

PV ROCK ROOF

Module Studies

EFFEKT

CURRENT BUILDUP

PV element

Metal bracket

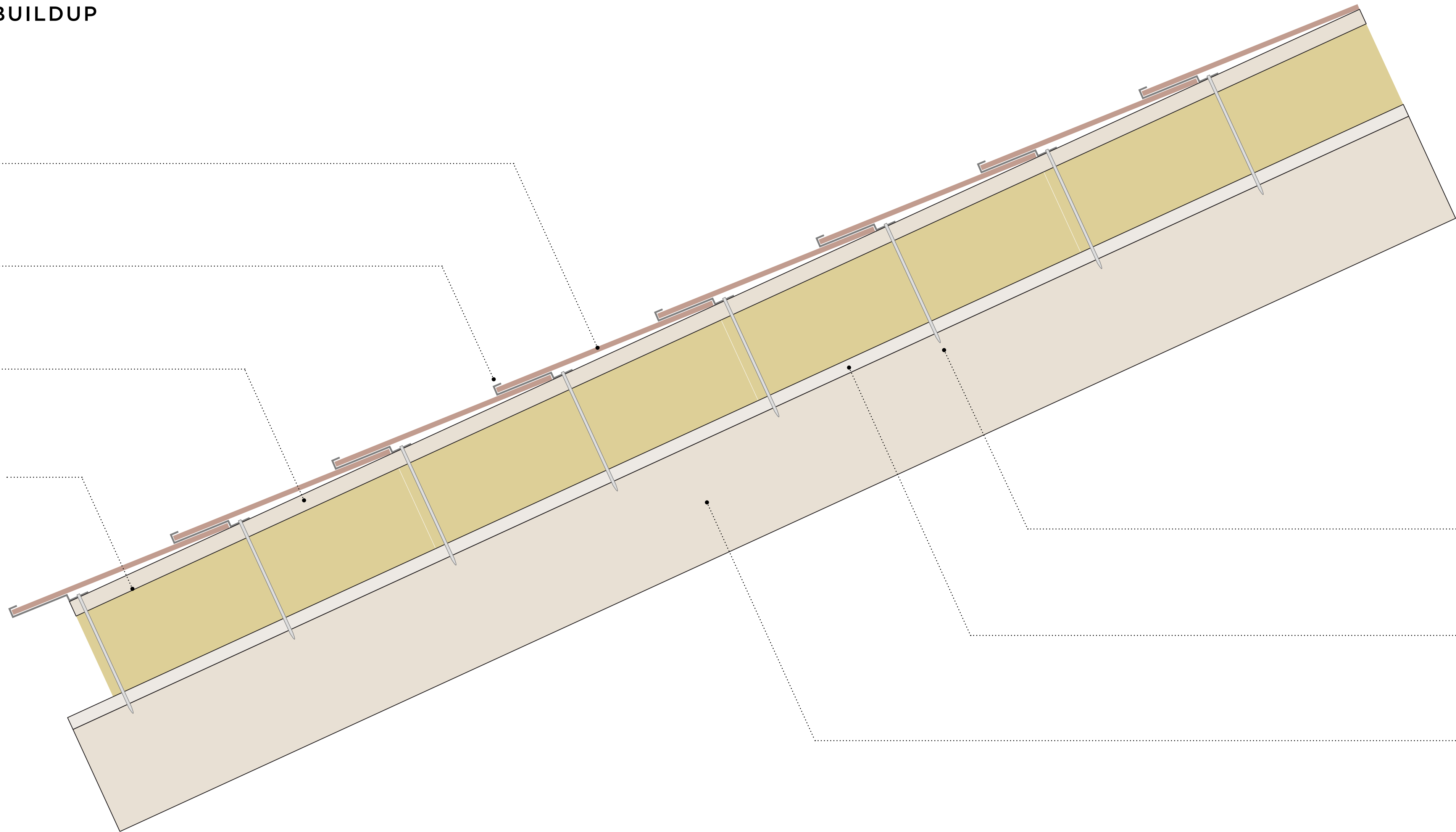
Batten

Underlayment?

