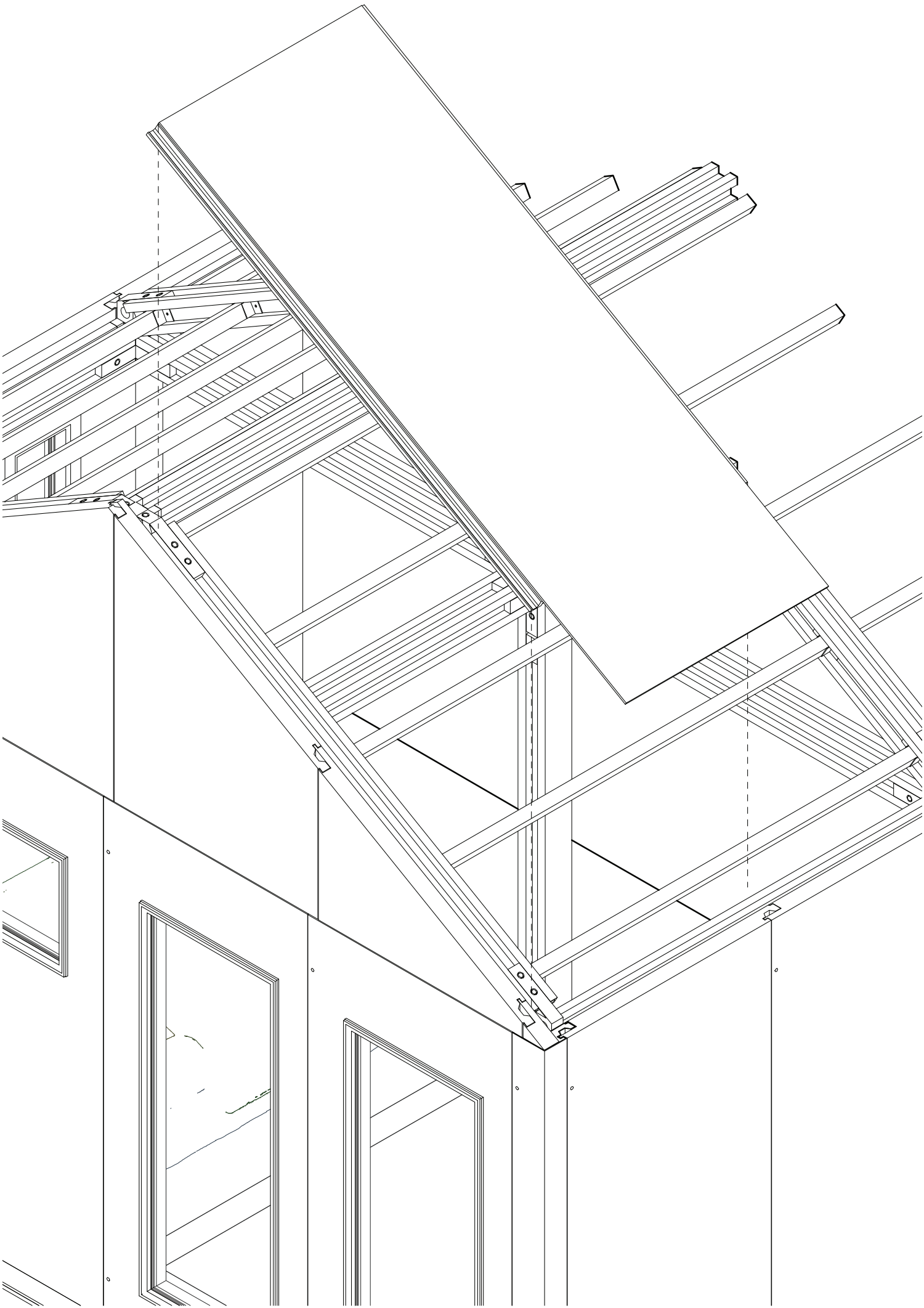
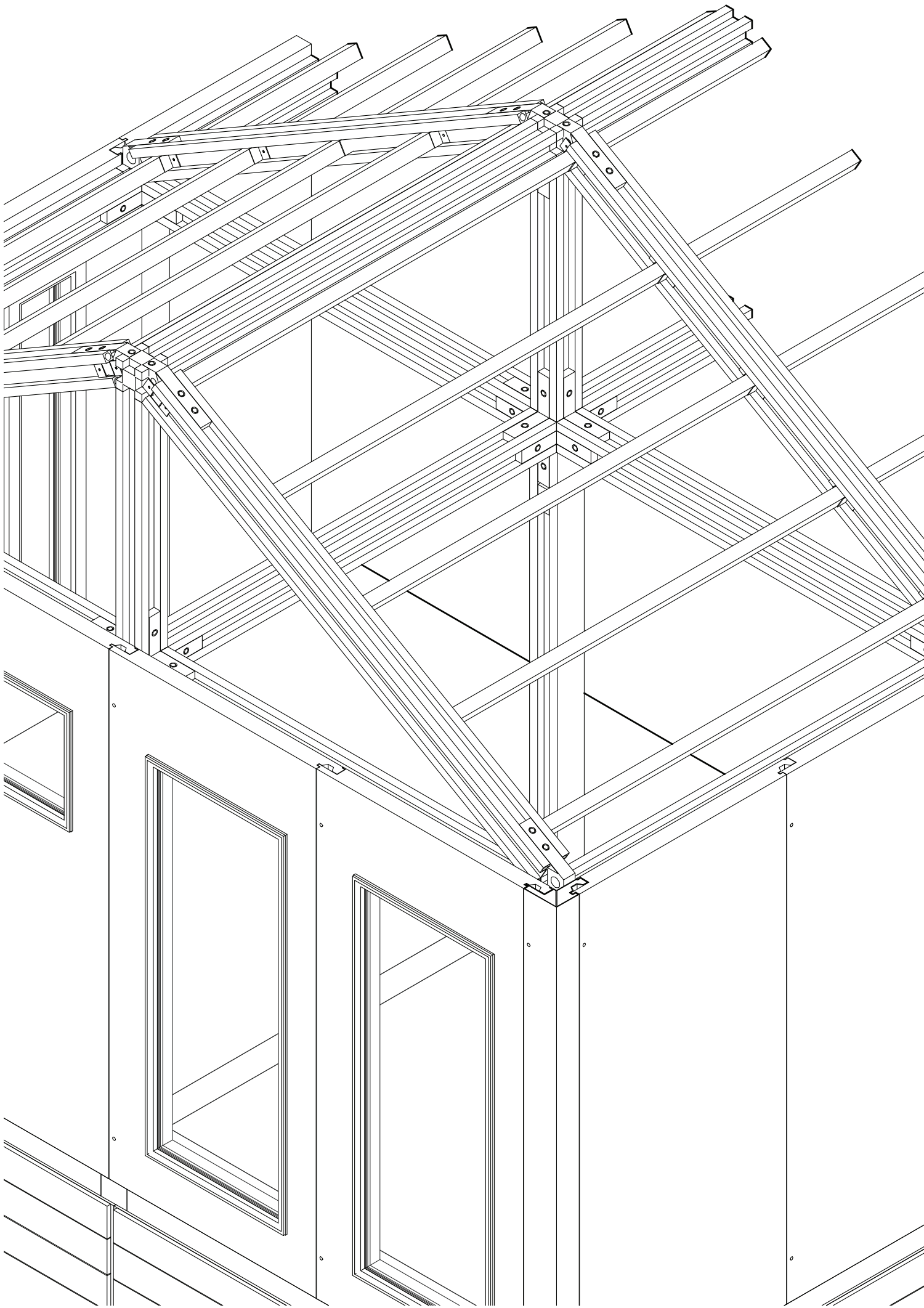
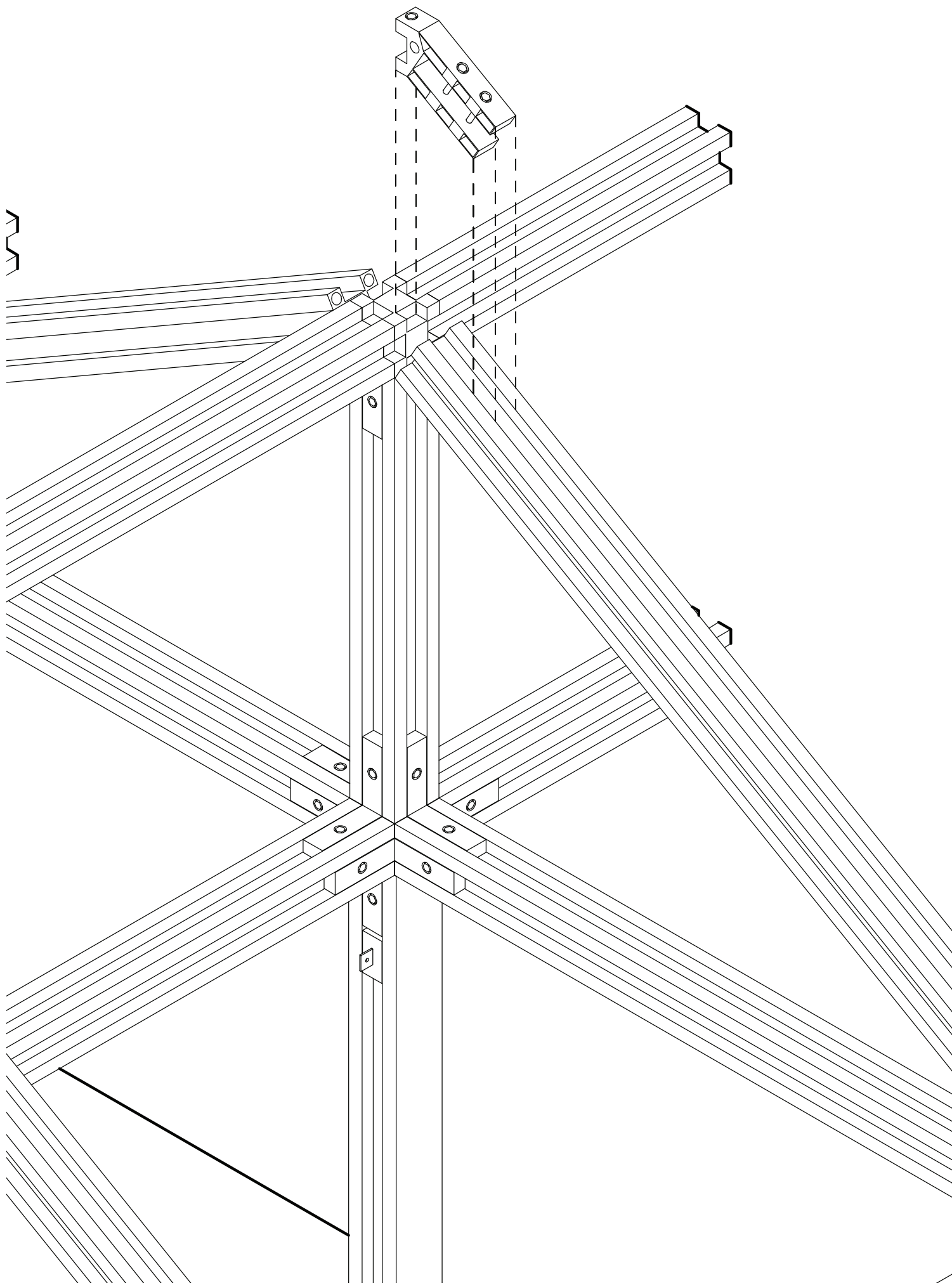
2. TOP U - BEAM CONNECTOR



ROOF ASSEMBLY

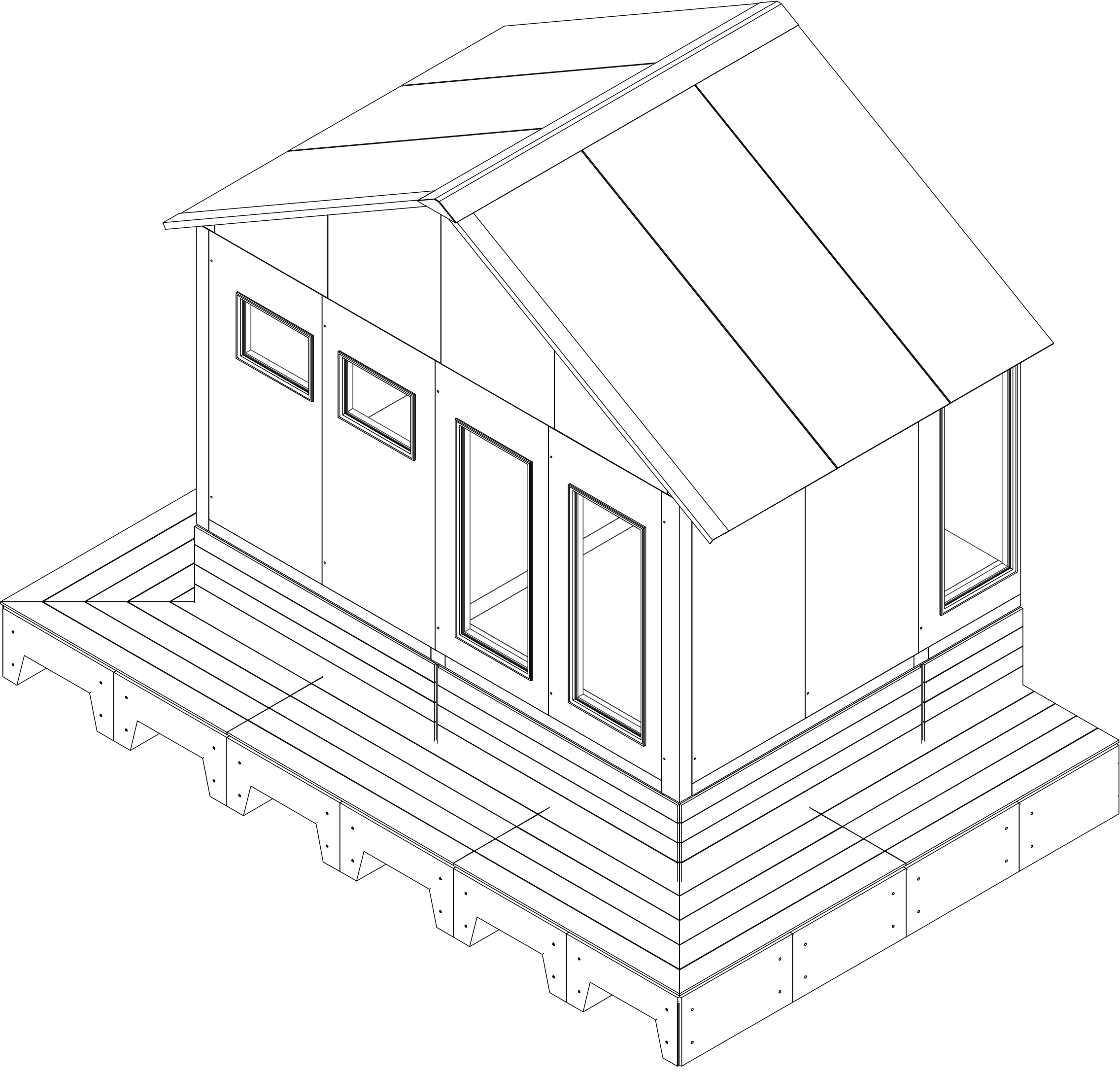
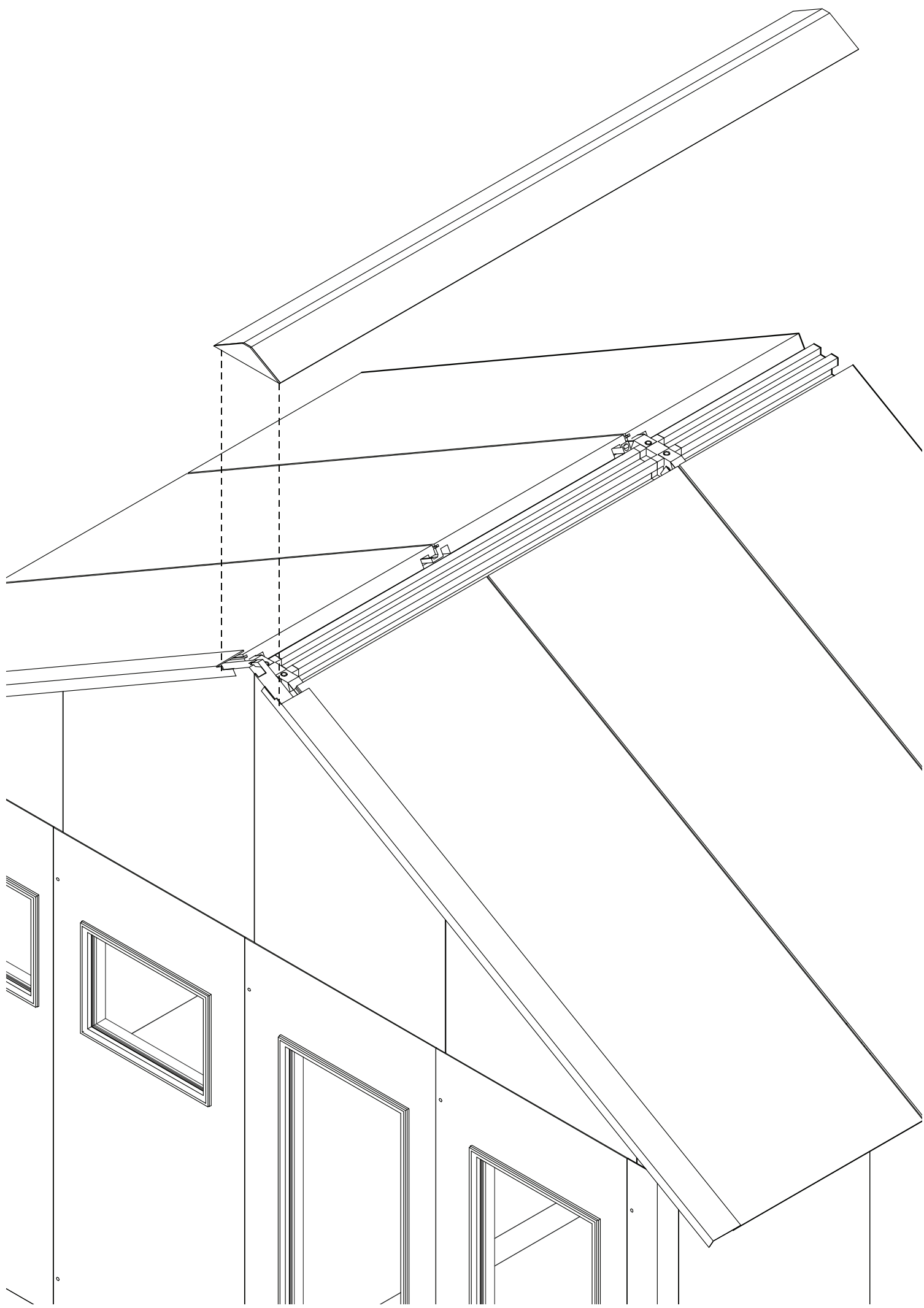


ROOF ASSEMBLY





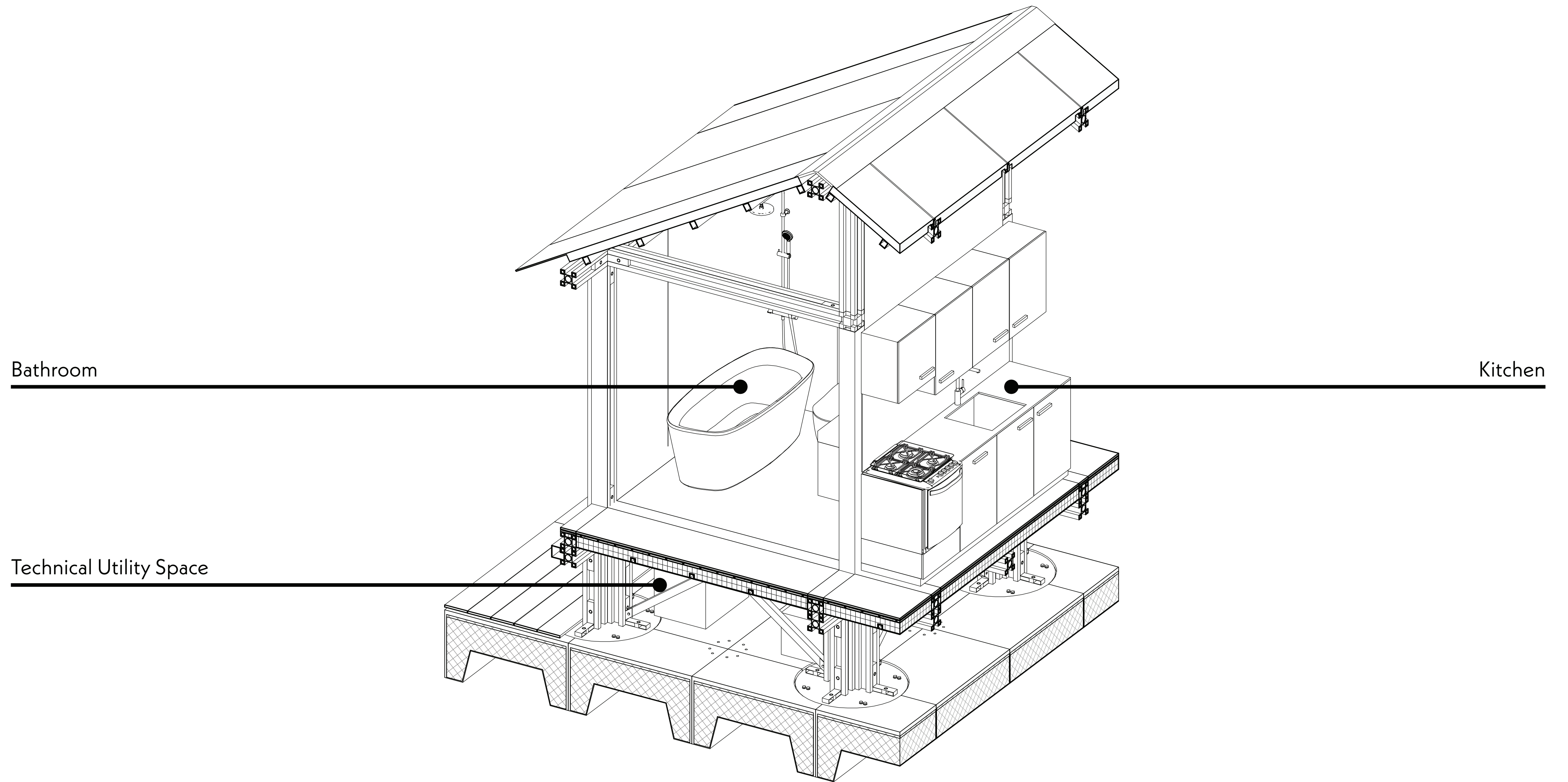
ROOF ASSEMBLY



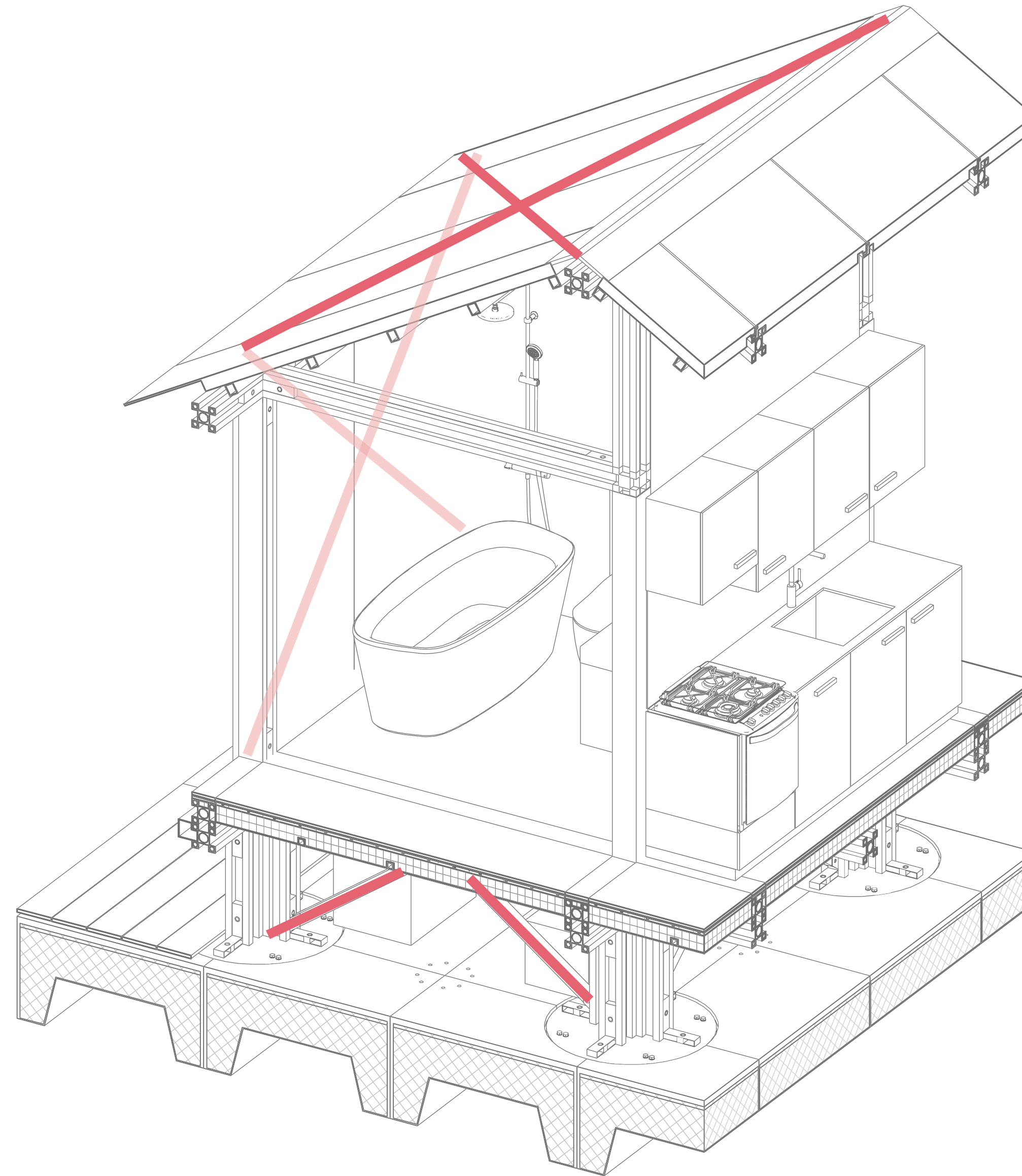
# BUC MODULE



## BUC MODULE

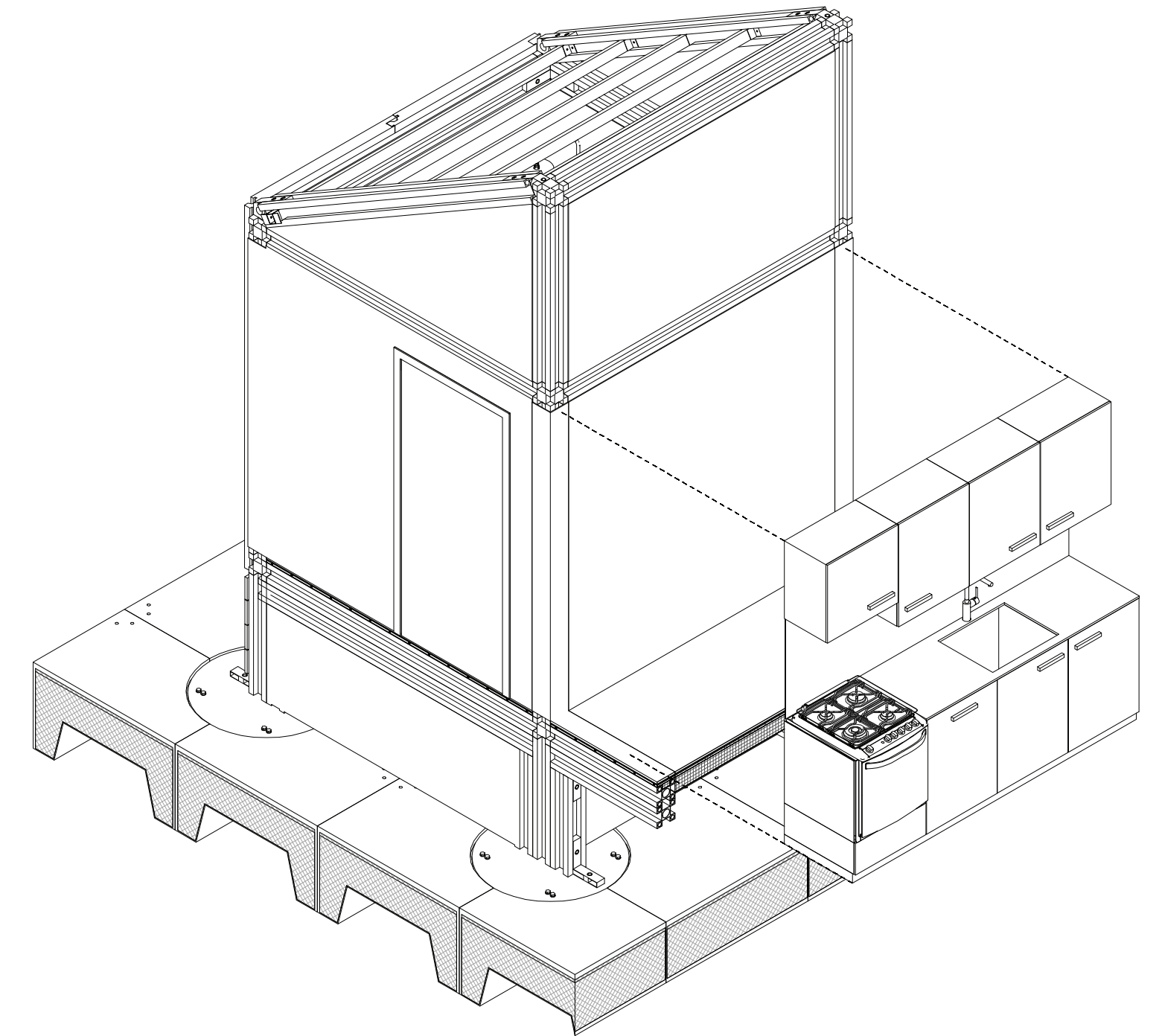
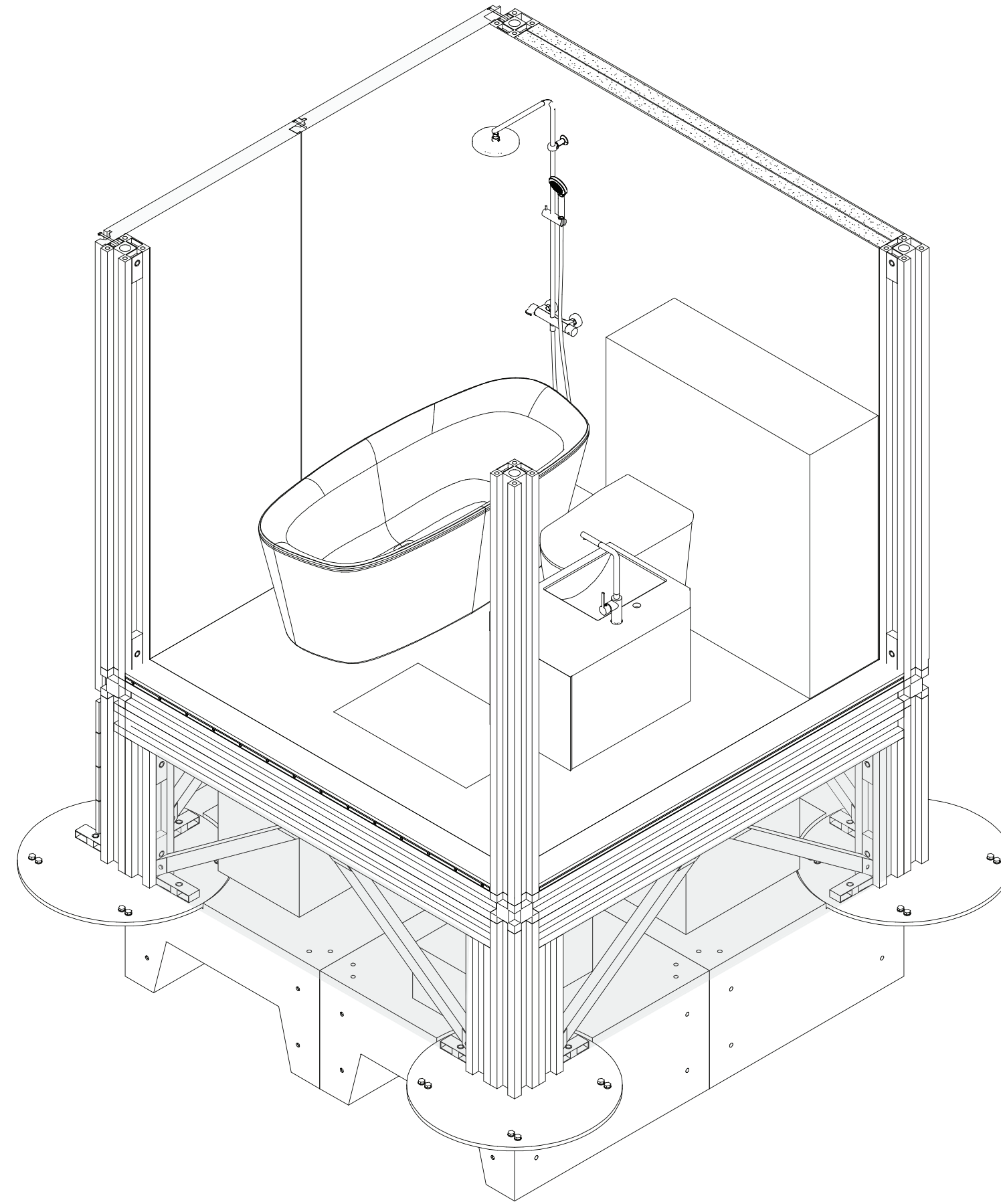
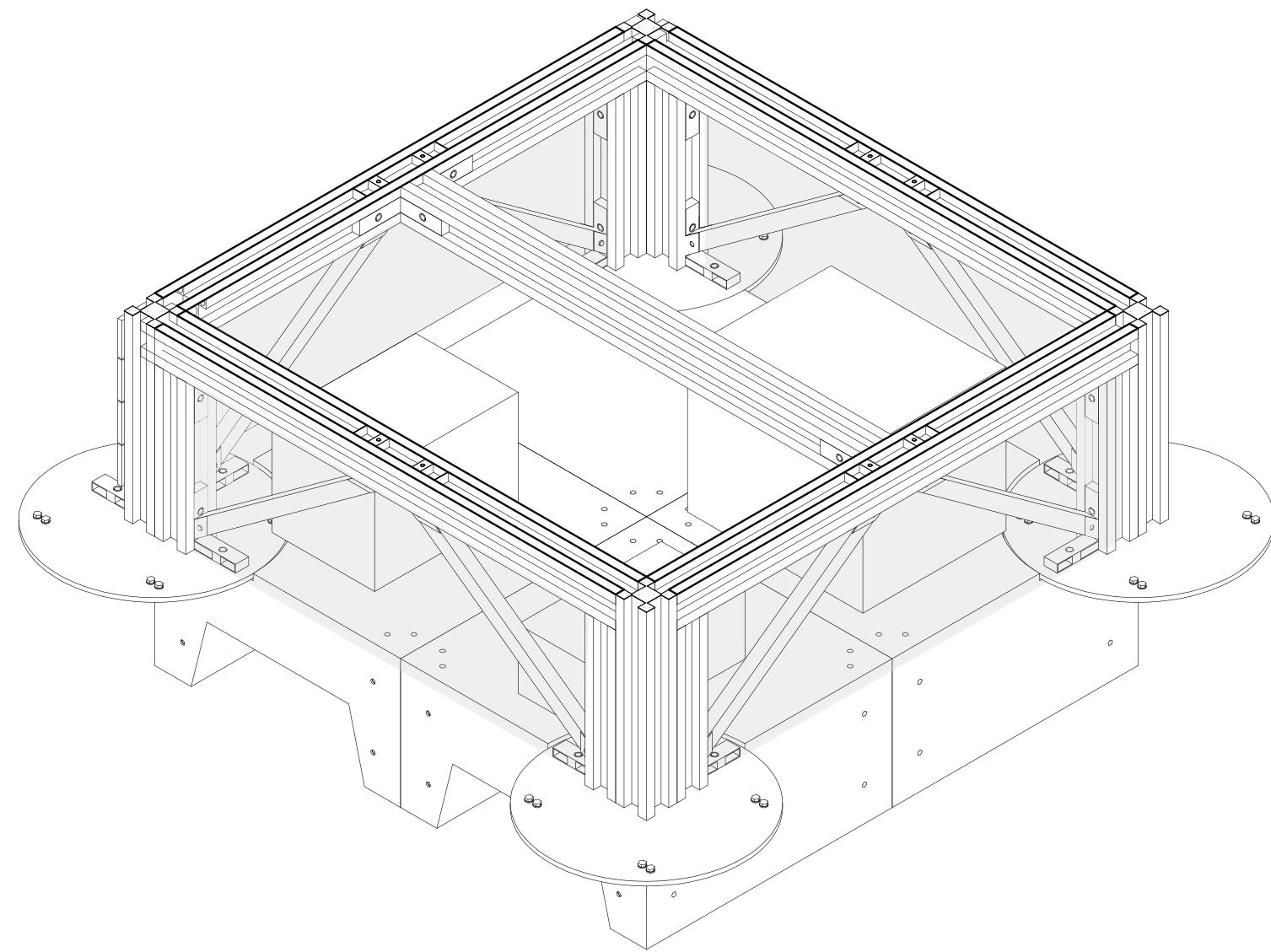


## BUC MODULE





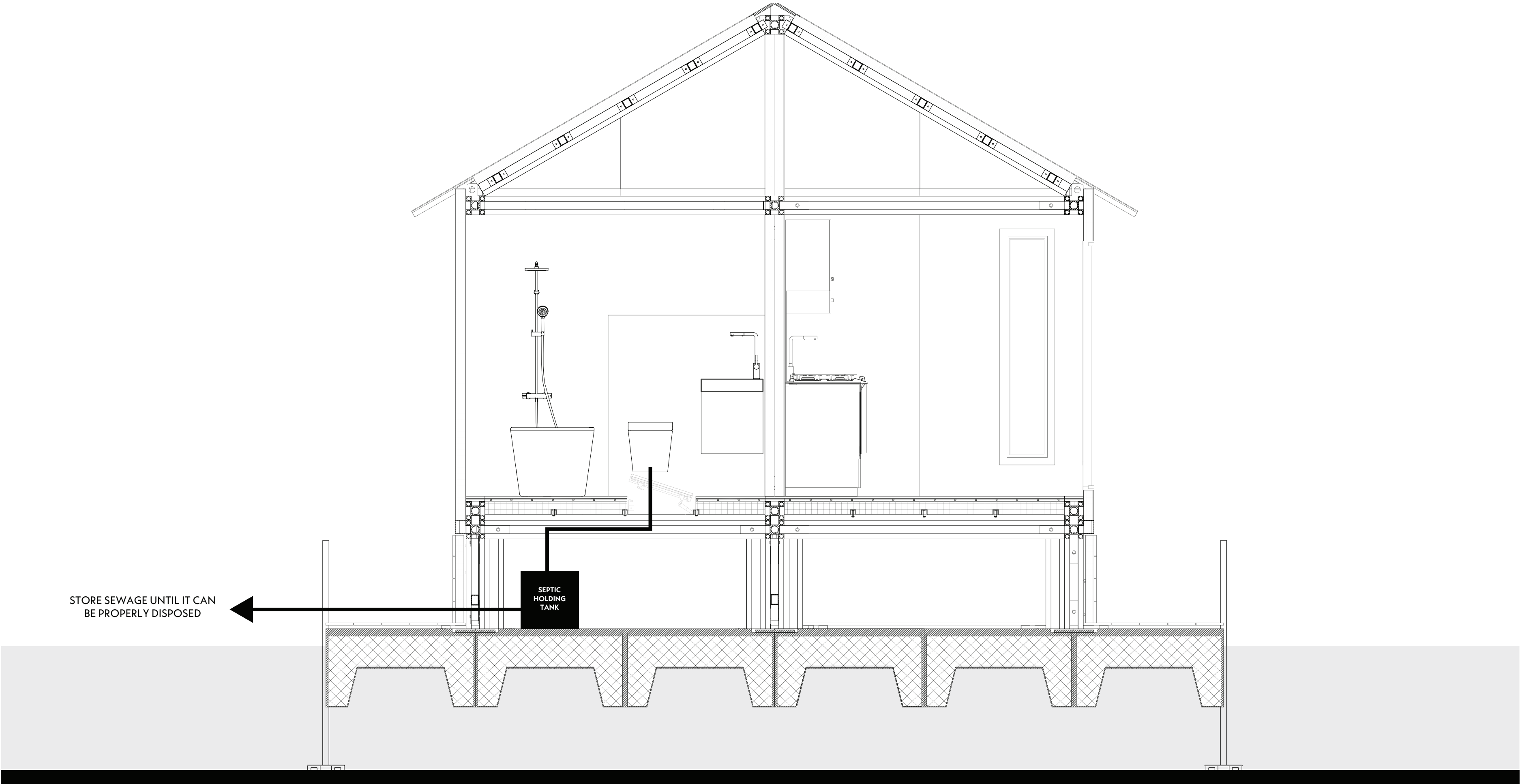
# BUC MODULE



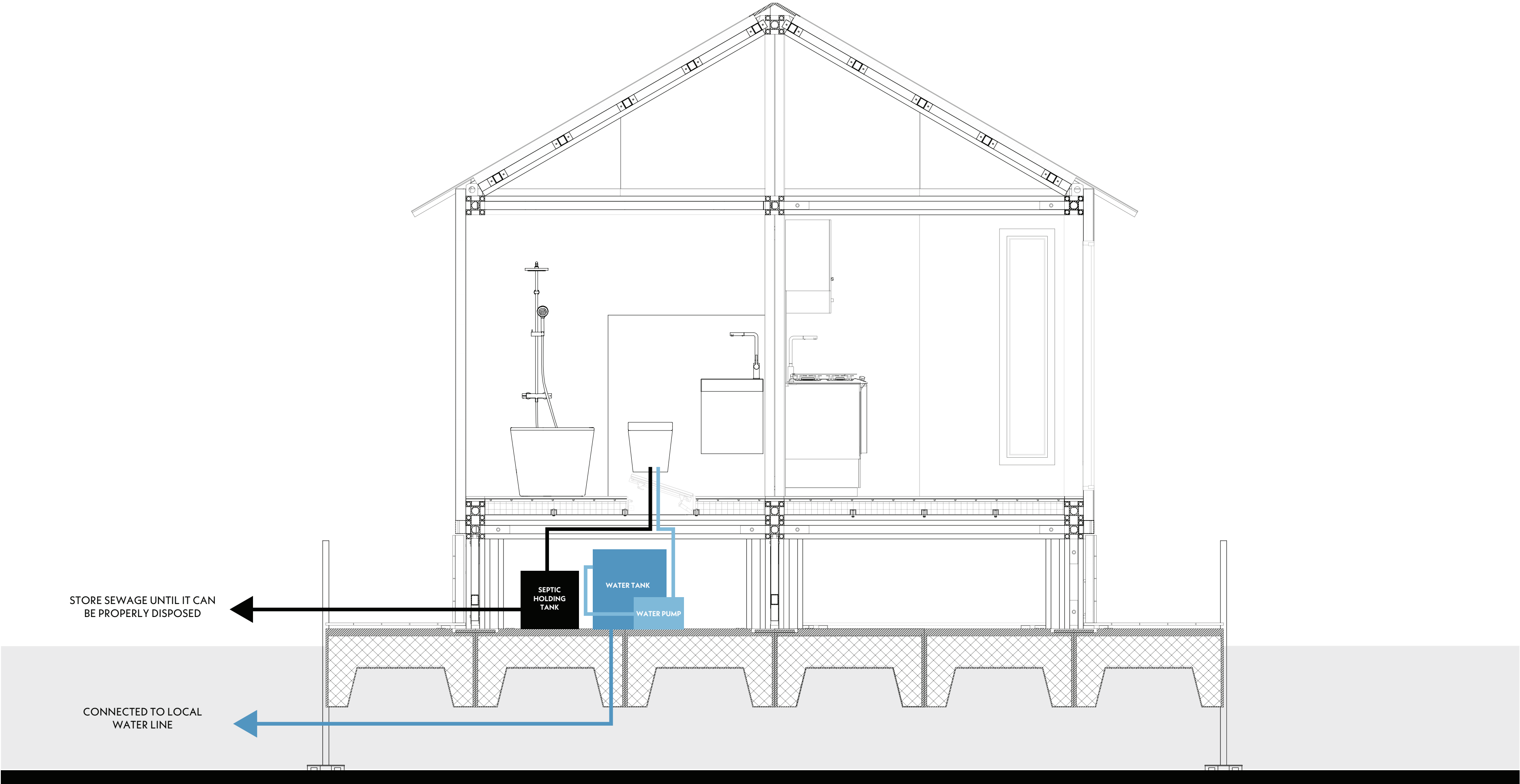
# CLIMATE AND MECHANISMS



CLIMATE AND UTILITY SECTION

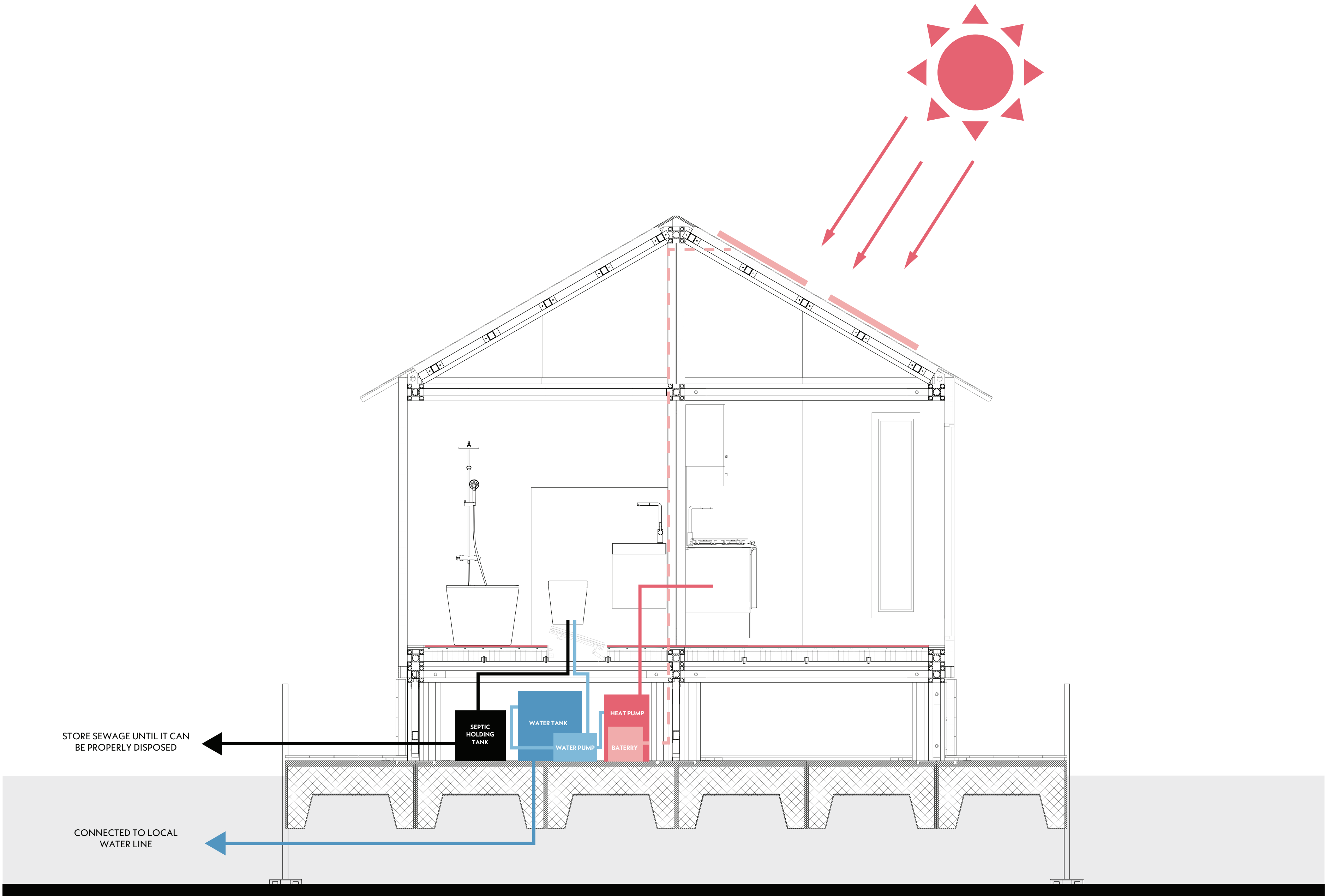


CLIMATE AND UTILITY SECTION

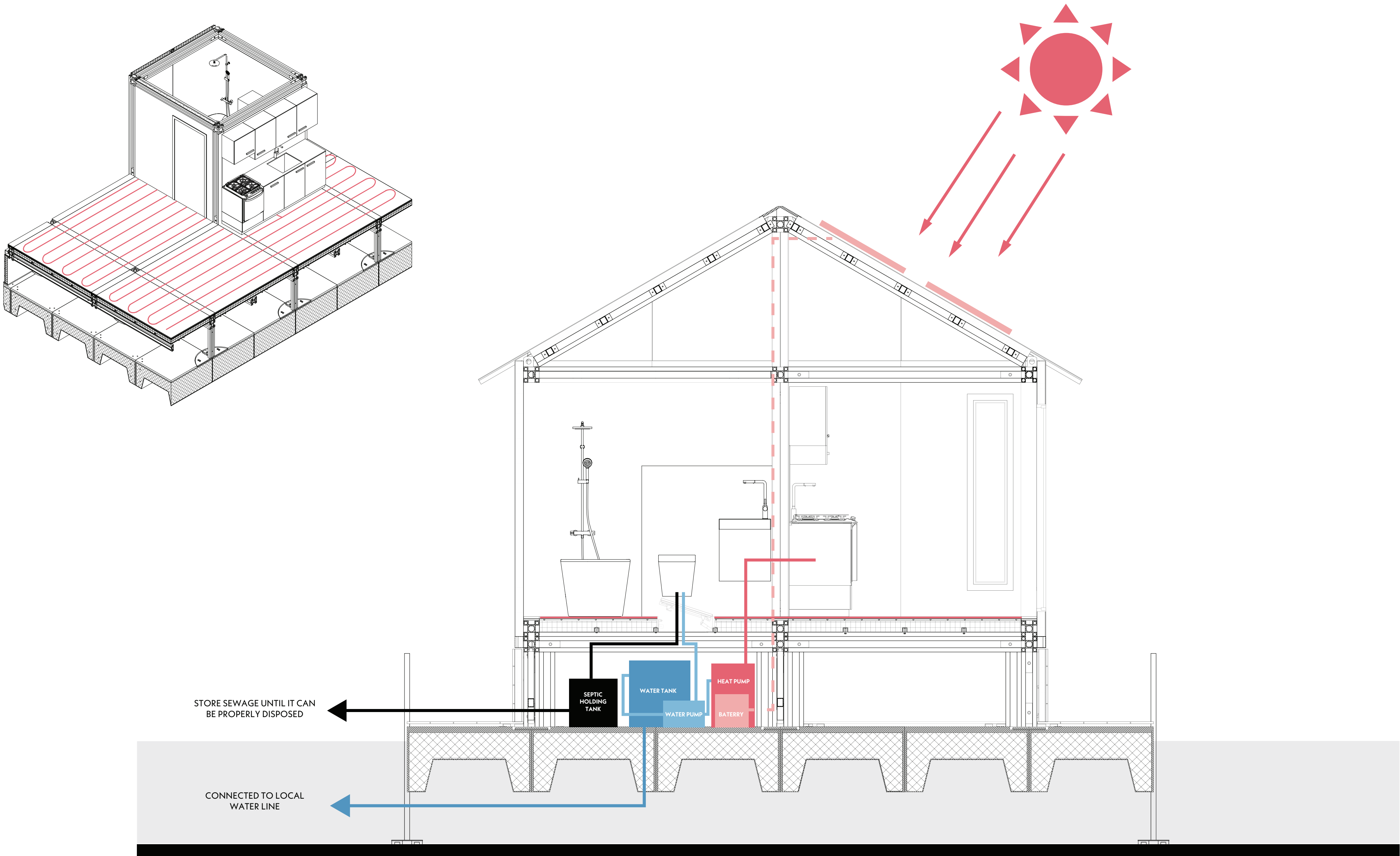




CLIMATE AND UTILITY SECTION



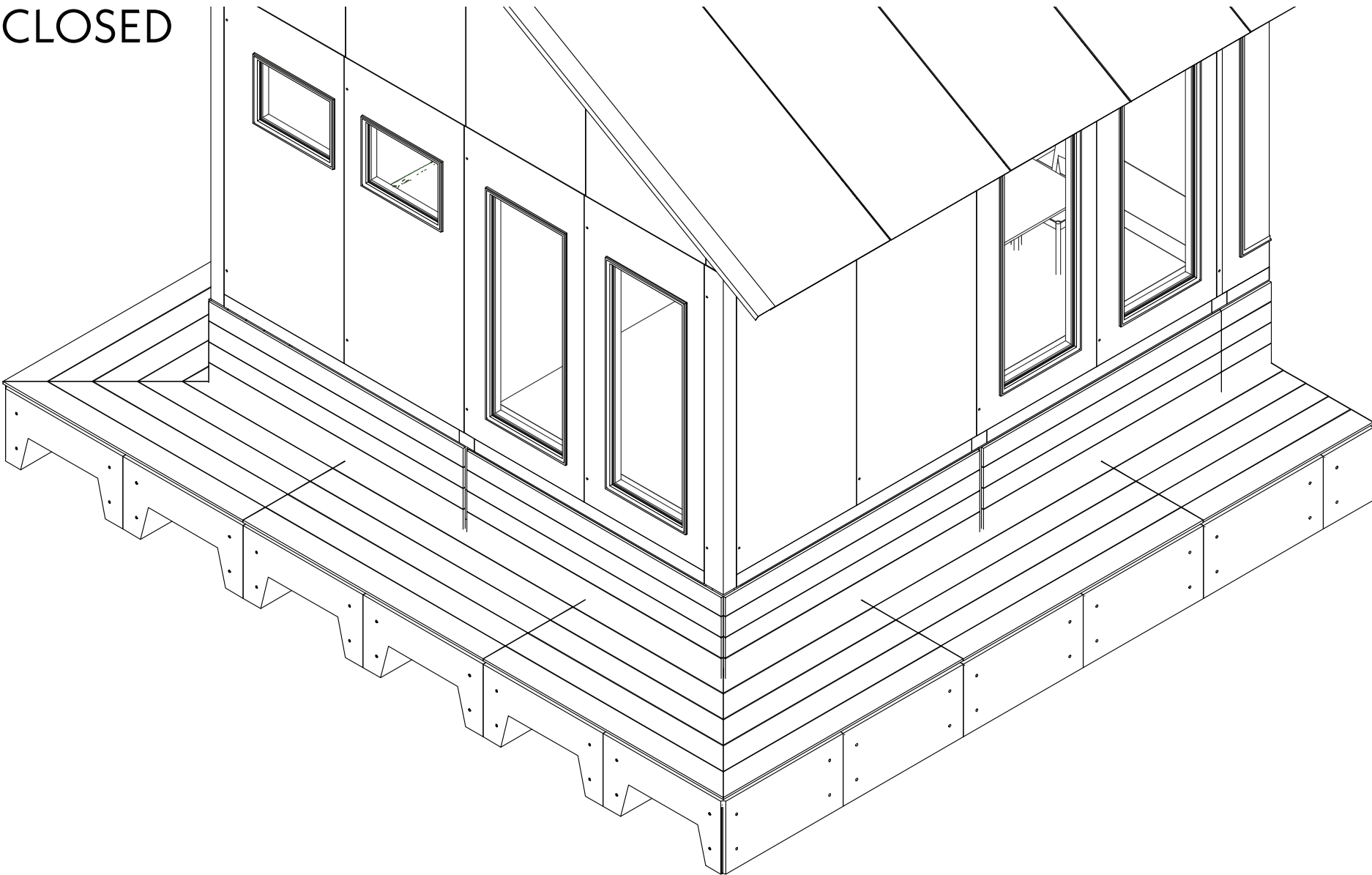
CLIMATE AND UTILITY SECTION



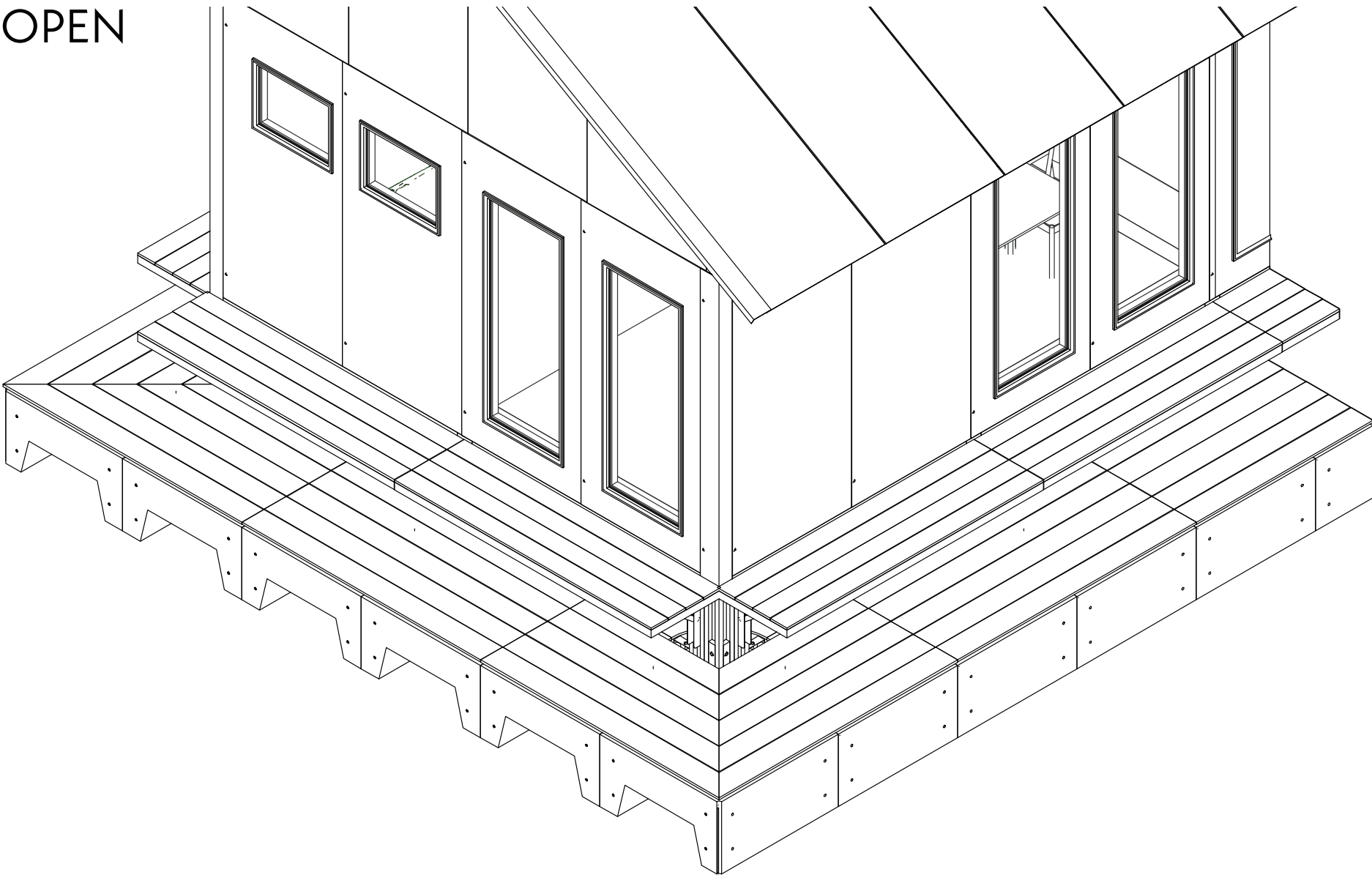


COOLING AND VENTILATION

CLOSED

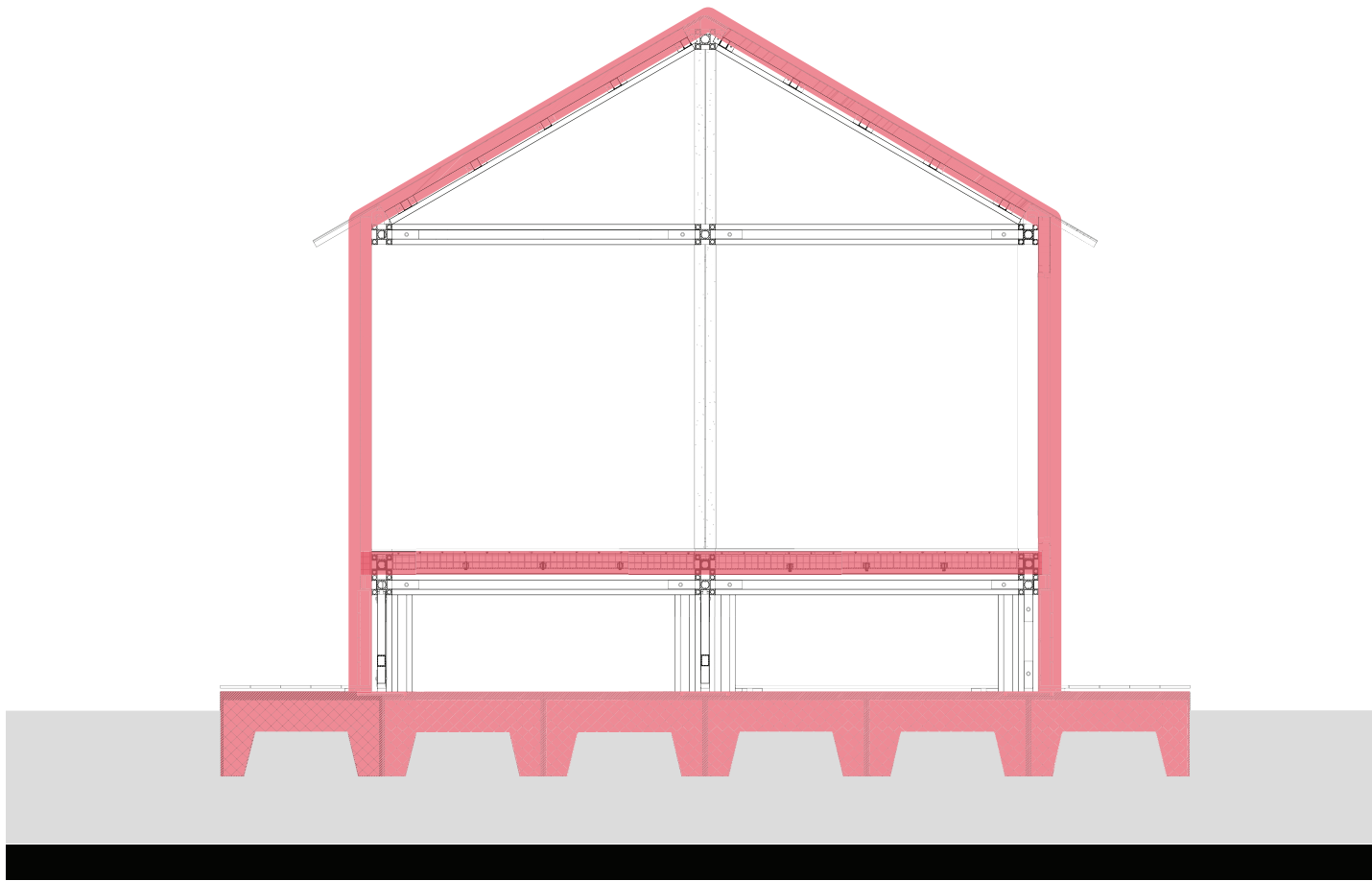
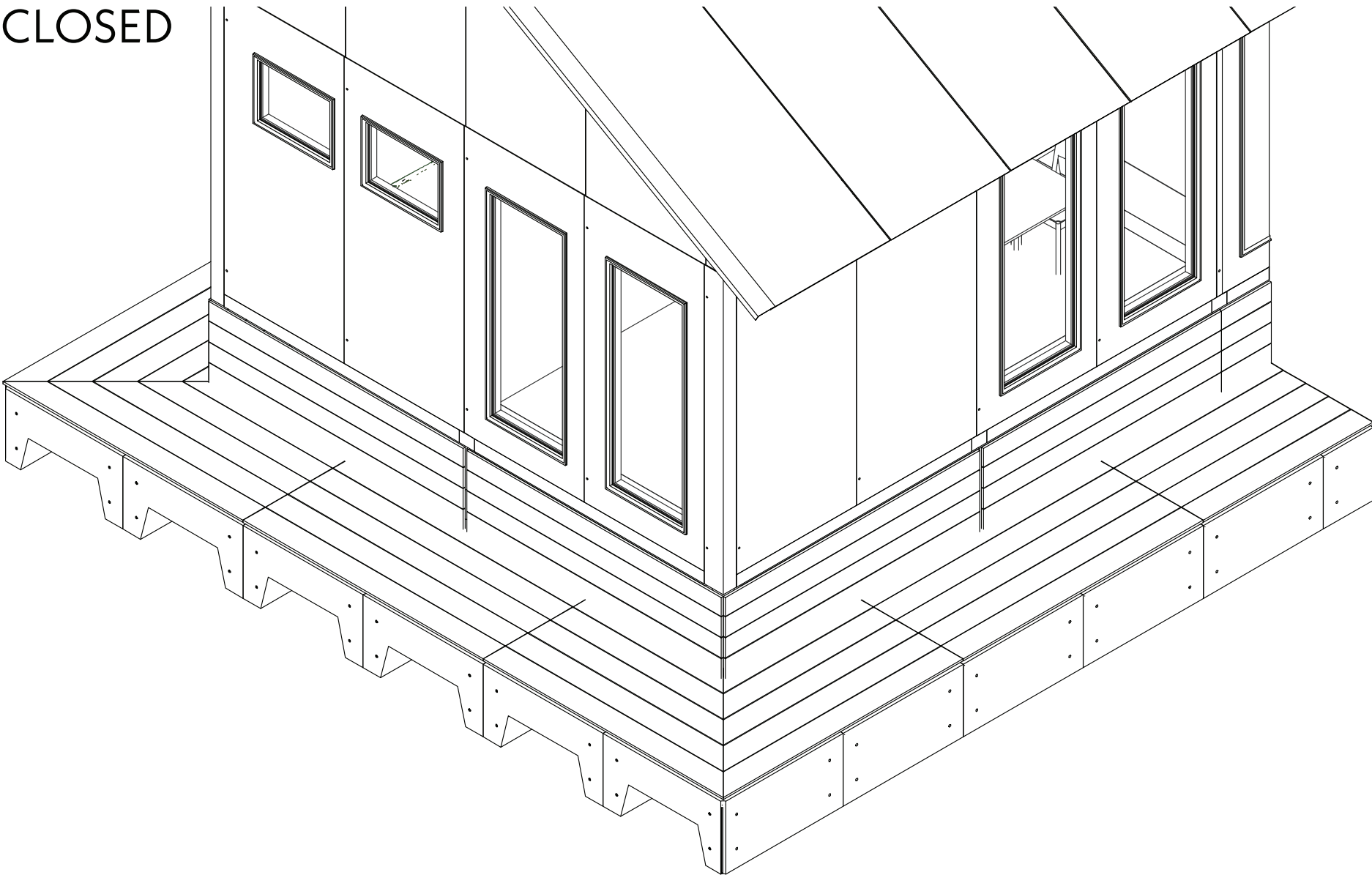


OPEN

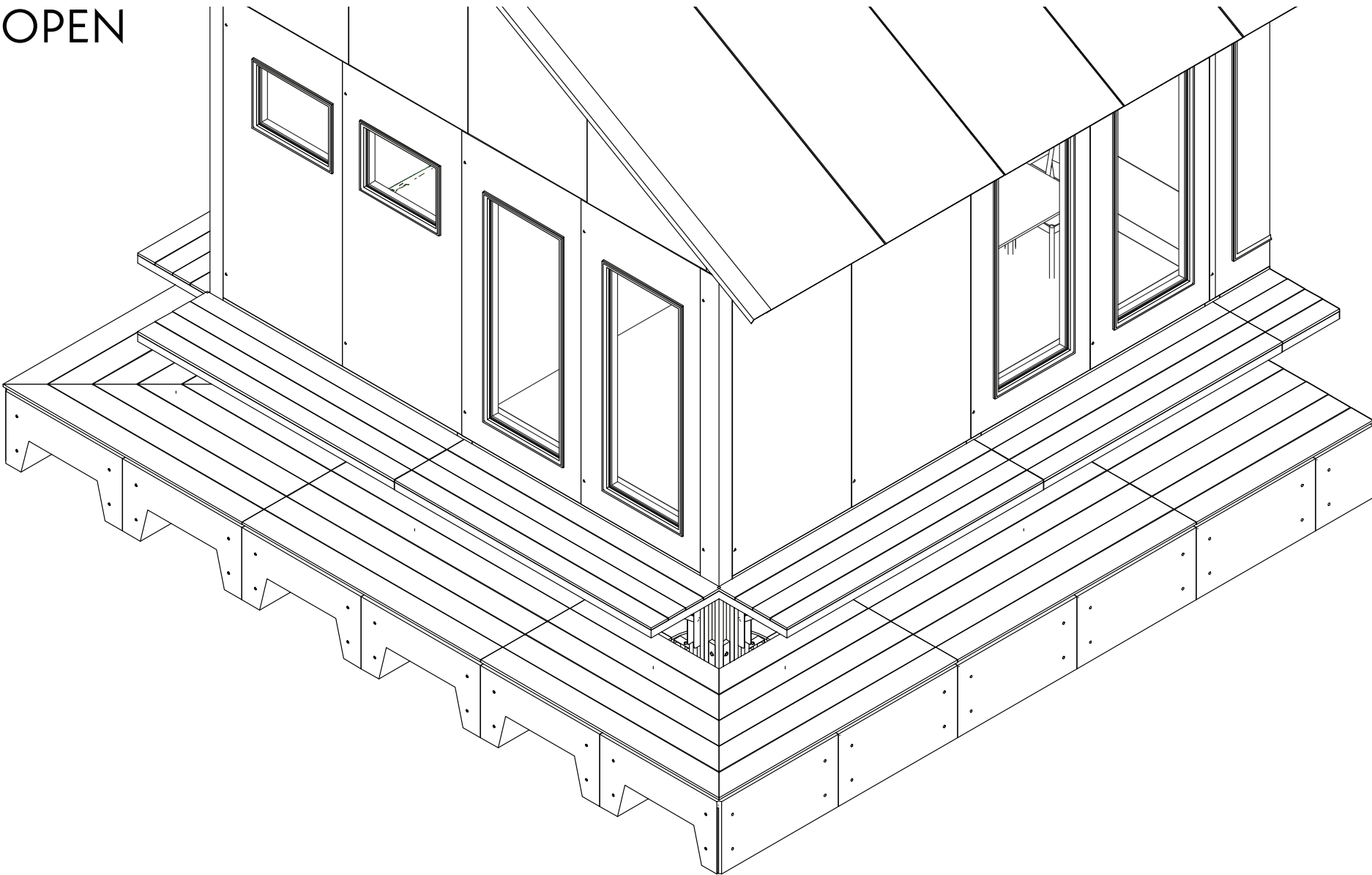


COOLING AND VENTILATION

CLOSED



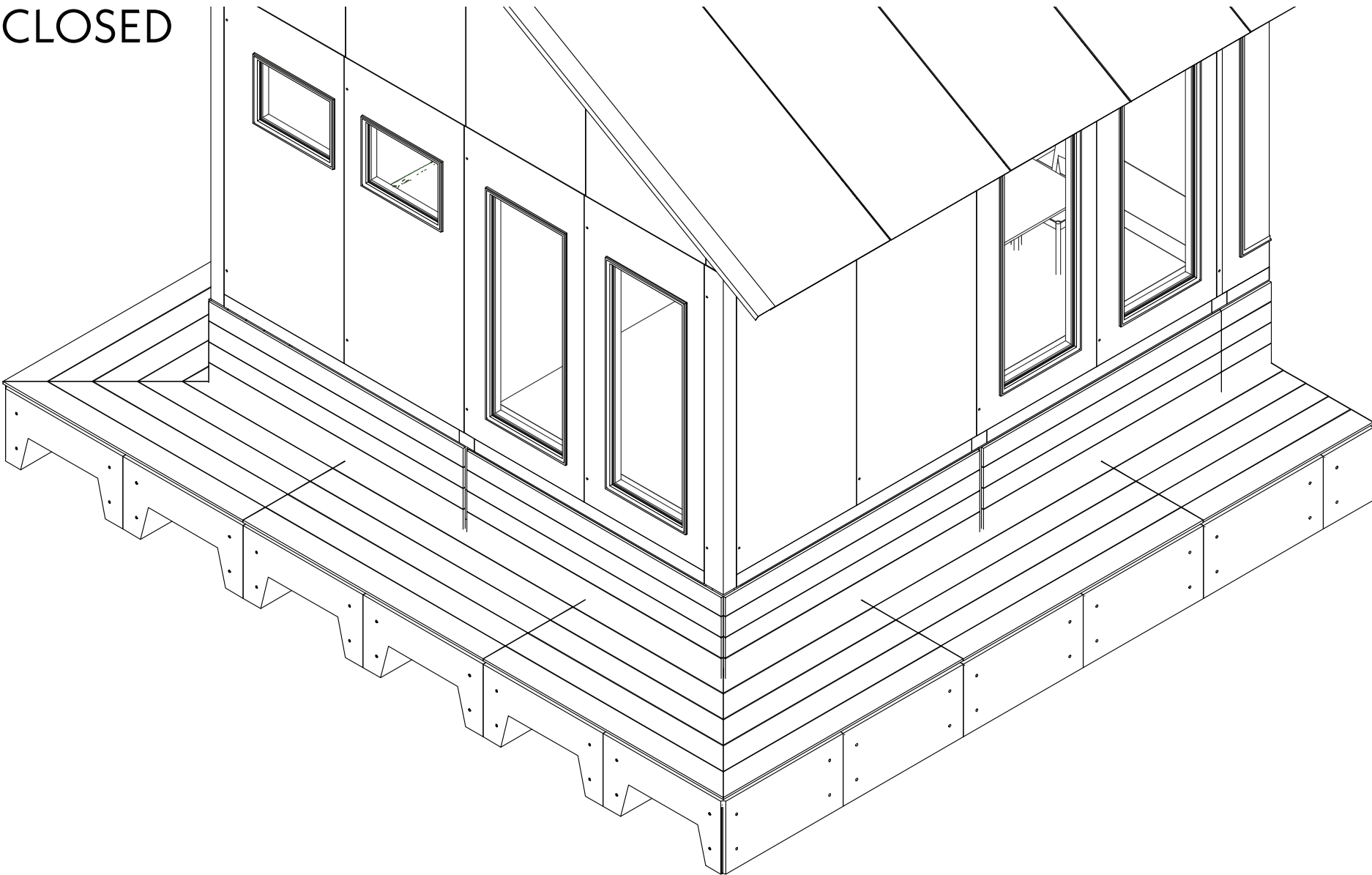
OPEN



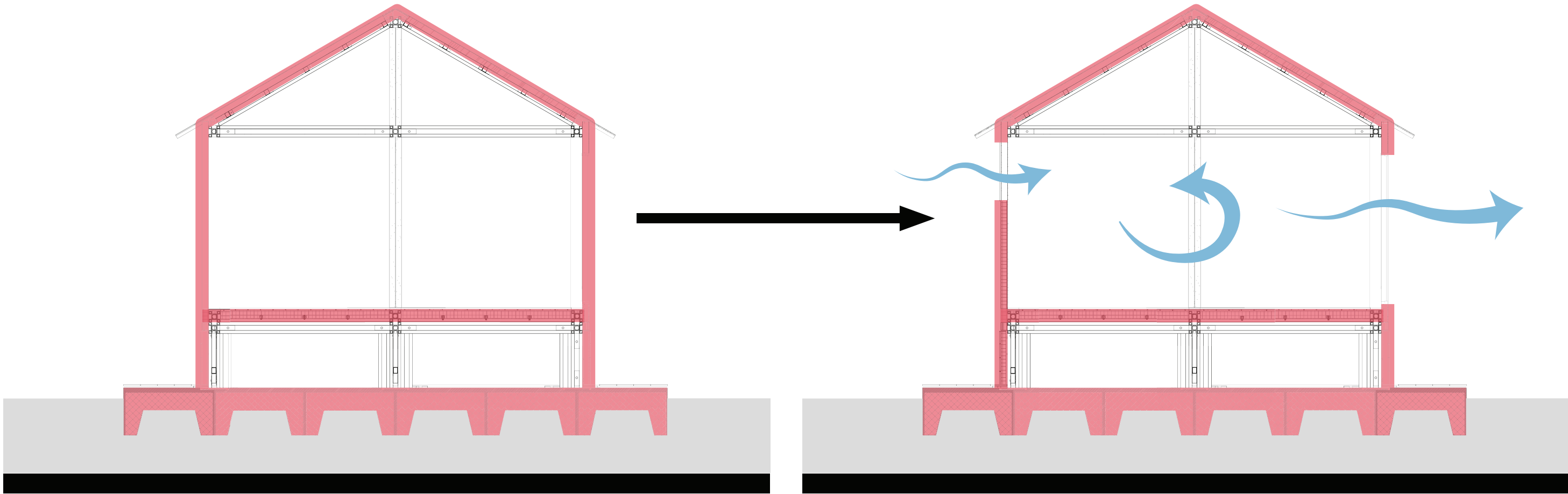
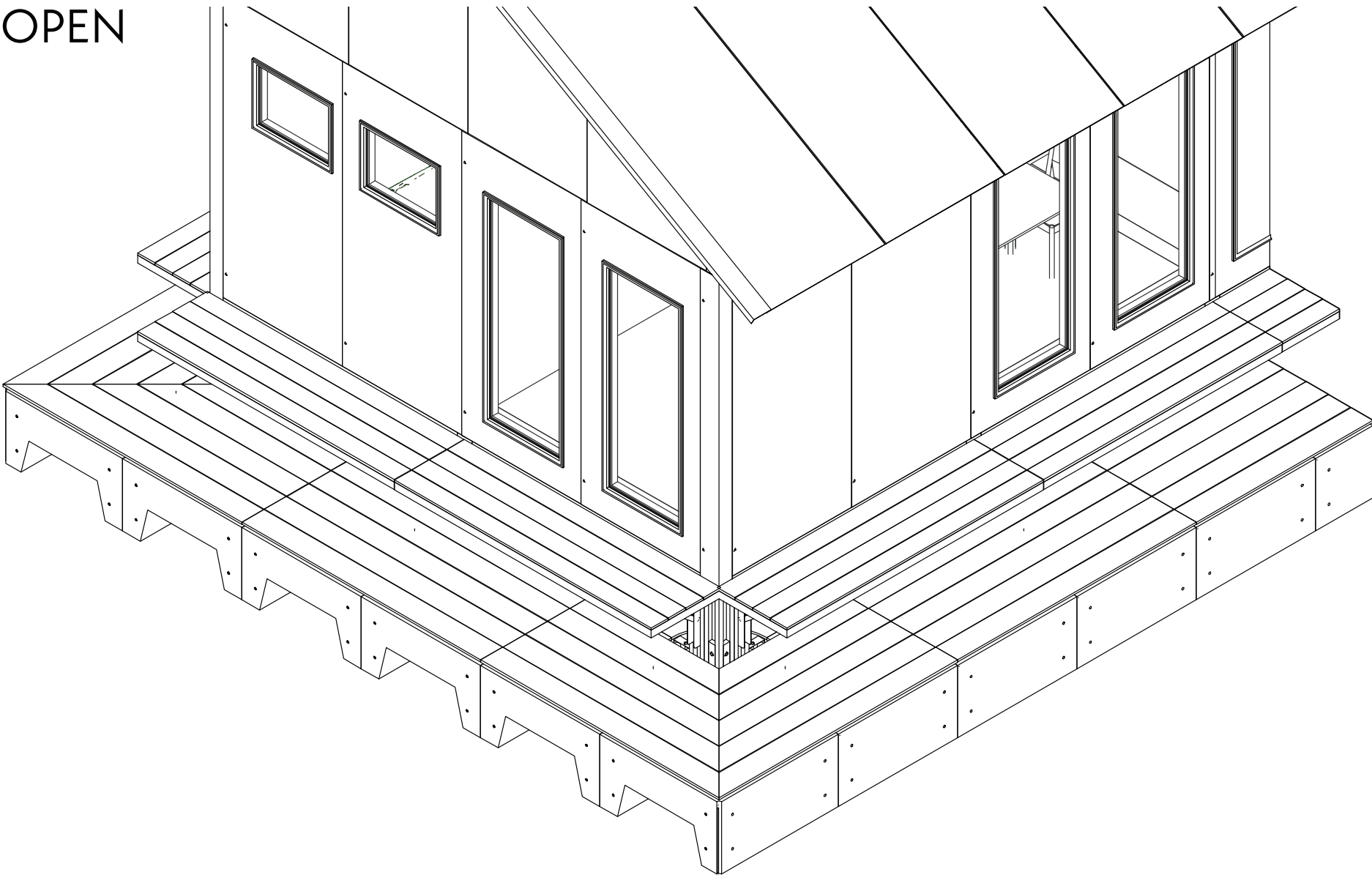


COOLING AND VENTILATION

CLOSED



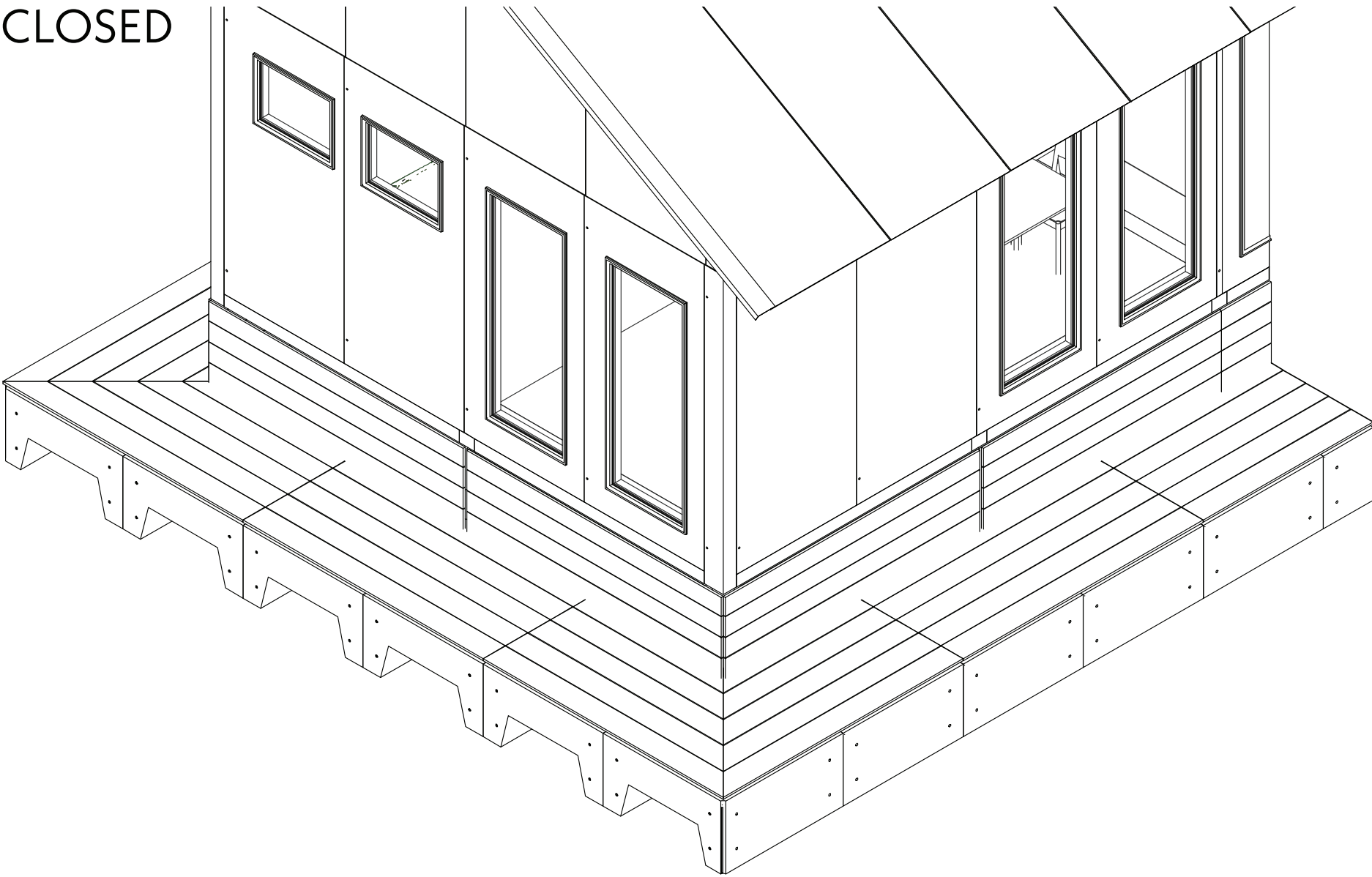
OPEN



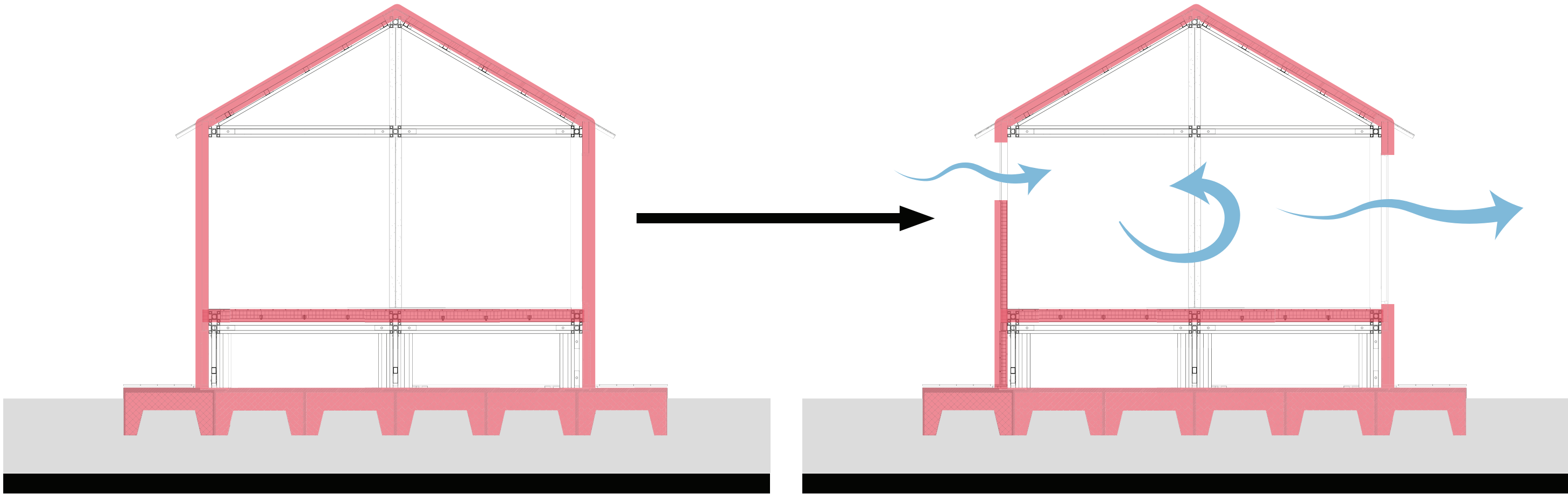
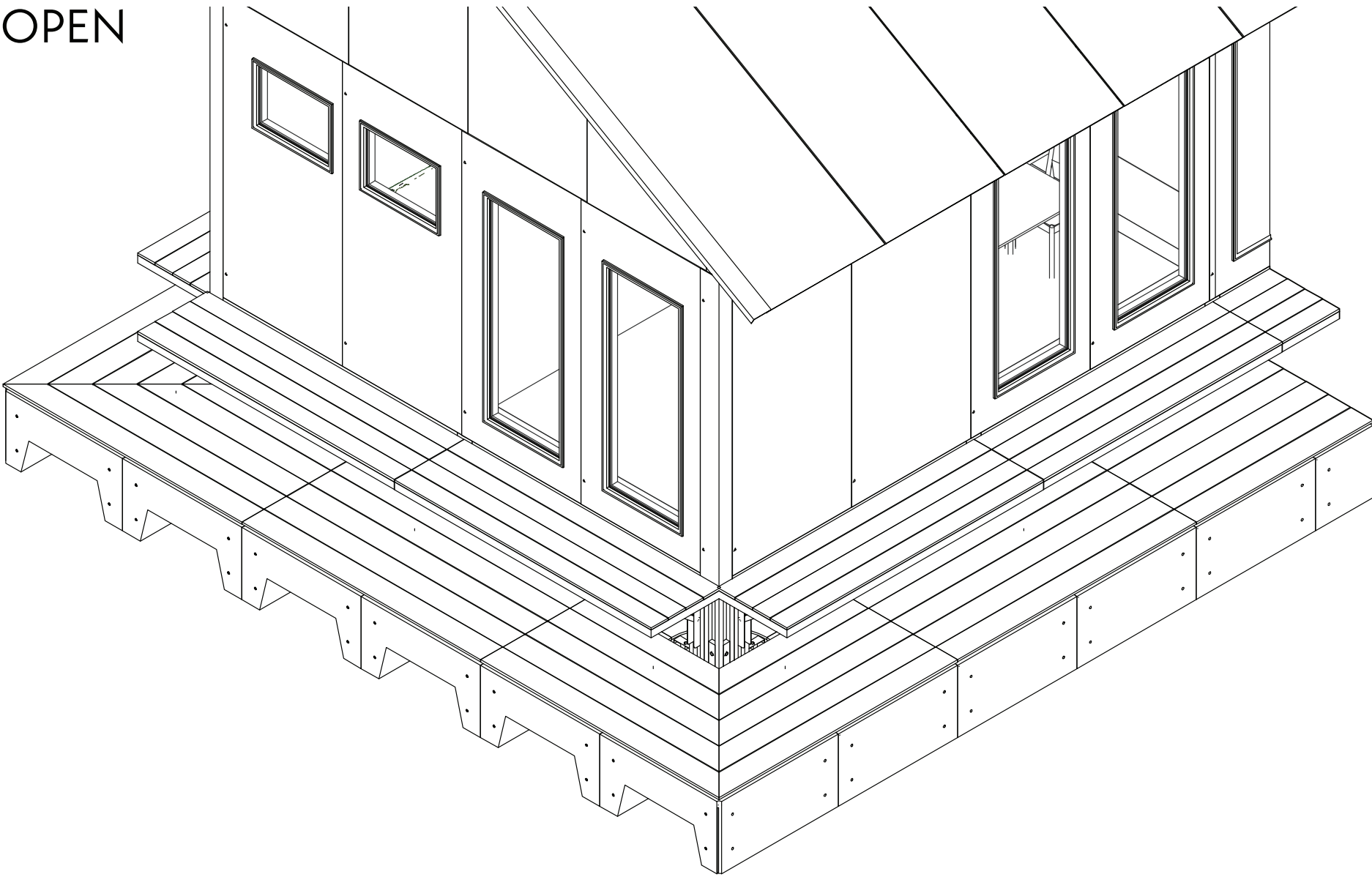
VENTILATION

COOLING AND VENTILATION

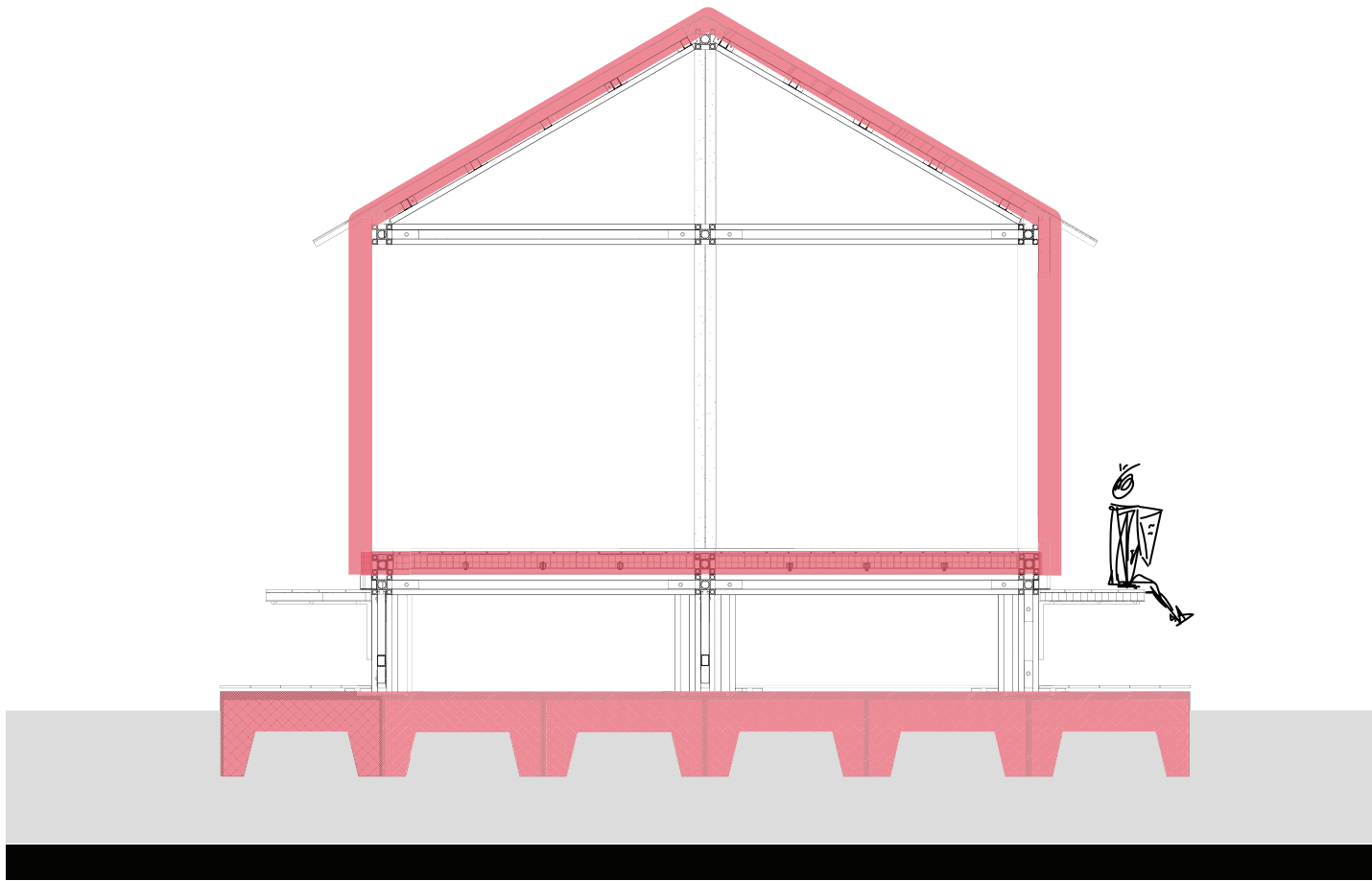
CLOSED



OPEN



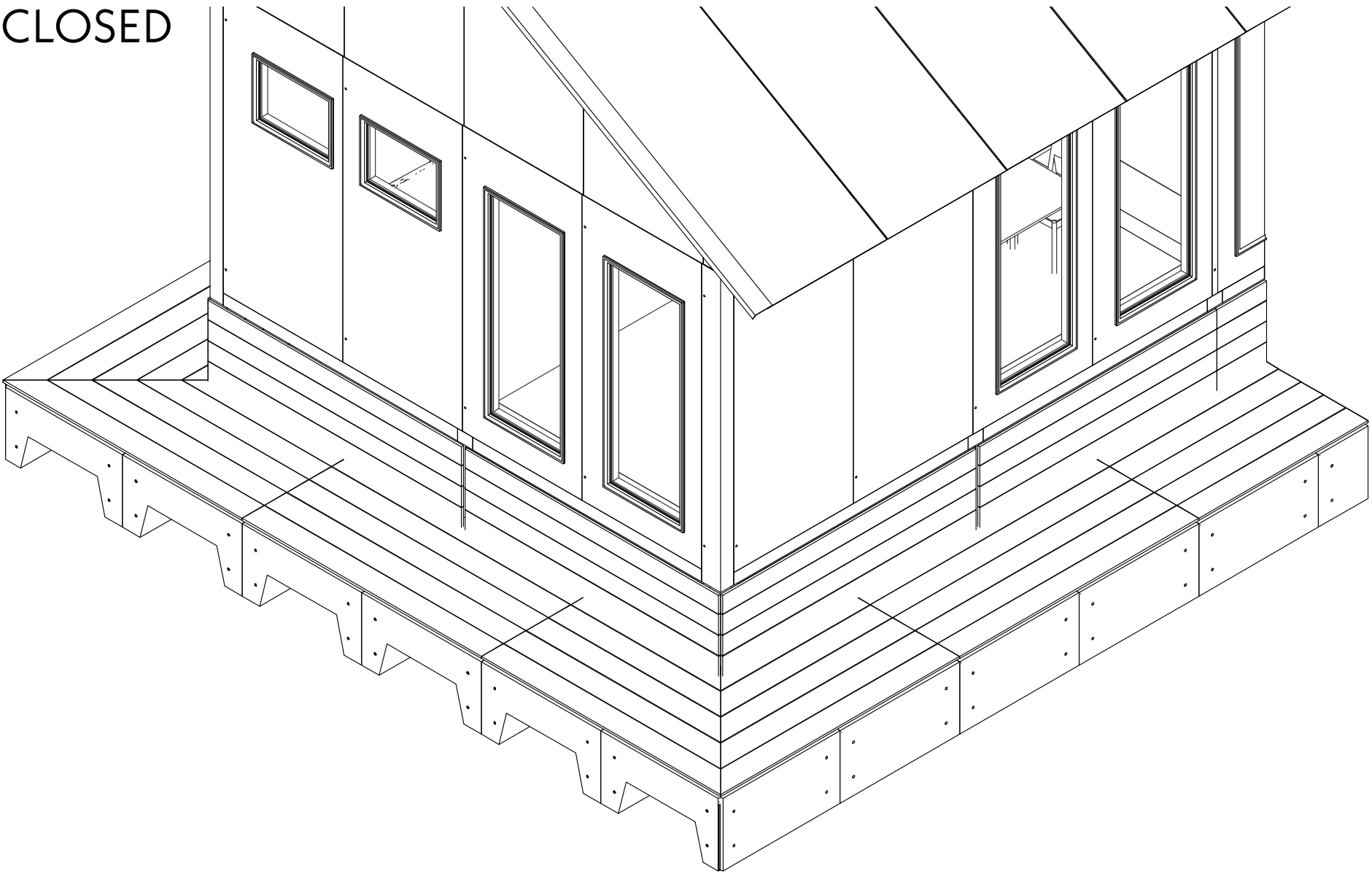
VENTILATION



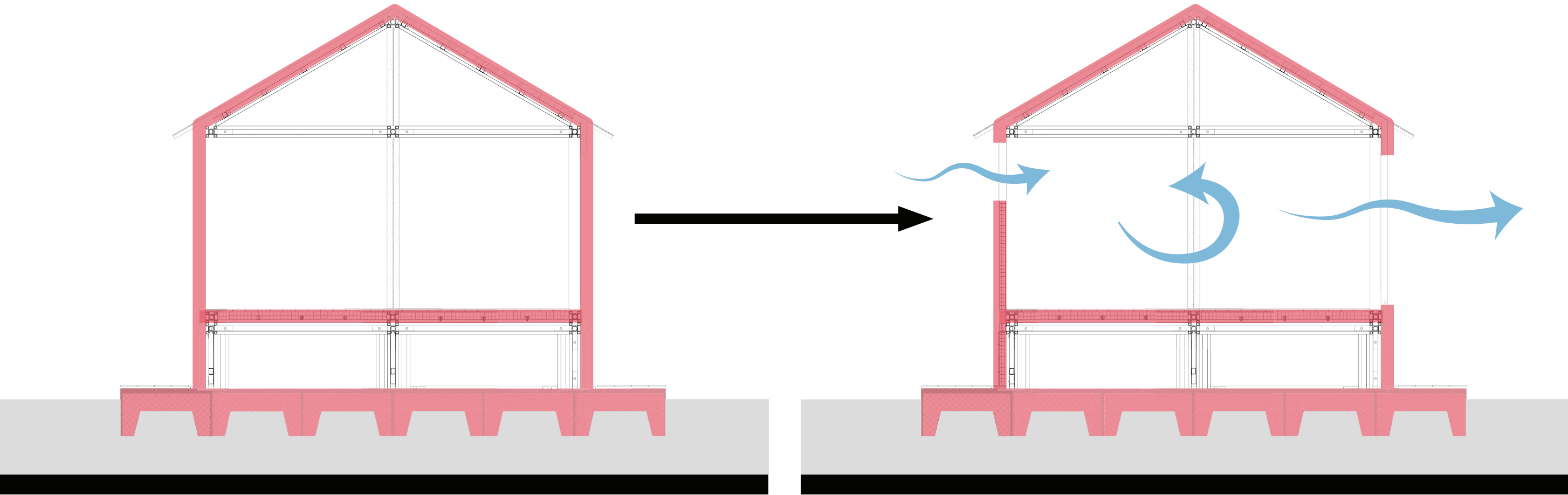
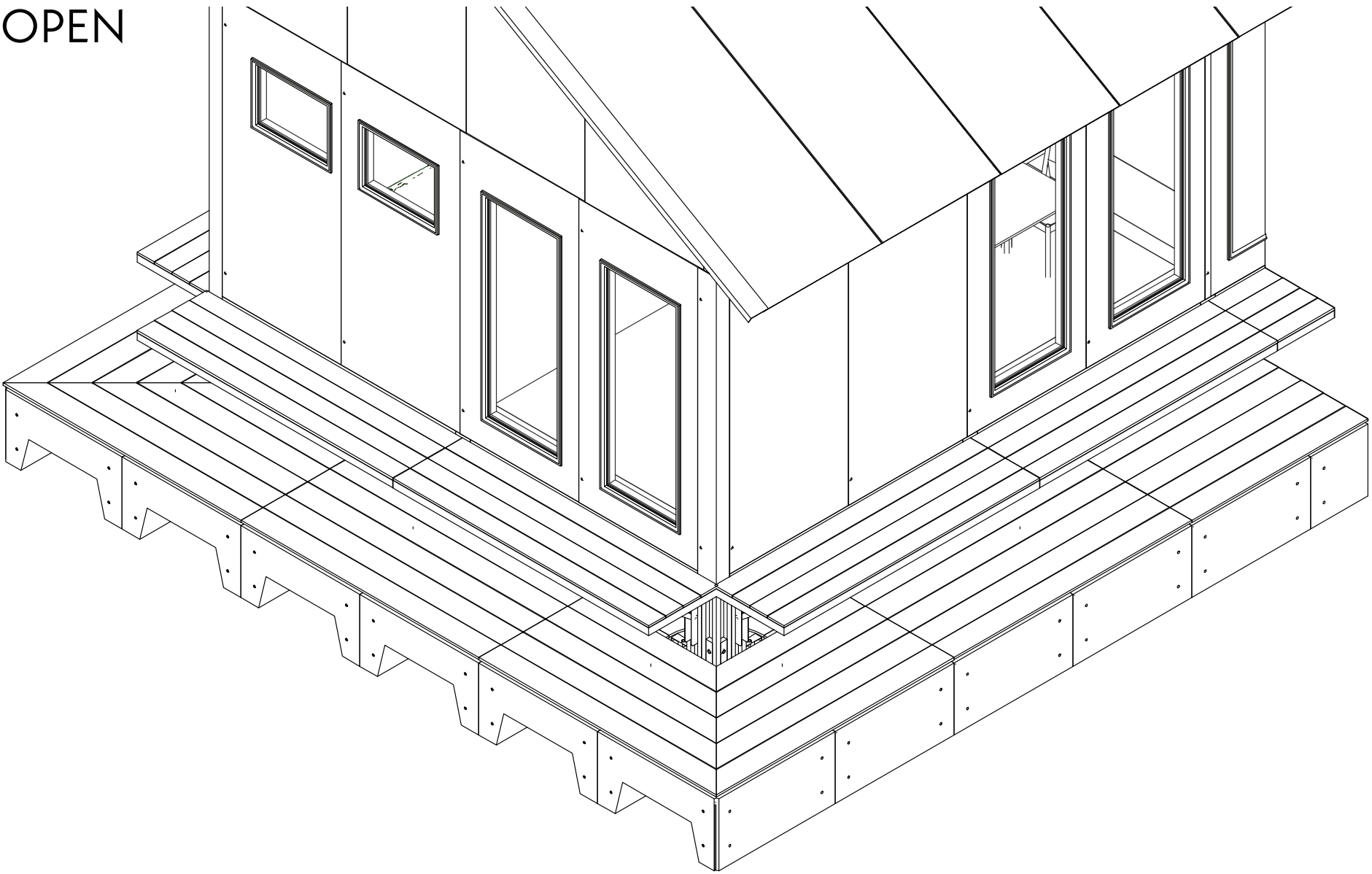


COOLING AND VENTILATION

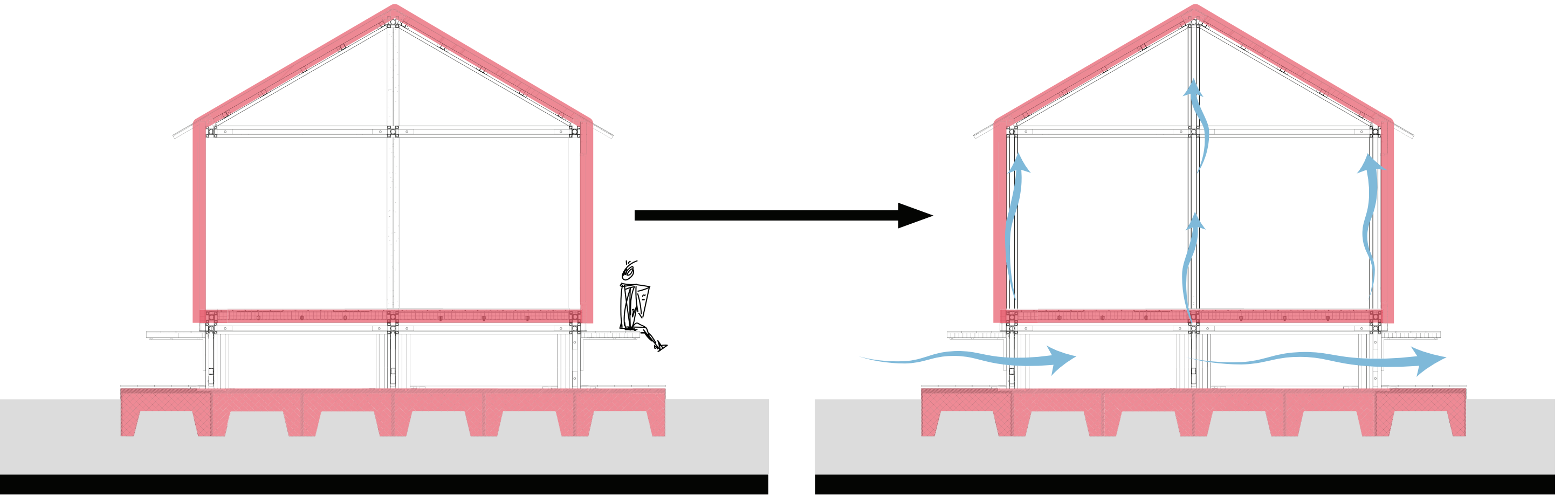
CLOSED



OPEN



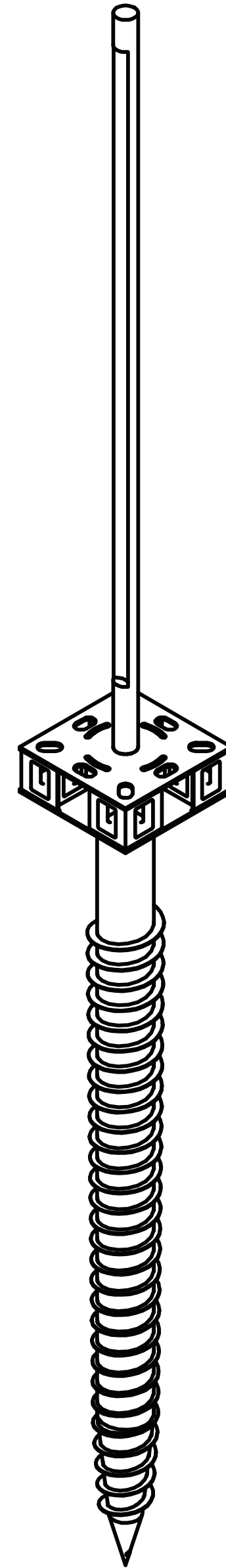
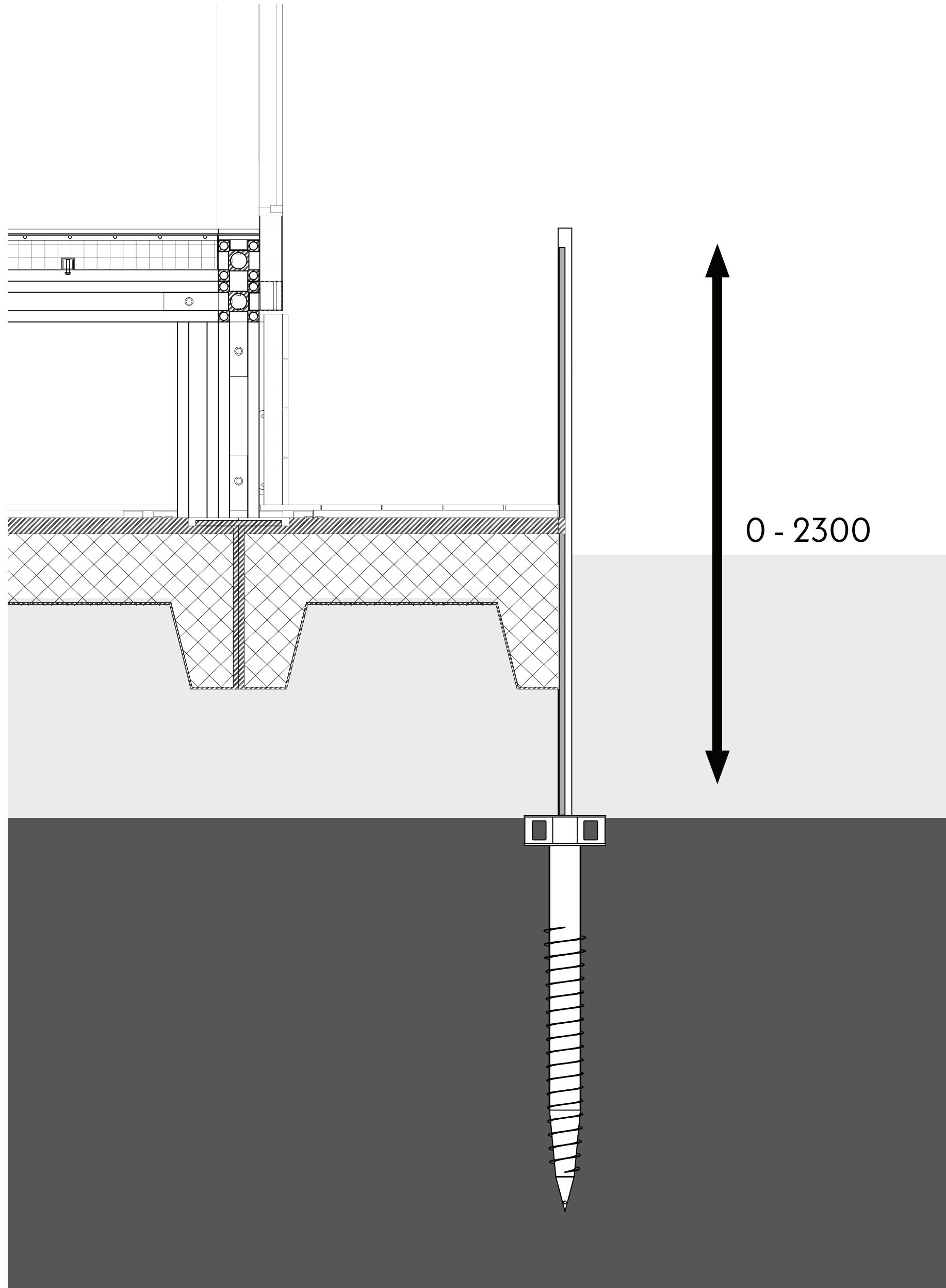
VENTILATION



PASSIVE COOLING

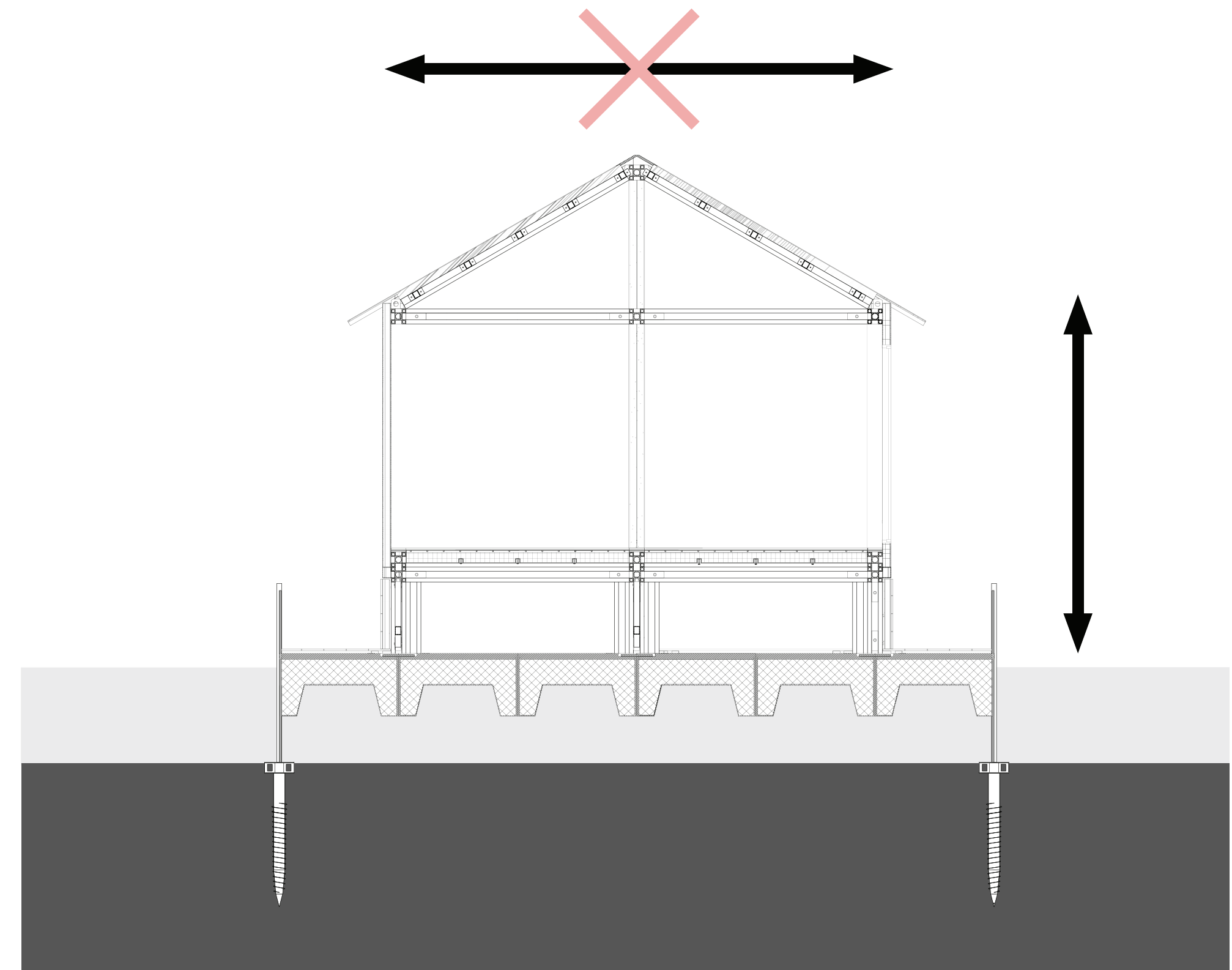
# GROUND LEVELING SYSTEM

## GROUND LEVELING SYSTEM



57

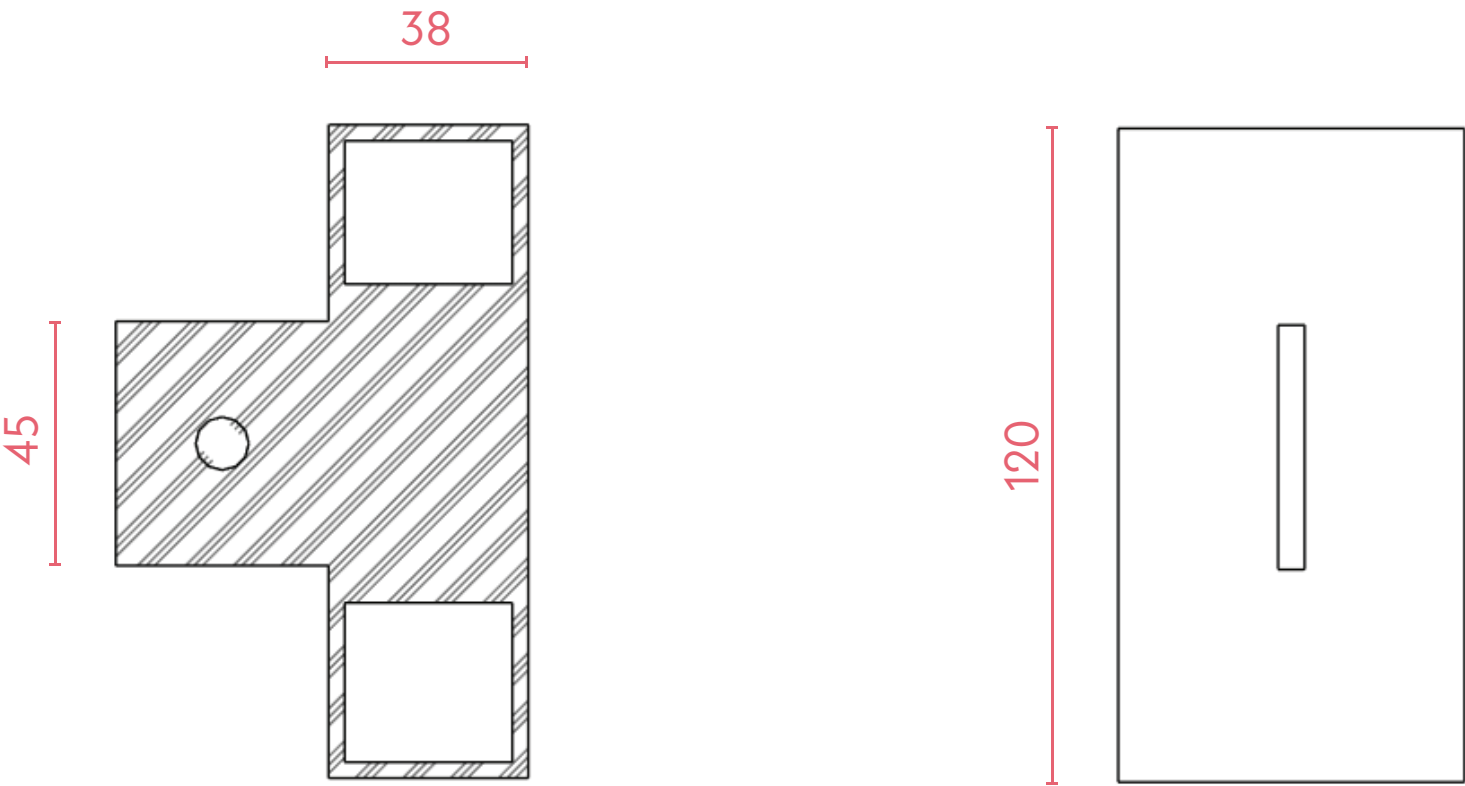
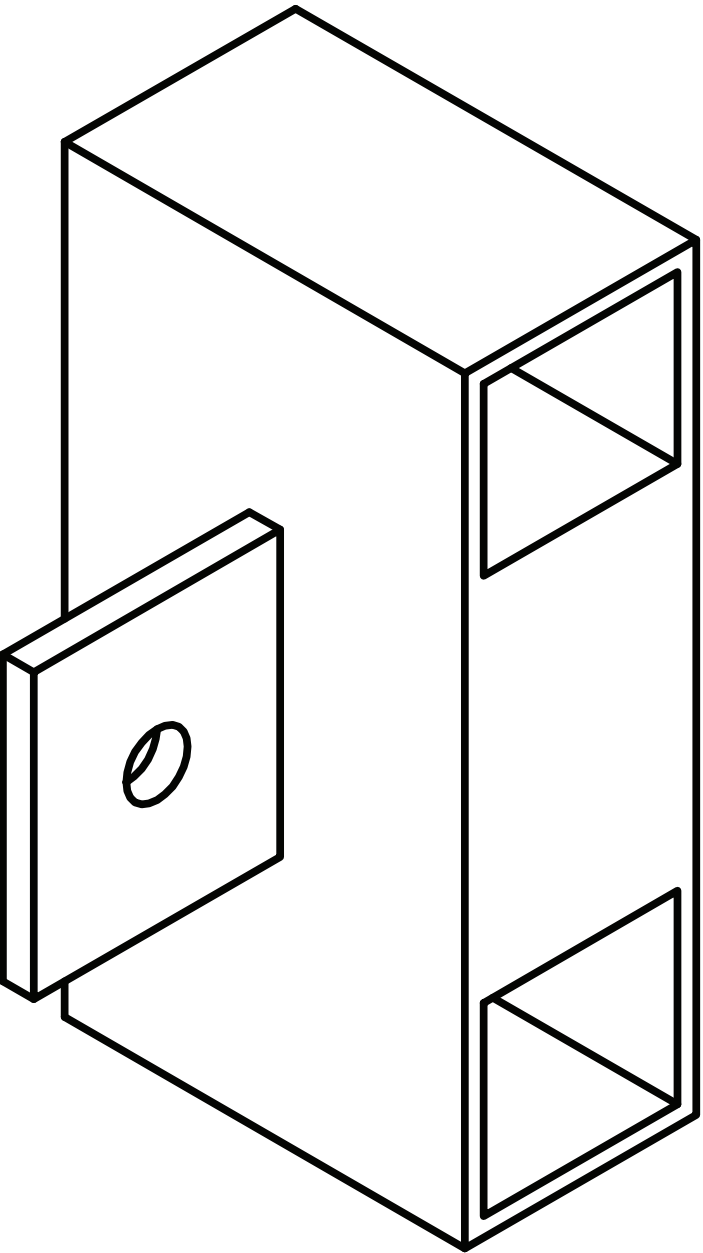
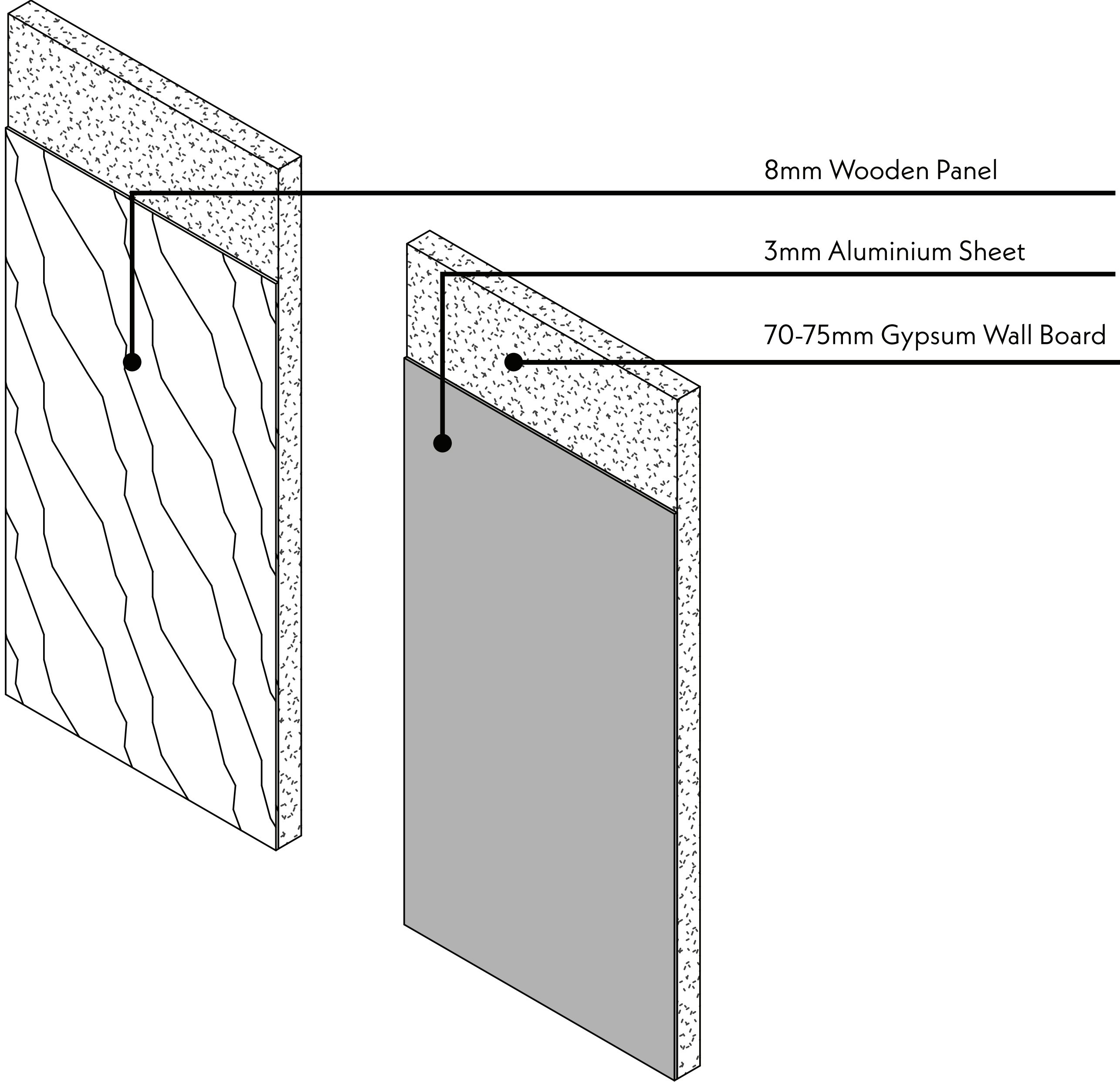
- ALLOW VERTICAL MOVEMENT
- MINIMISE HORIZONTAL MOVEMENT



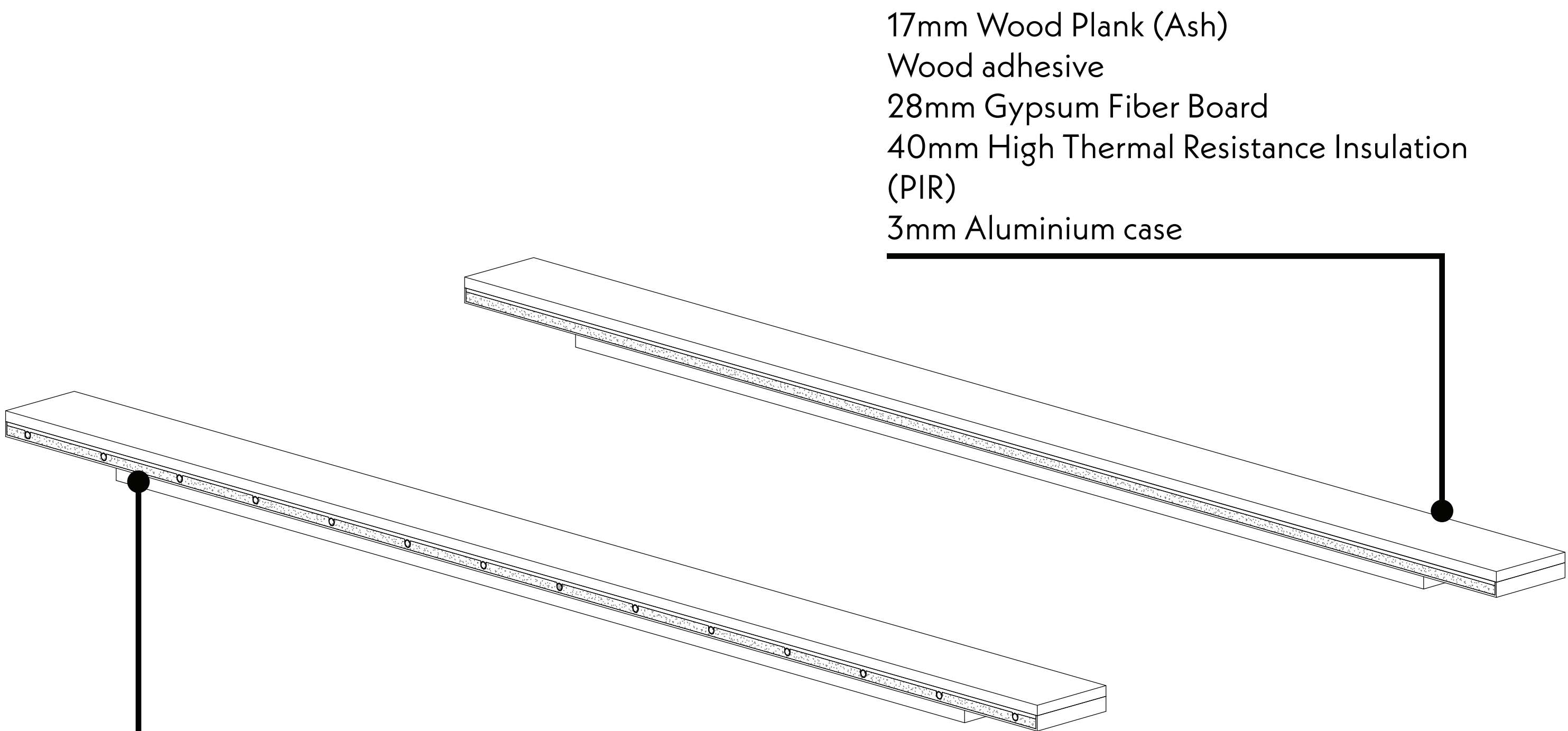


**INTERIOR**

INTERIOR WALLS

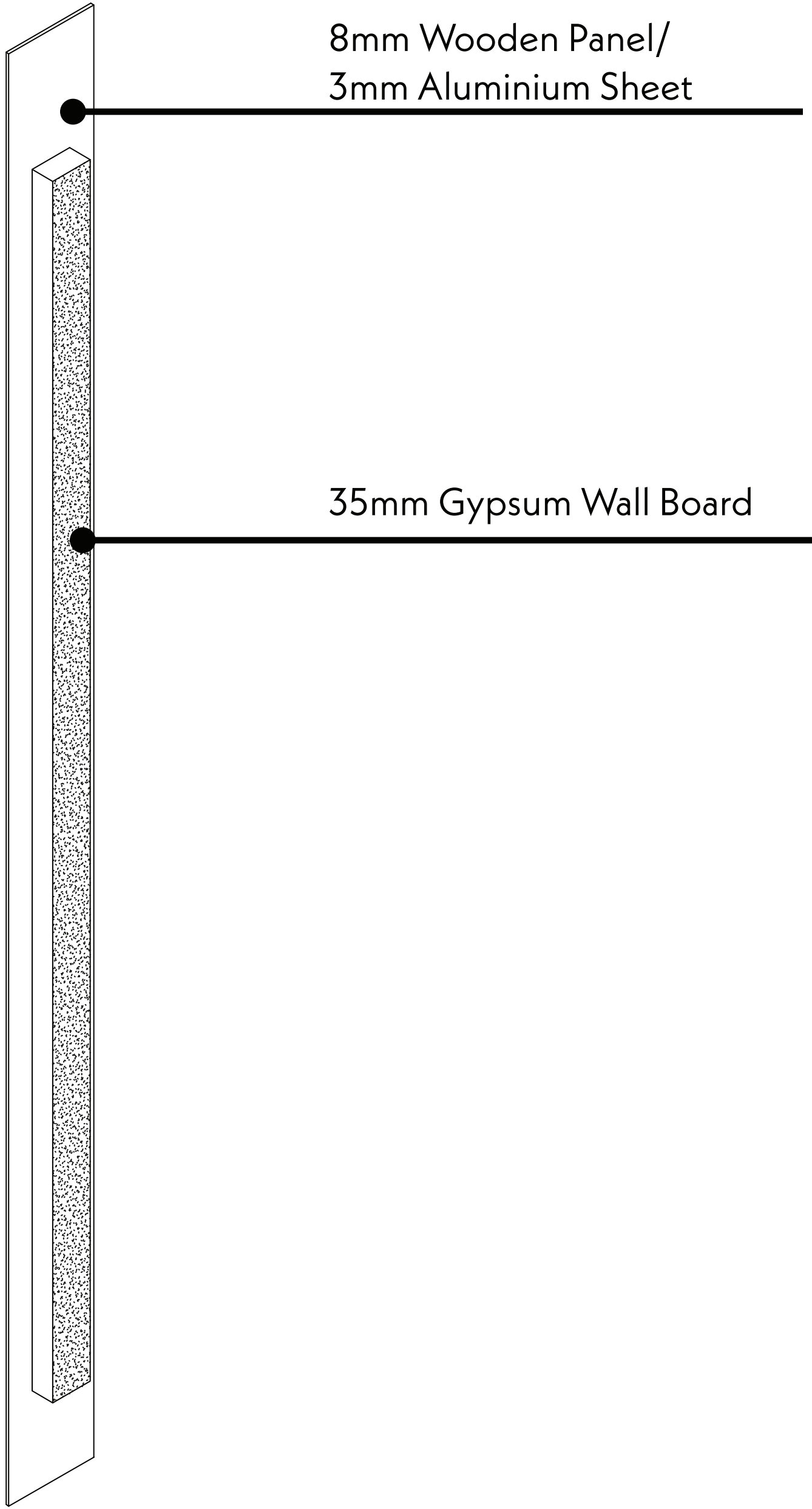


# COLUMN, BEAM AND FLOOR FILLERS



17mm Wood Plank (Ash)  
 Wood adhesive  
 28mm Gypsum Fiber Board  
 40mm High Thermal Resistance Insulation (PIR)  
 3mm Aluminium case

17mm Wood Plank (Ash)  
 Wood adhesive  
 Ø10x1.2mm Floor Heating Pipe  
 18mm Gypsum Fiber Board  
 40mm High Thermal Resistance Insulation (PIR)  
 3mm Aluminium case

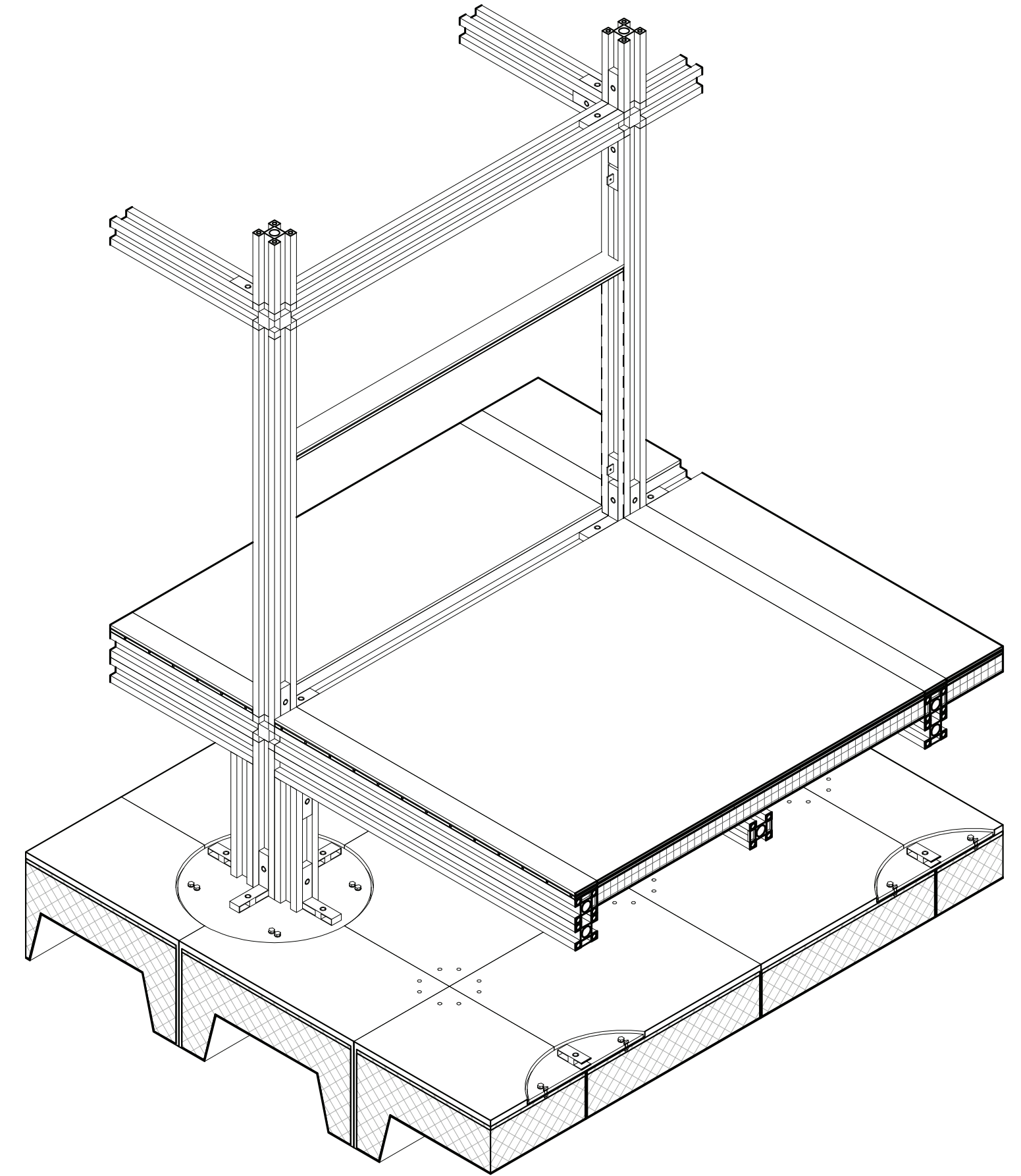
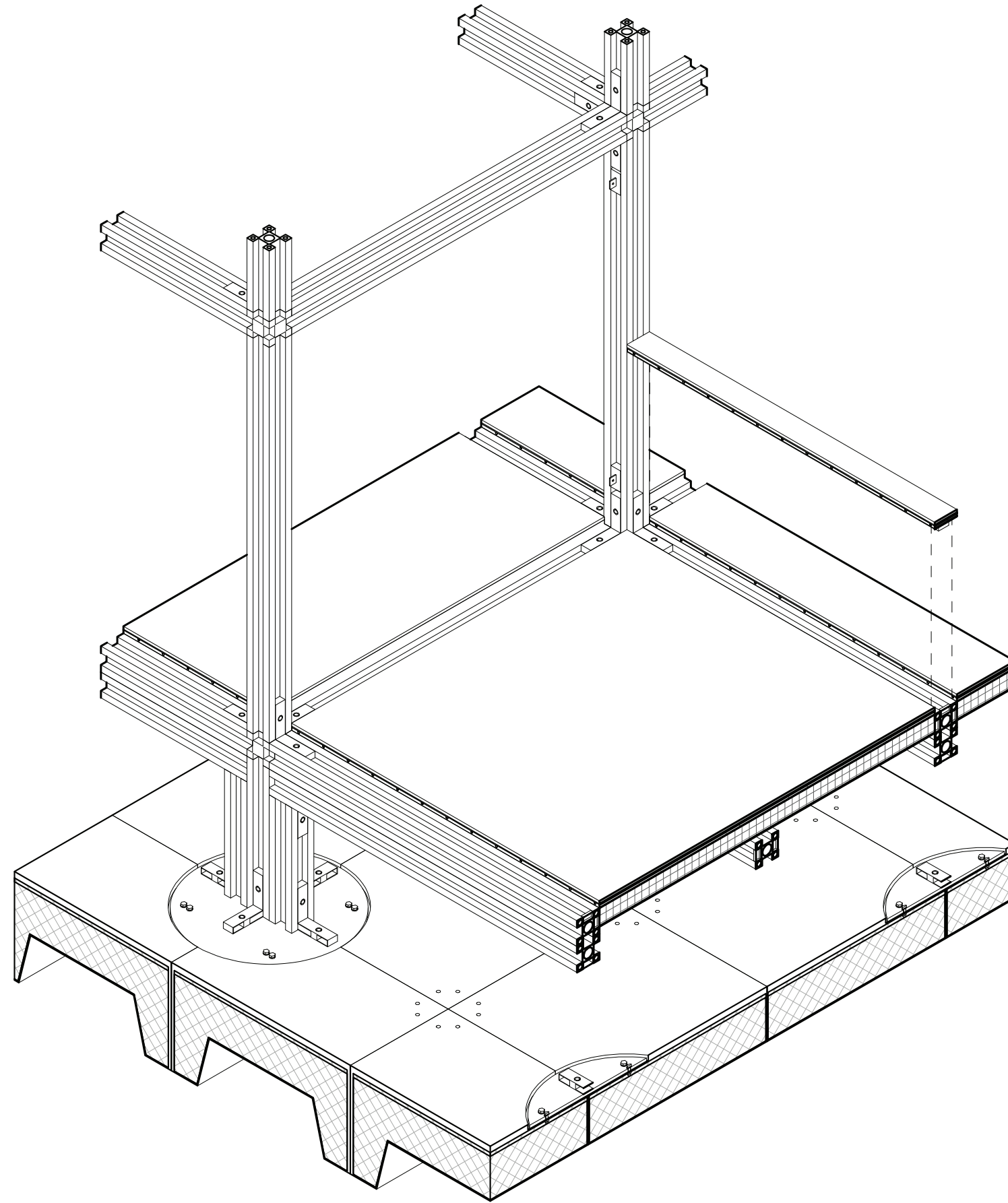
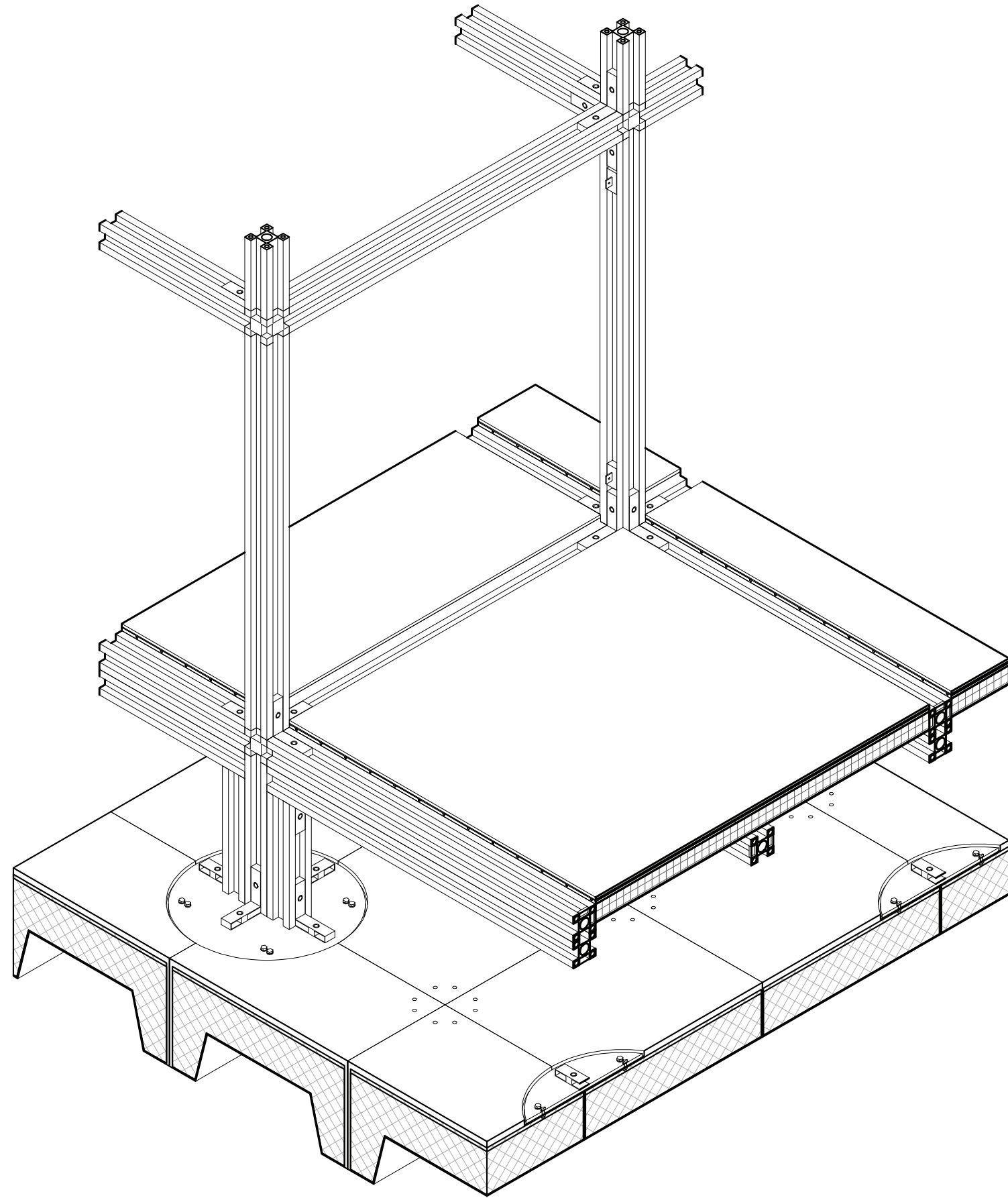


8mm Wooden Panel/  
 3mm Aluminium Sheet

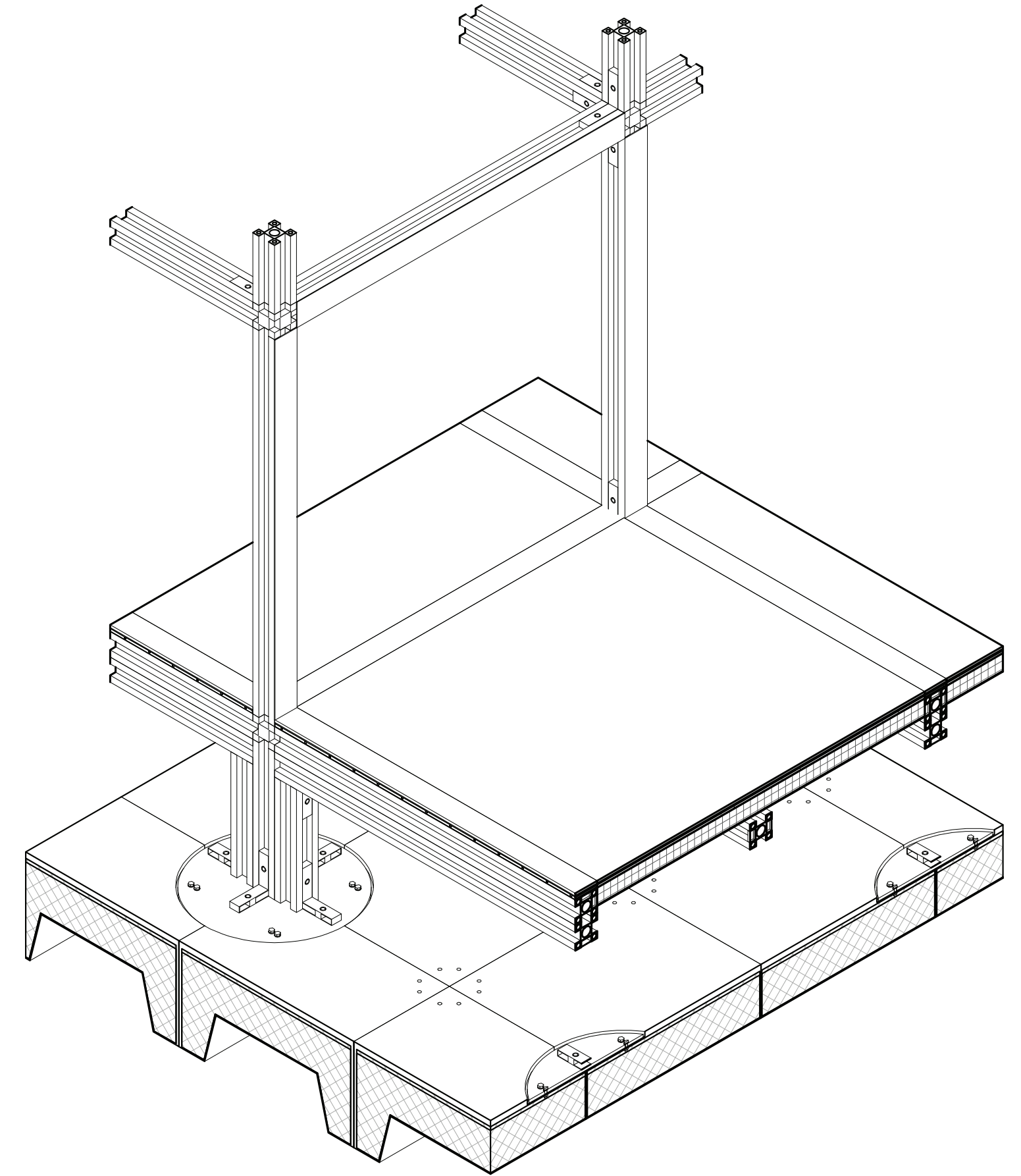
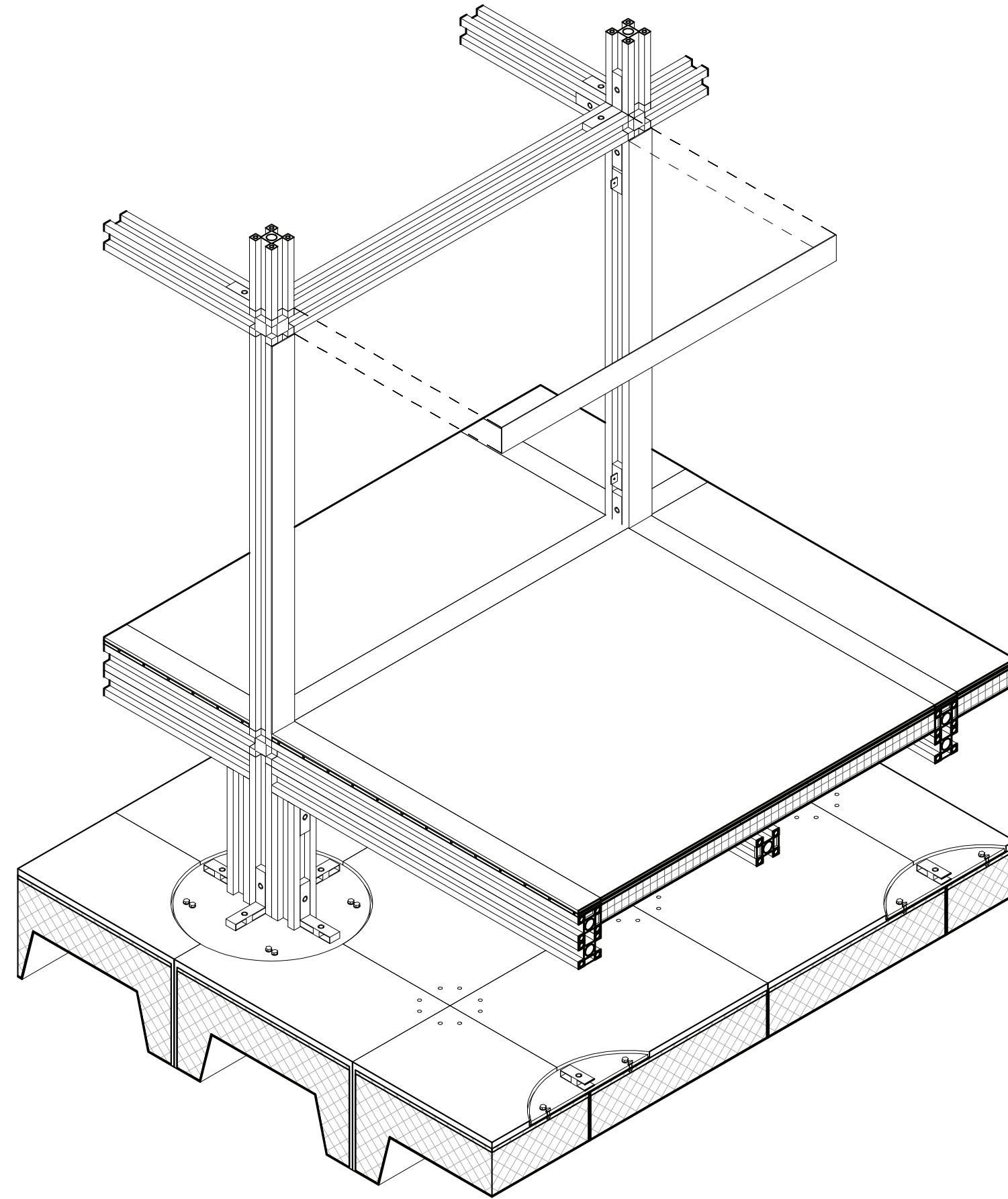
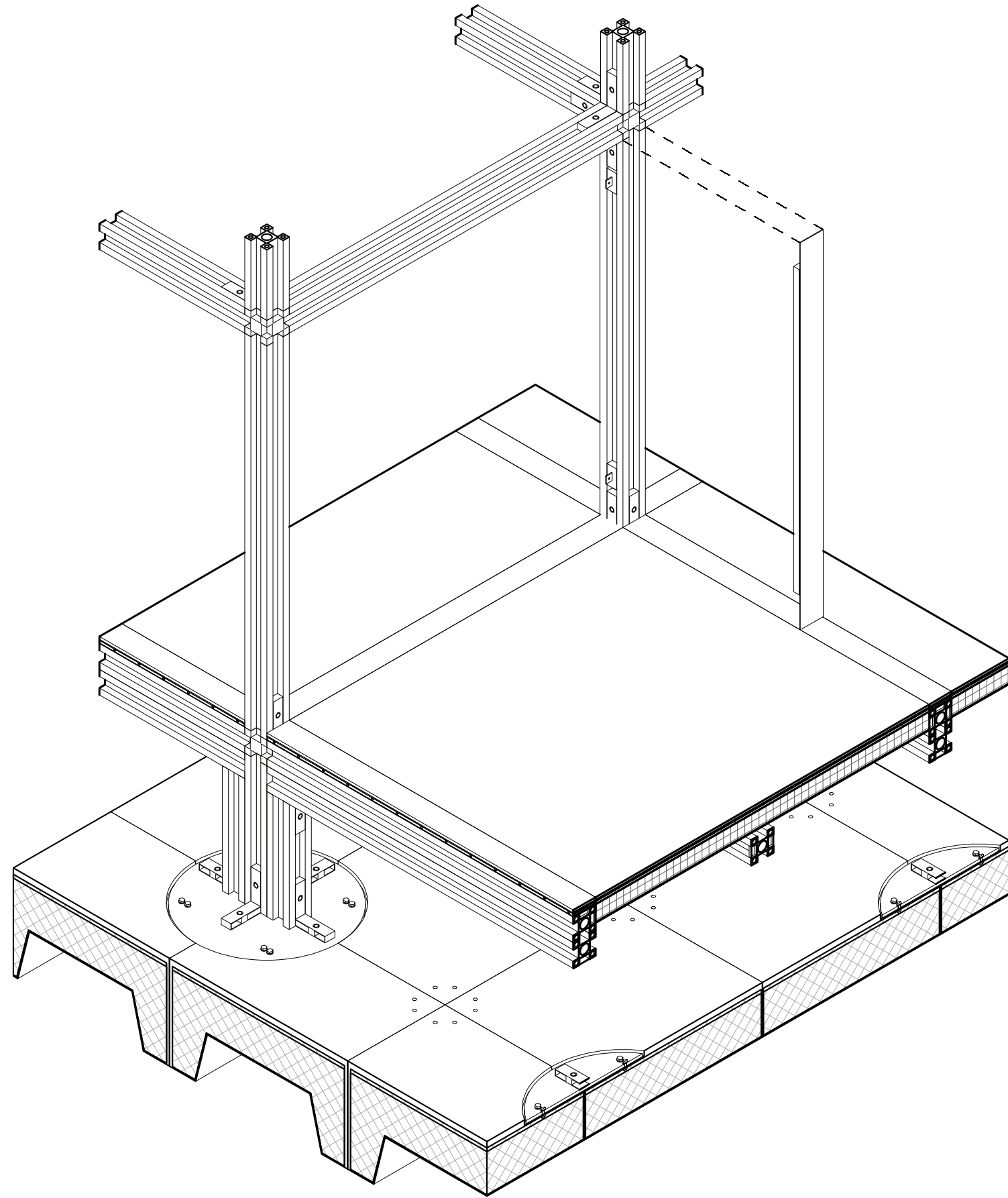
35mm Gypsum Wall Board



## FLOOR FILLERS

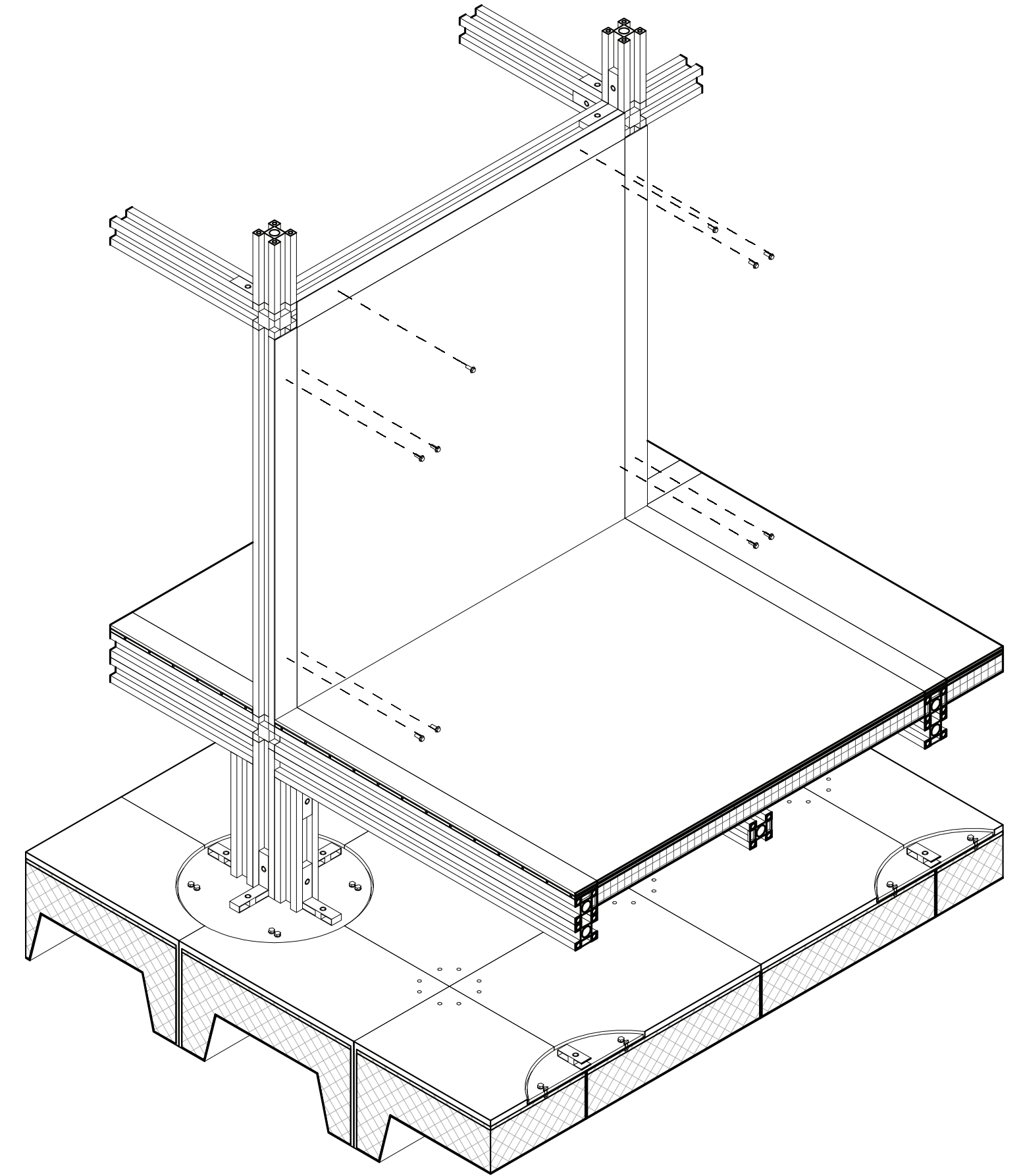
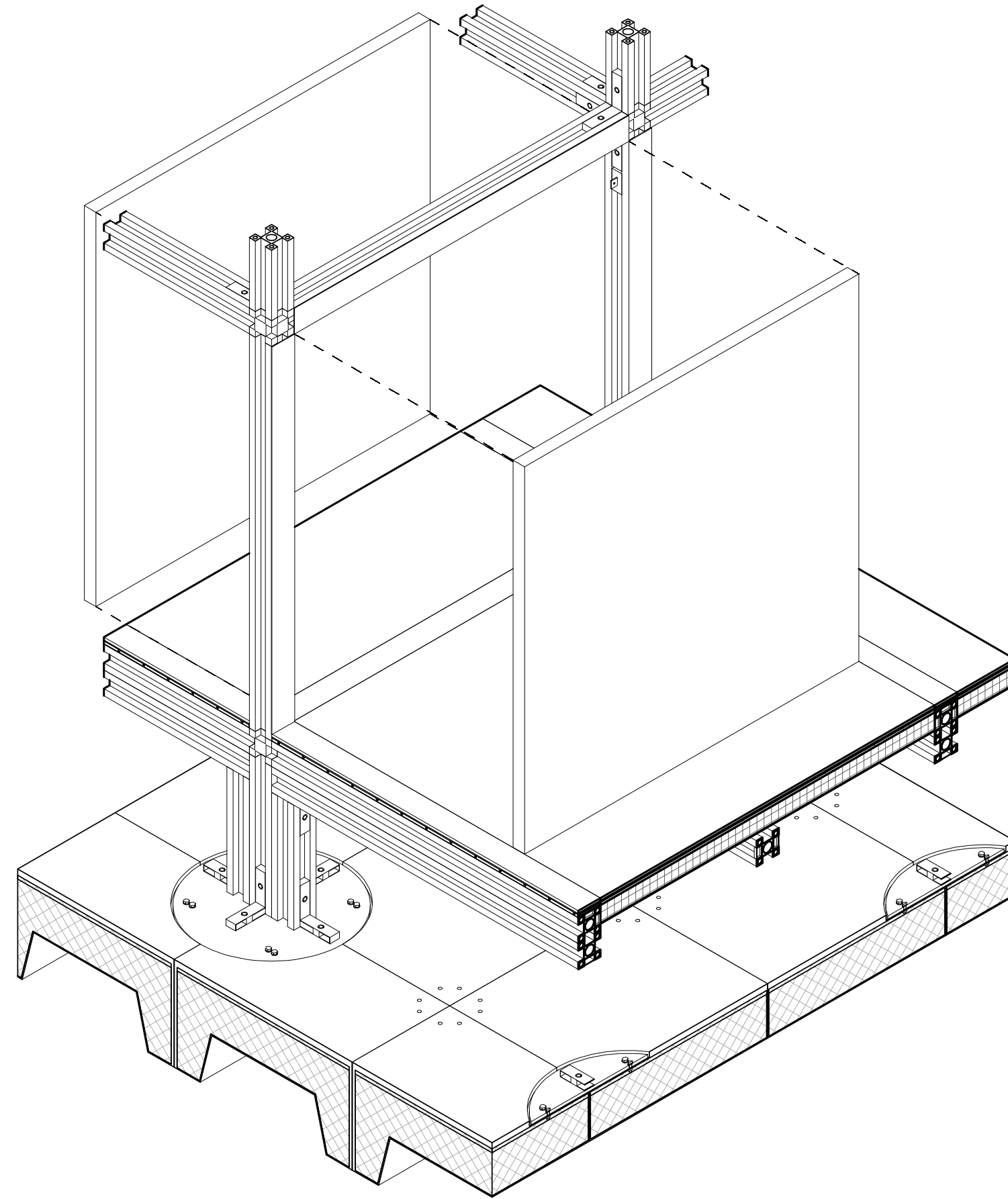
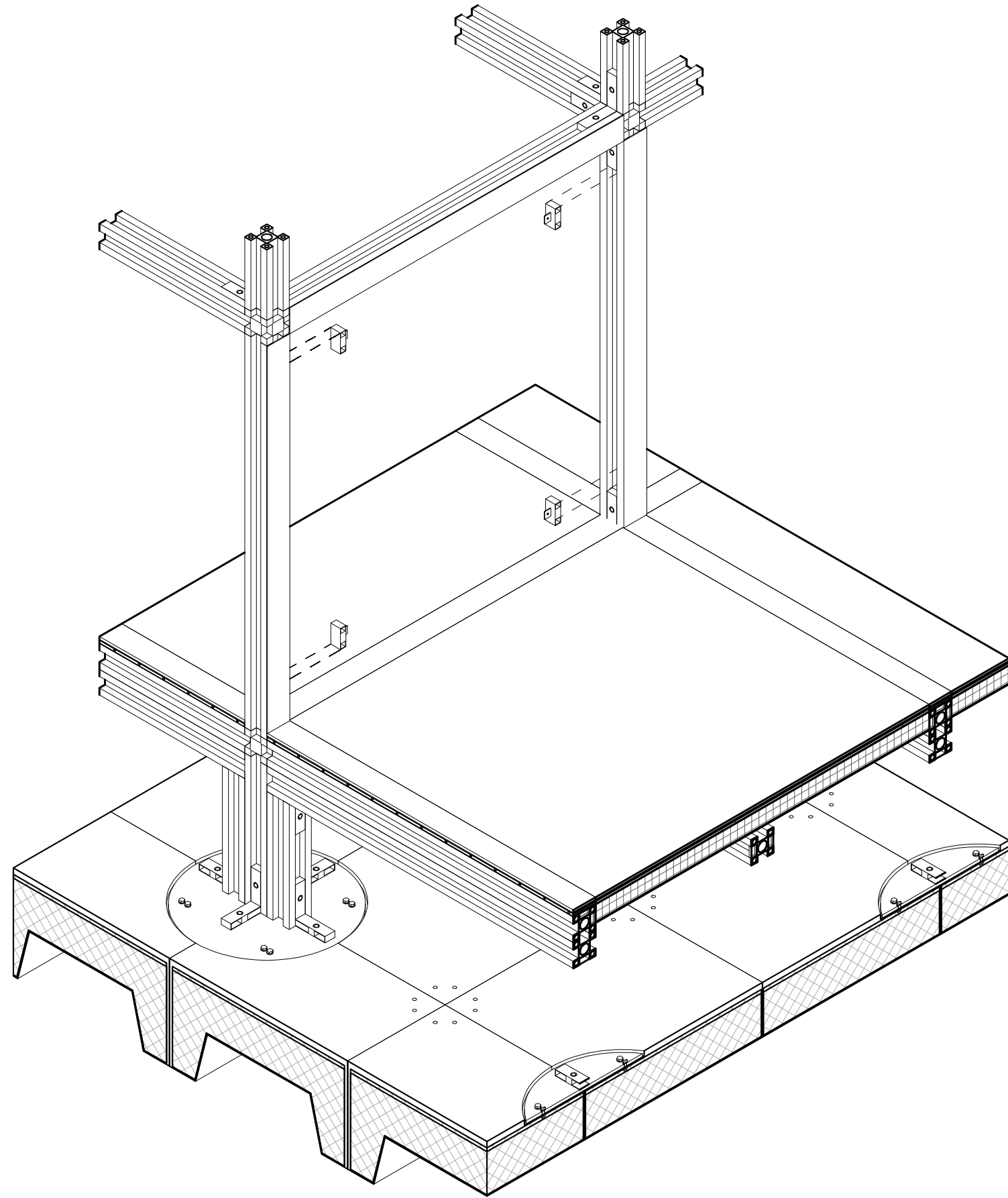


## COLUMN AND BEAM FILLERS





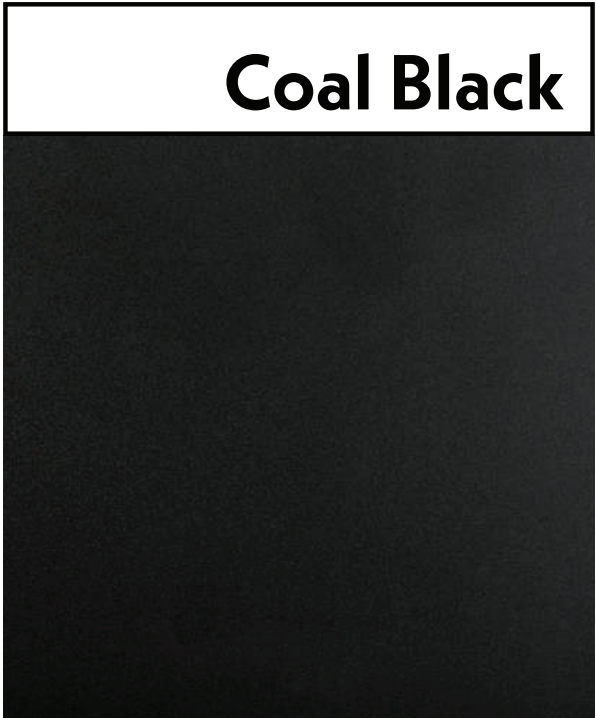
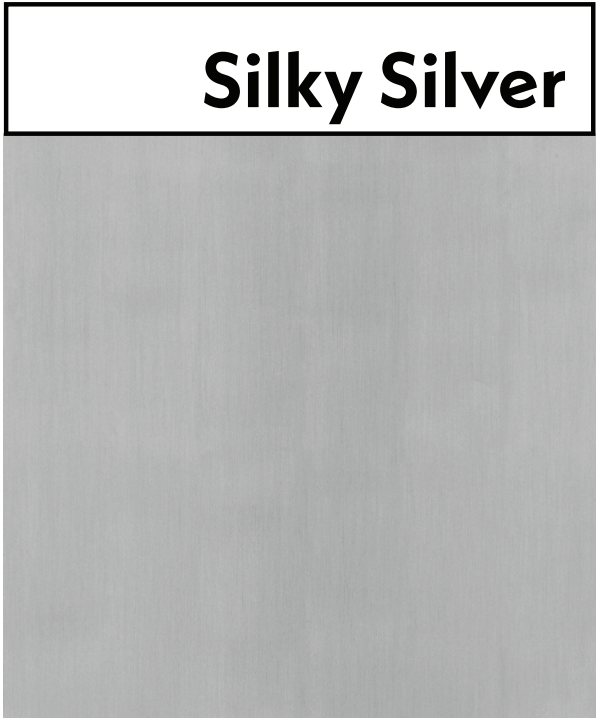
## COLUMN AND BEAM FILLERS



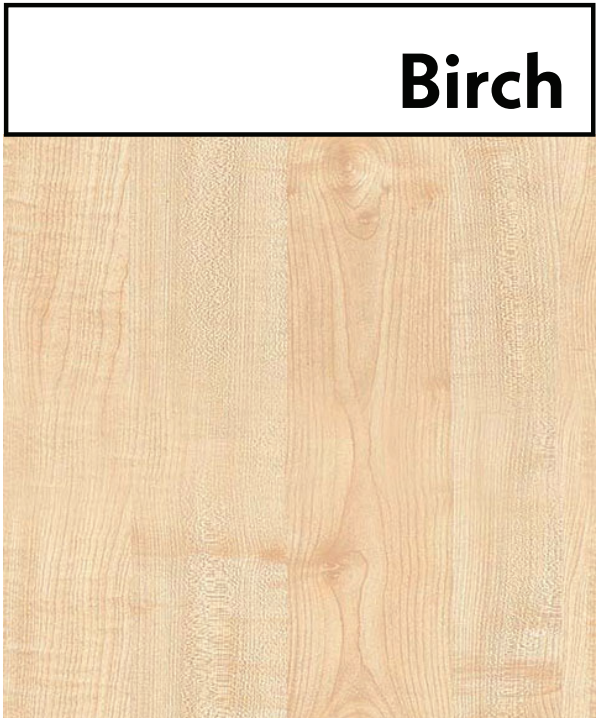


MATERIAL PALETTE

ALUMINIUM



WOOD





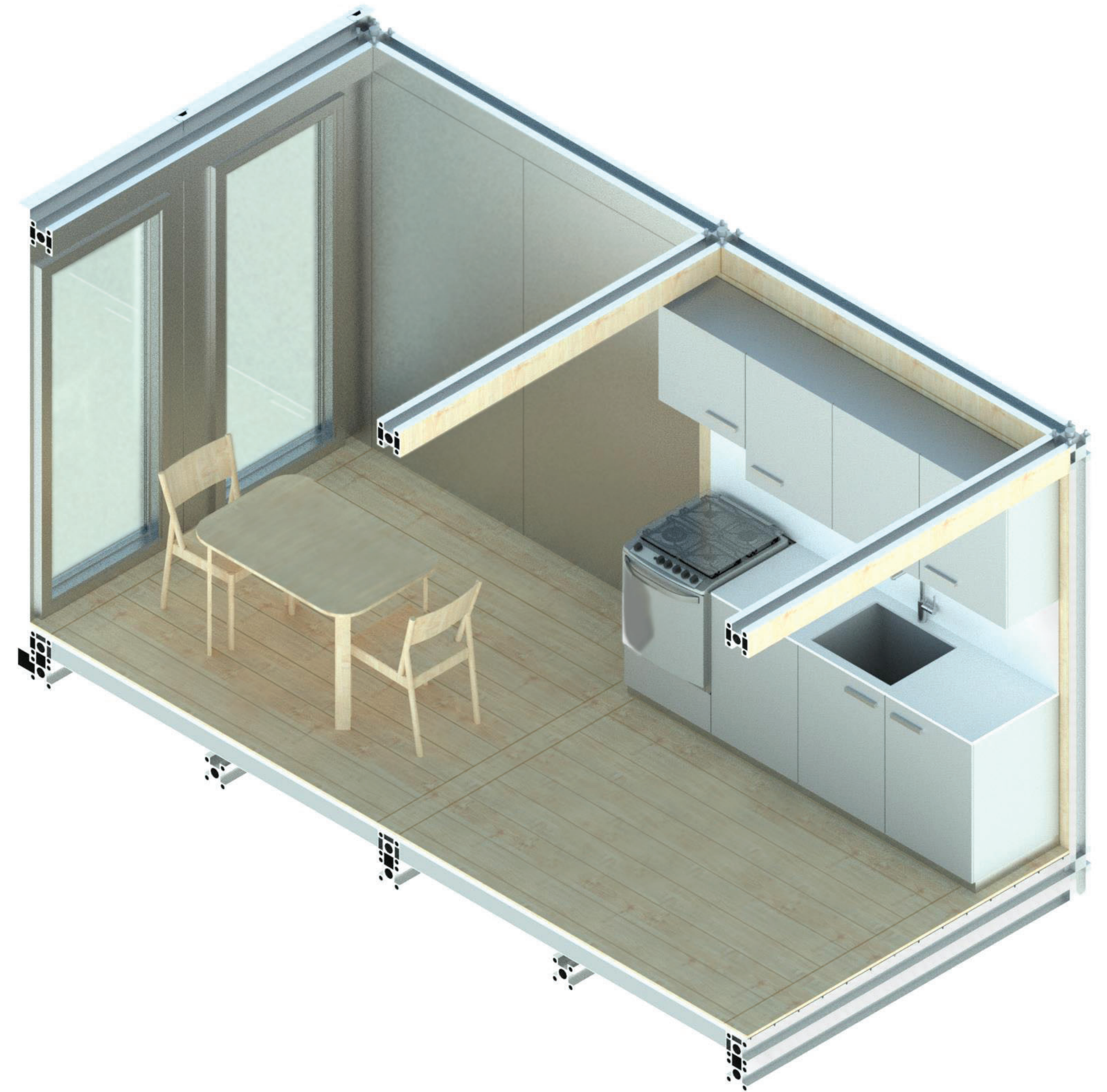
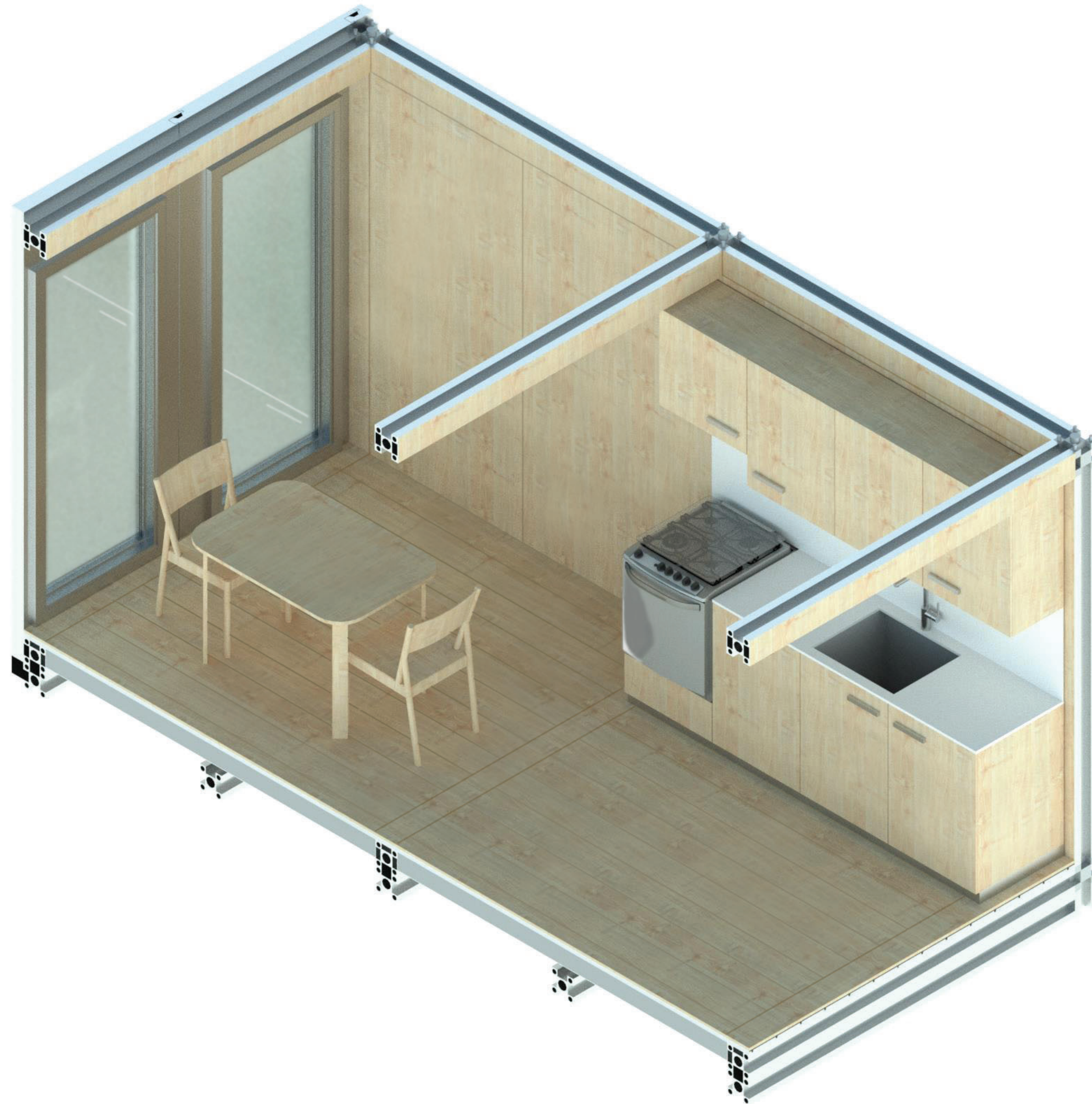
## INTERIOR IMPRESSIONS



**Coal Black + Ash**



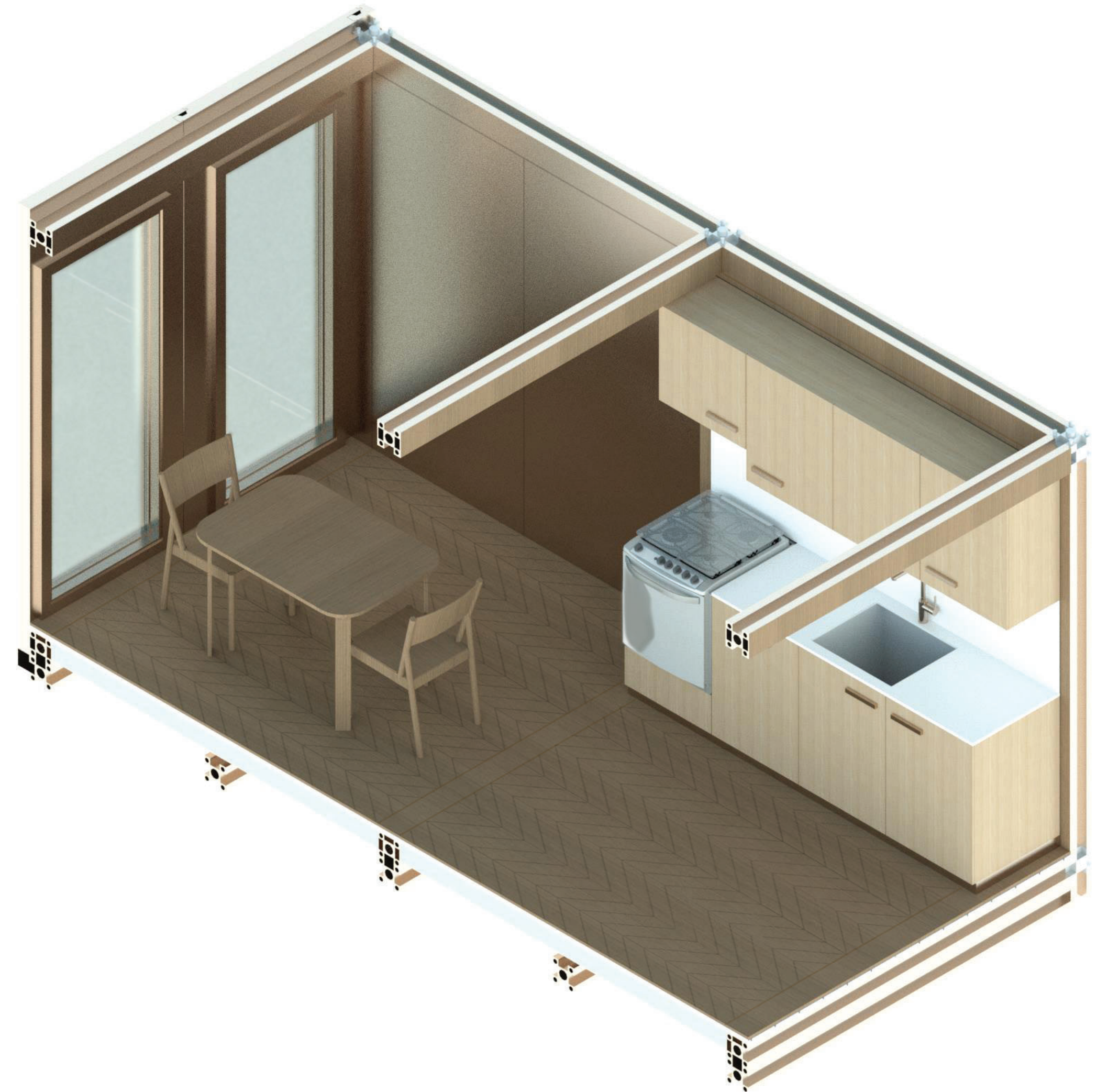
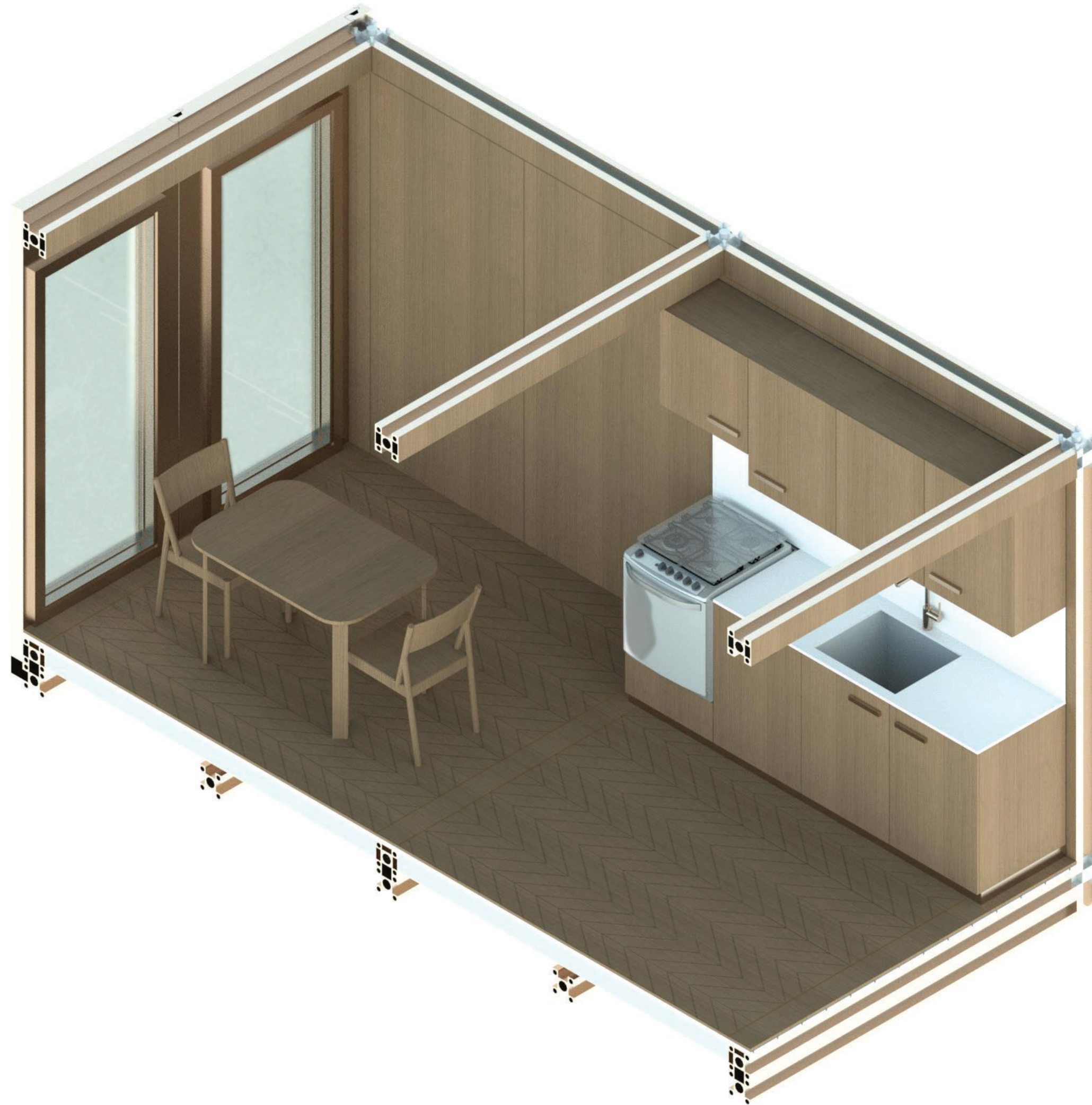
## INTERIOR IMPRESSIONS



**Silky Silver + Birch**



## INTERIOR IMPRESSIONS



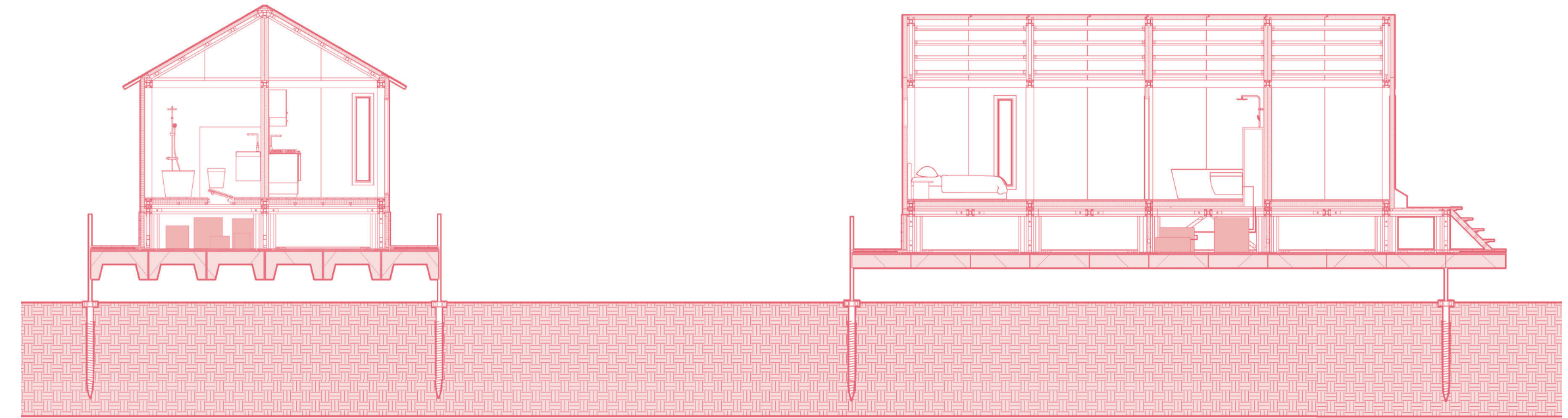
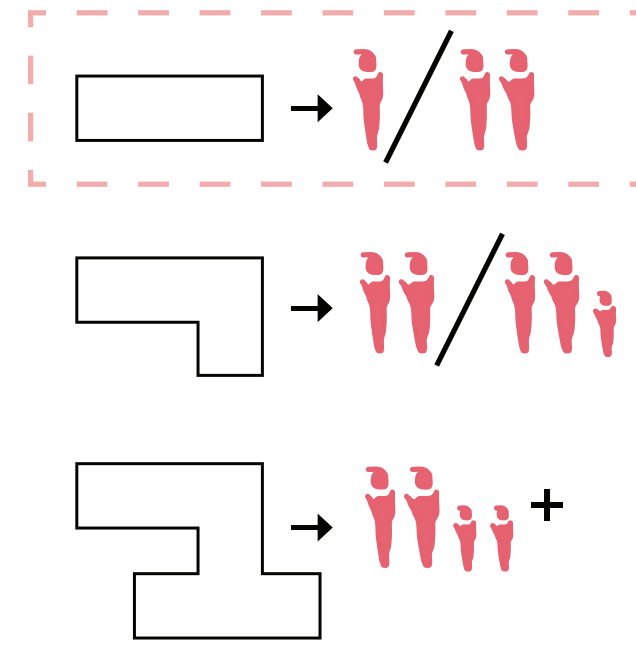
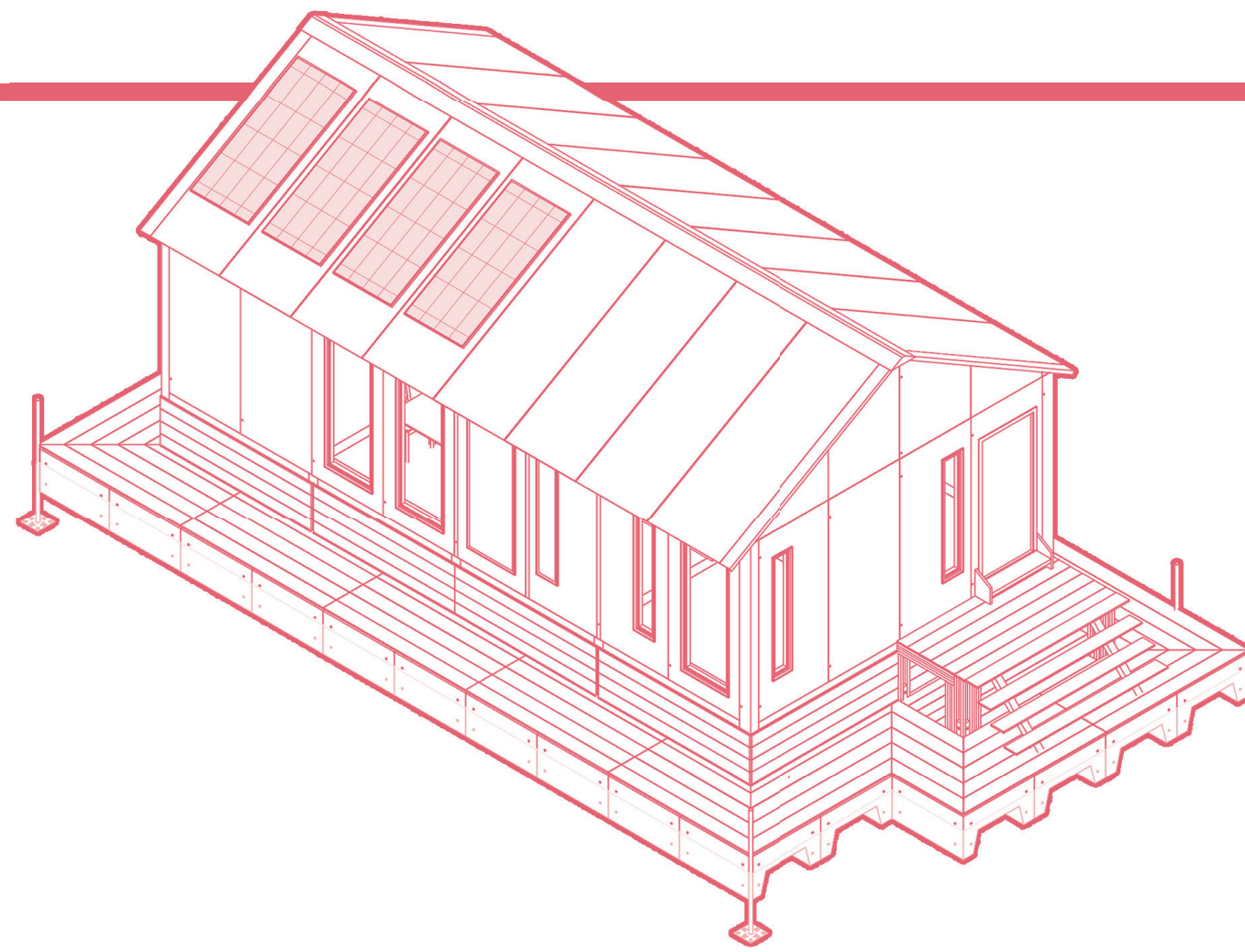
**Soft Bronze + Oak**



# VARIATIONS

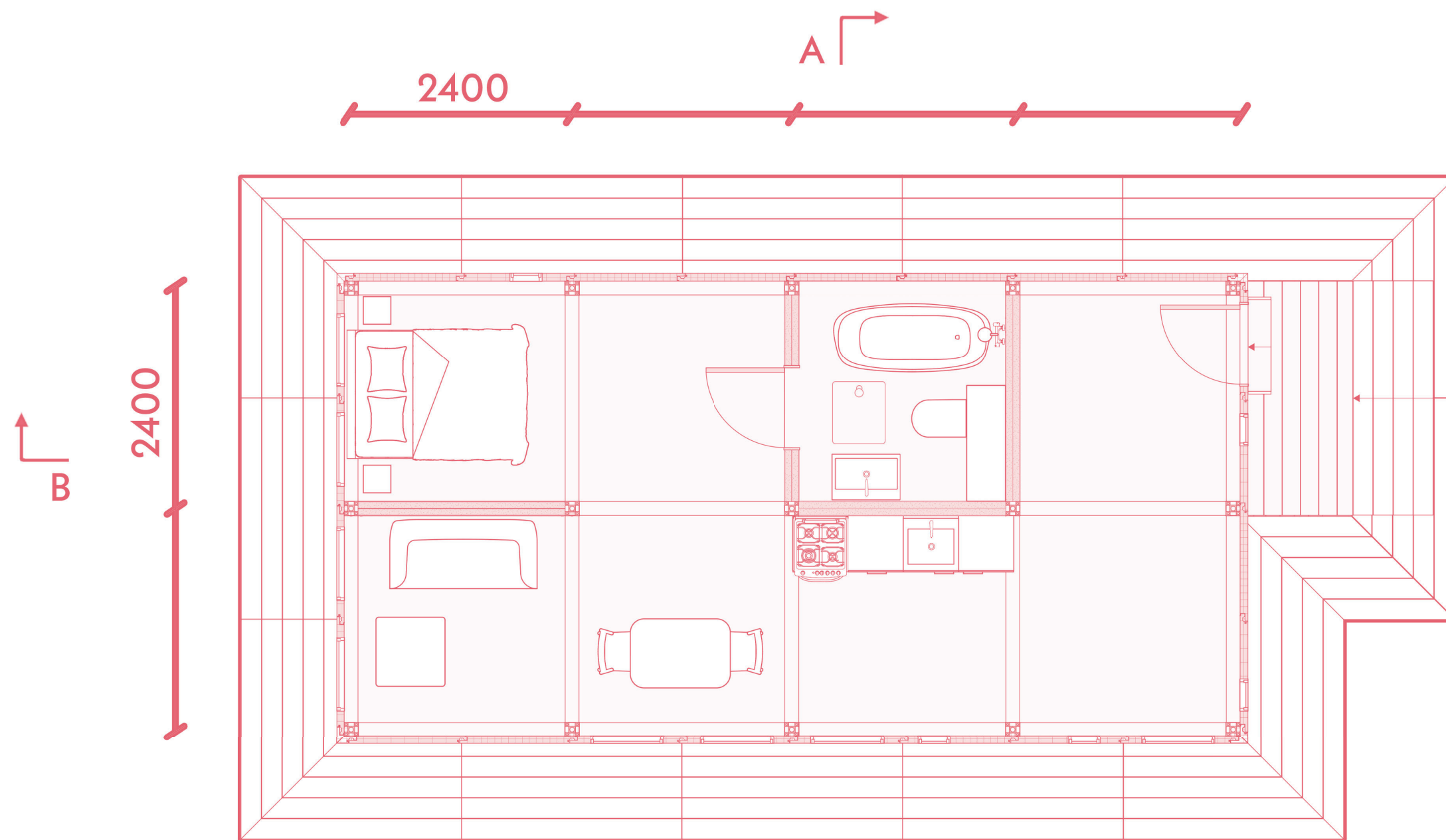


# TYPE O

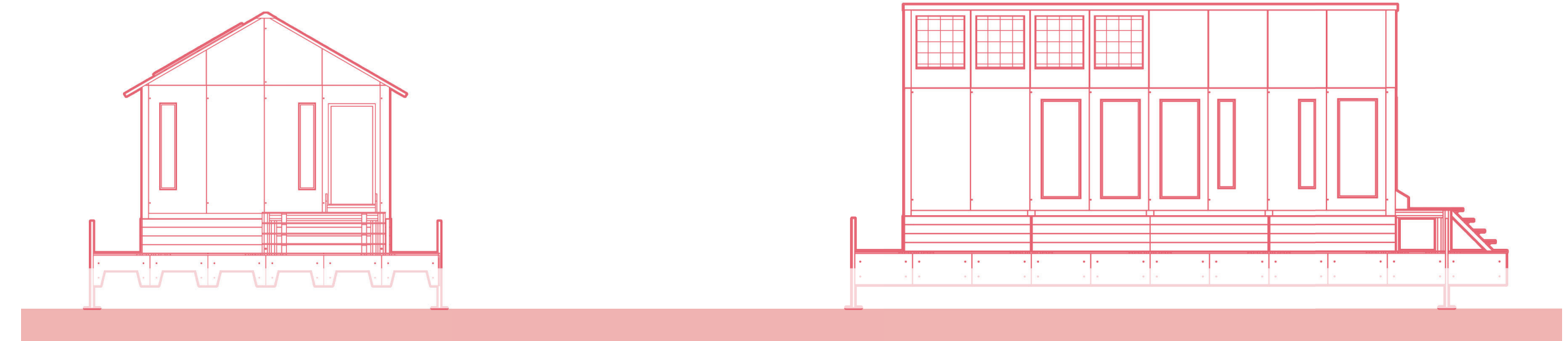


Section AA'

Section BB'

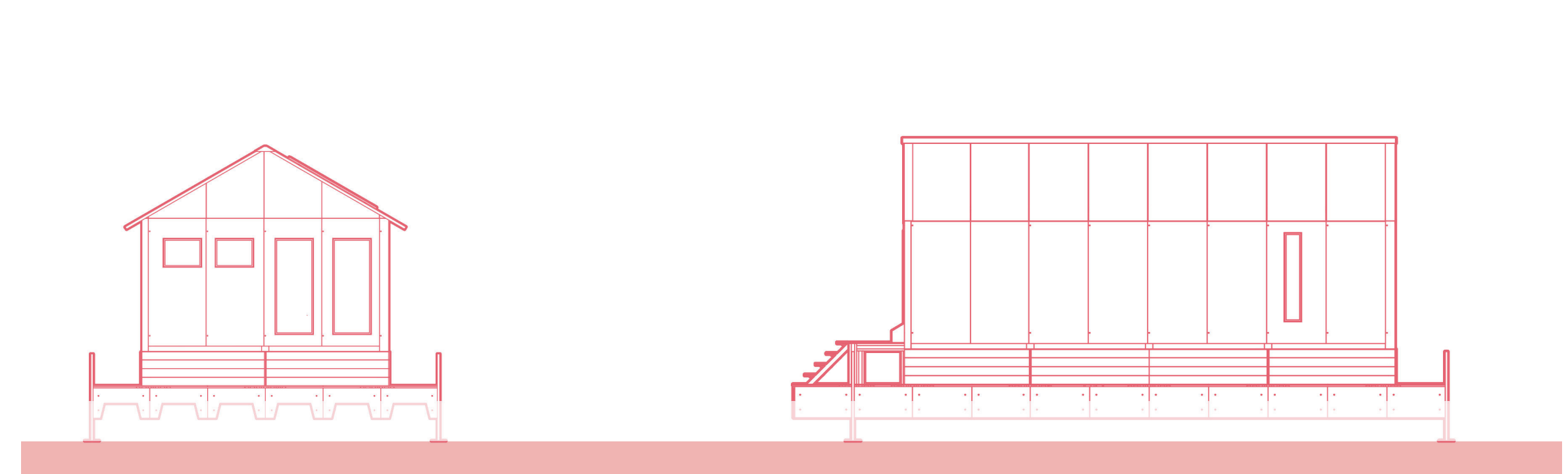


Floor plan



East elevation

South elevation

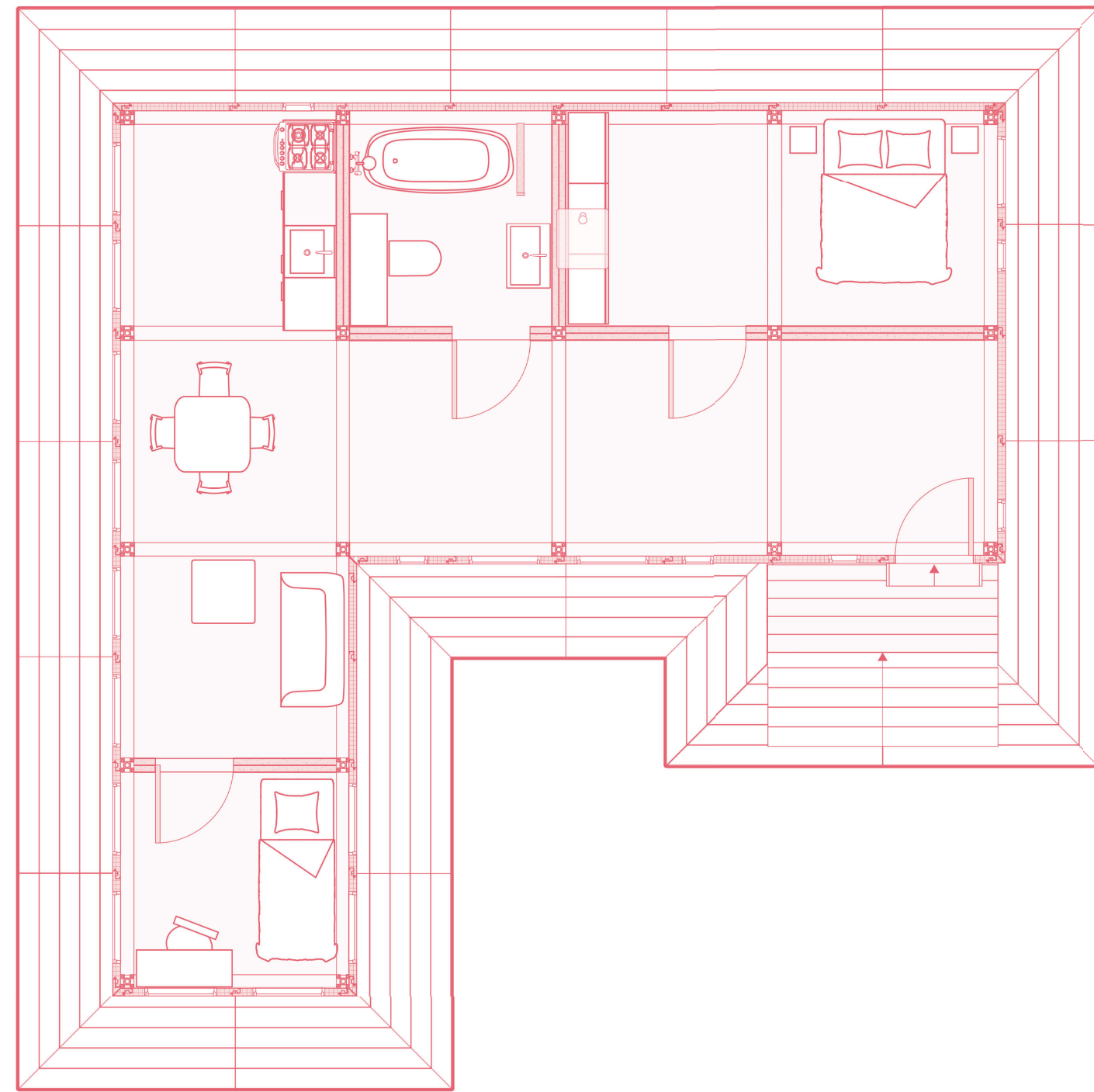
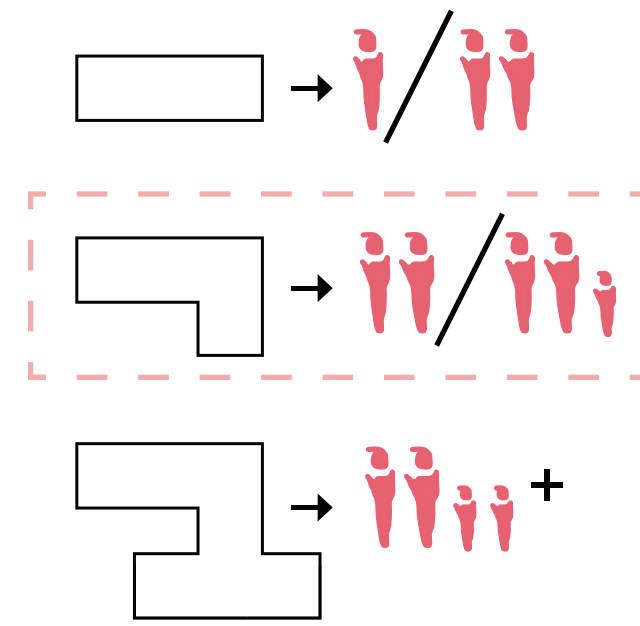
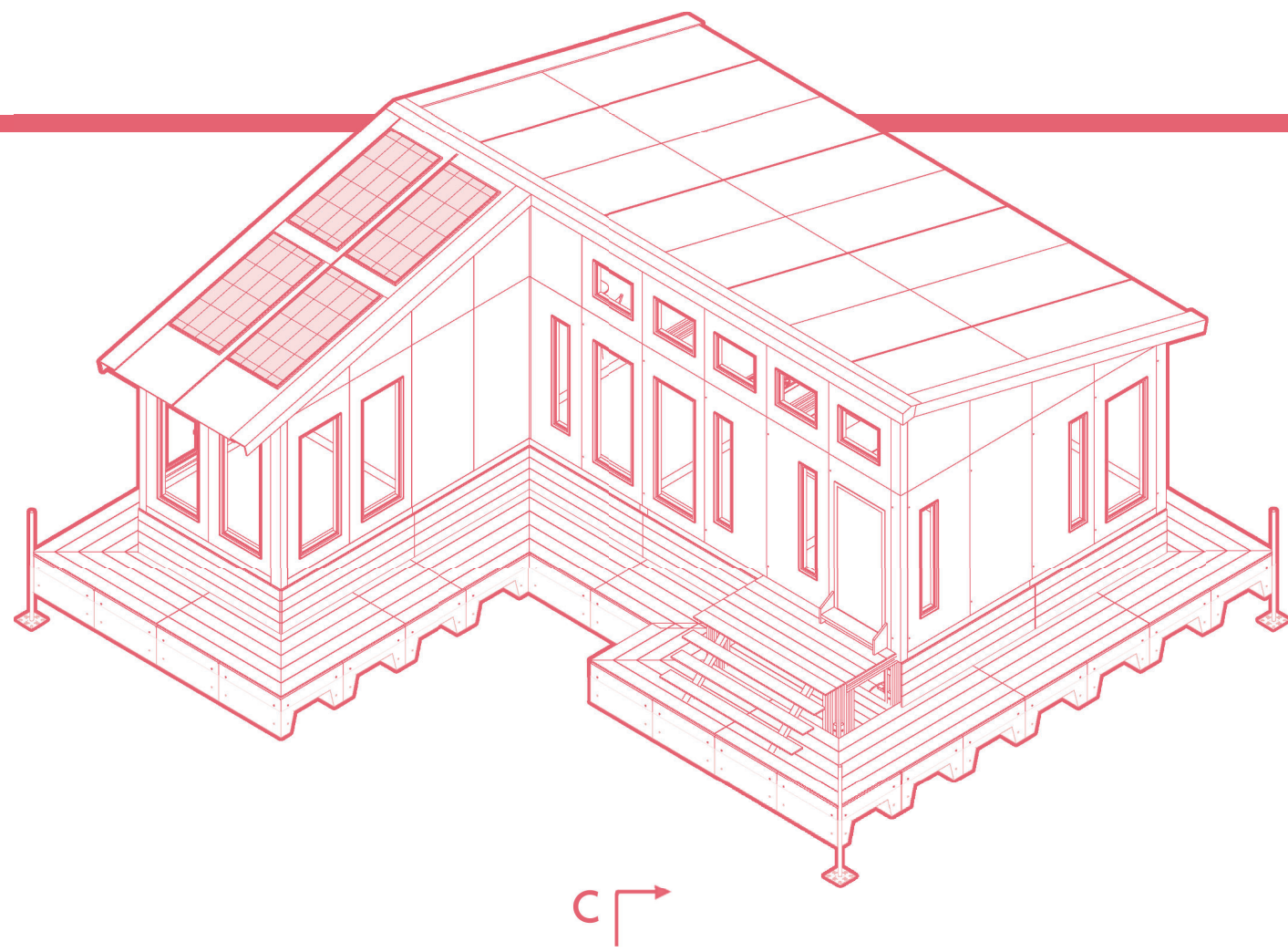


West elevation

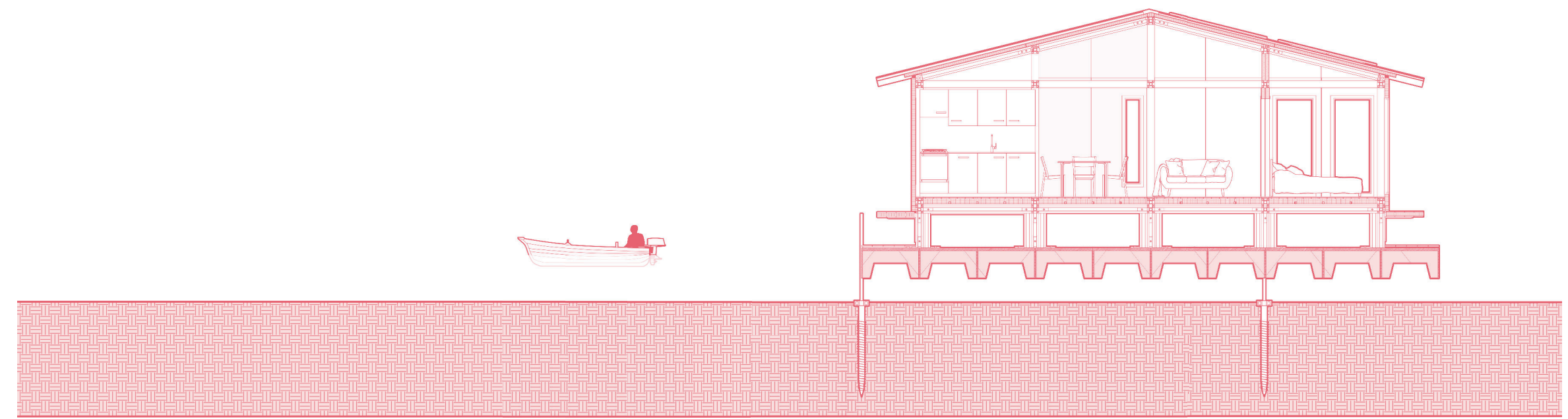
North elevation



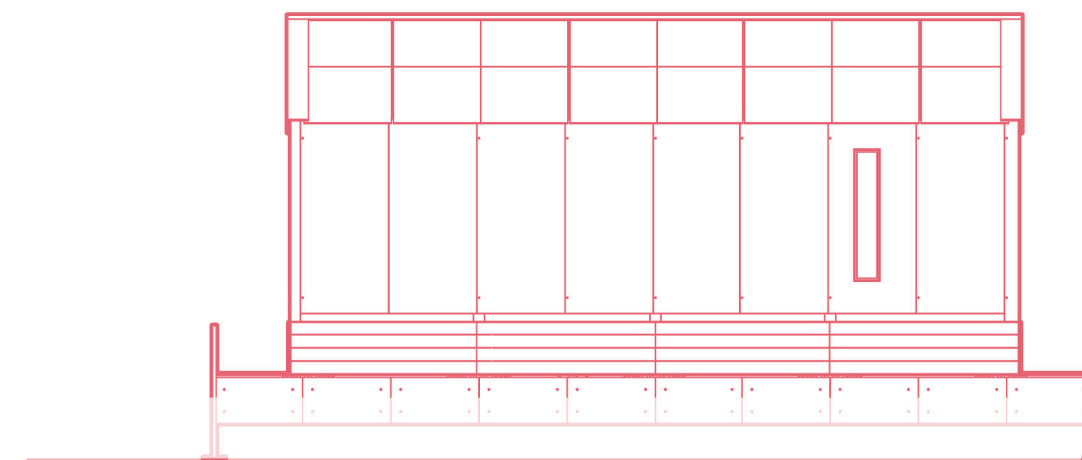
# TYPE L



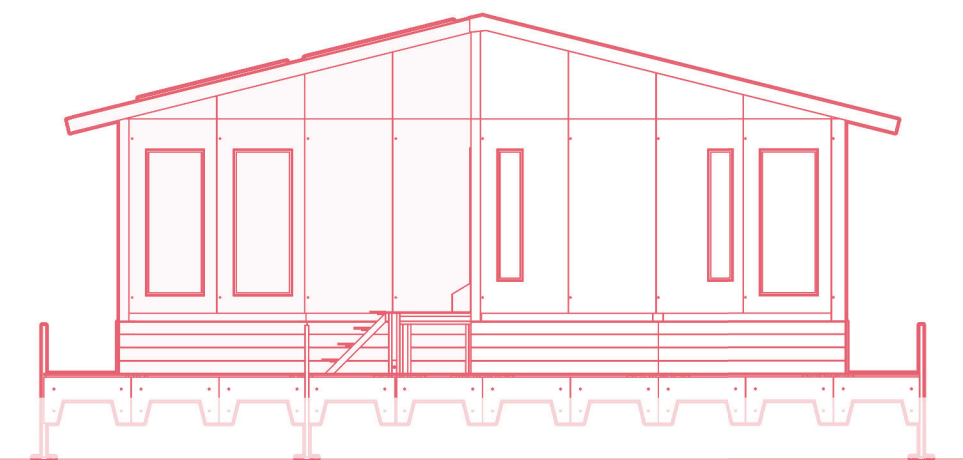
Floor plan C-C



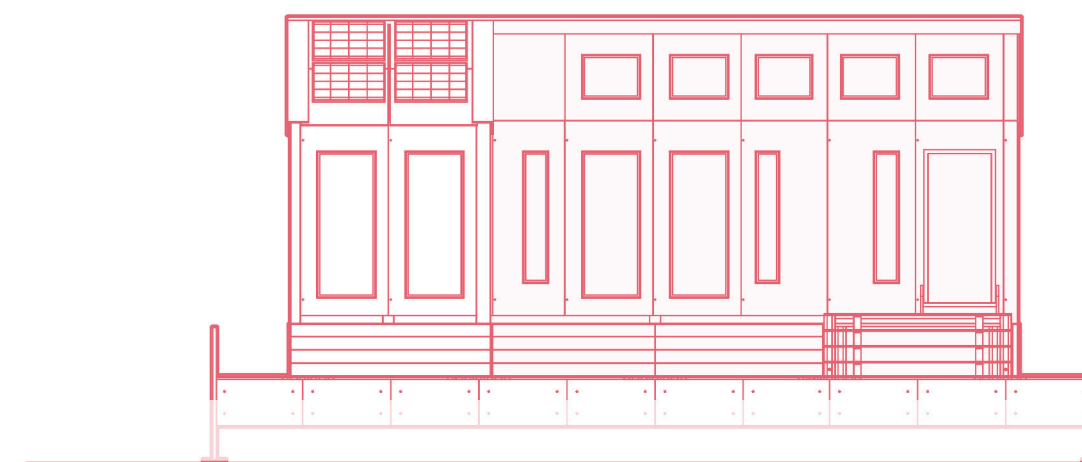
Section CC'



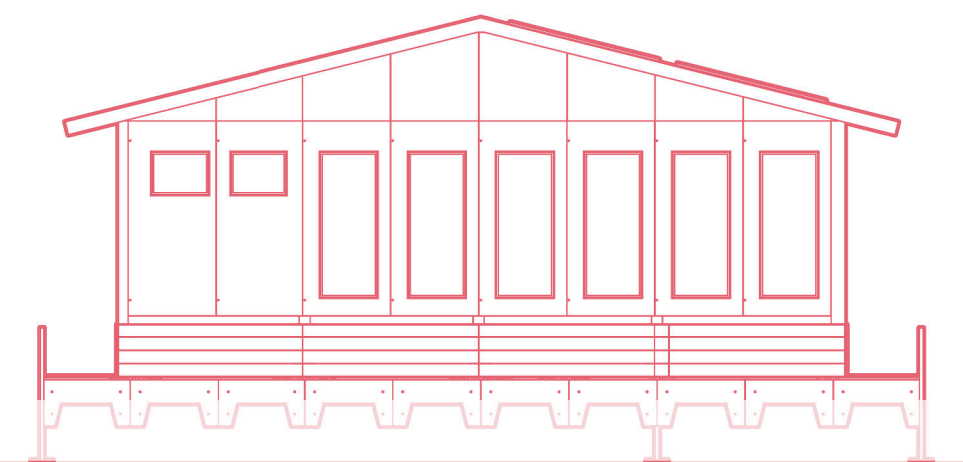
North elevation



East elevation



South elevation



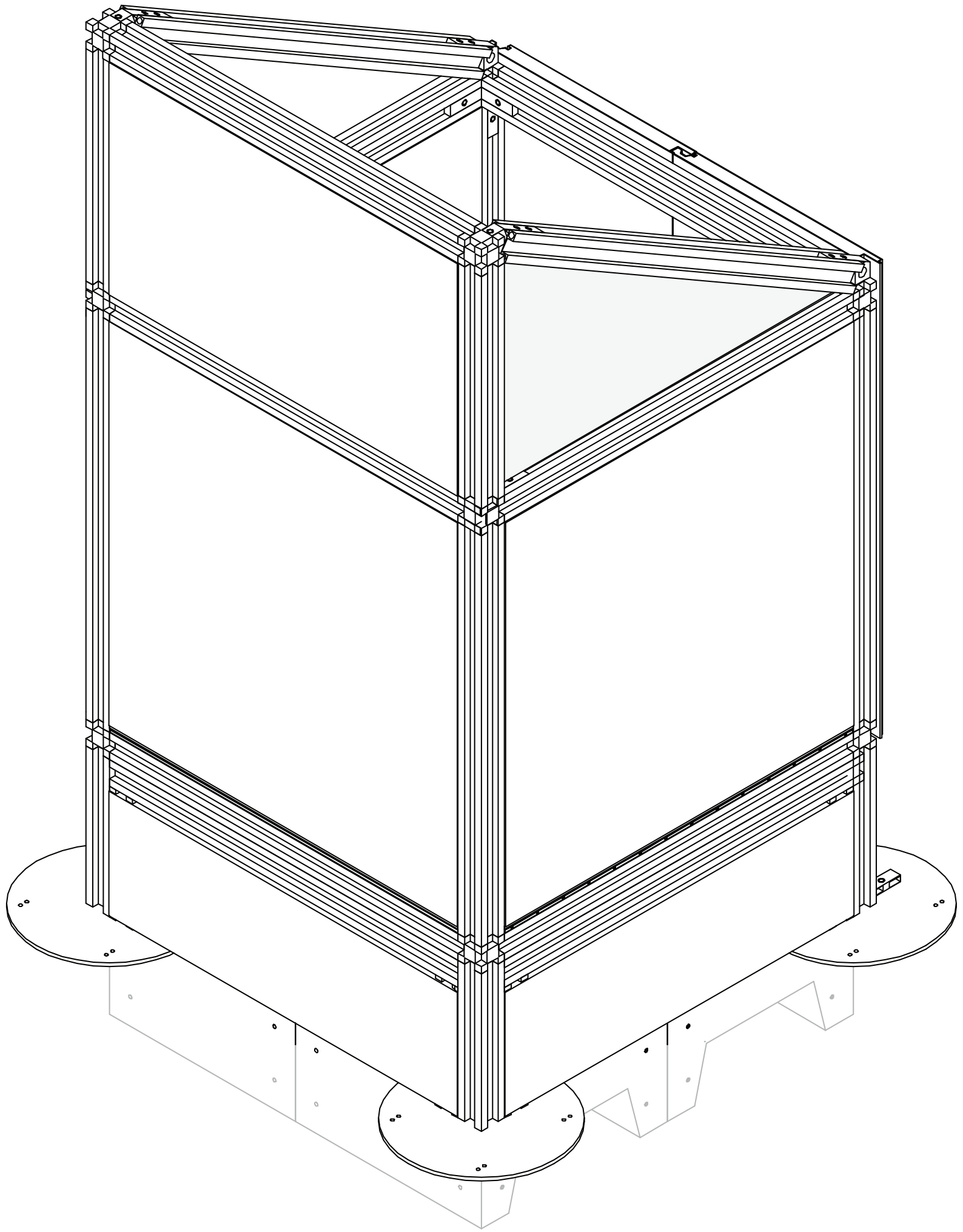
West elevation



# TYPE 0 ASSEMBLY

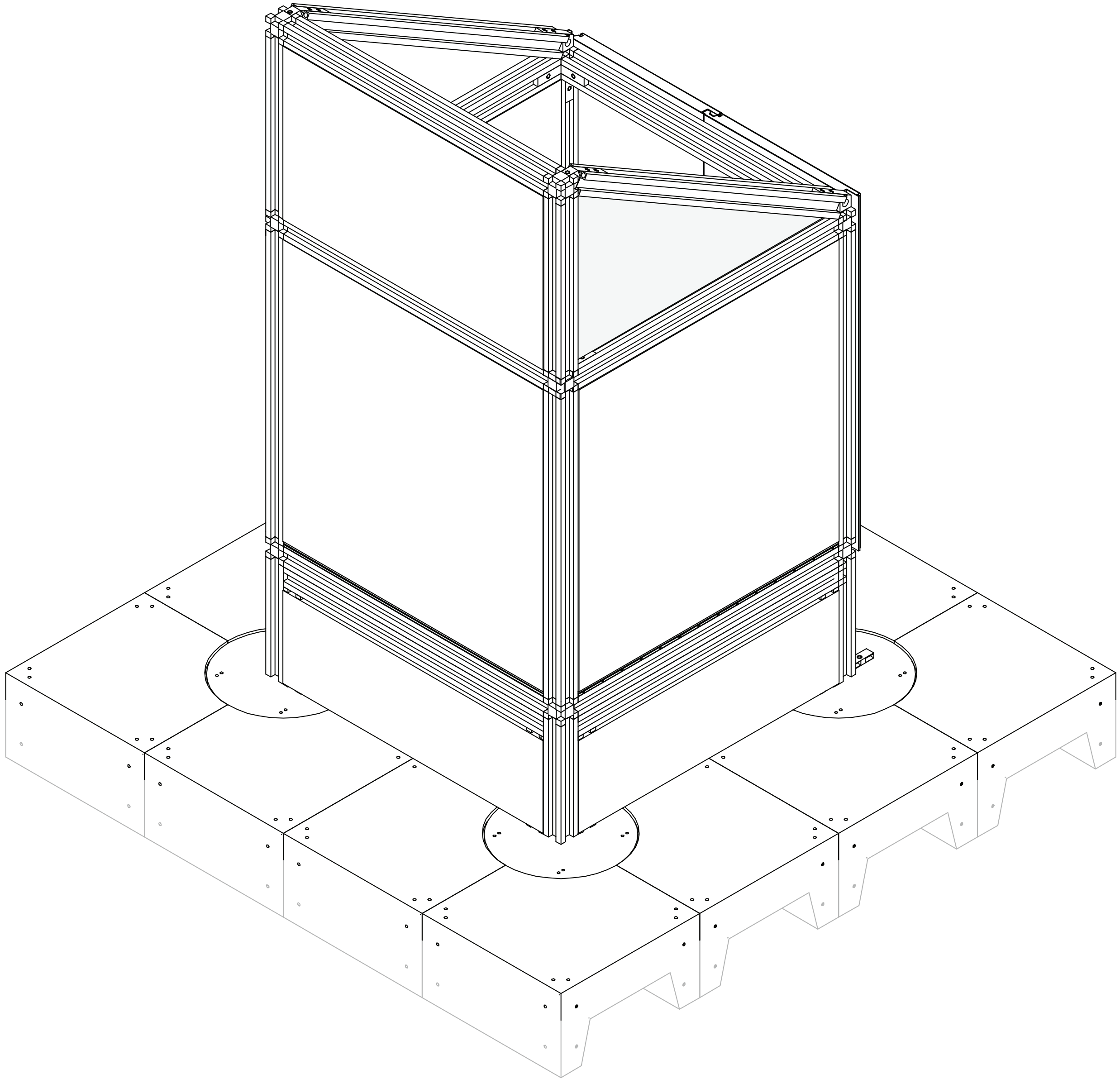


BUILD UP





BUILD UP



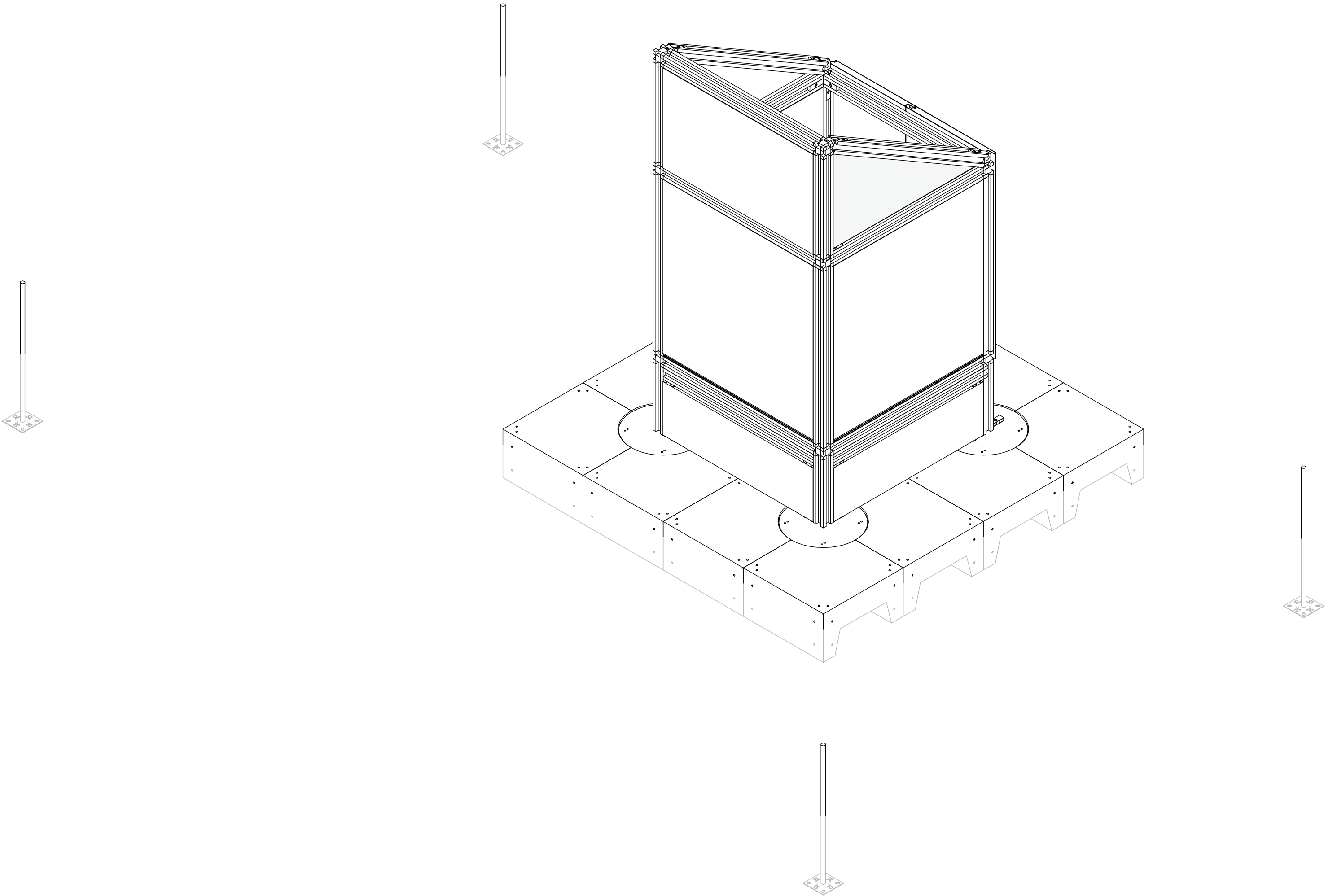


BUILD UP



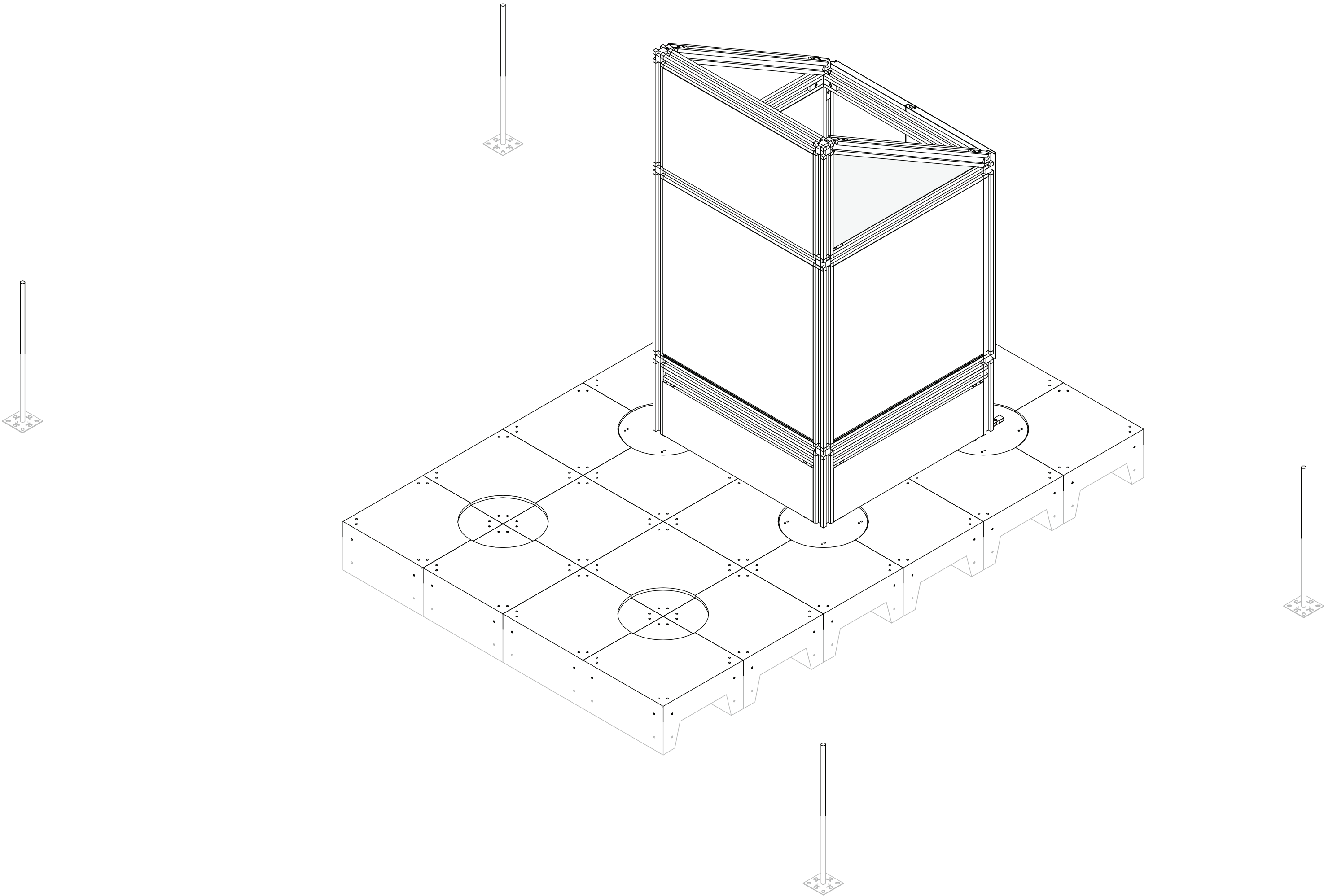


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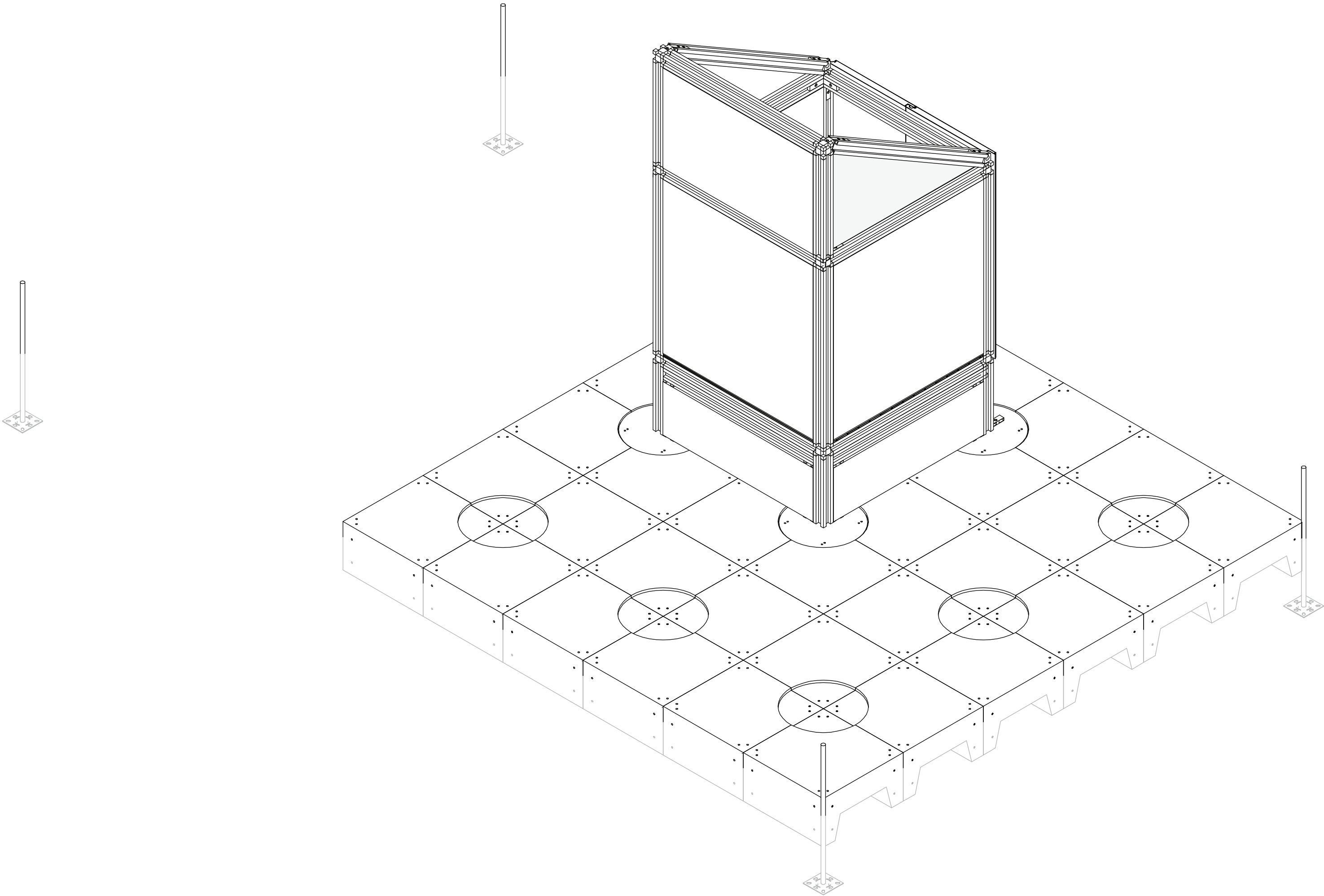


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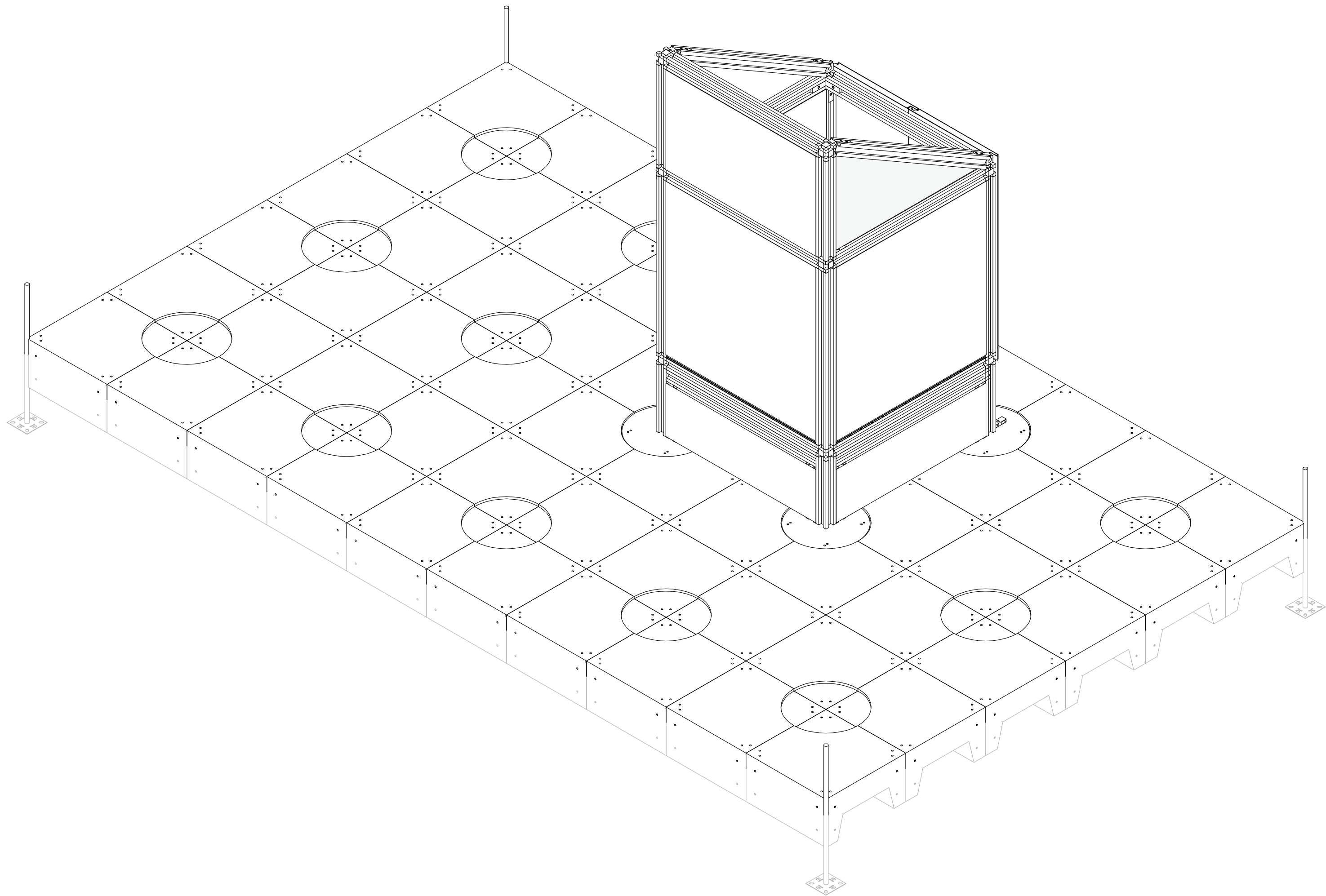


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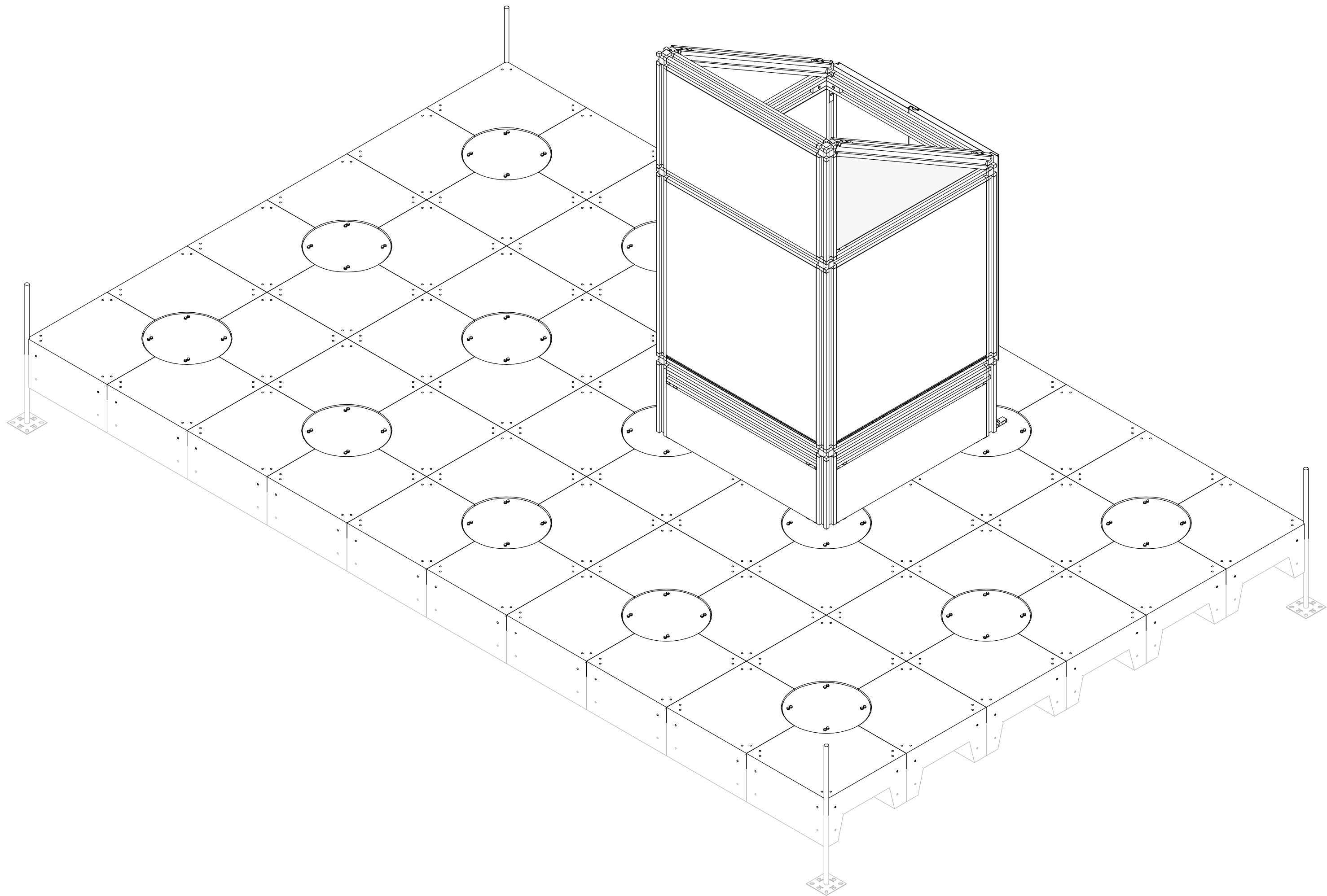


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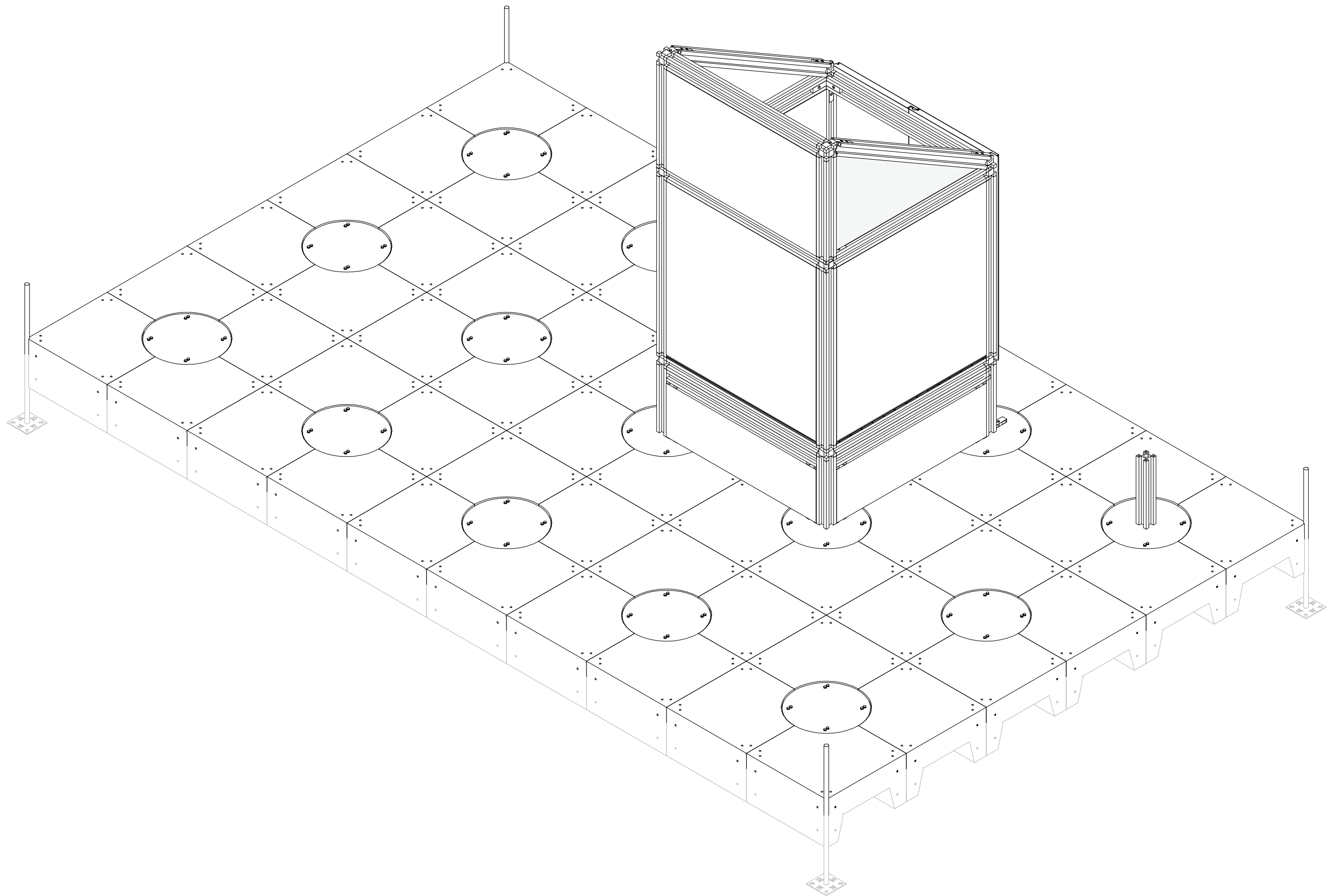


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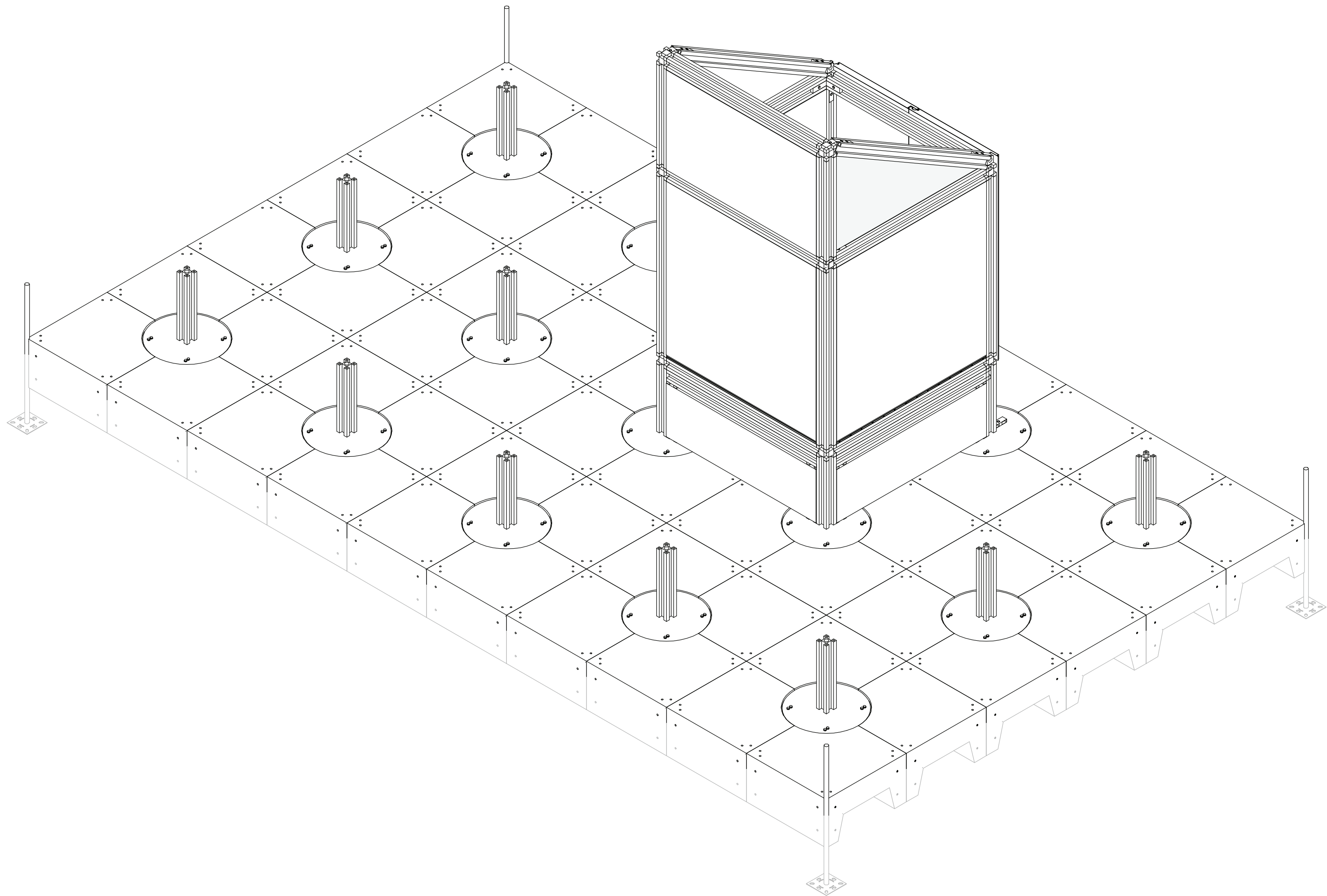


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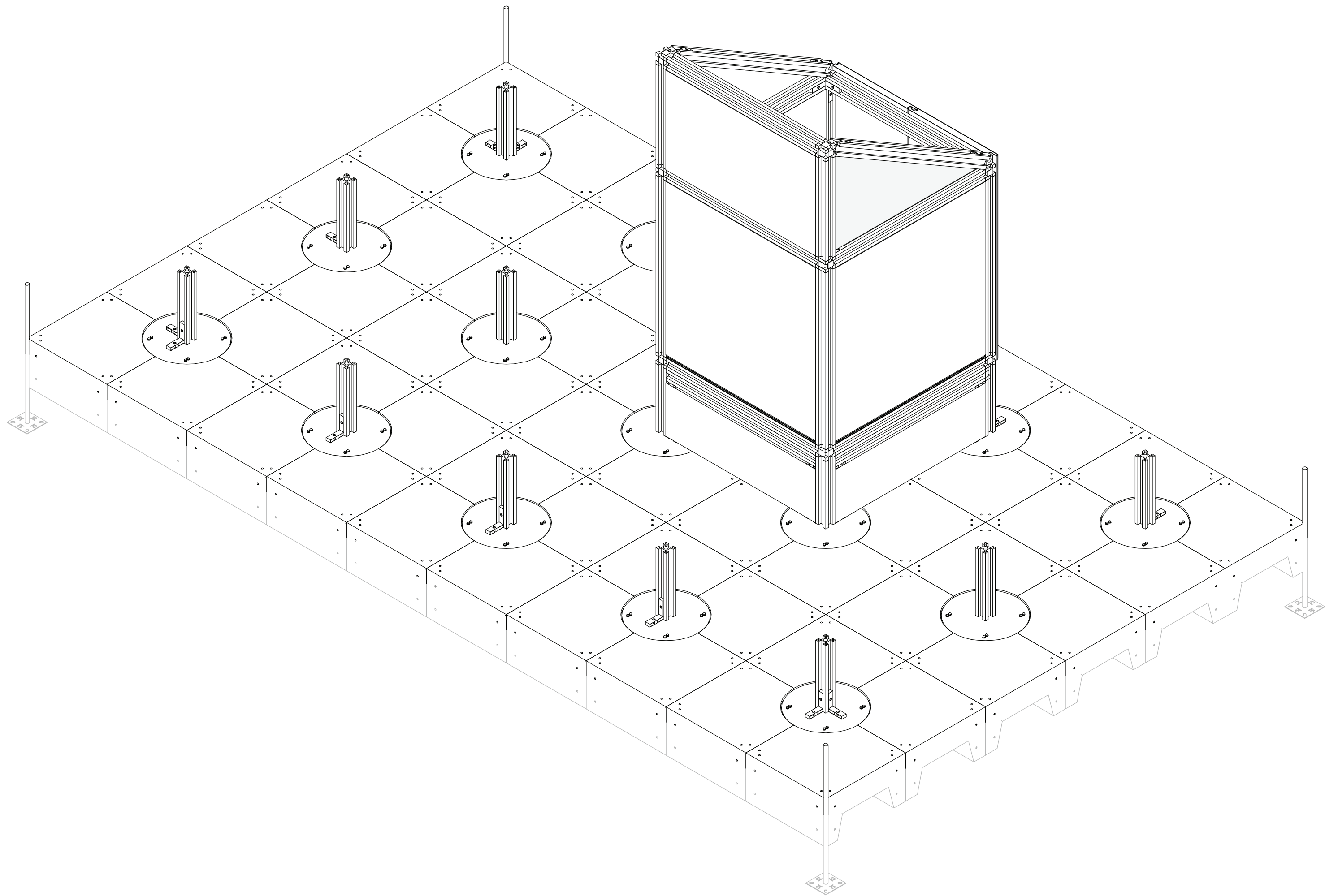


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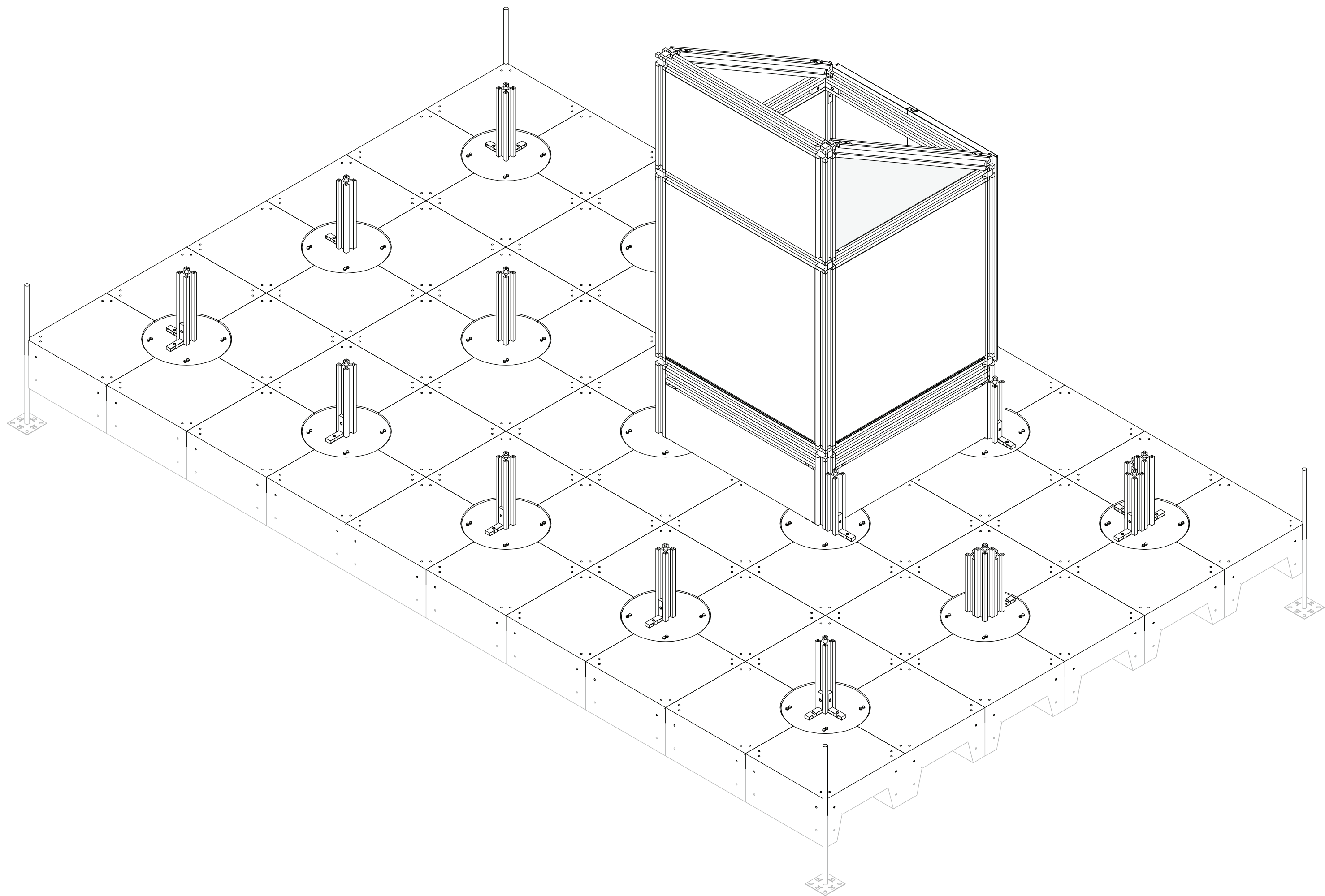


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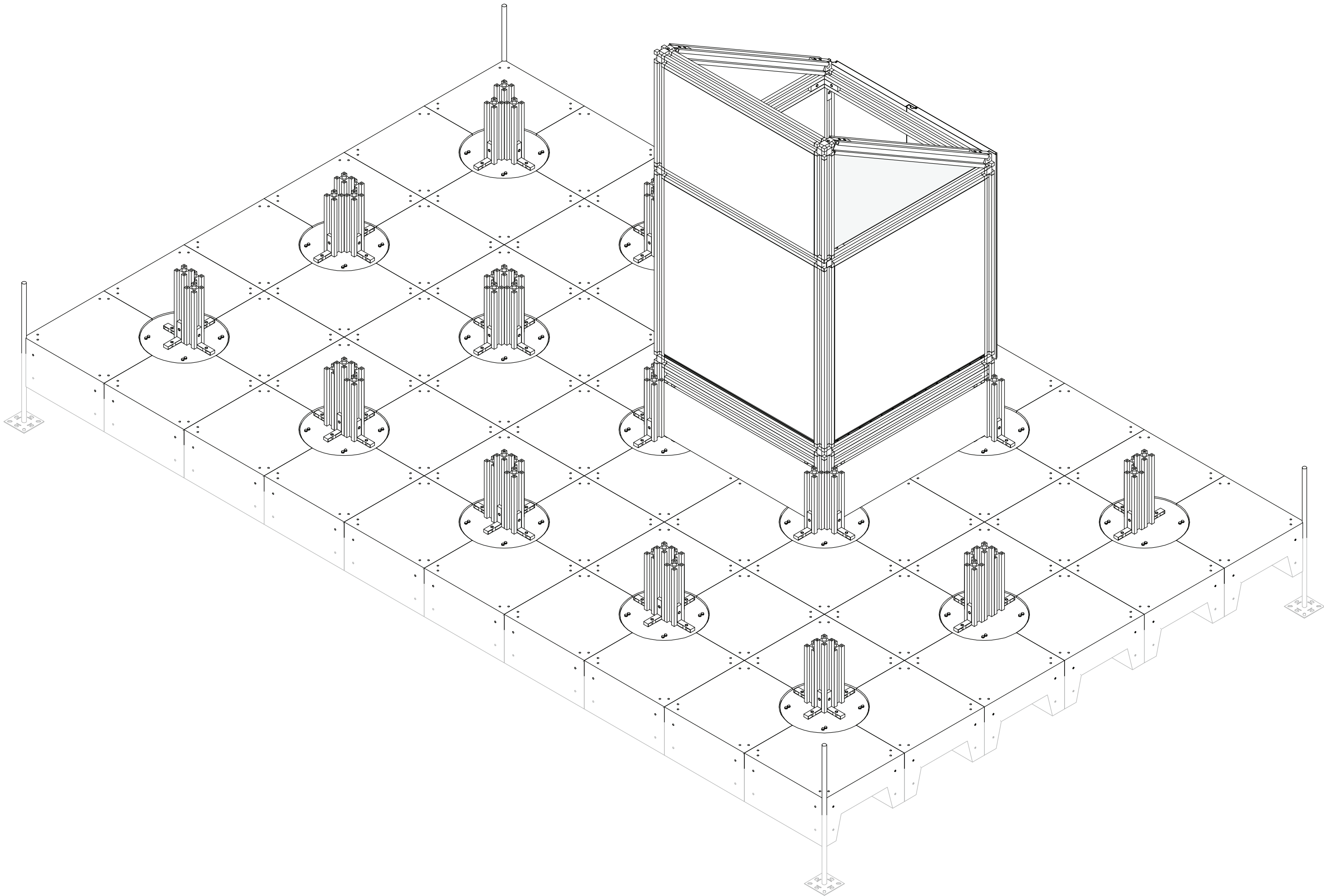


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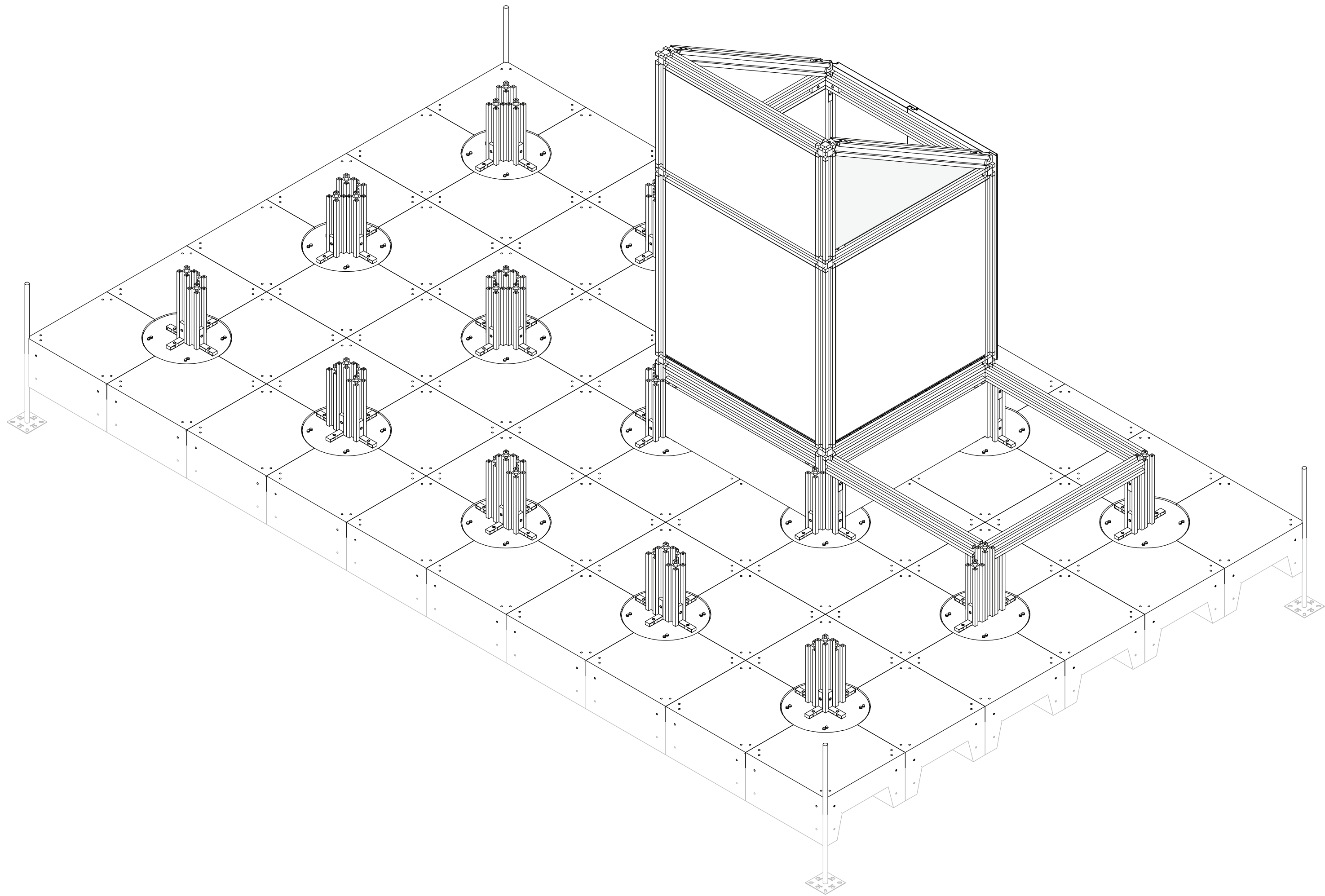


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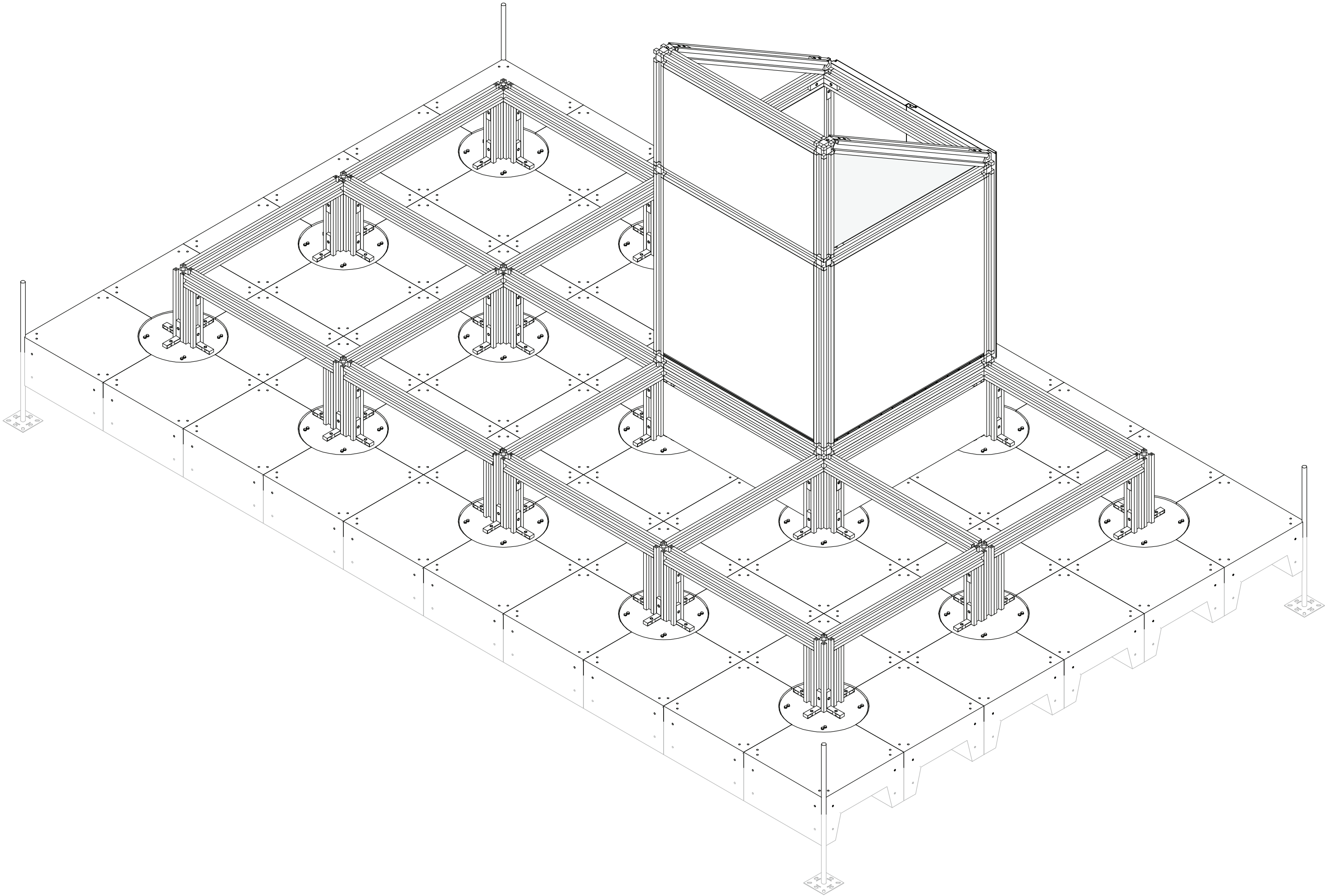


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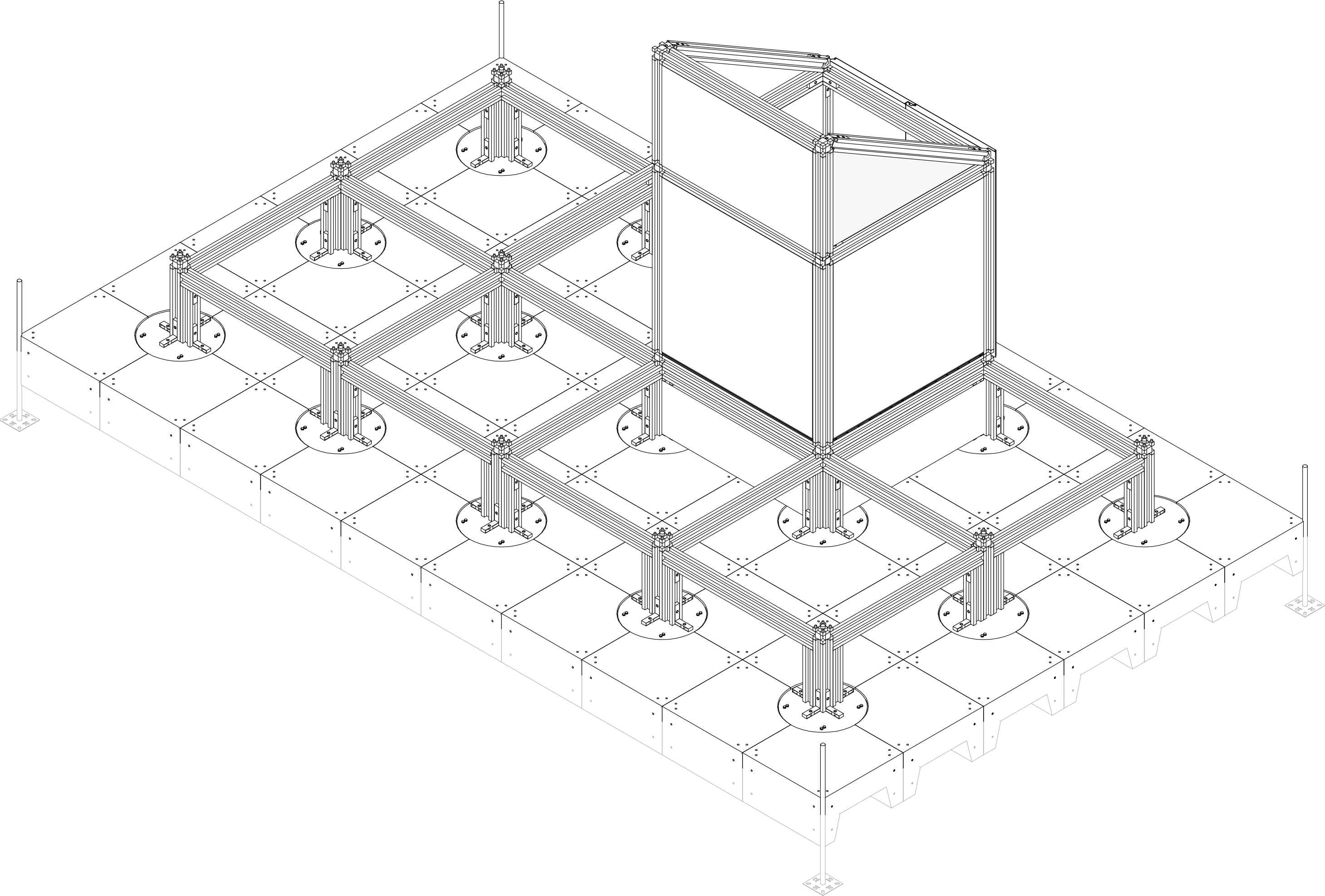


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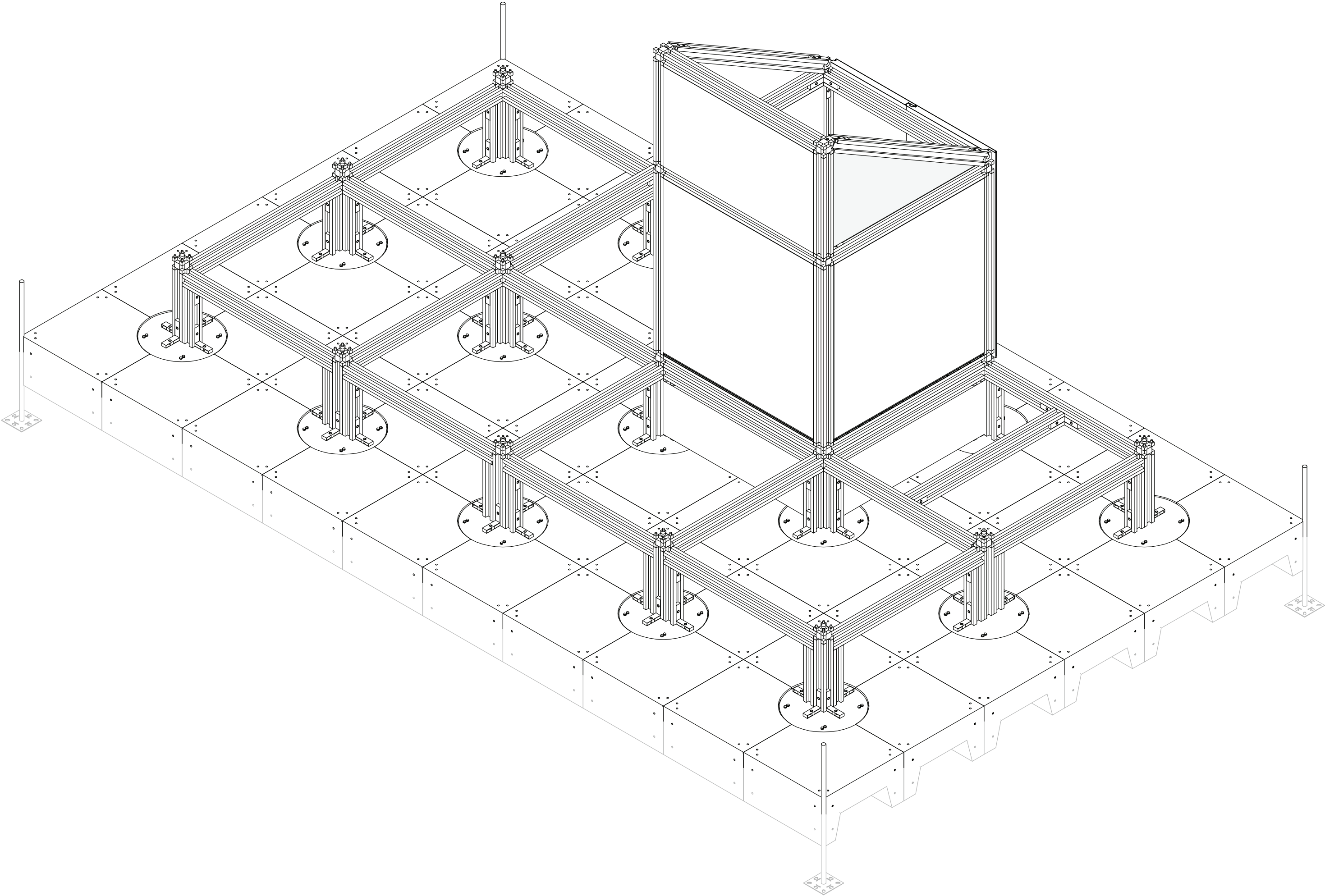


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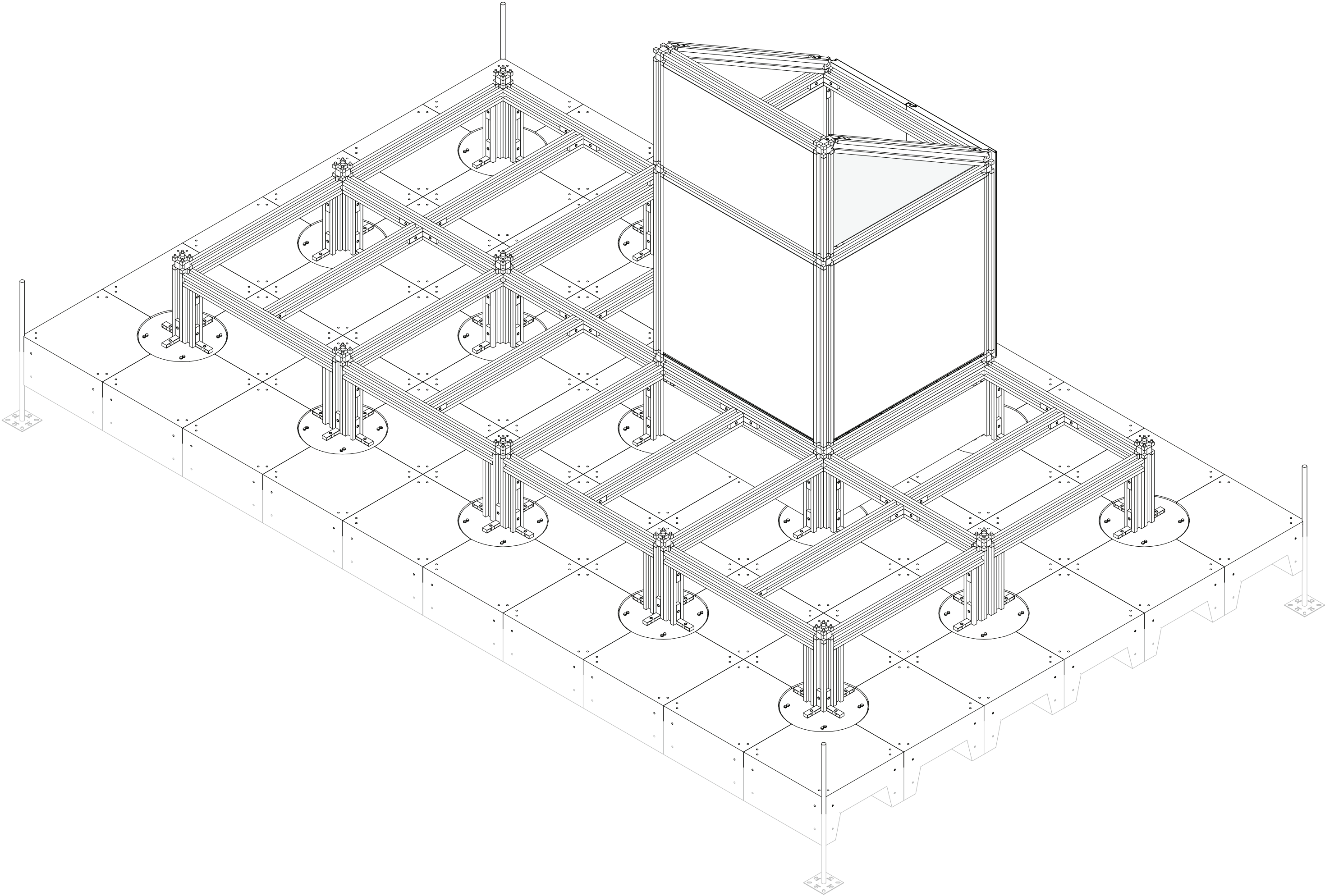


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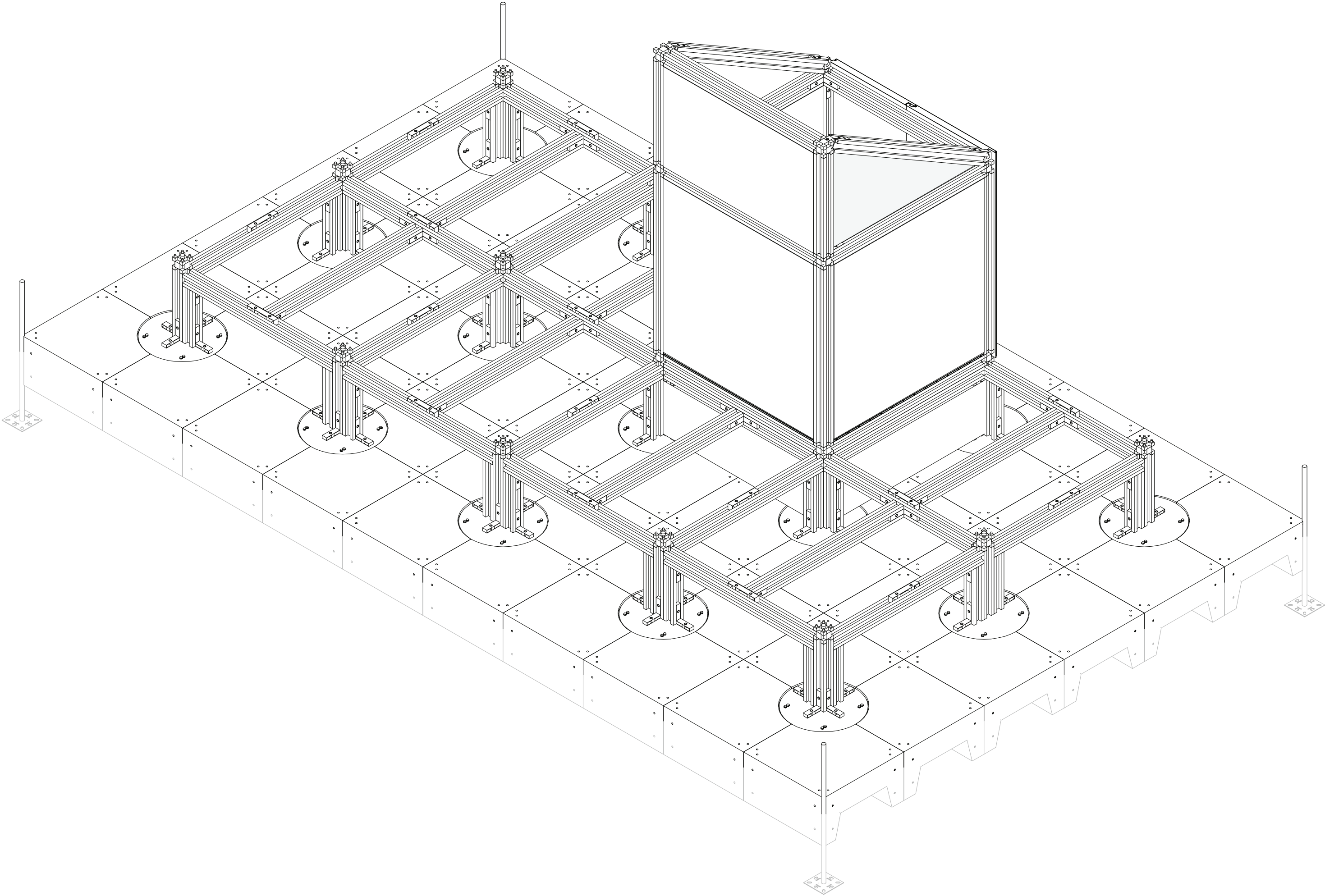


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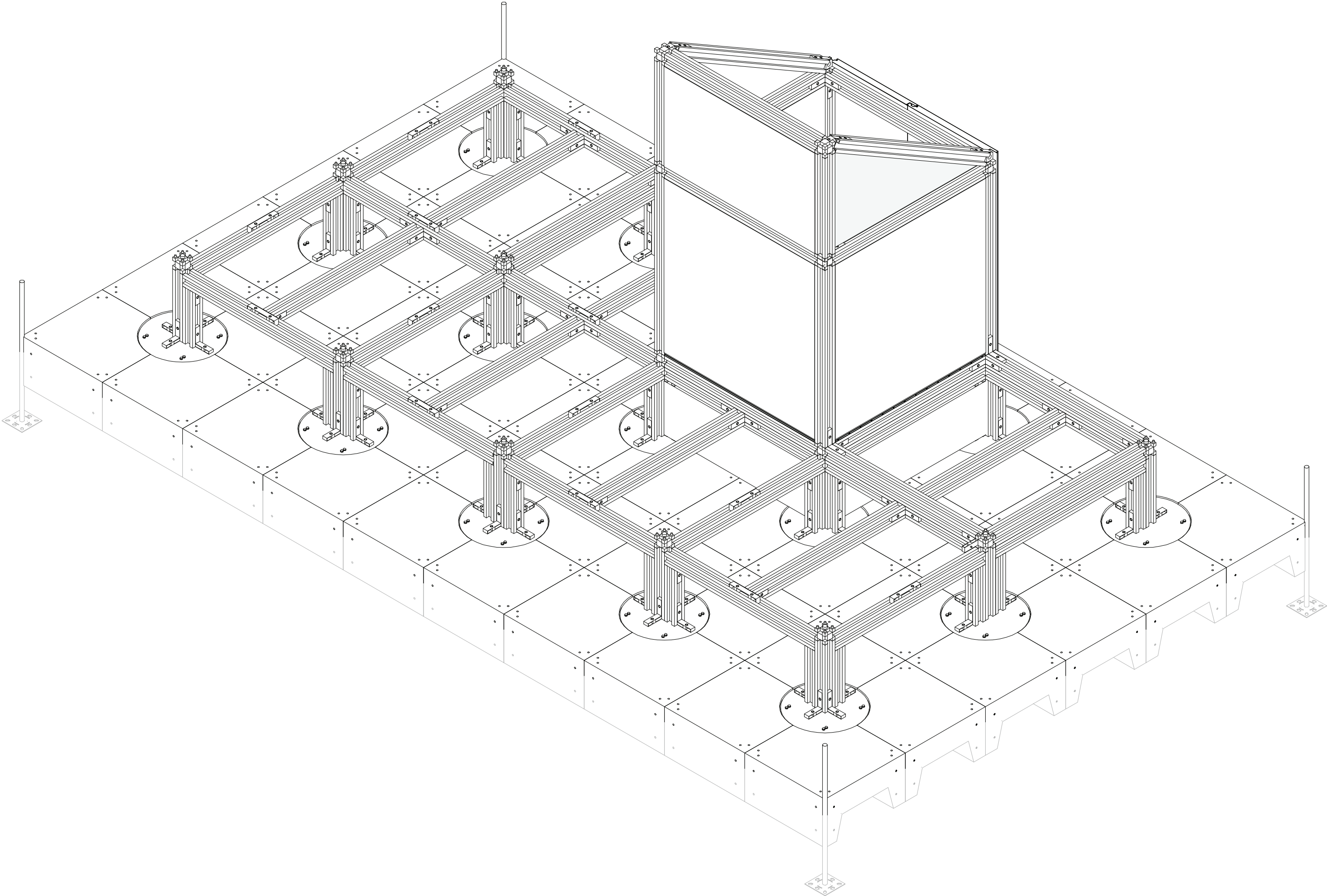


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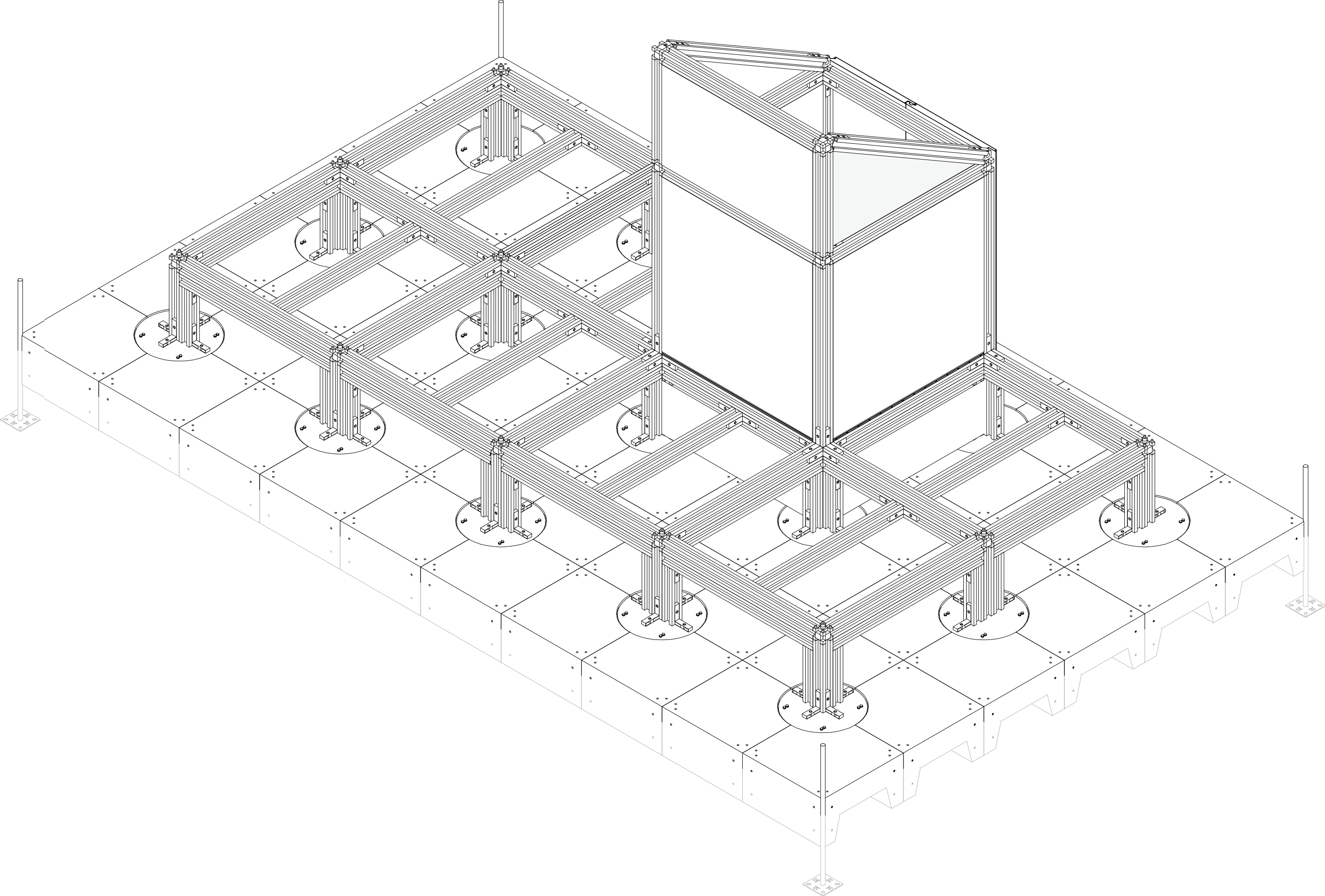


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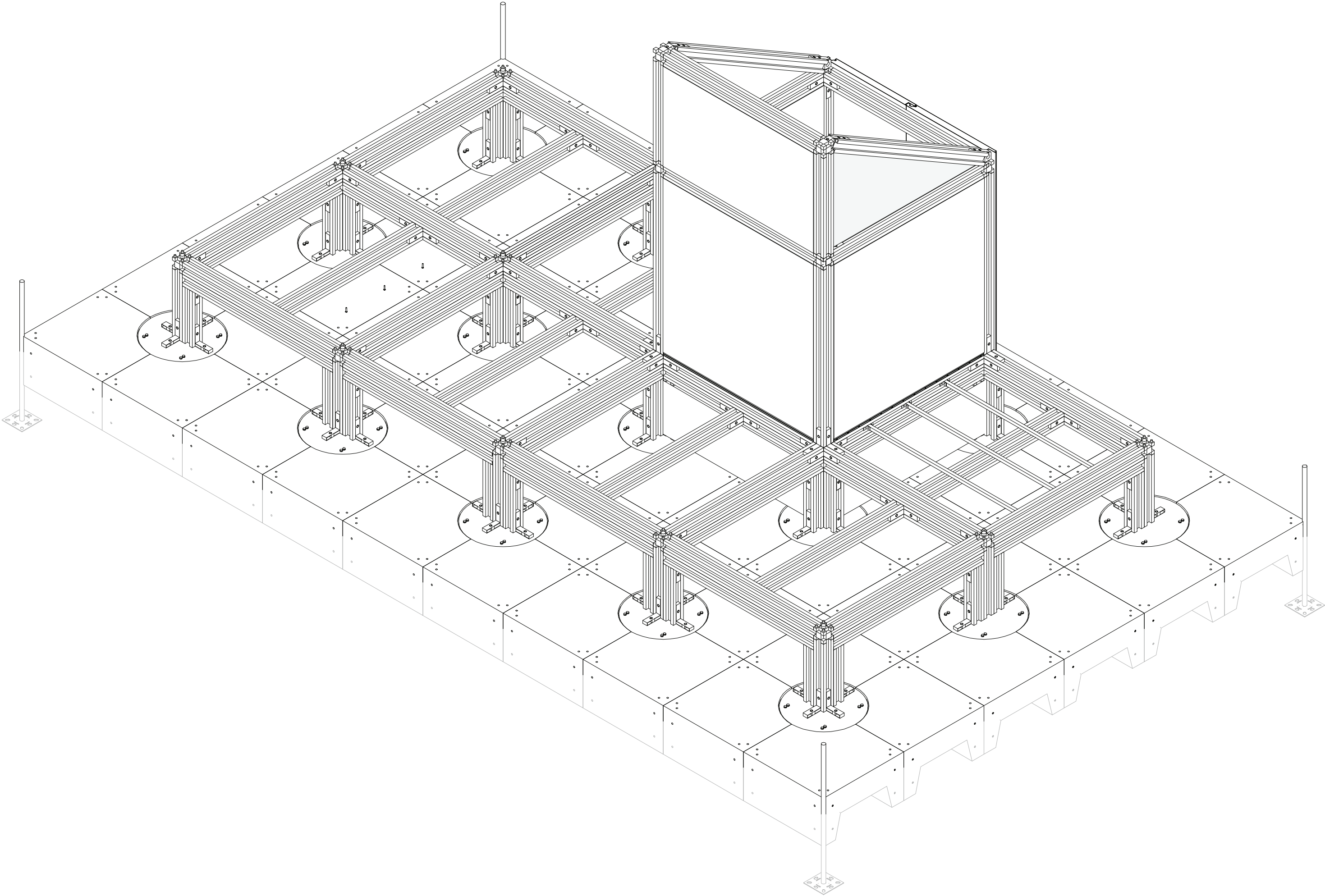


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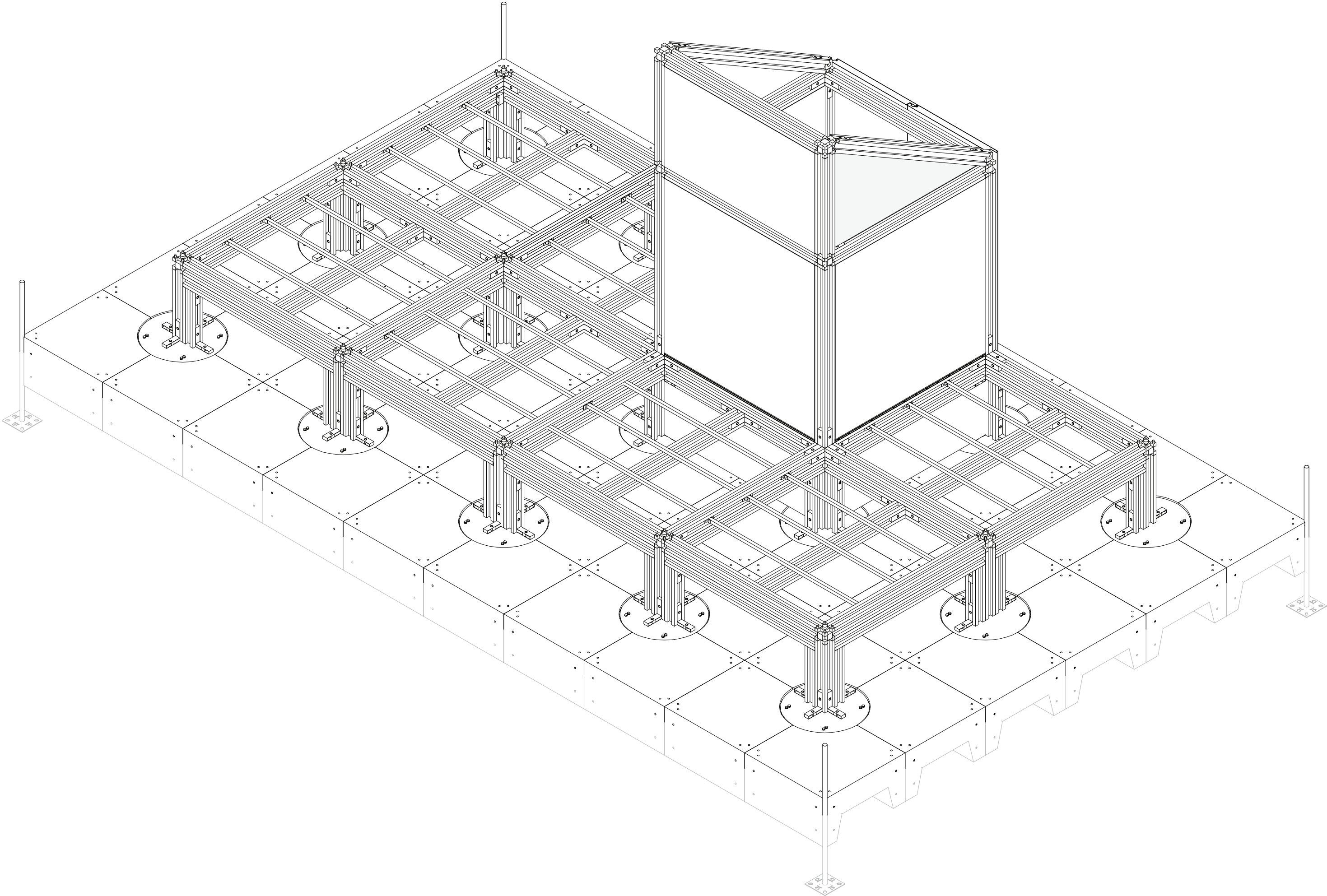


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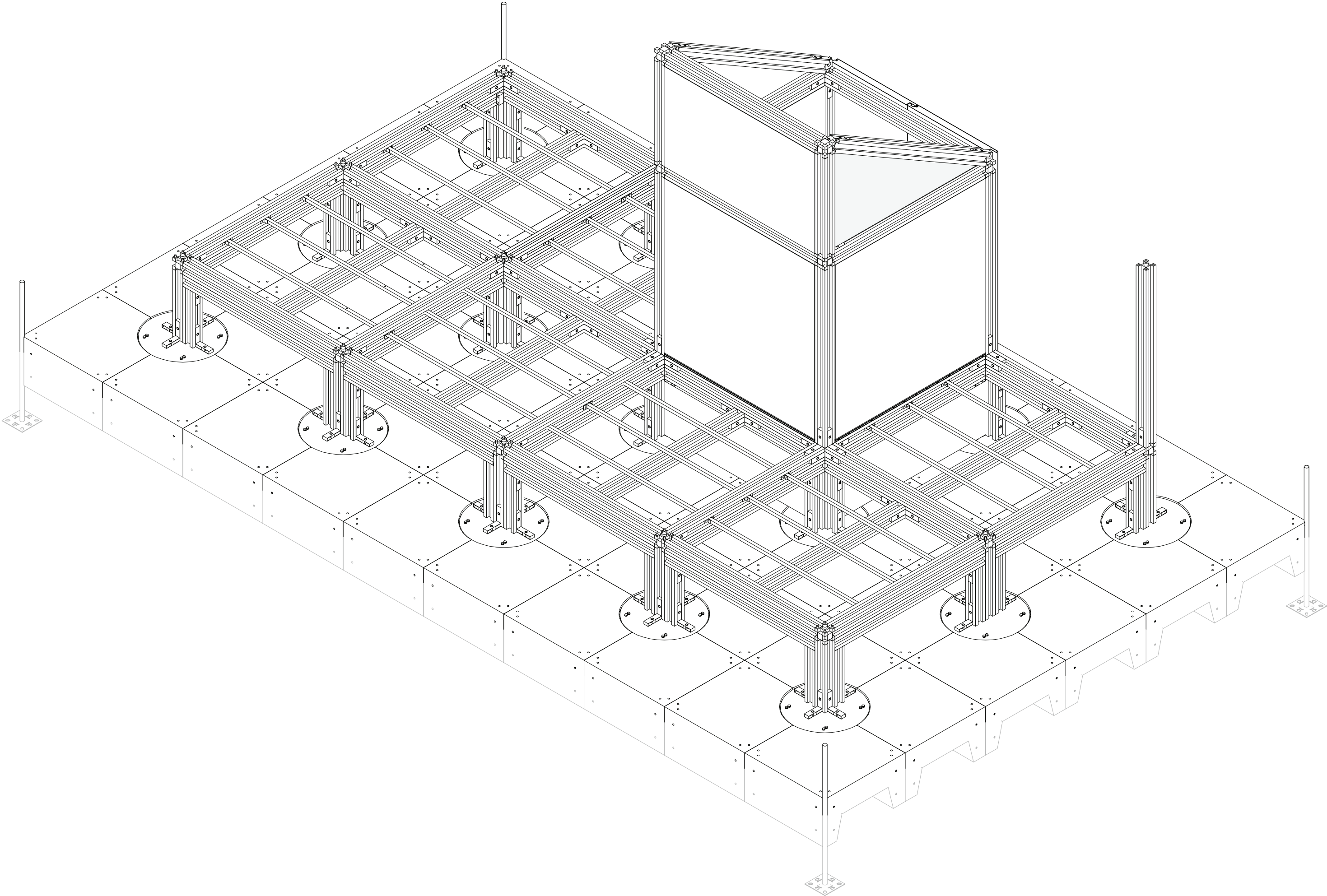


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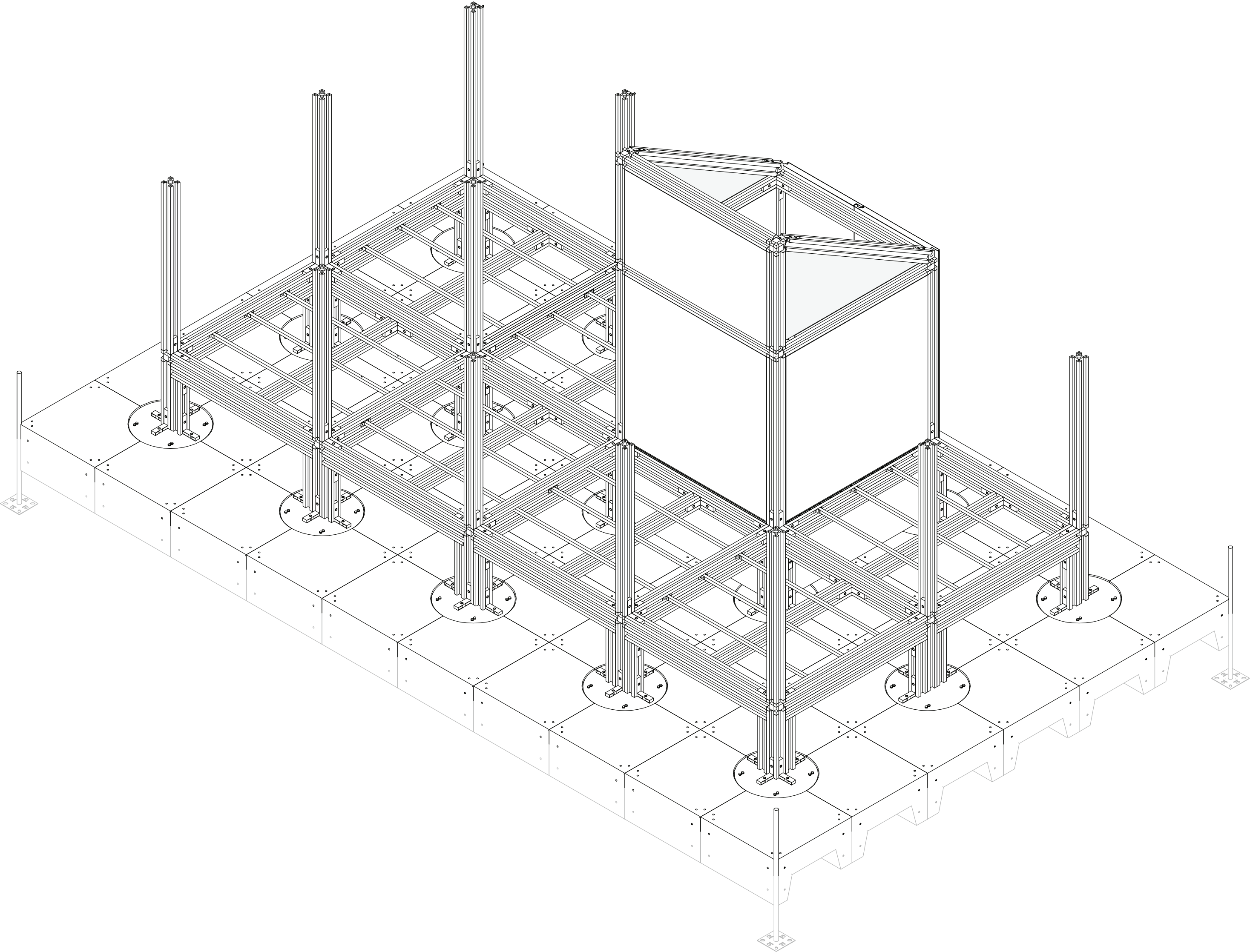


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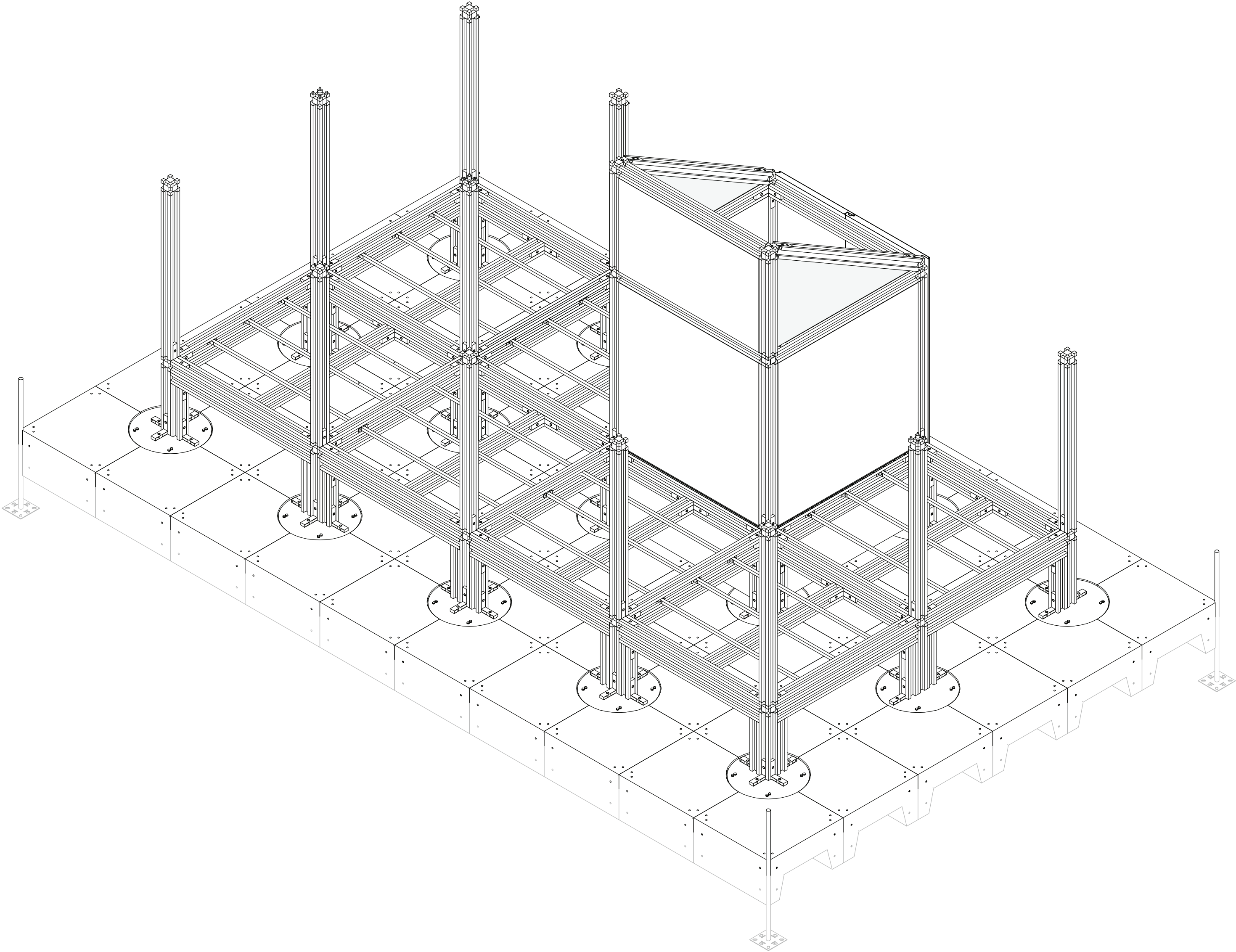


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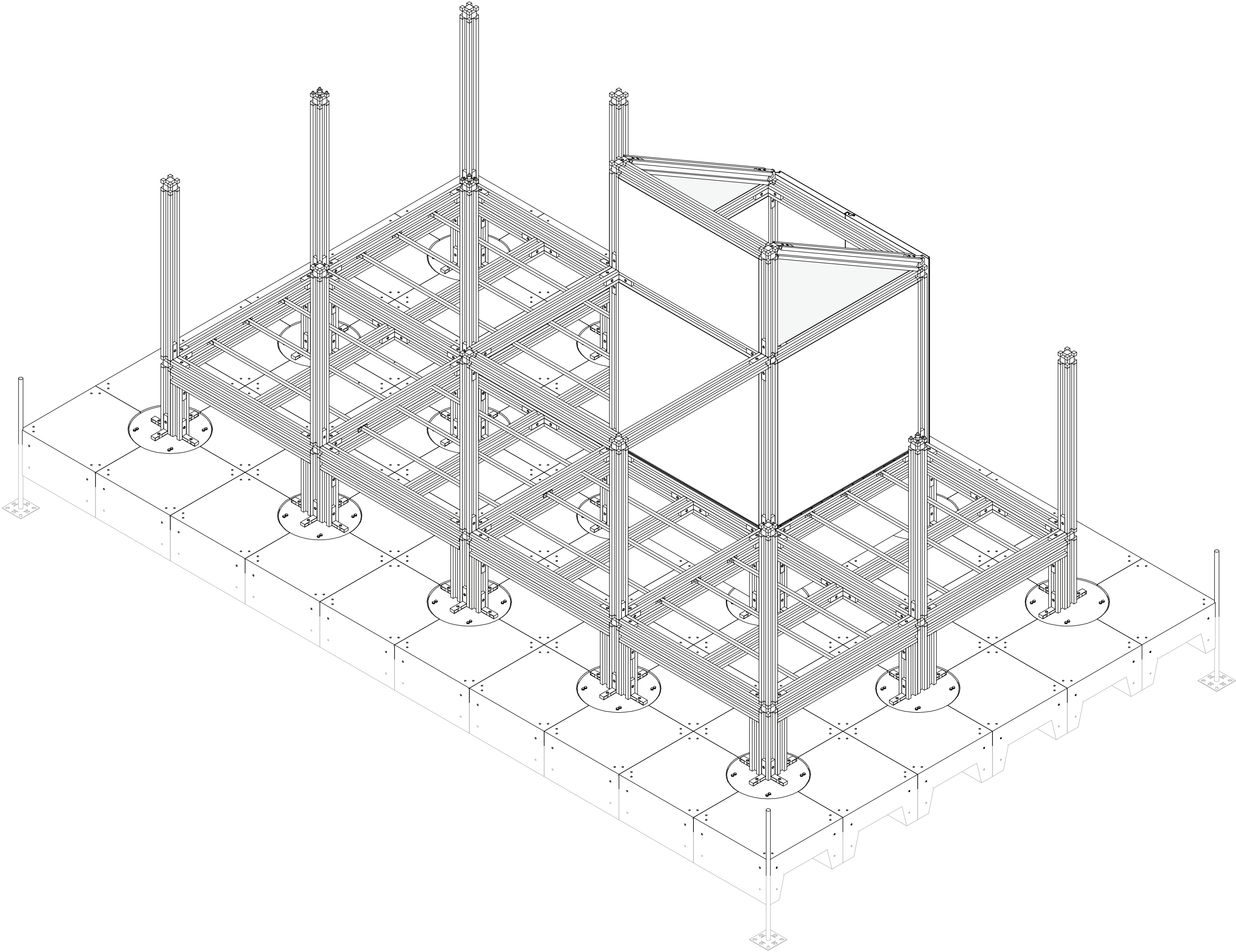


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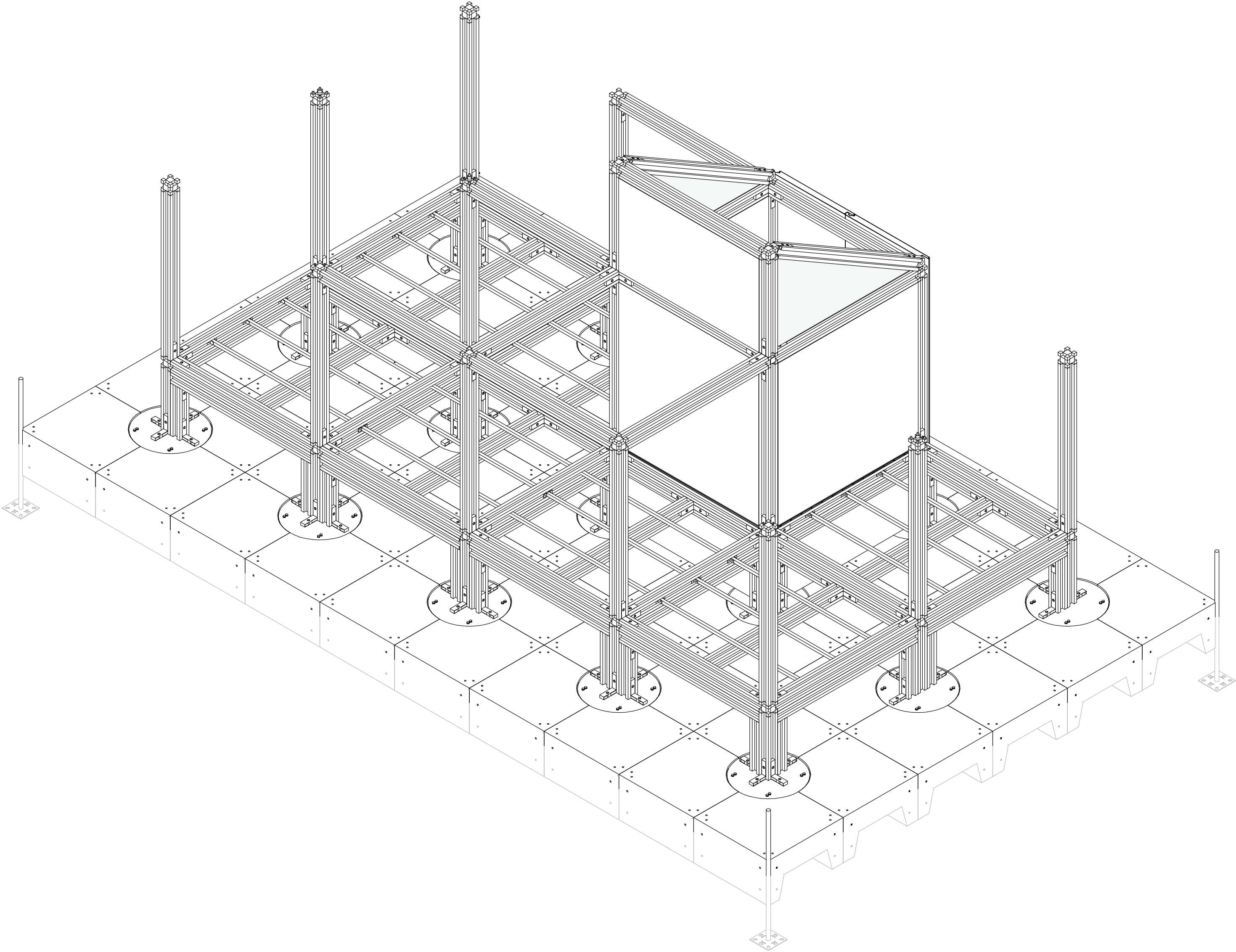


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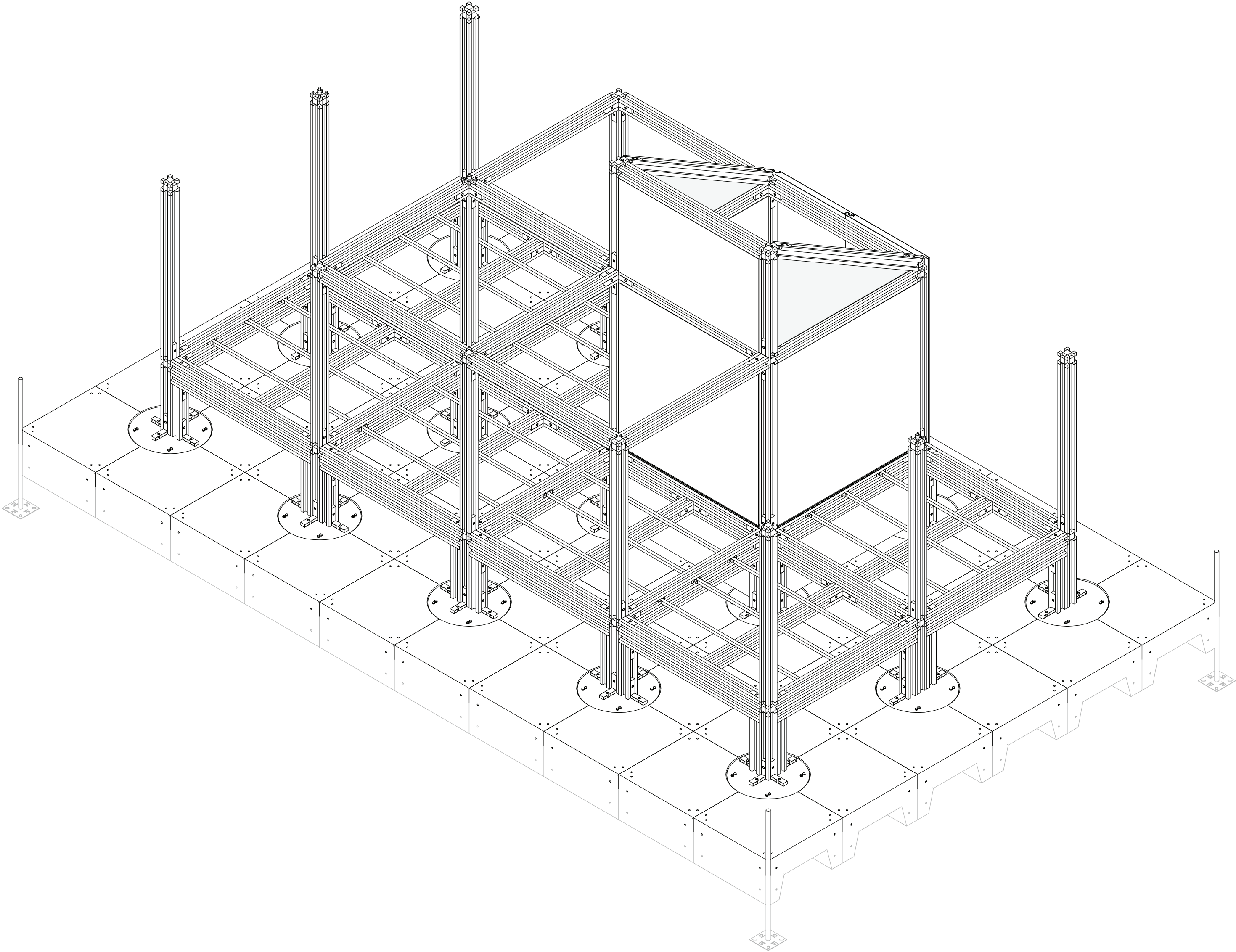


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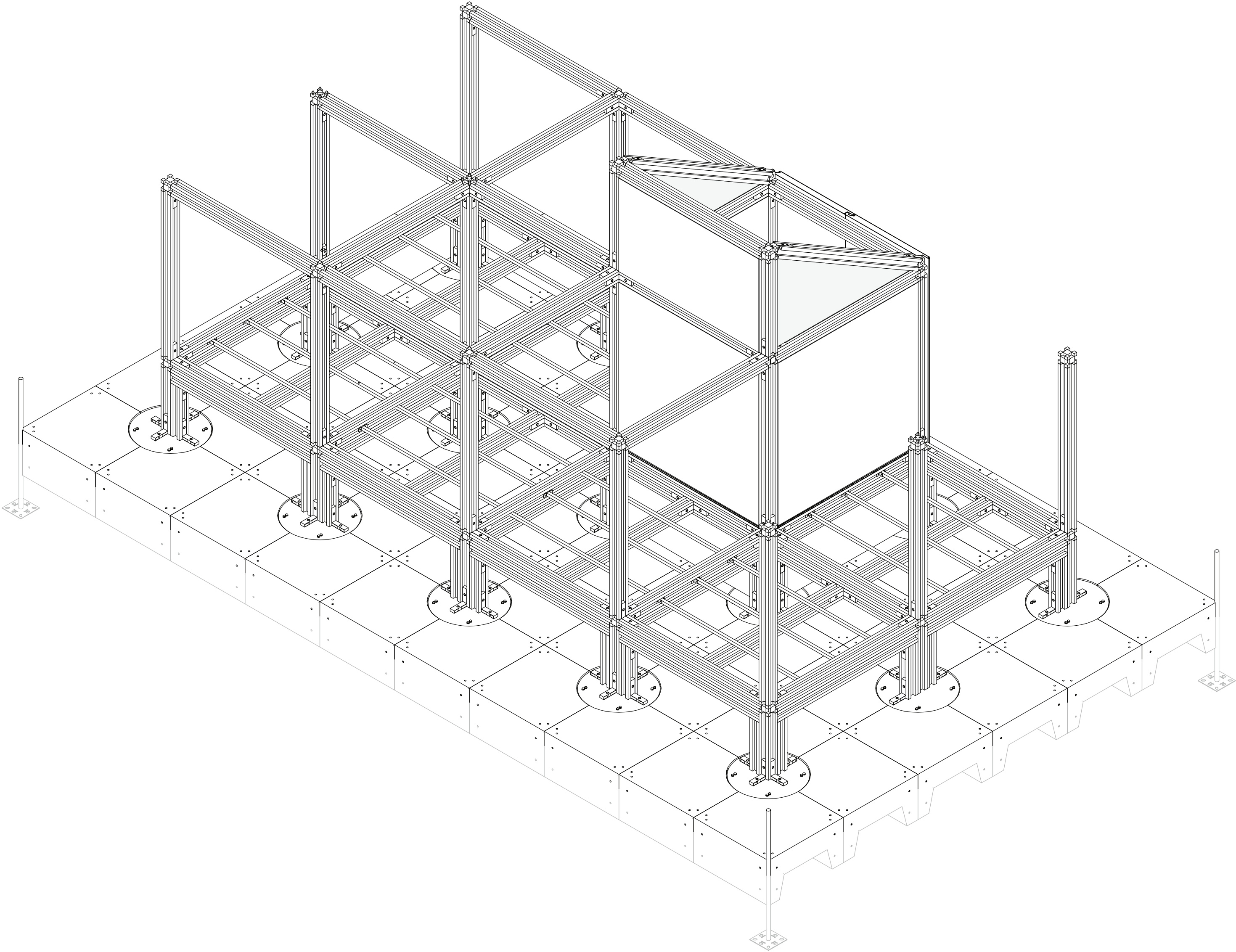


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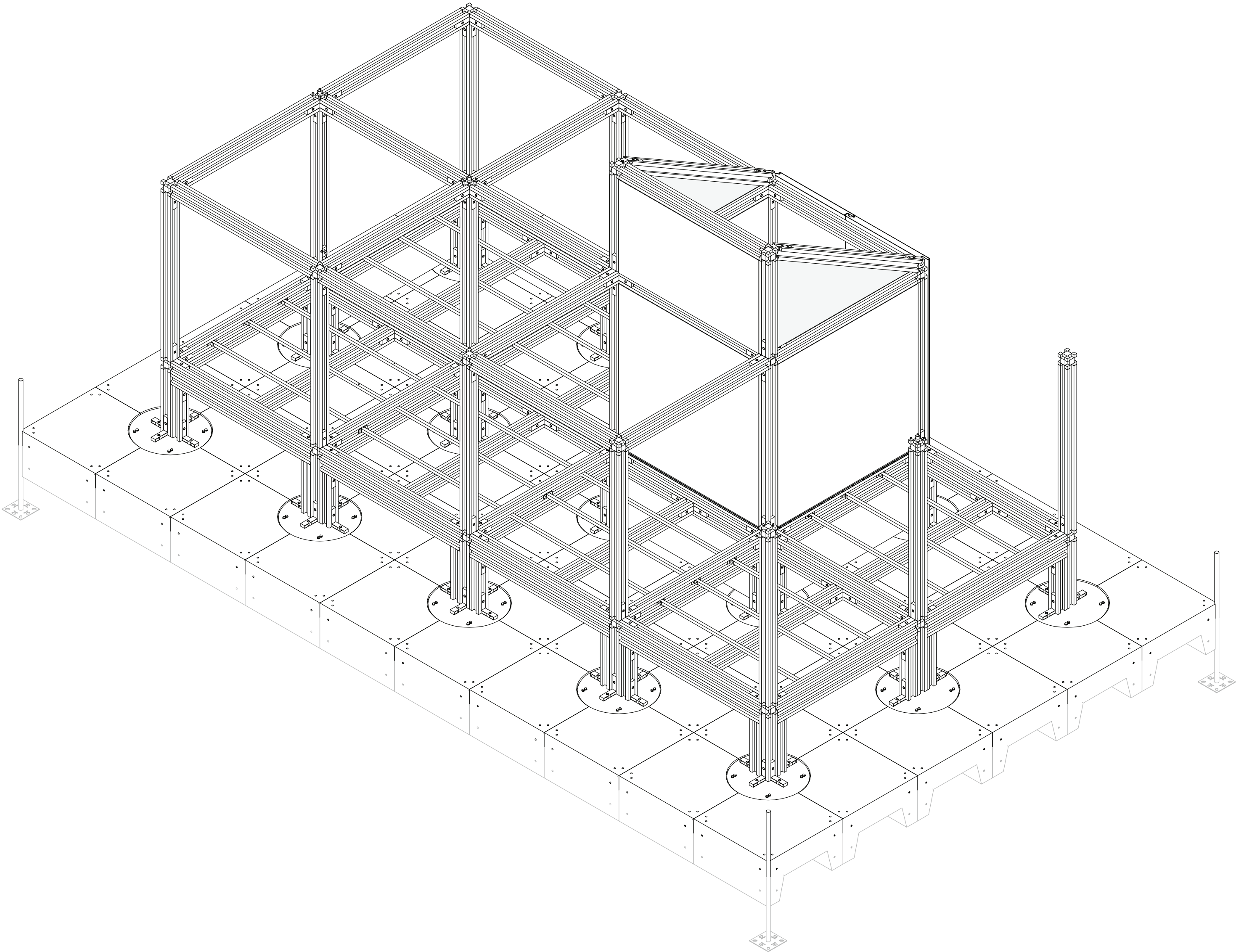


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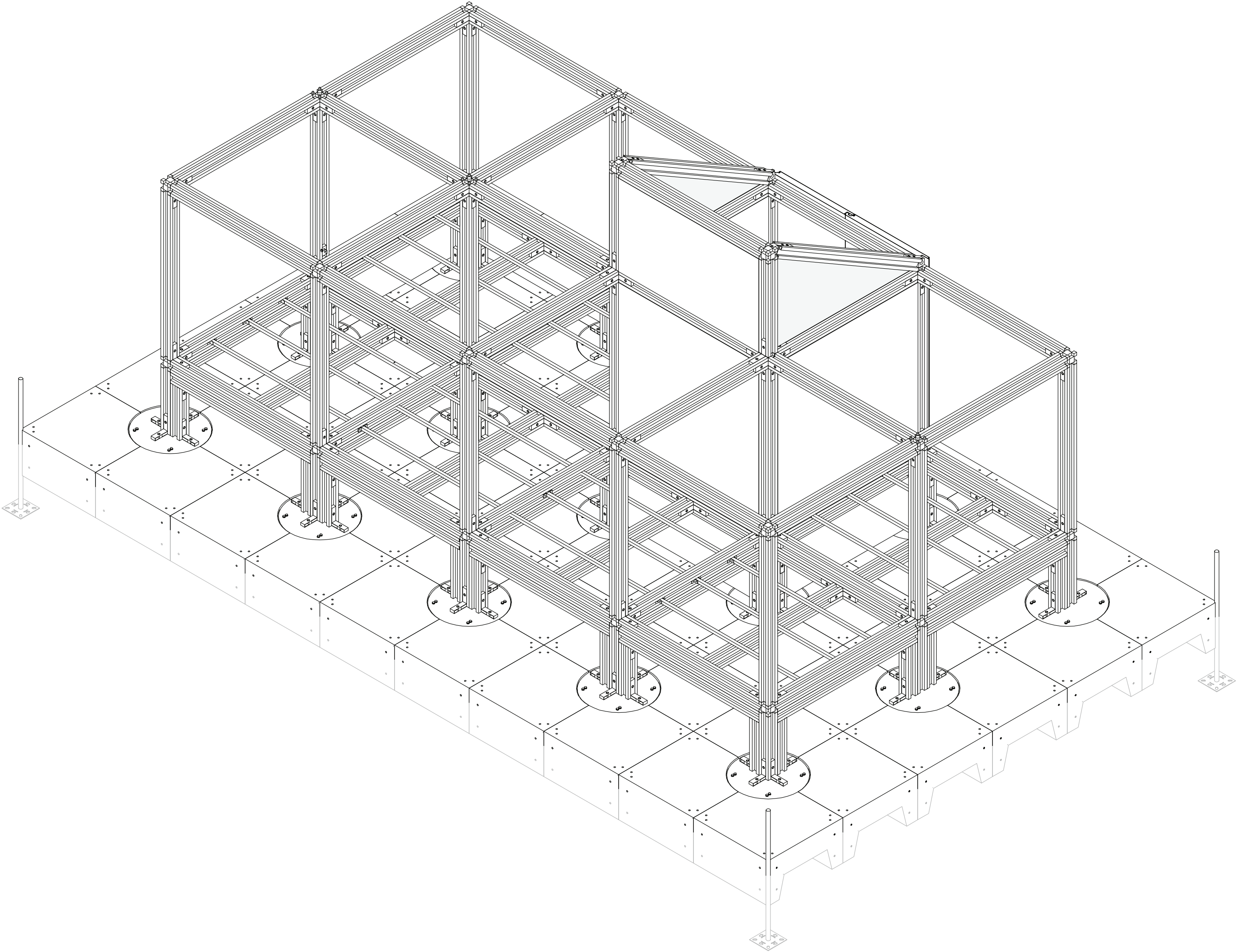


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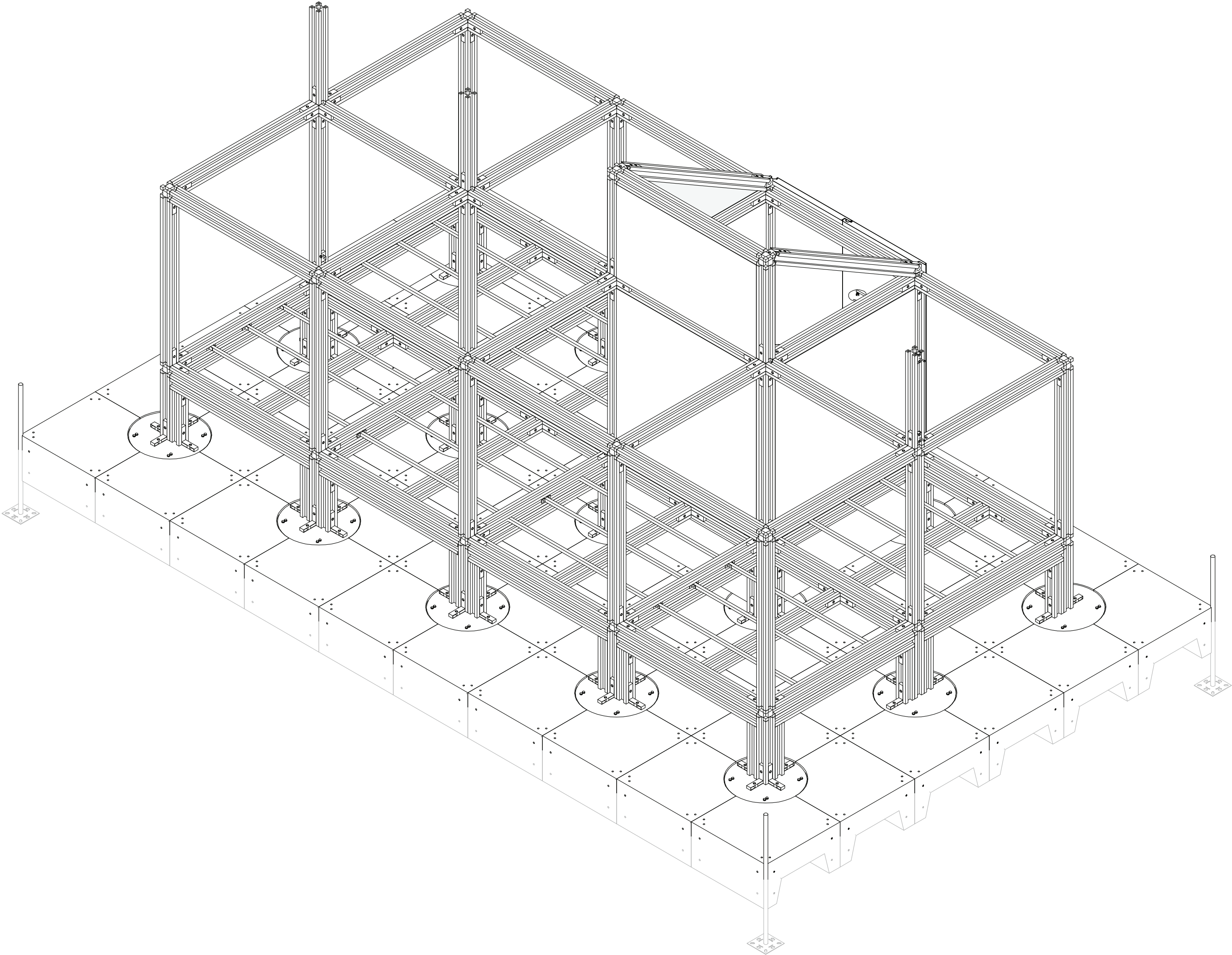


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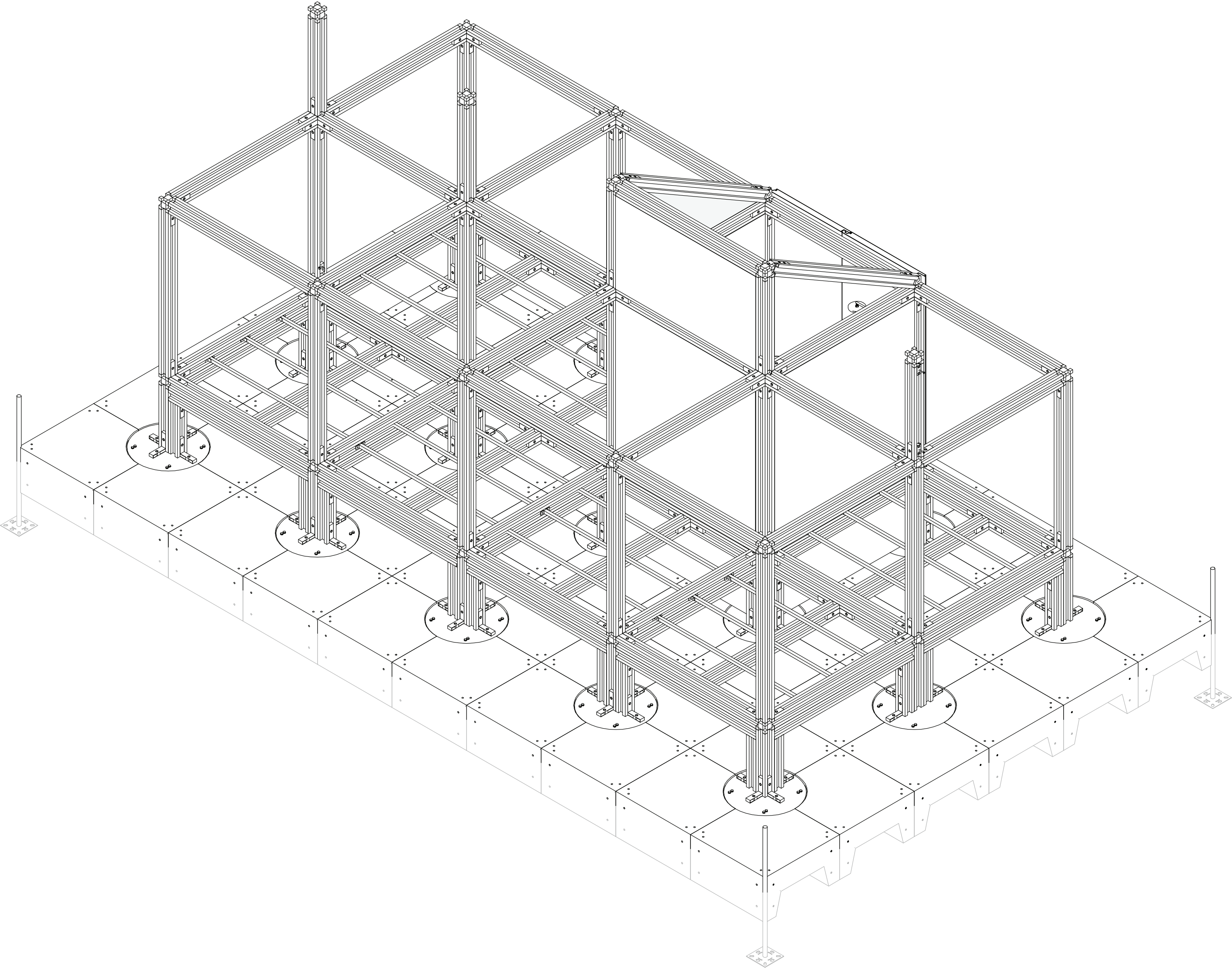


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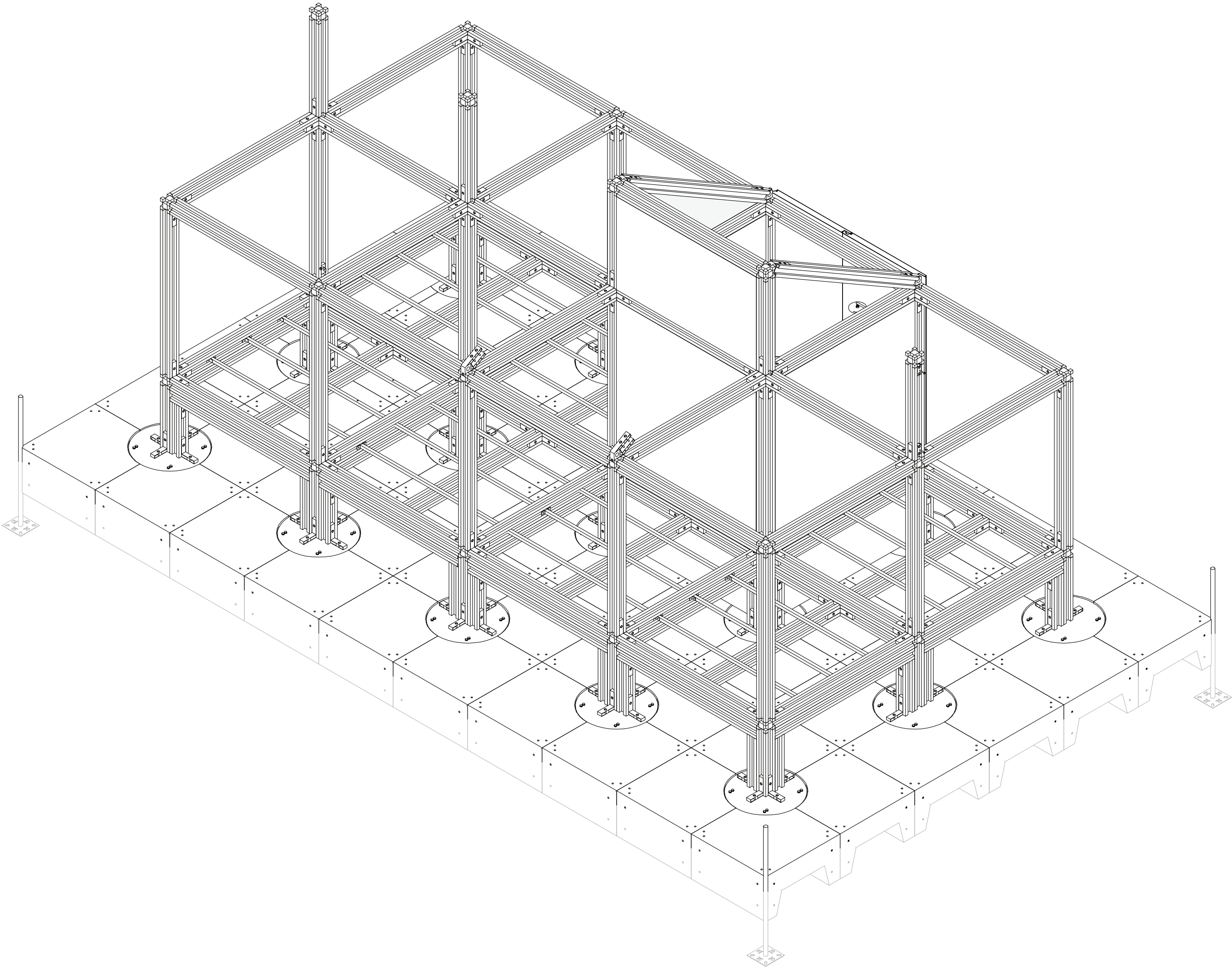


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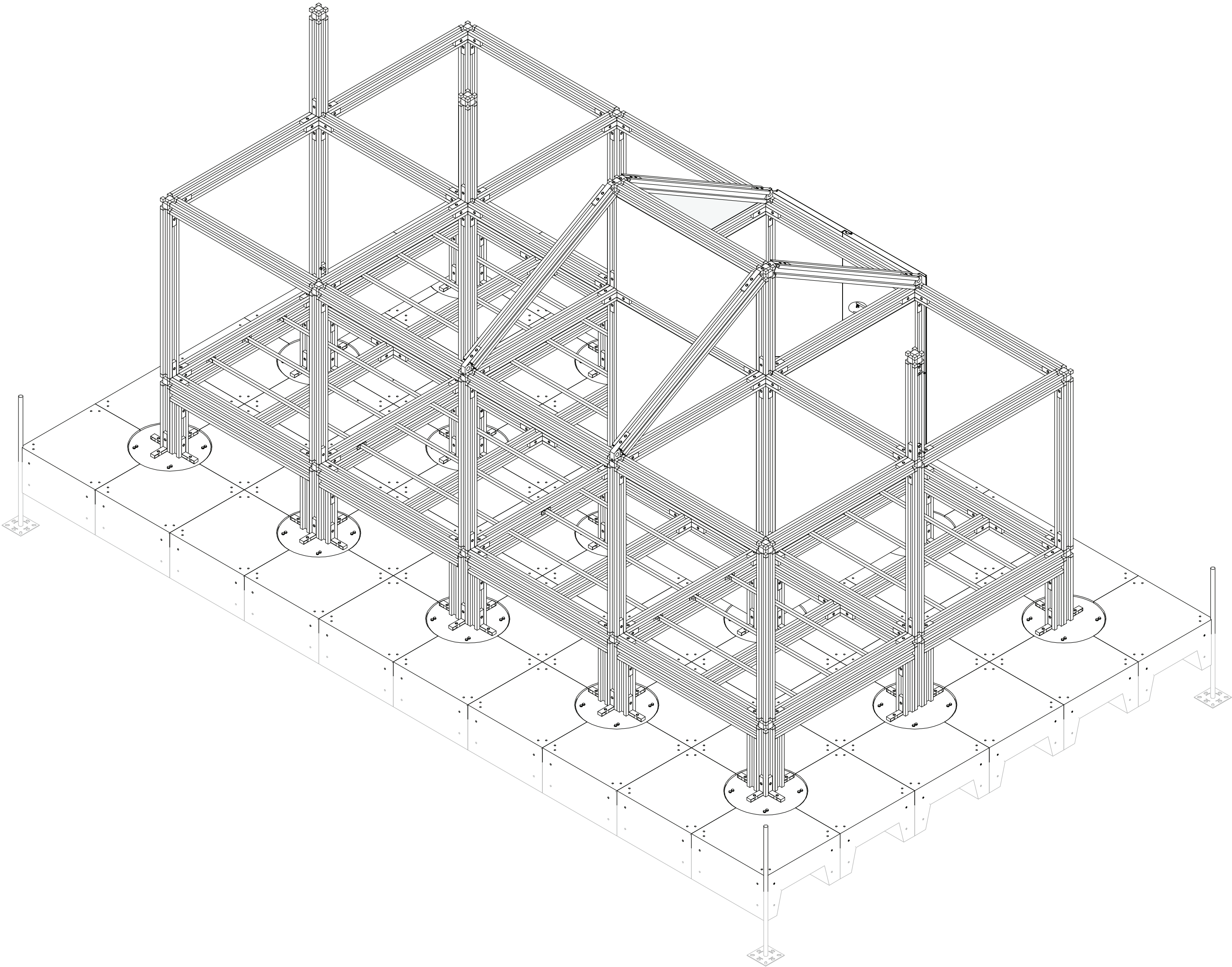


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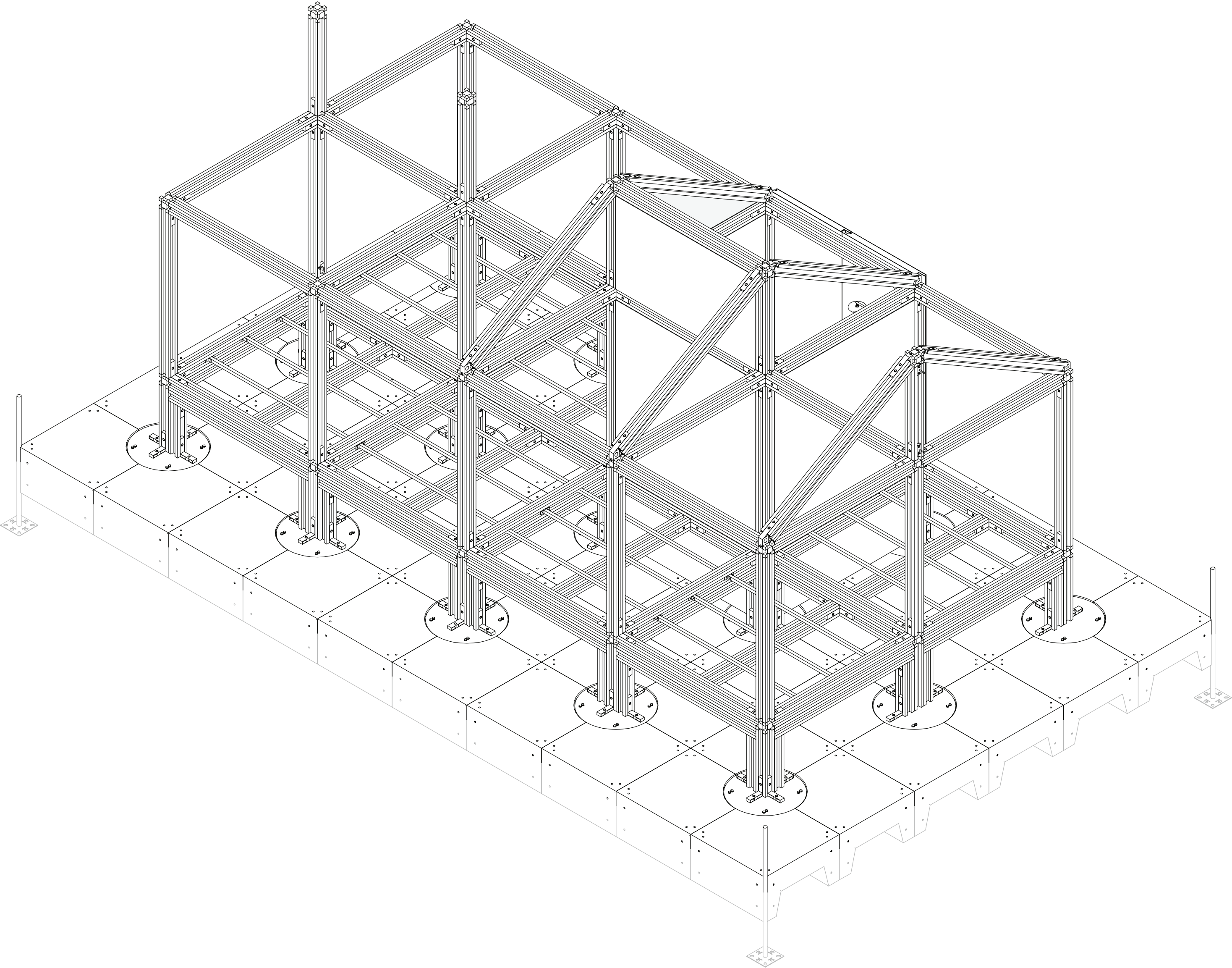


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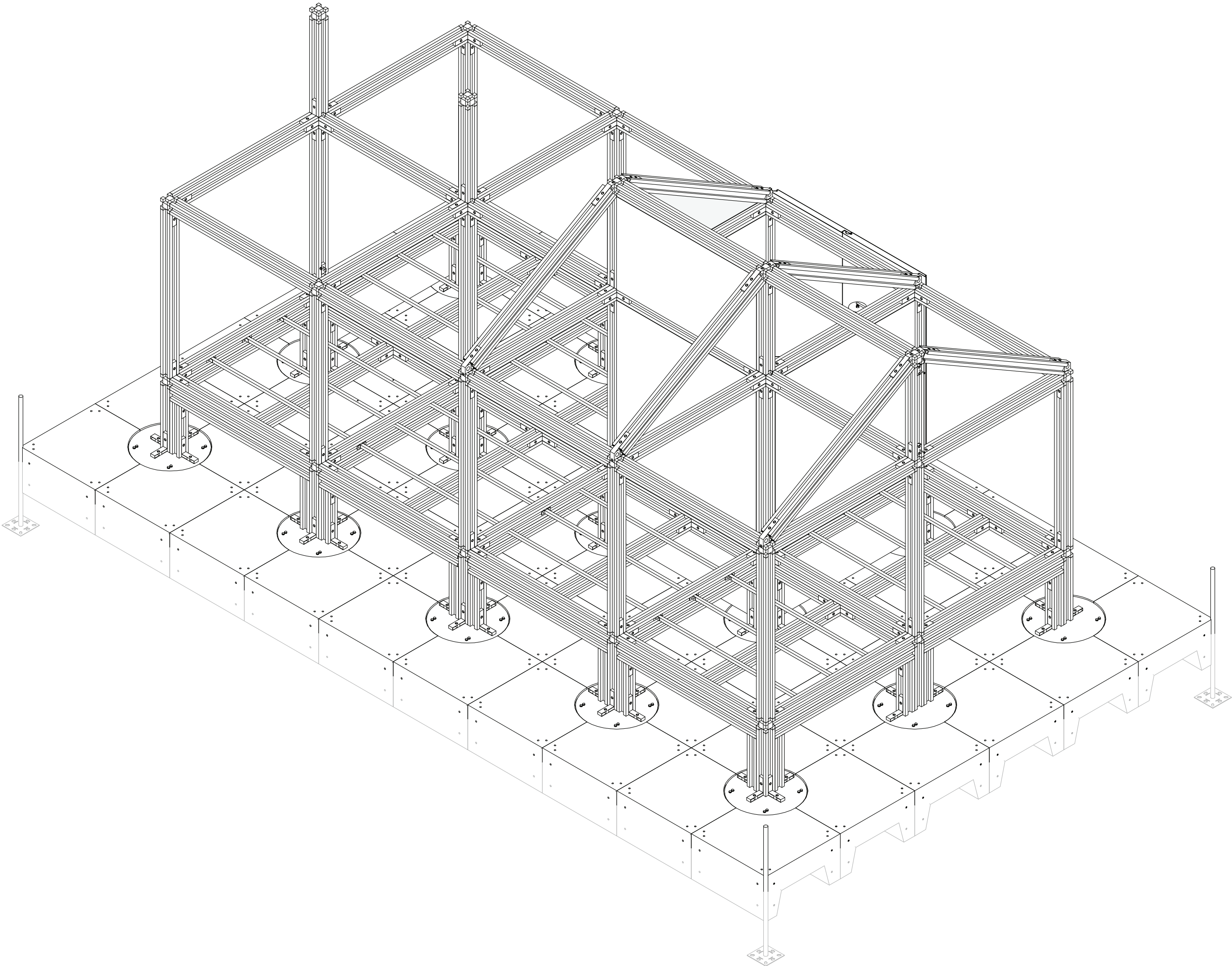


BUILD UP



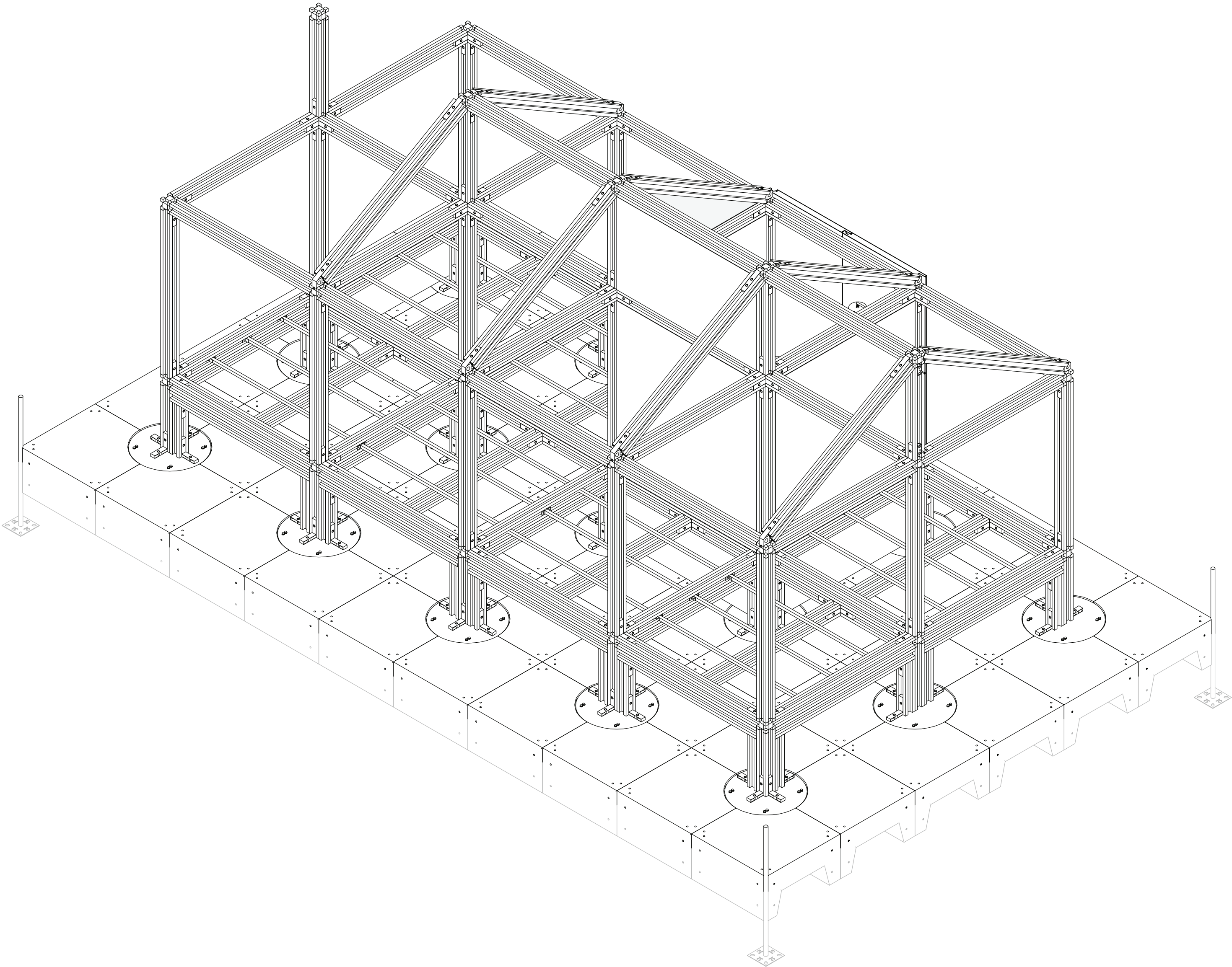


BUILD UP



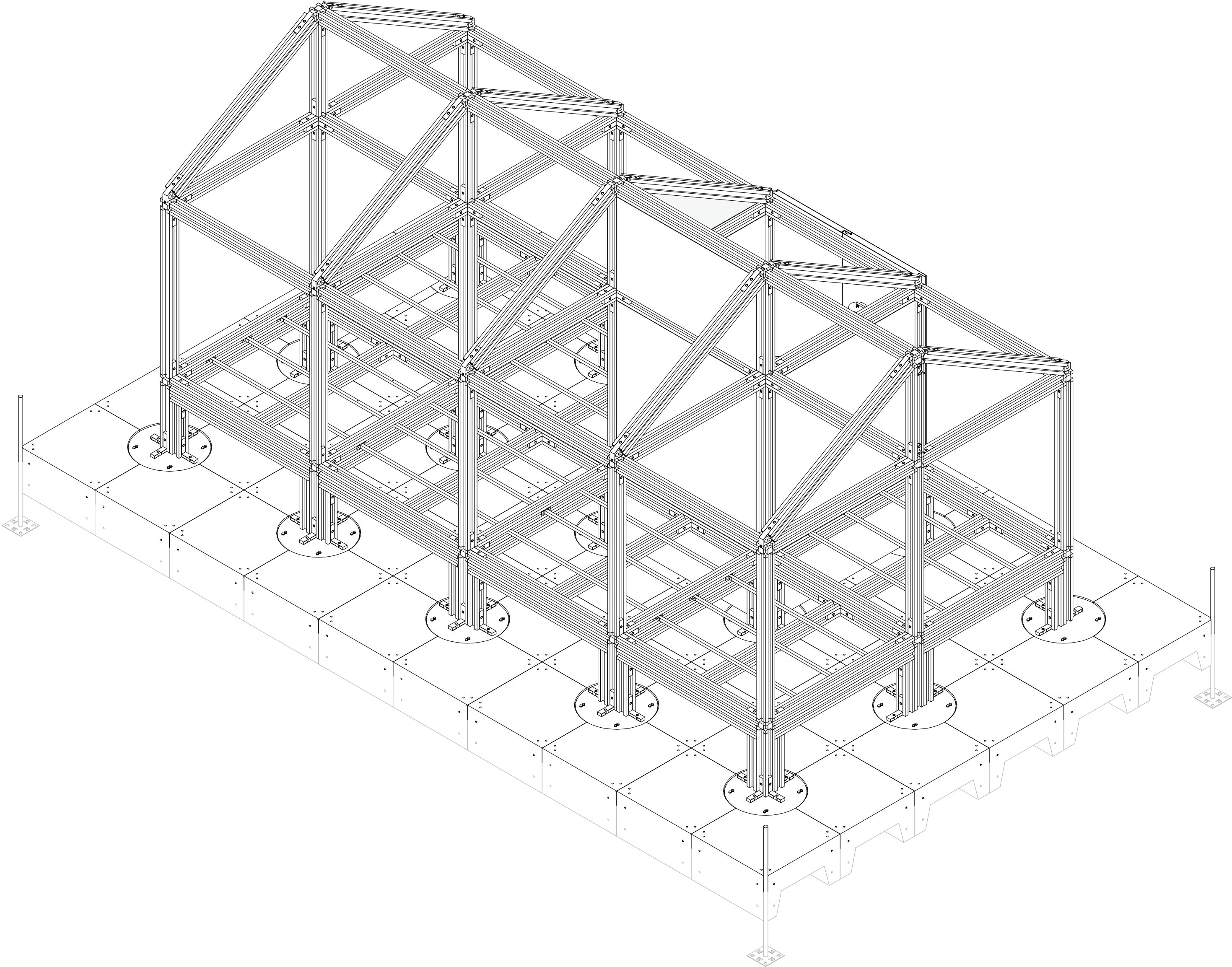


BUILD UP



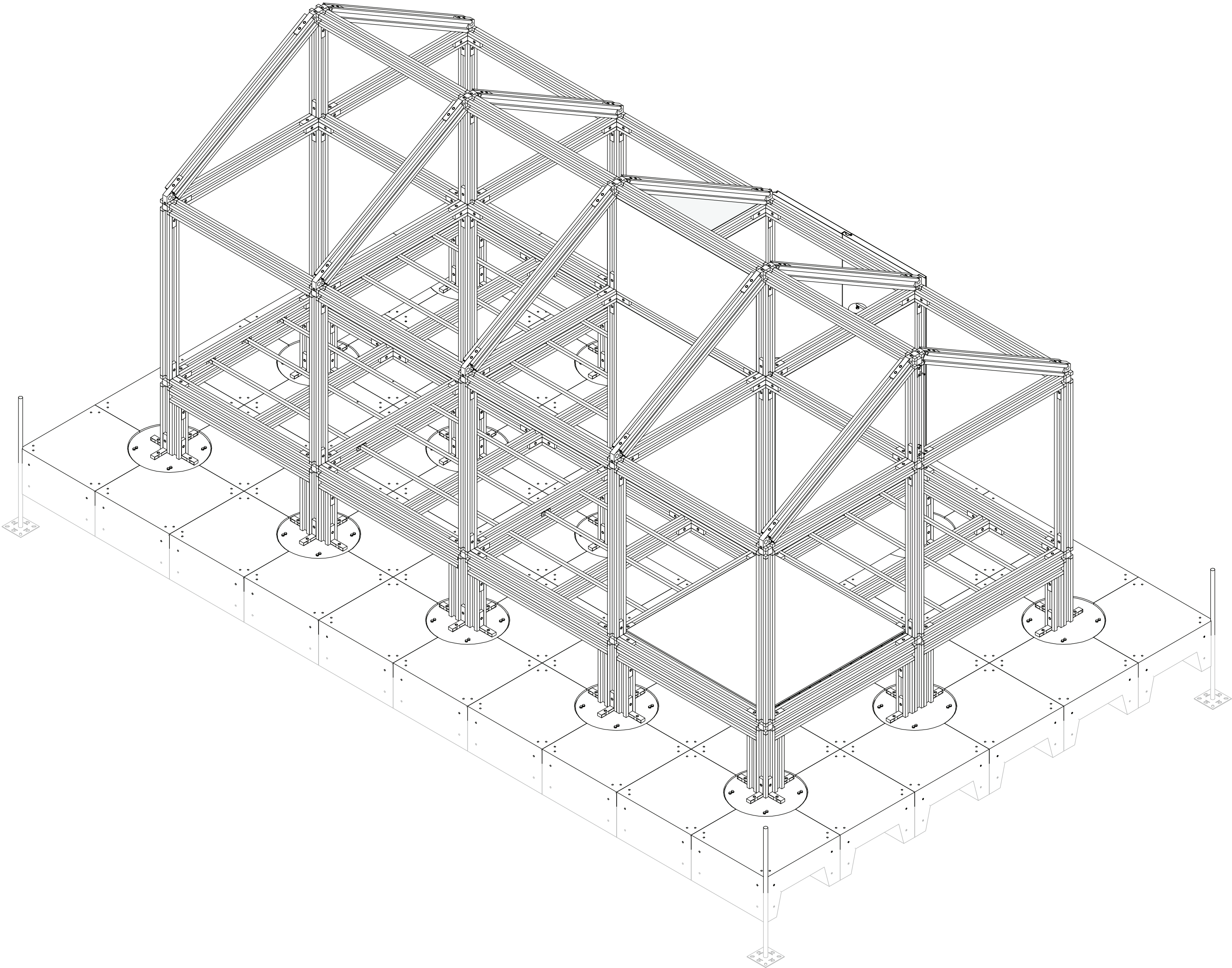


BUILD UP



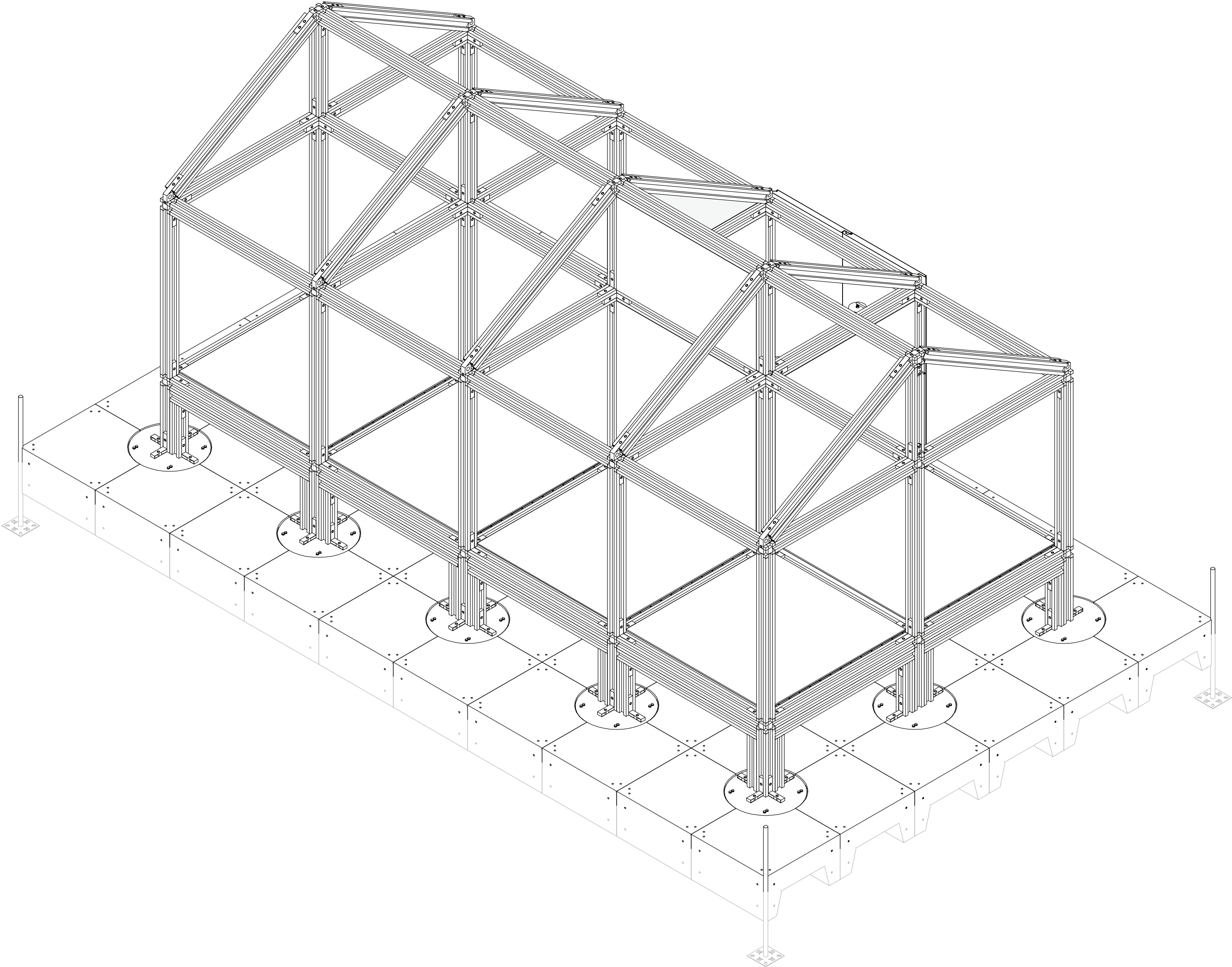


BUILD UP



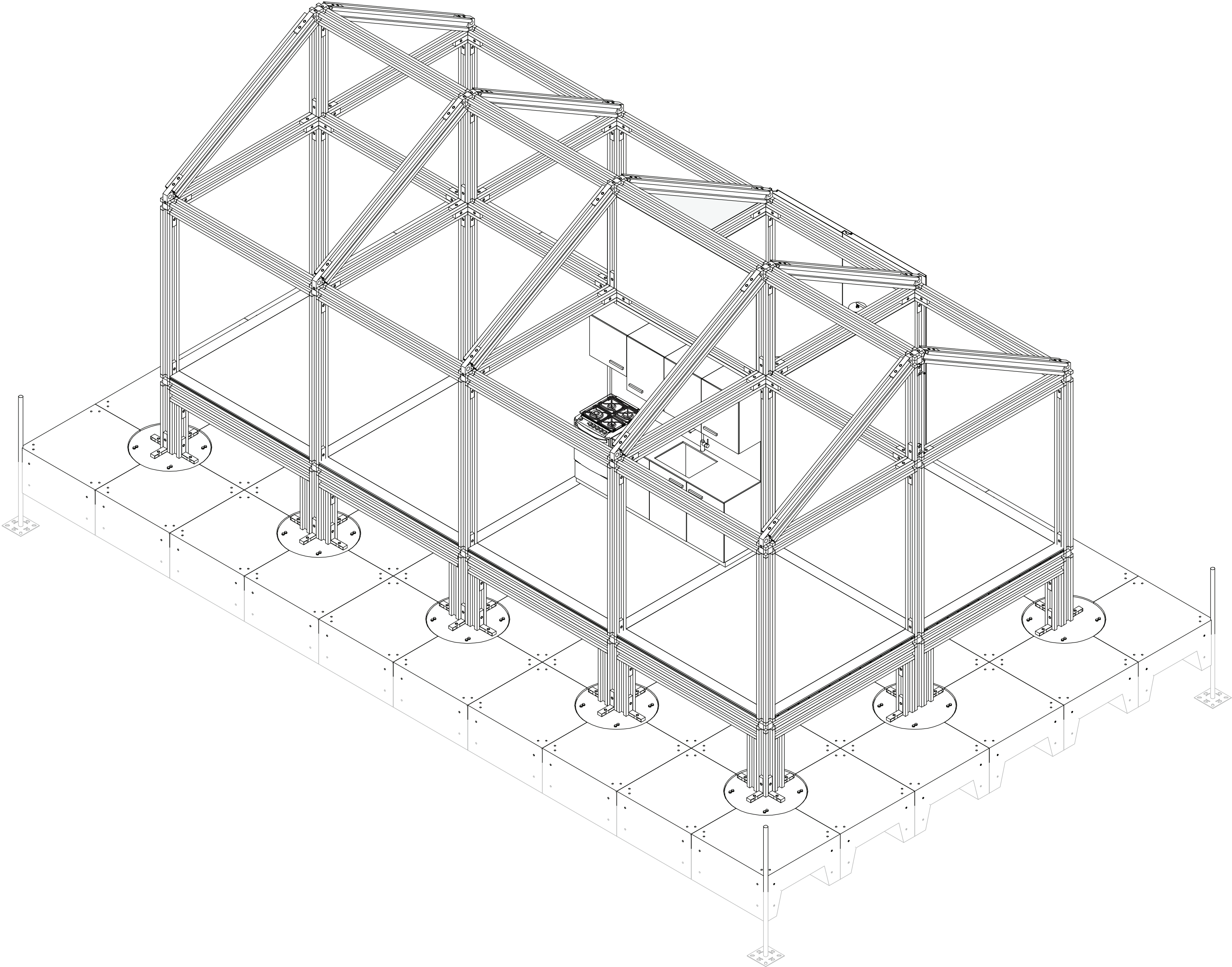


BUILD UP



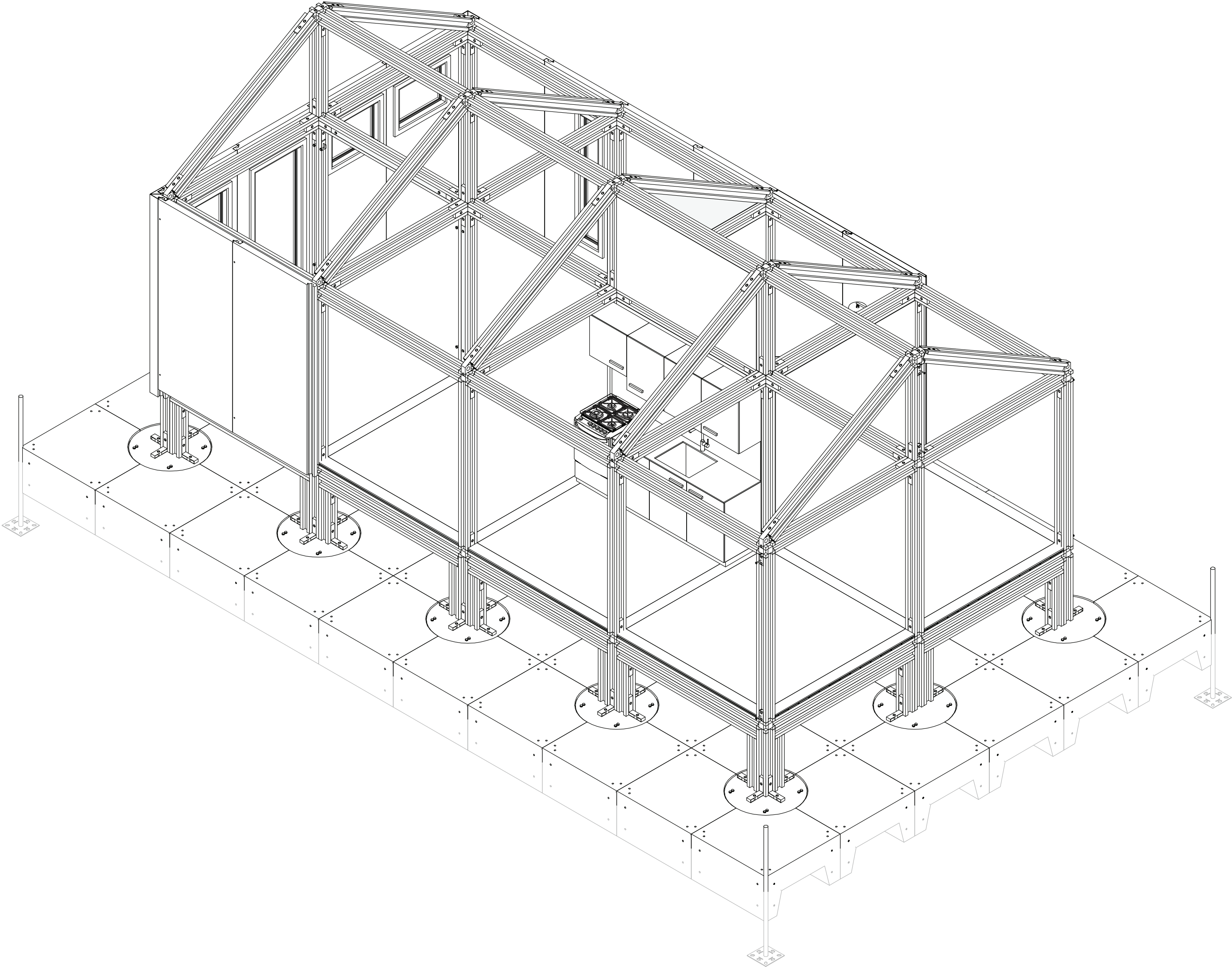


BUILD UP



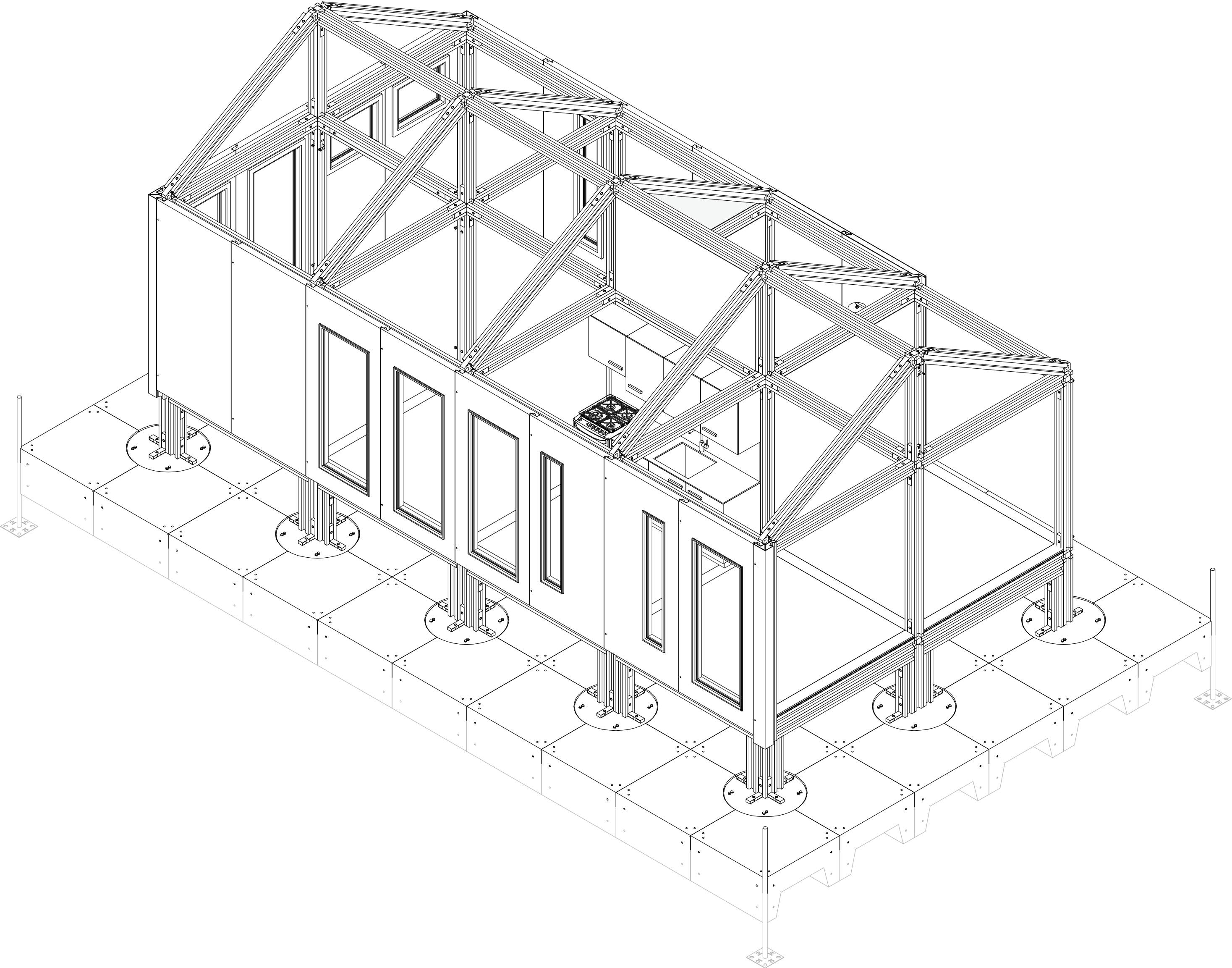


BUILD UP



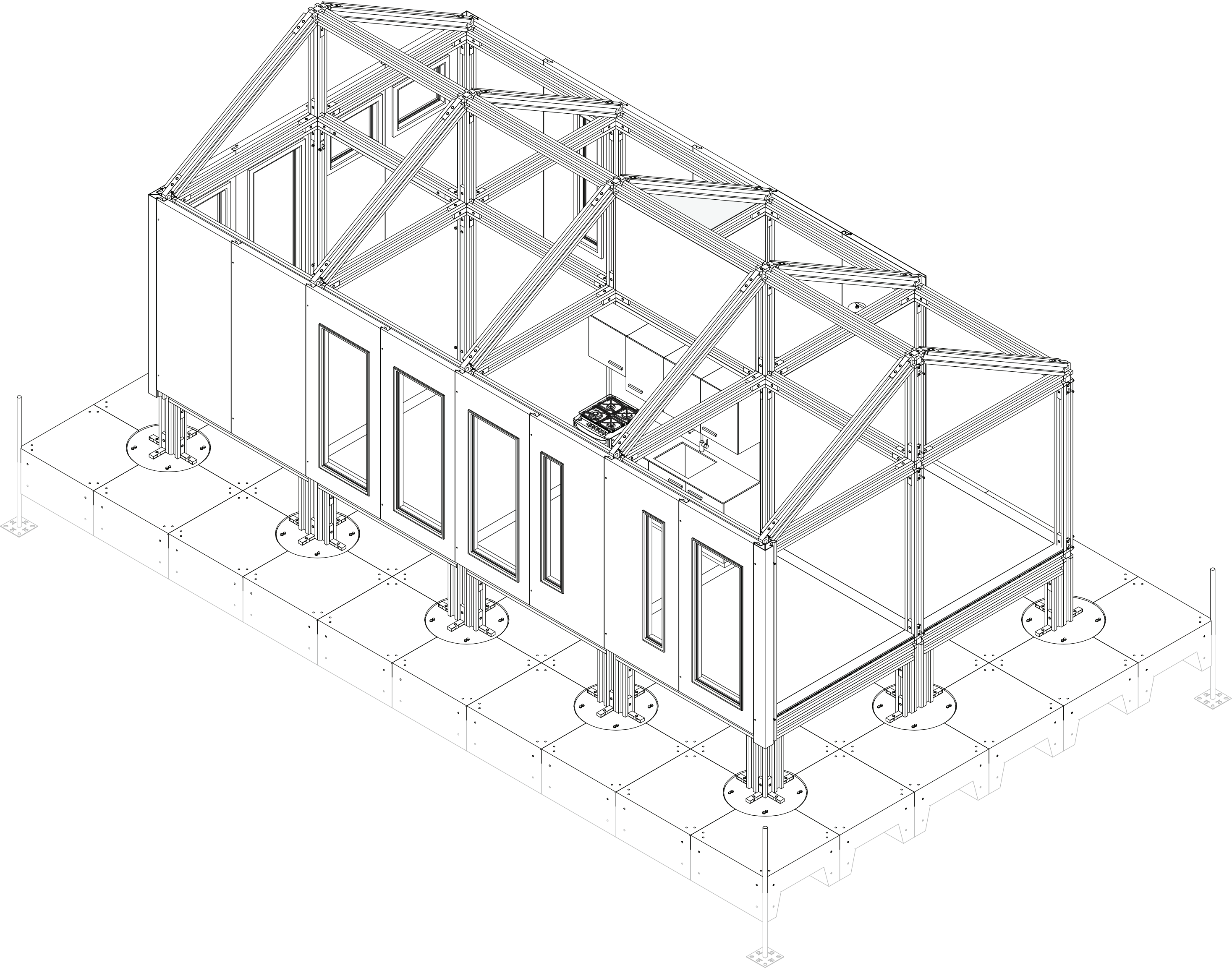


BUILD UP



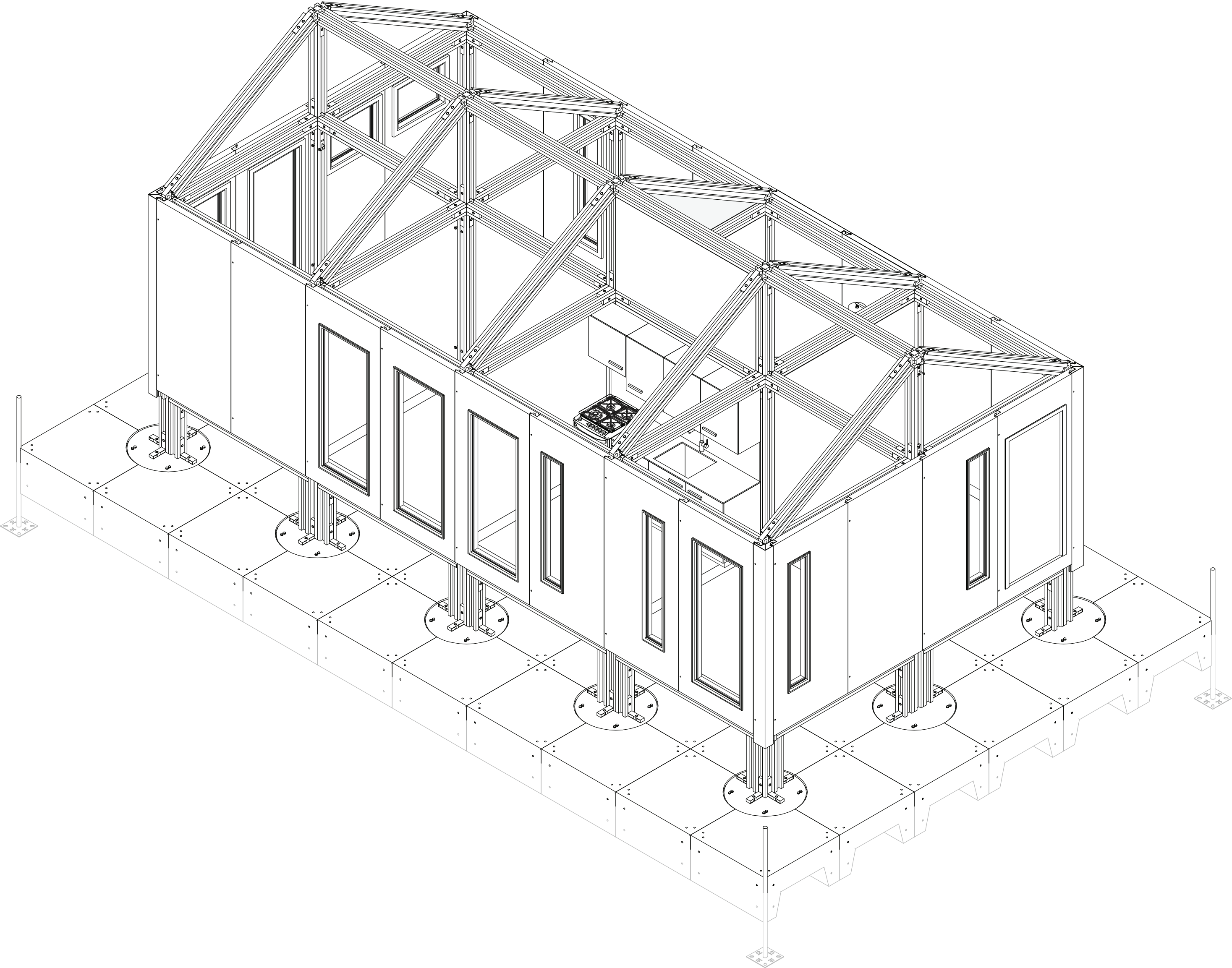


BUILD UP



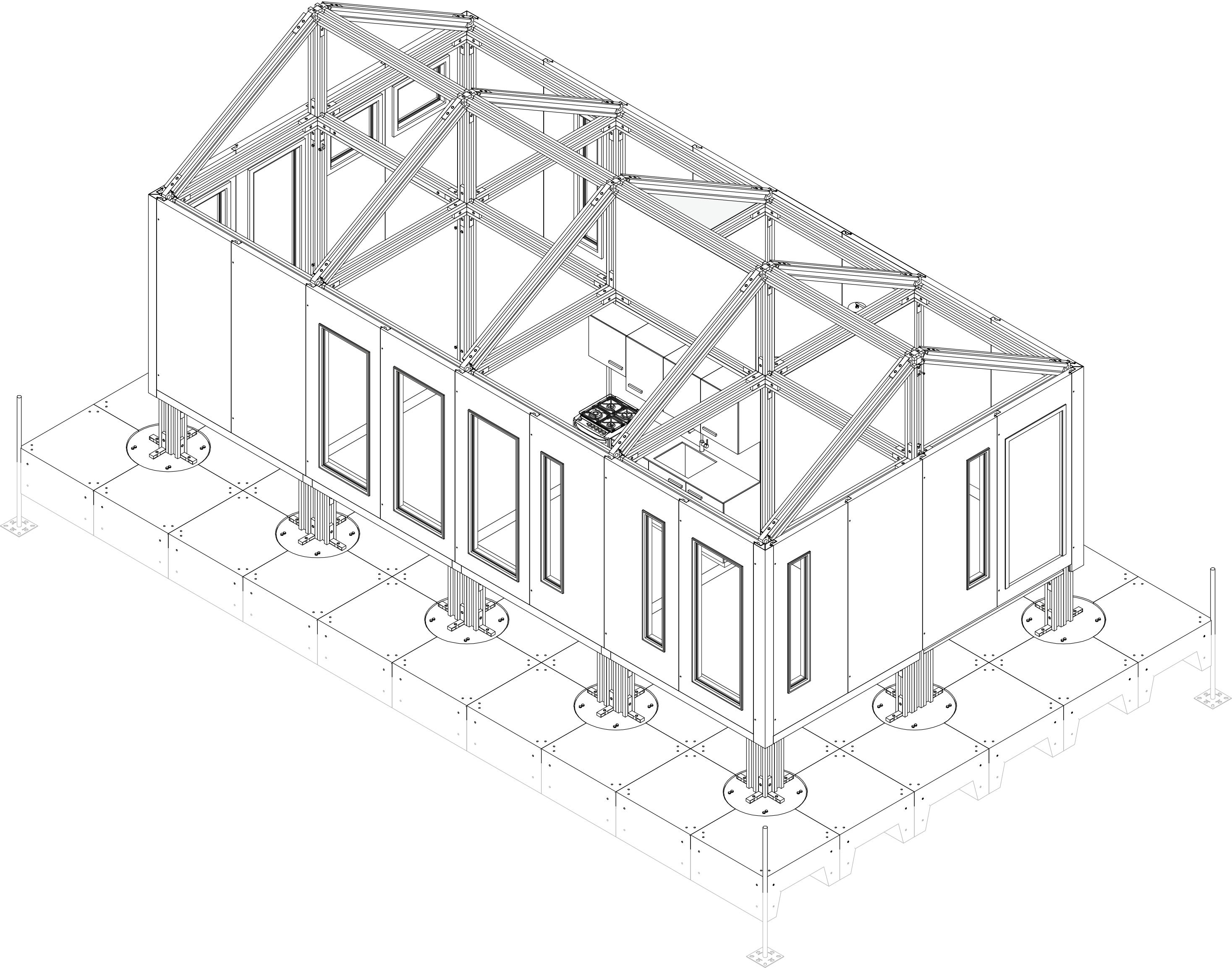


BUILD UP



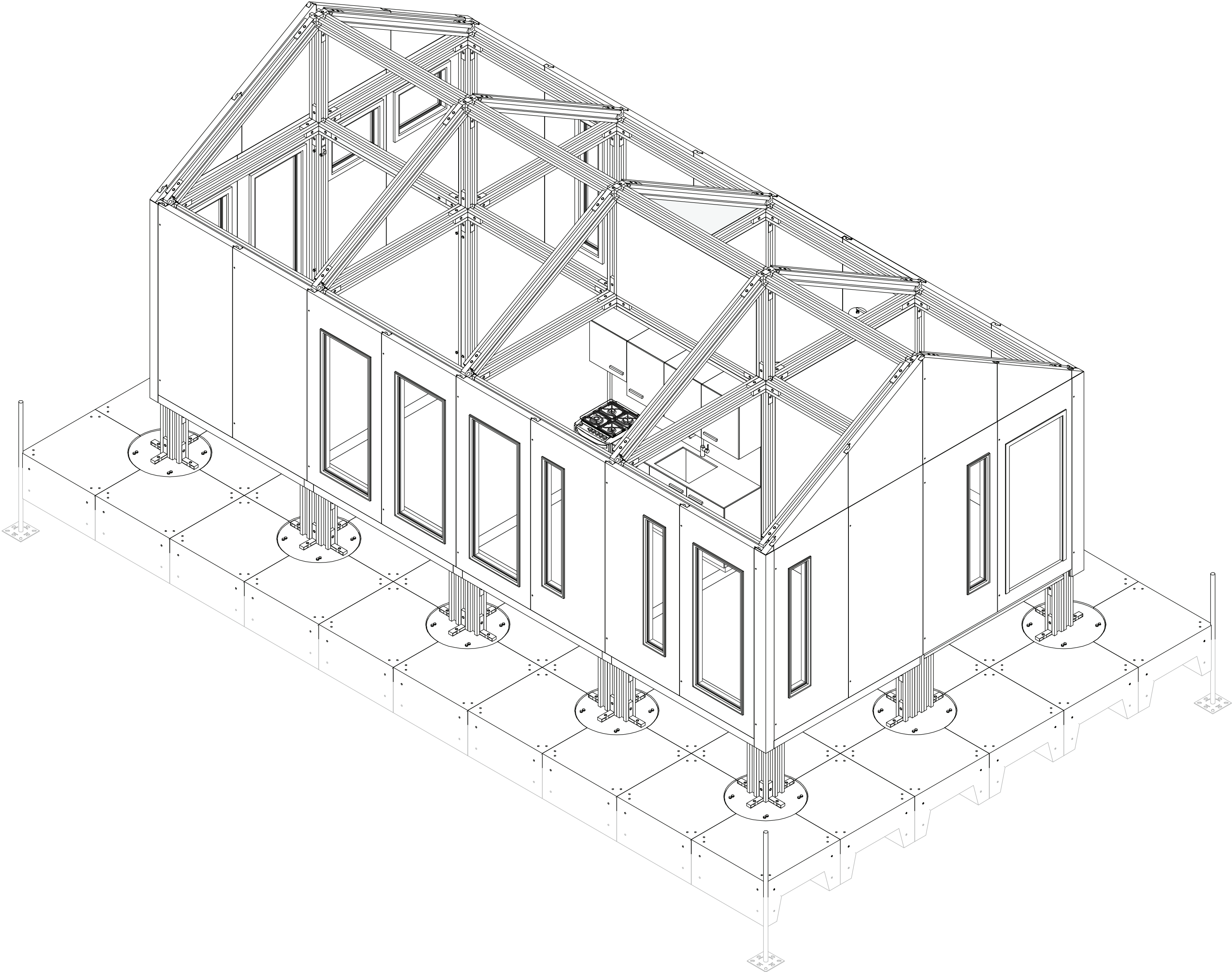


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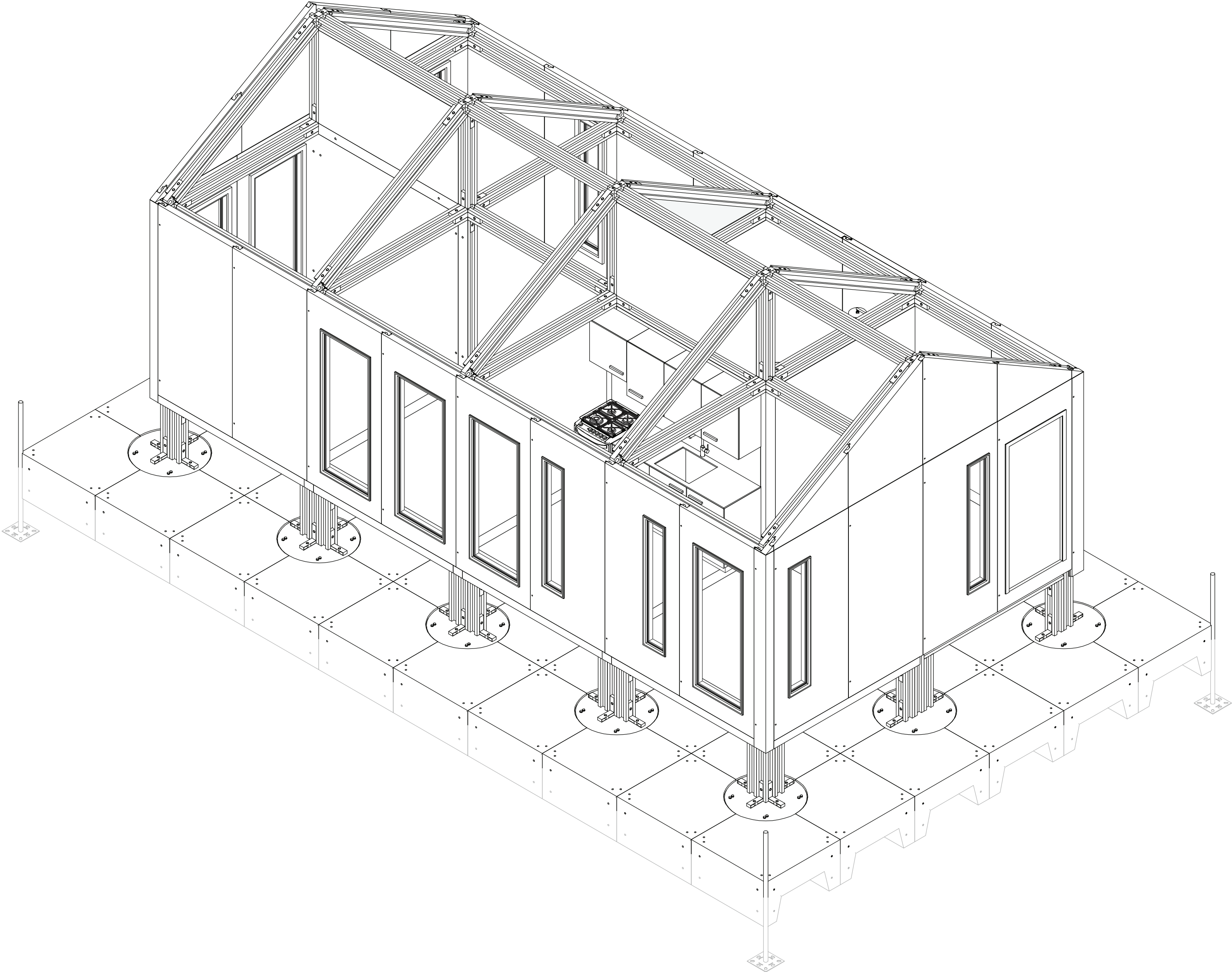


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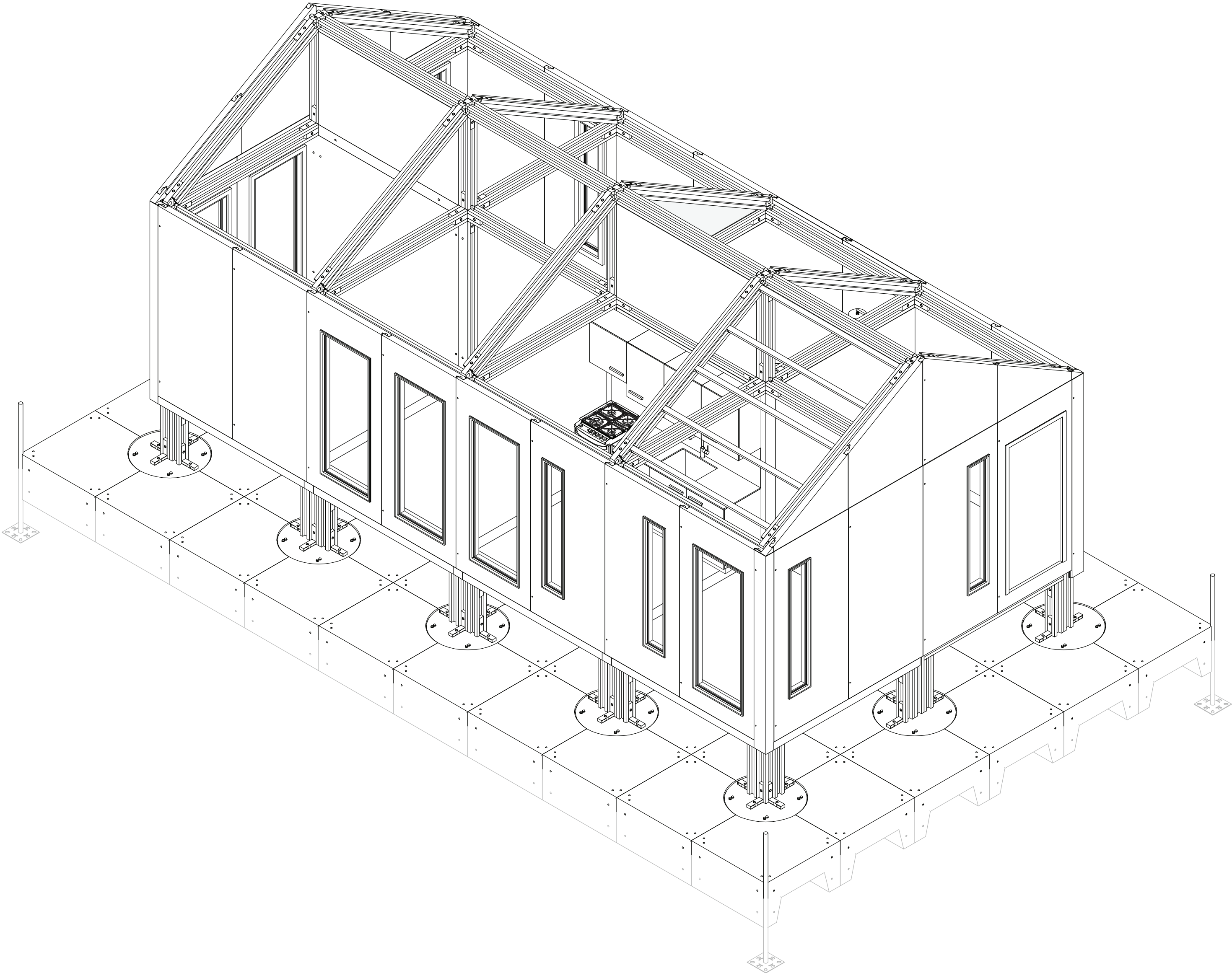


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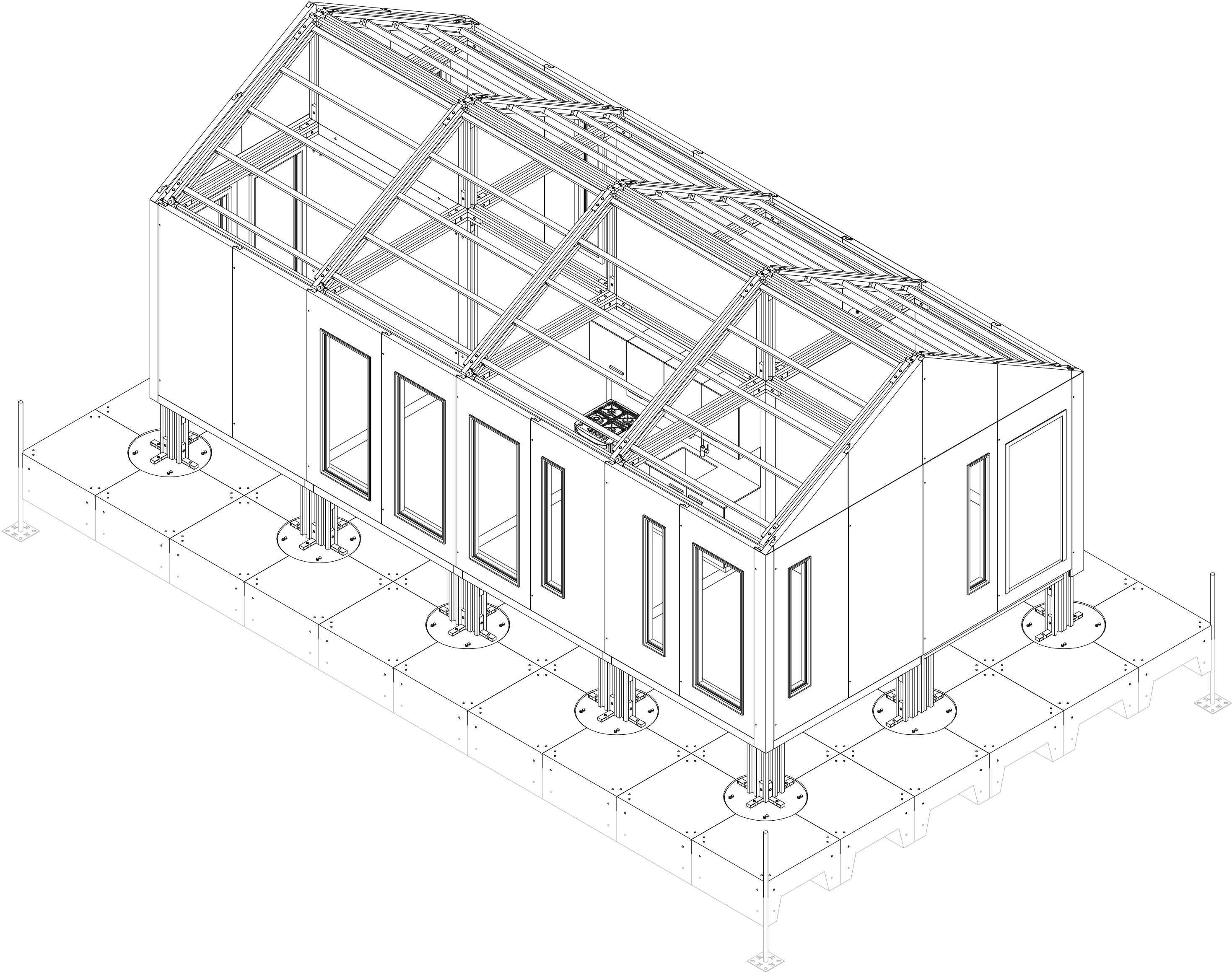


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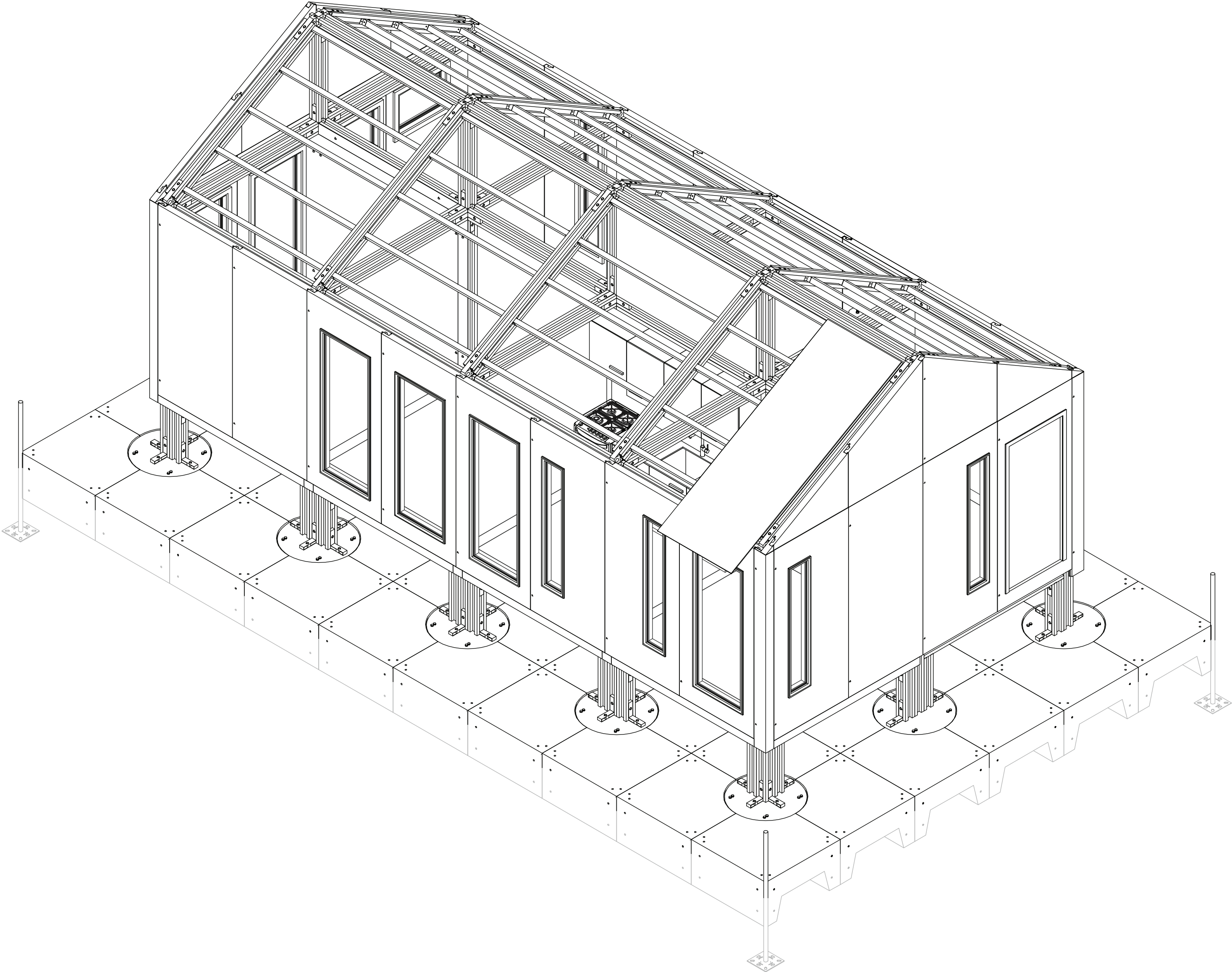


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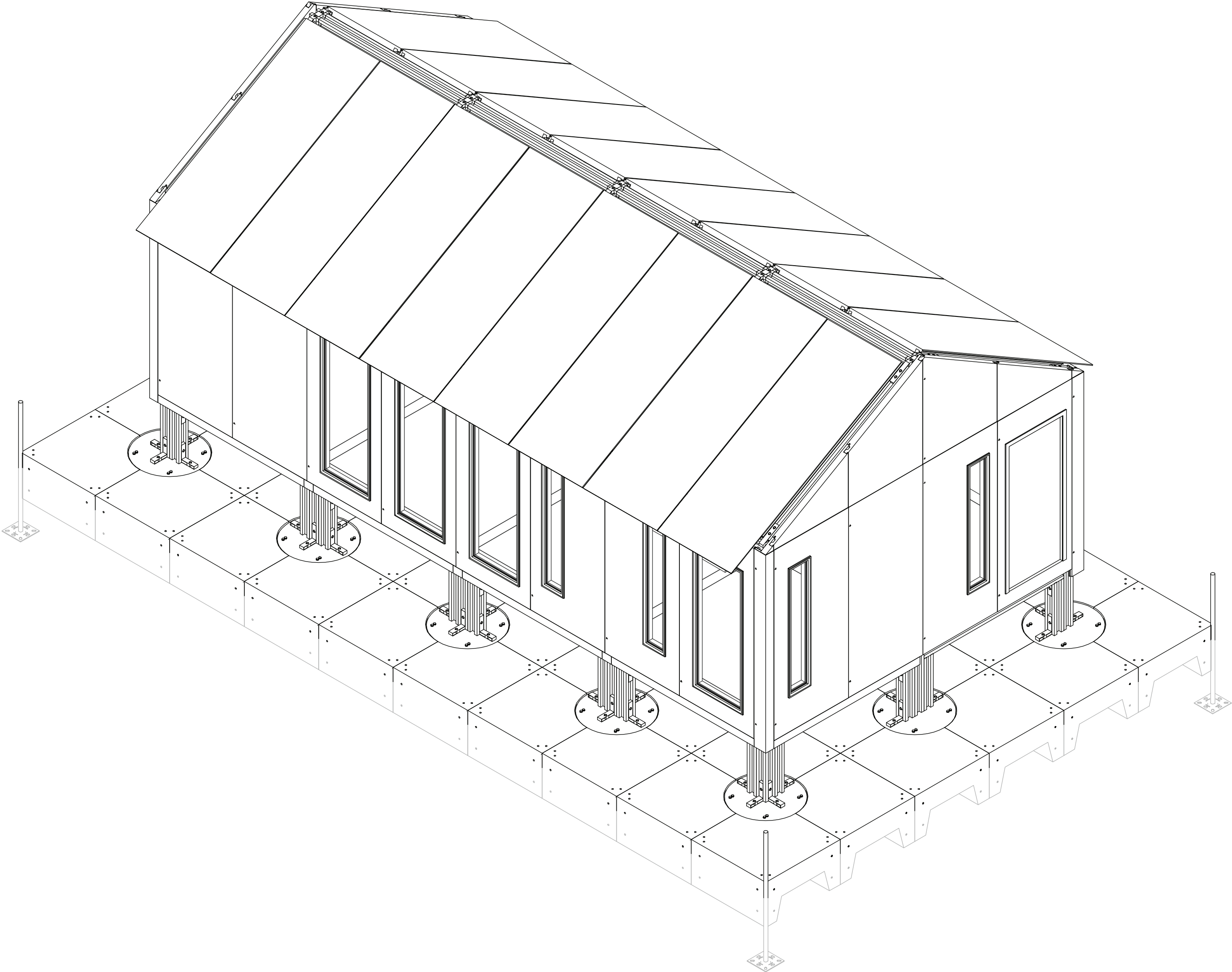


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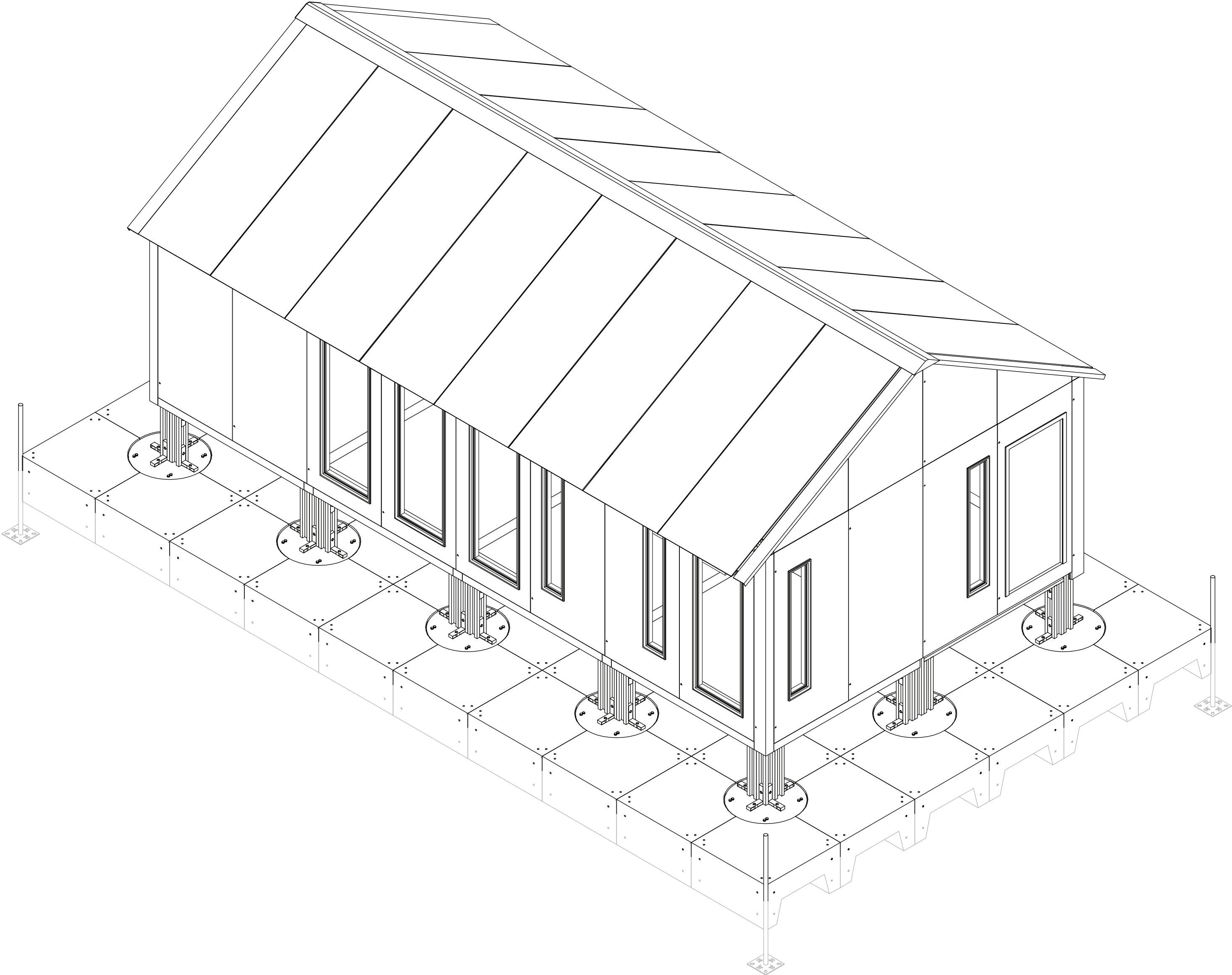


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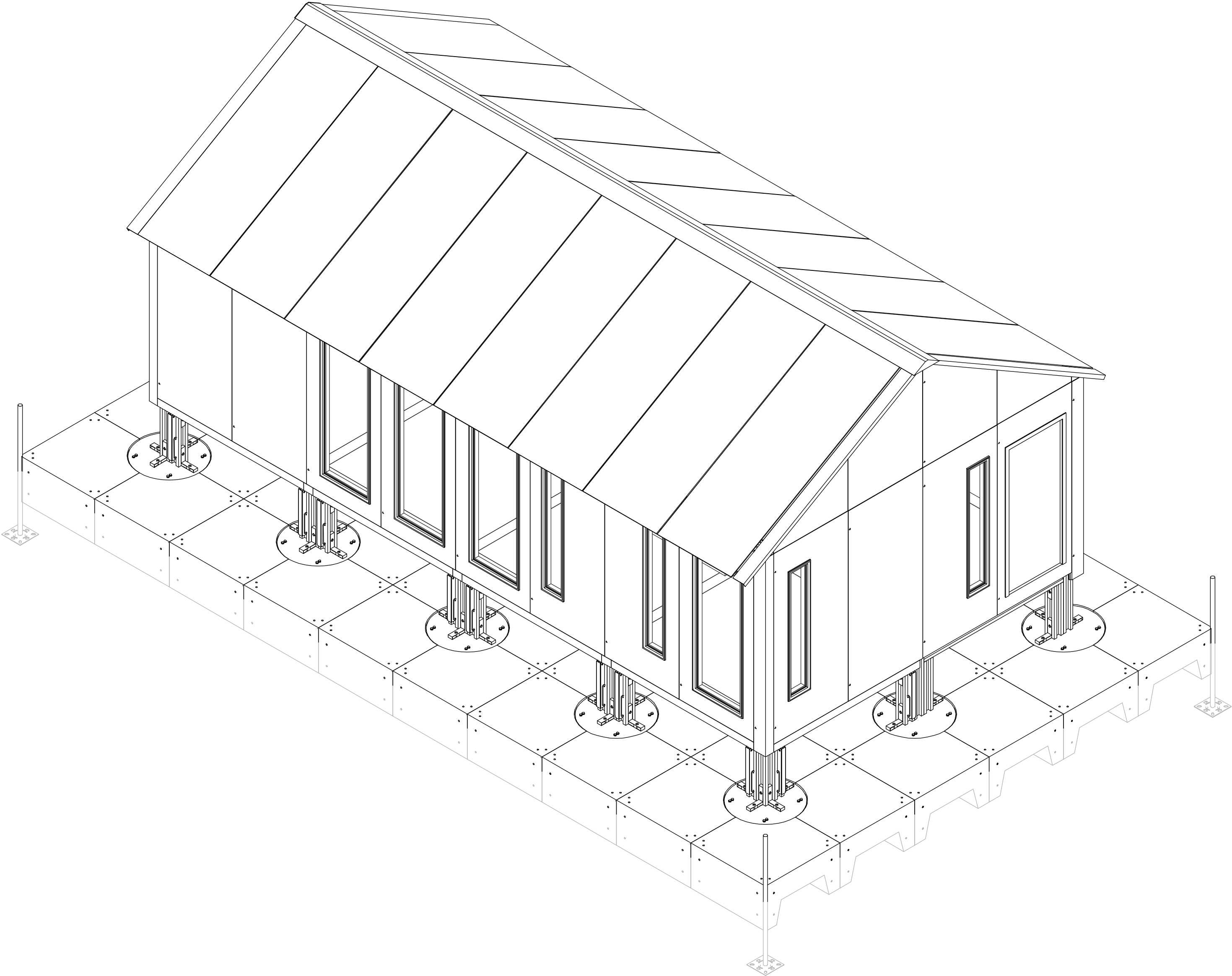


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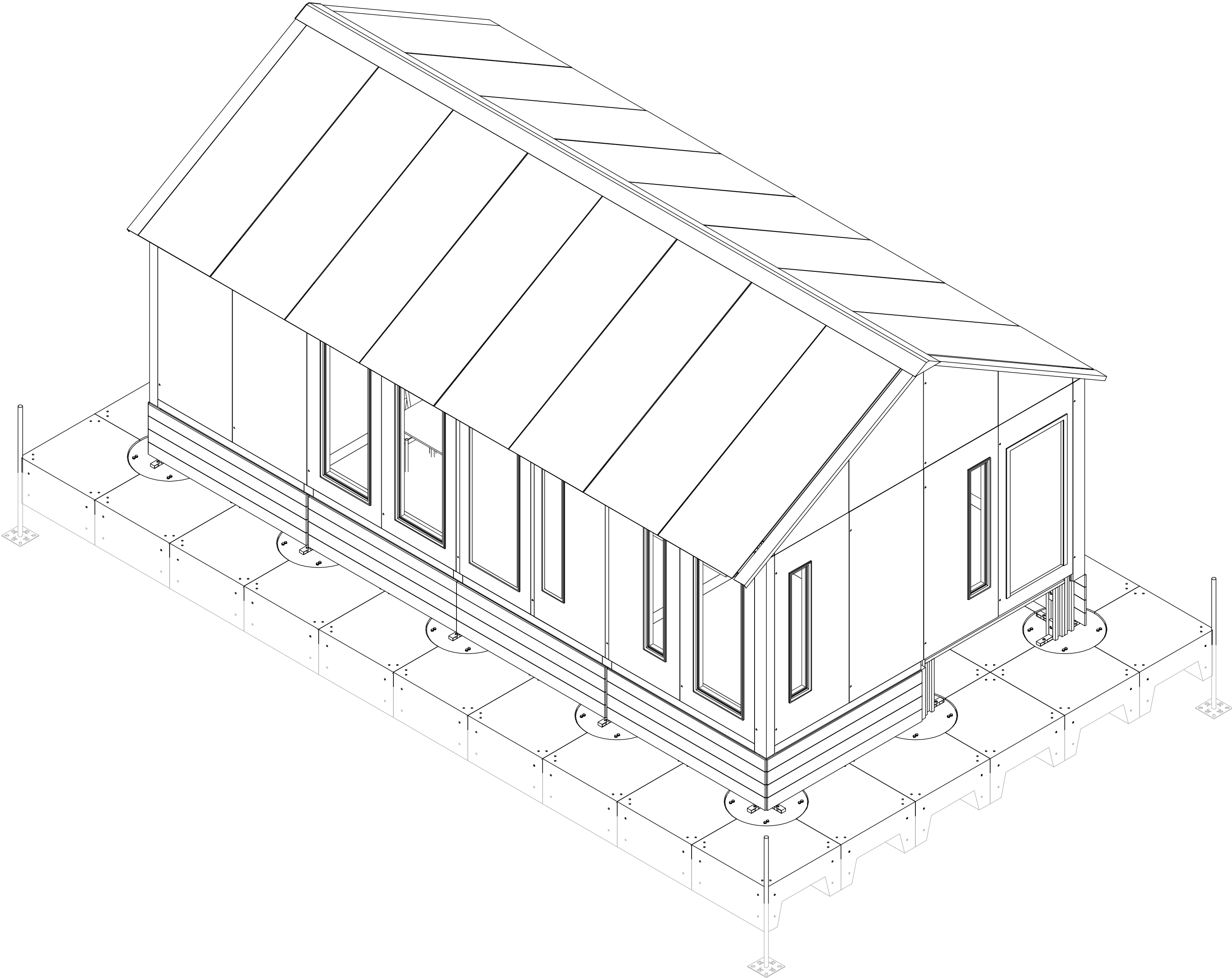


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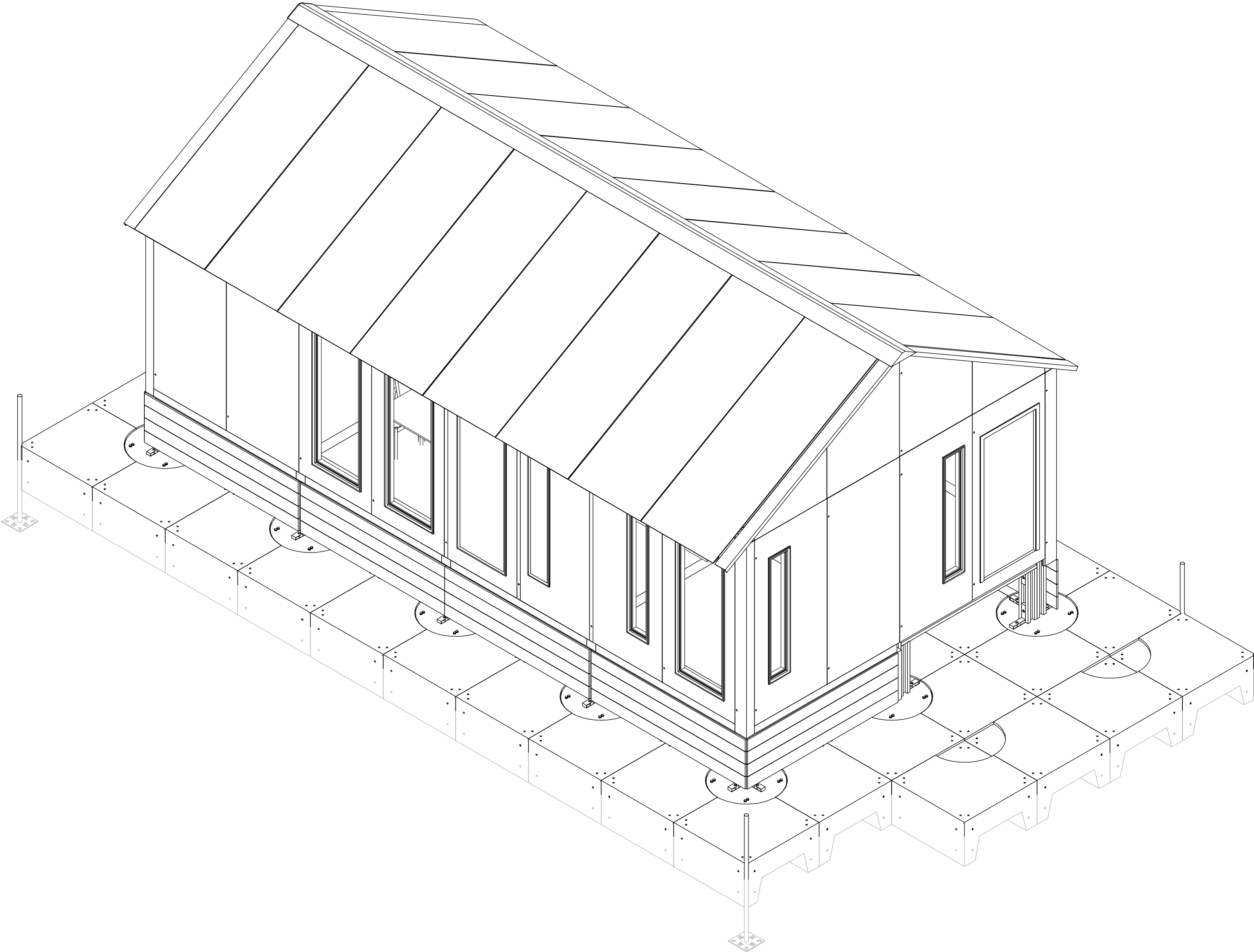


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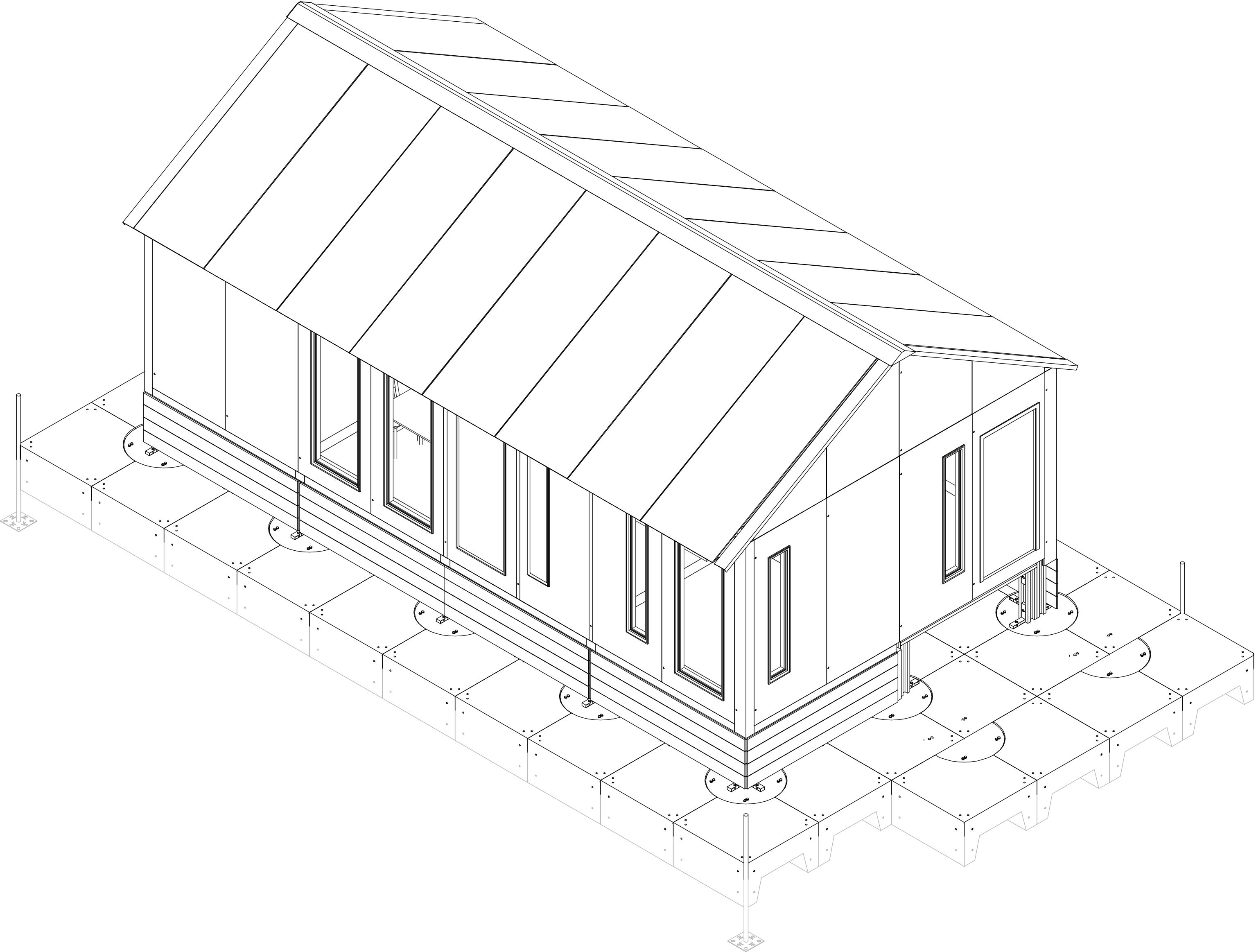


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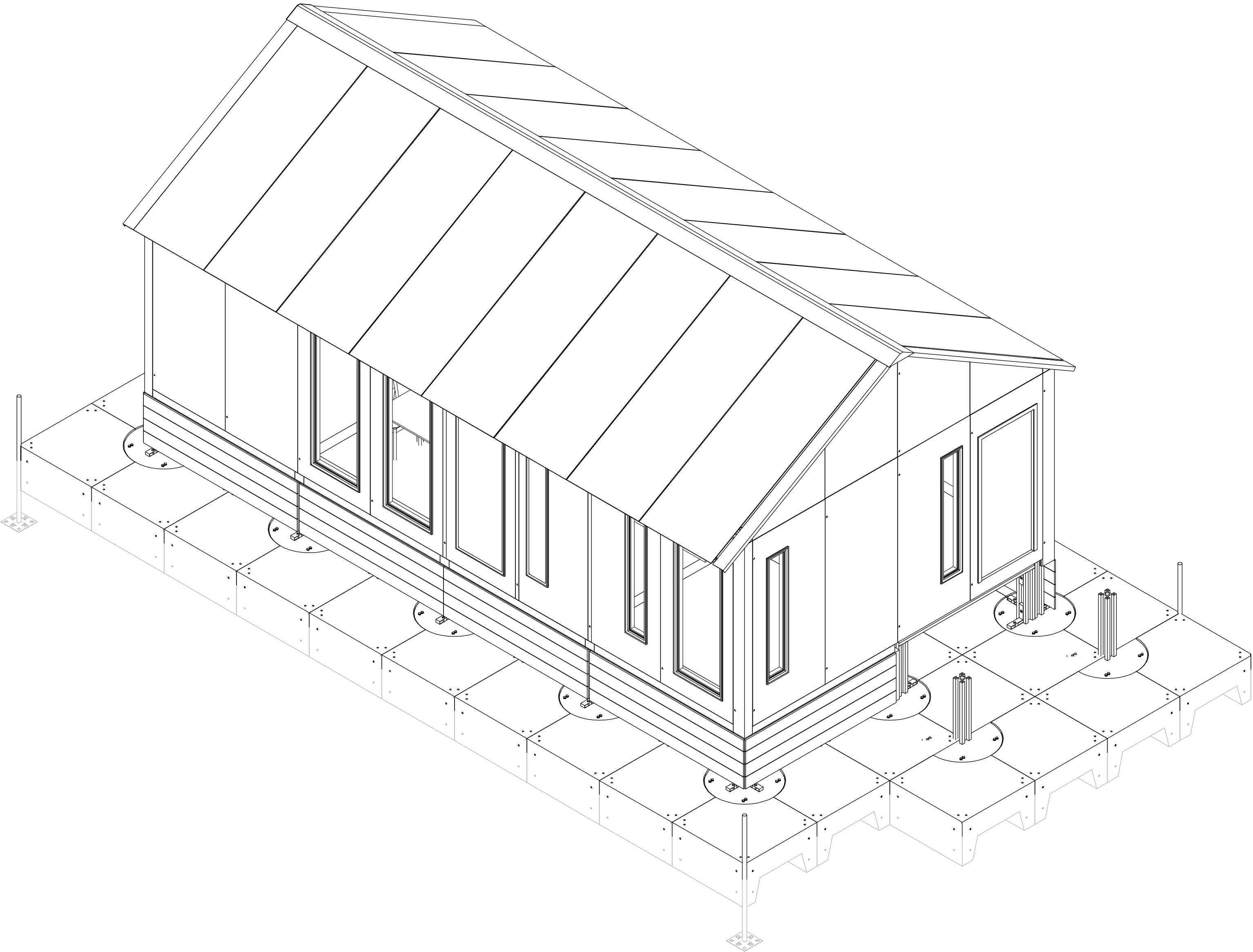


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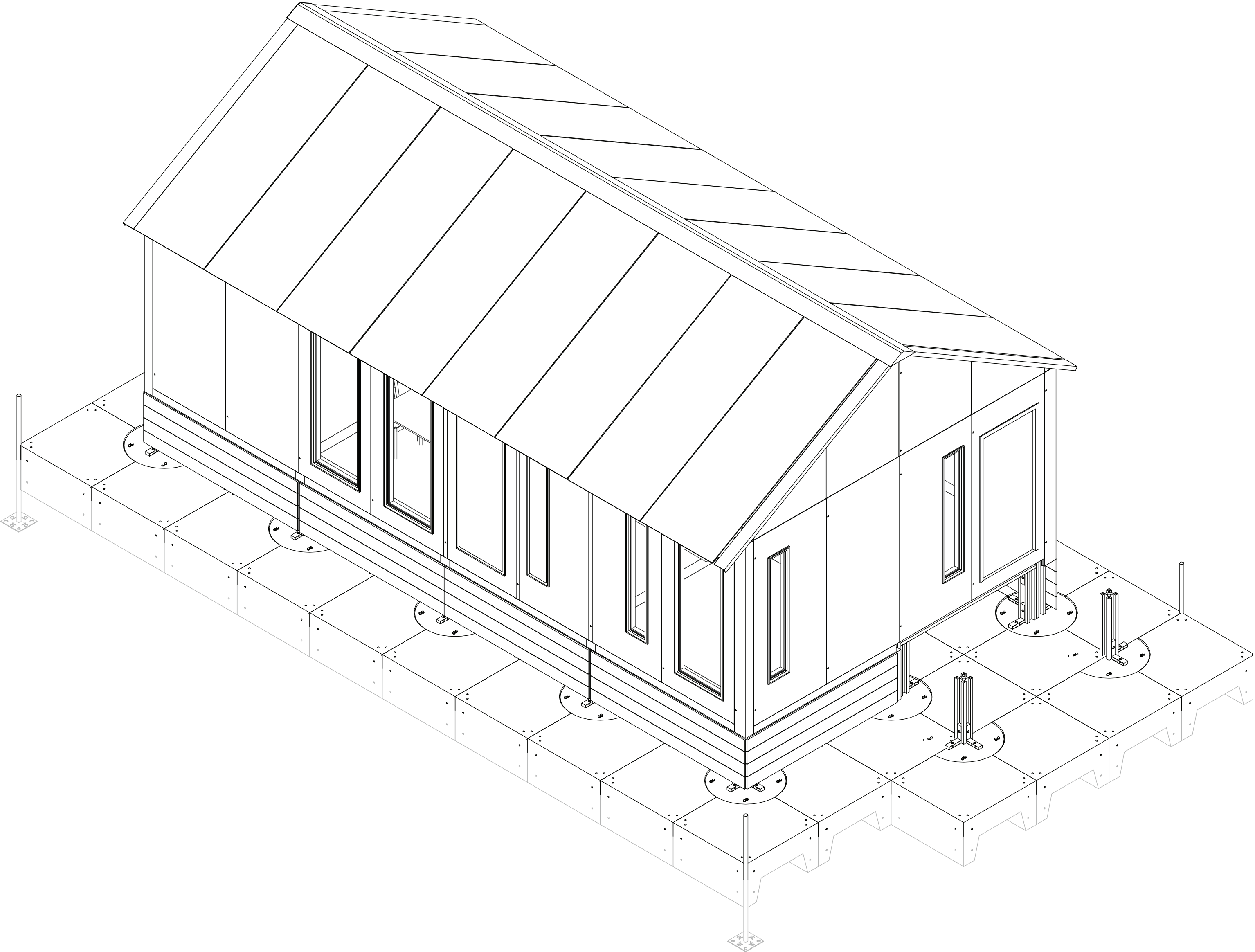


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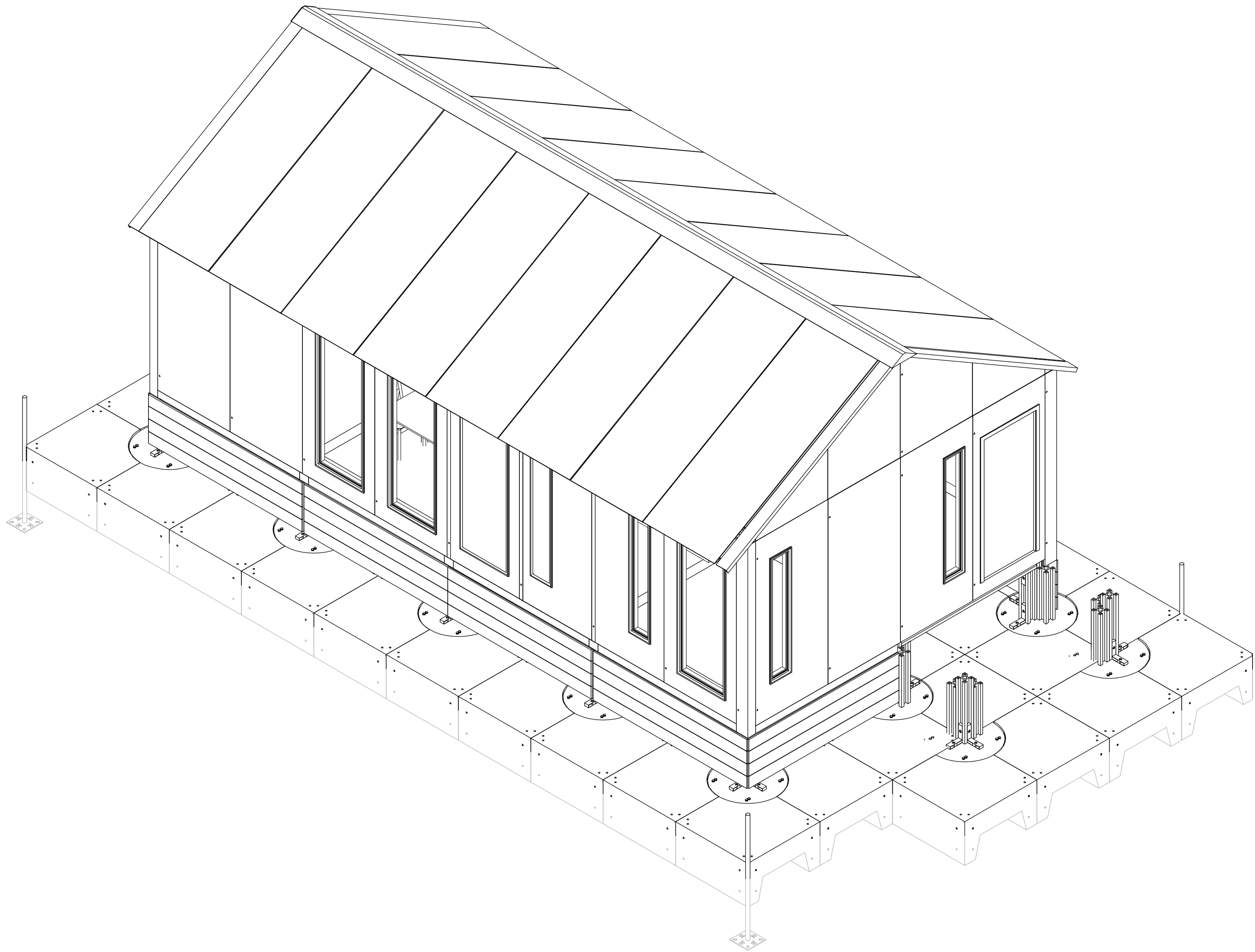


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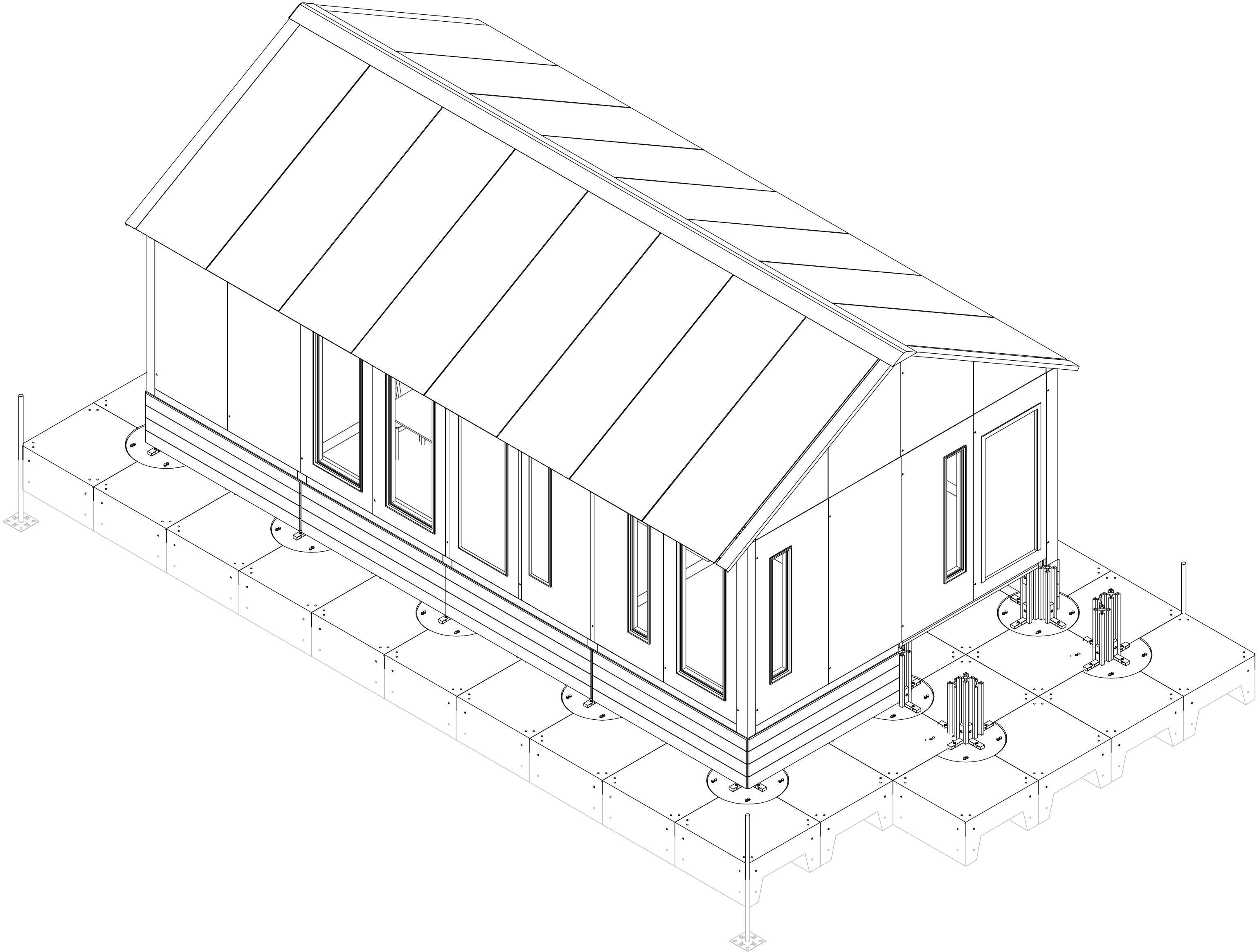


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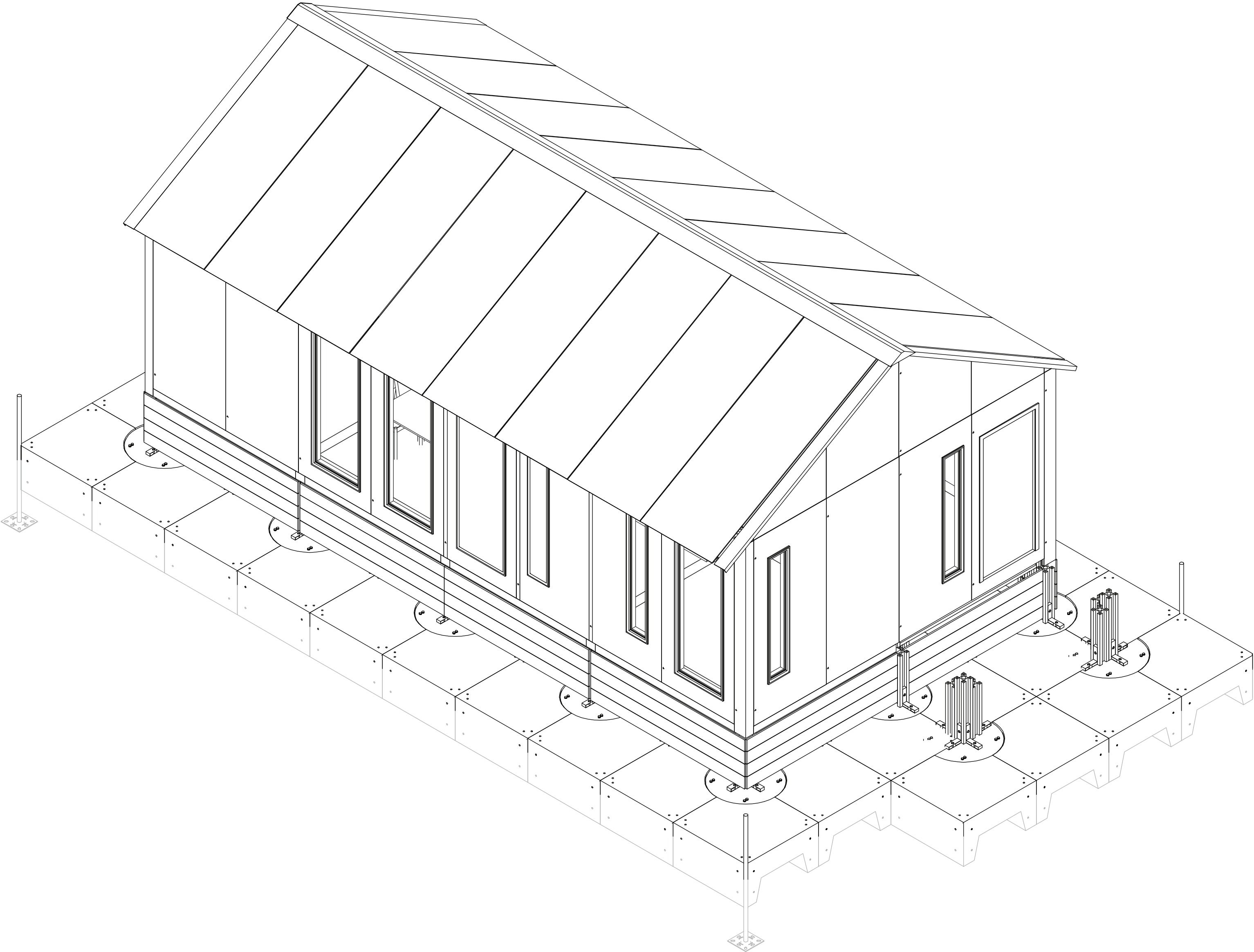


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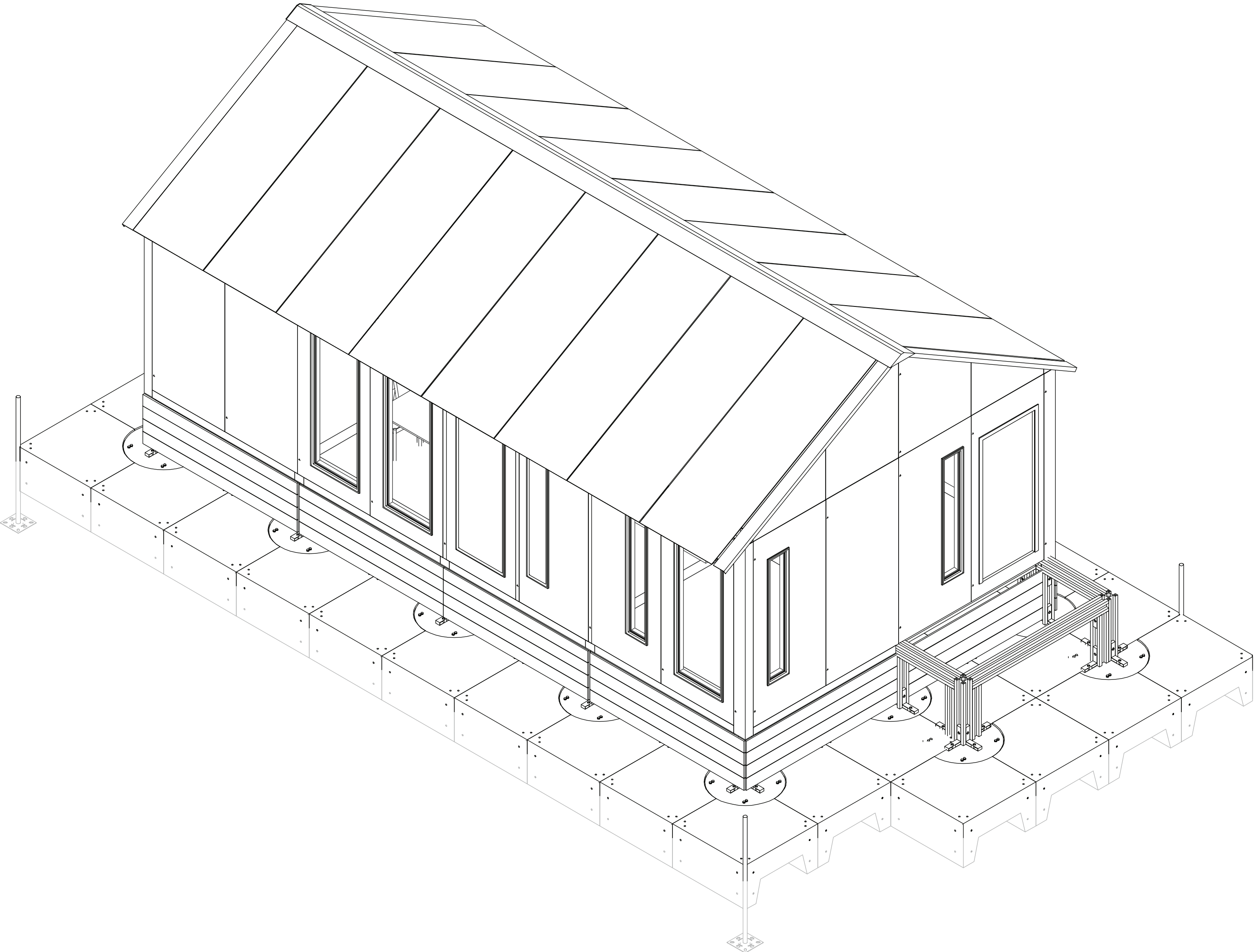


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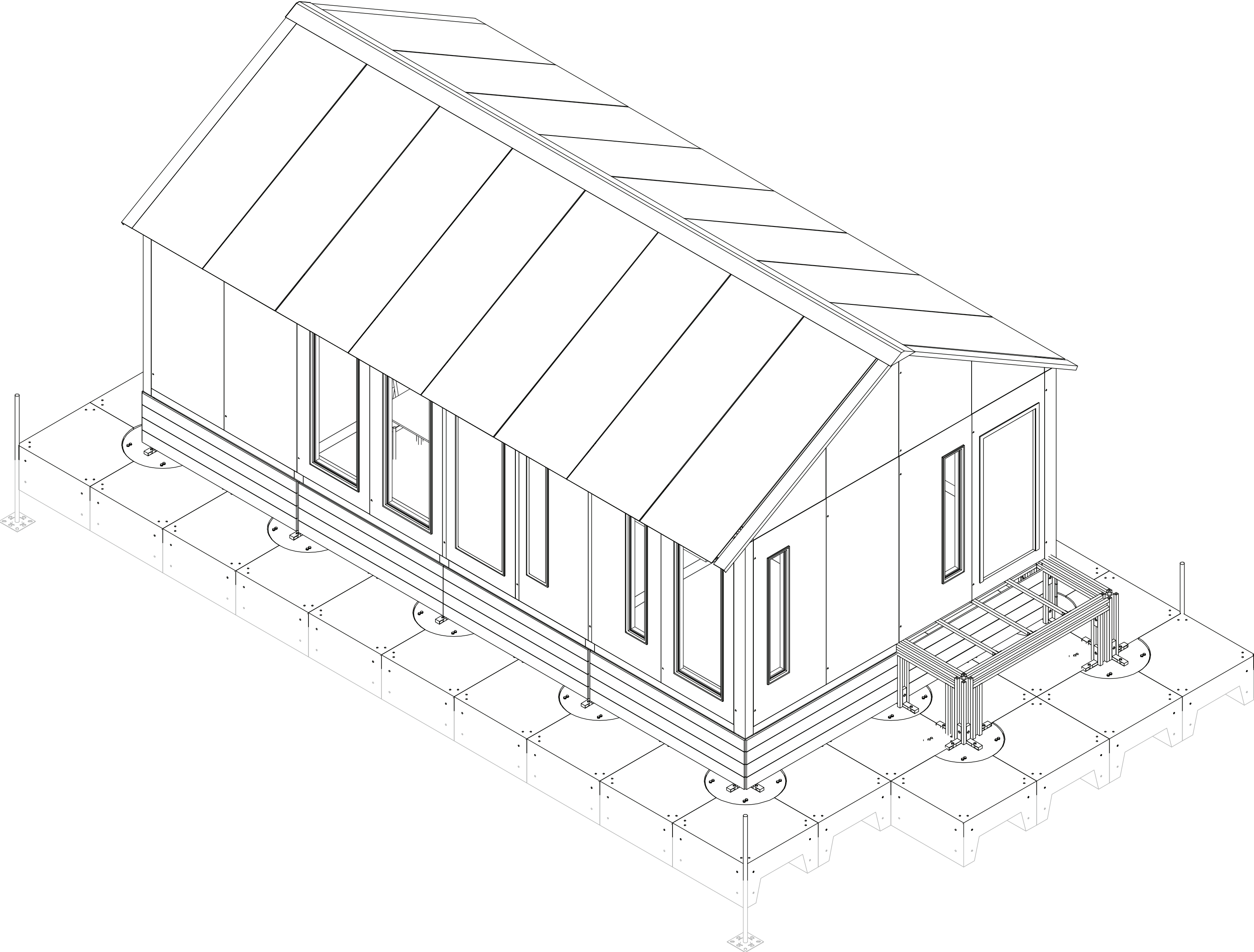


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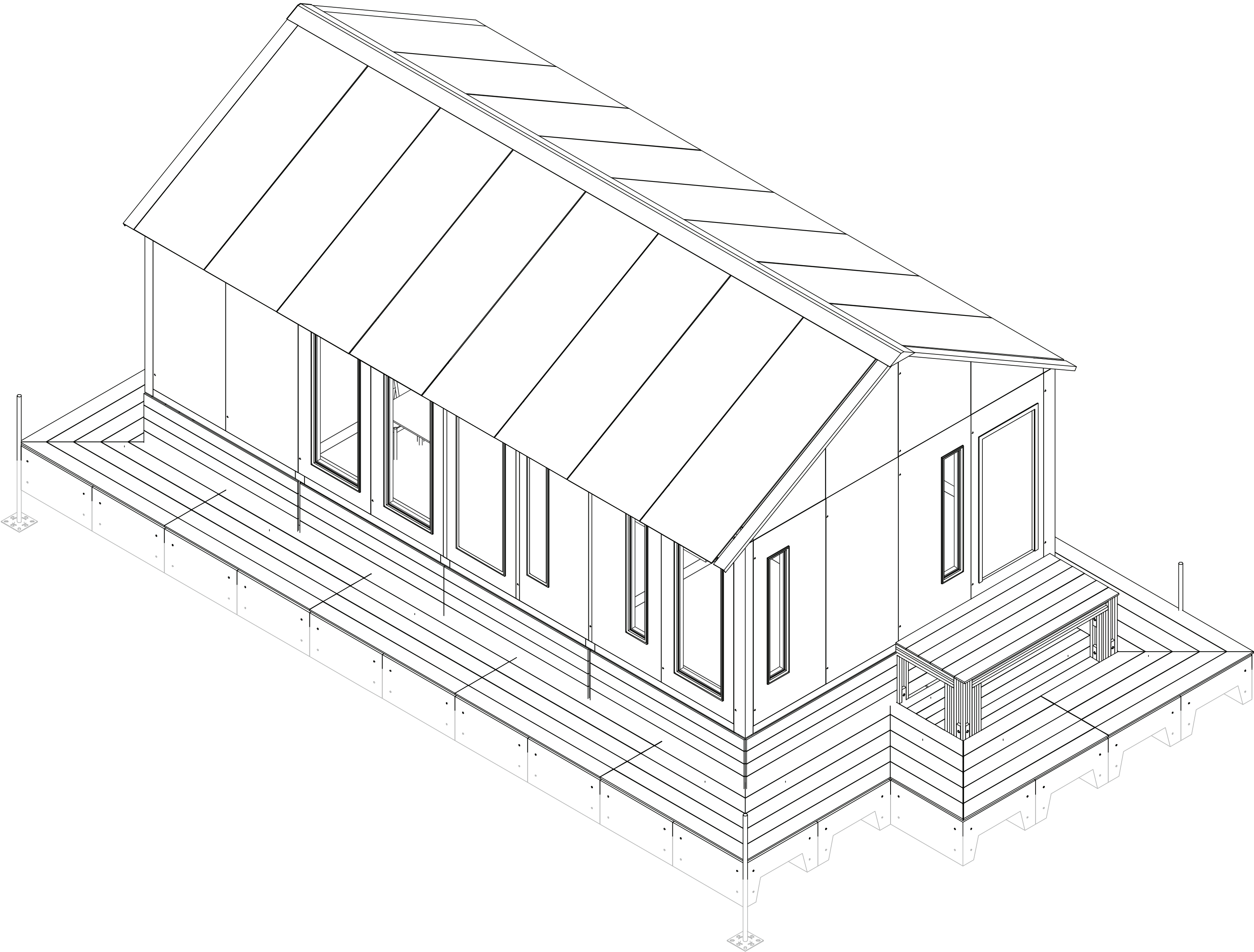




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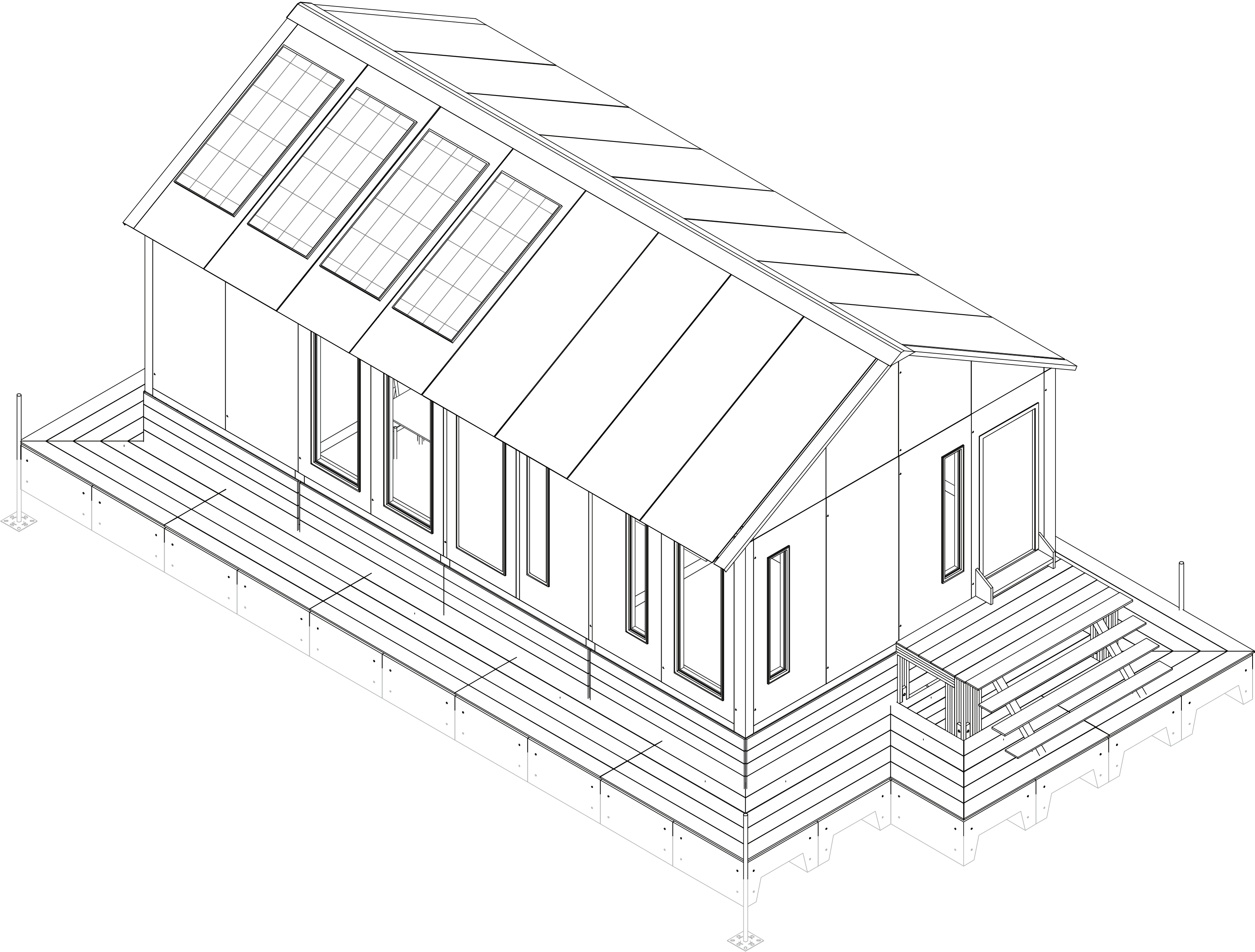






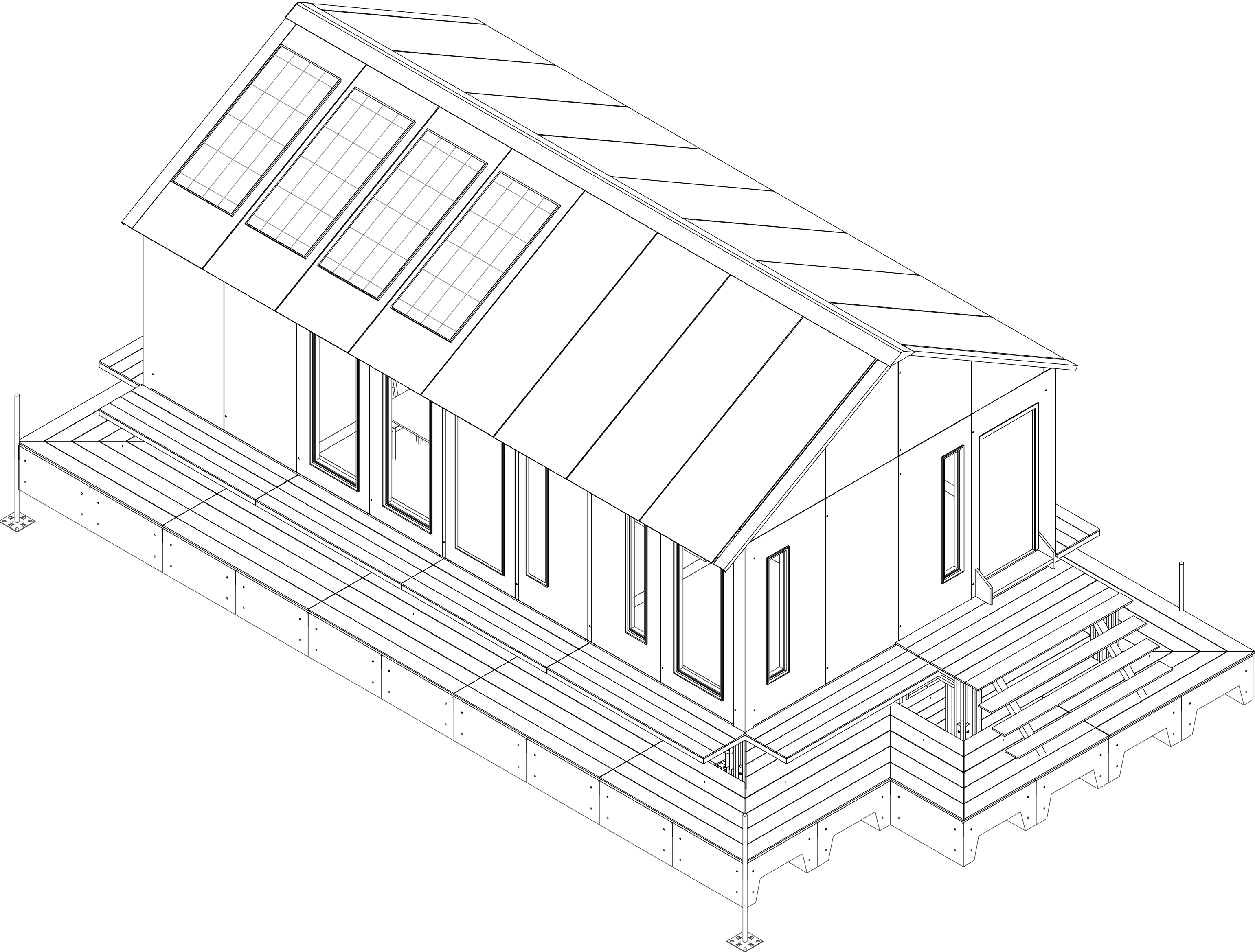


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THANK YOU!