Fastener

Sheathing

Rafter



**DESIGN CONSIDERATIONS
CRITERIA**

MINIMALISM

Edge solutions, fasteners and brackets need to be kept as simple and sleek as possible, so that the PV panel becomes the focus.

FLUSHNESS

All other components need to be flush with the PV panel. Anything that juts out will draw attention and negatively affect the aesthetics.

COLOUR

Dummie PV panels, caps and brackets, should all be coloured in a way that ensures aesthetic integration with the PV panels.



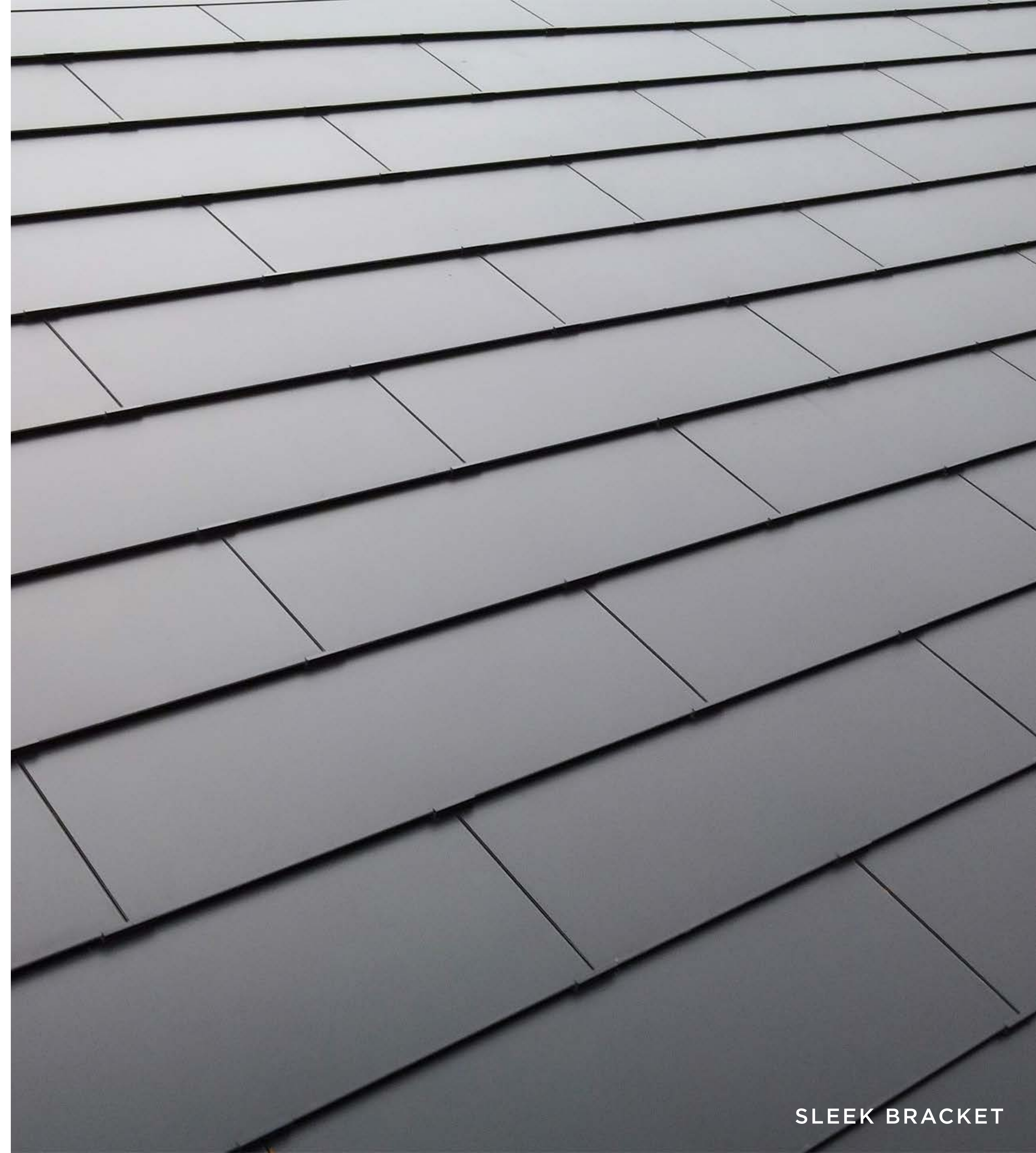
COLOUR

MINIMALISM

FLUSHNESS



MINIMALISTIC, FLUSH AND INTEGRATED EDGE



SLEEK BRACKET



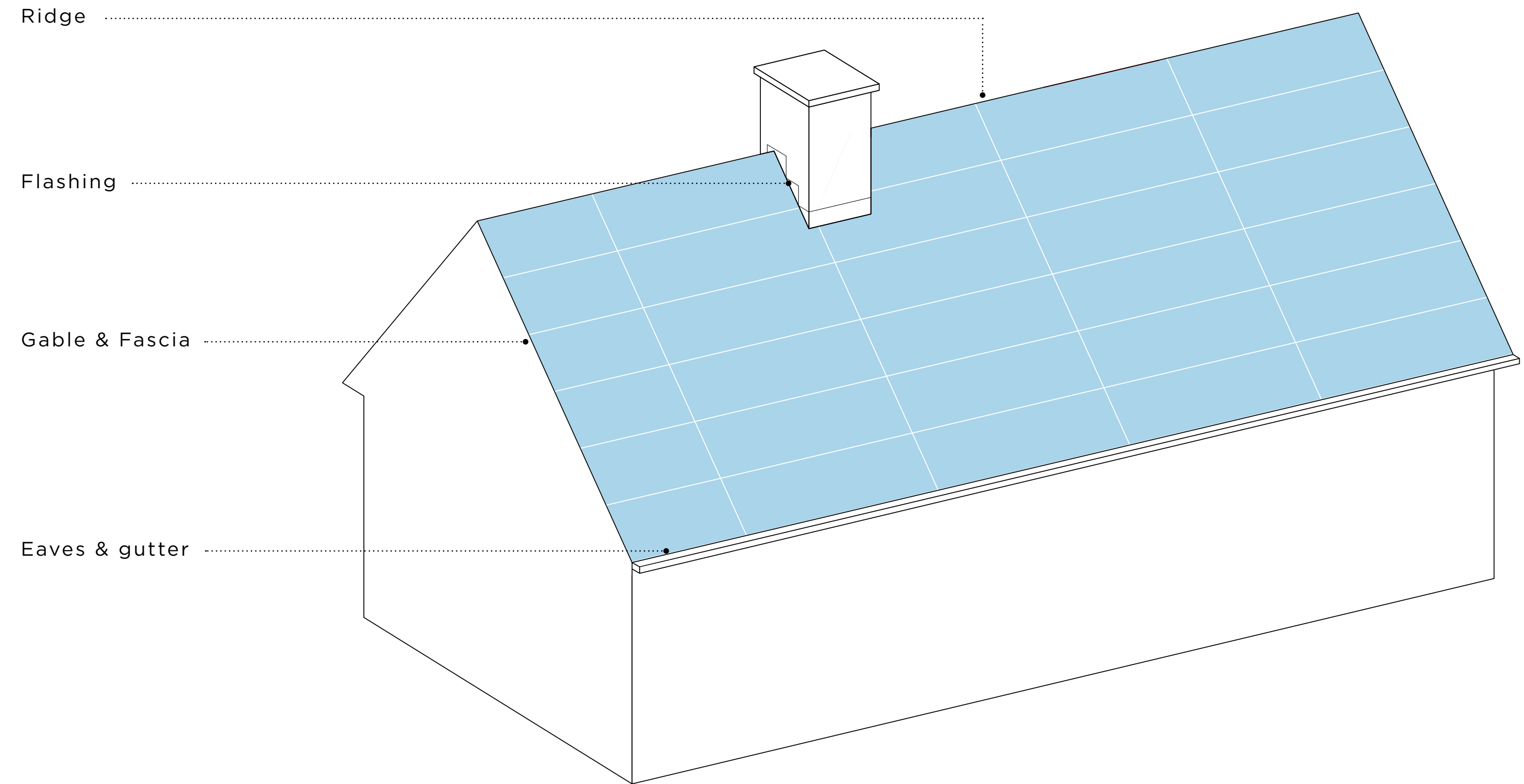
GOOD INTEGRATION



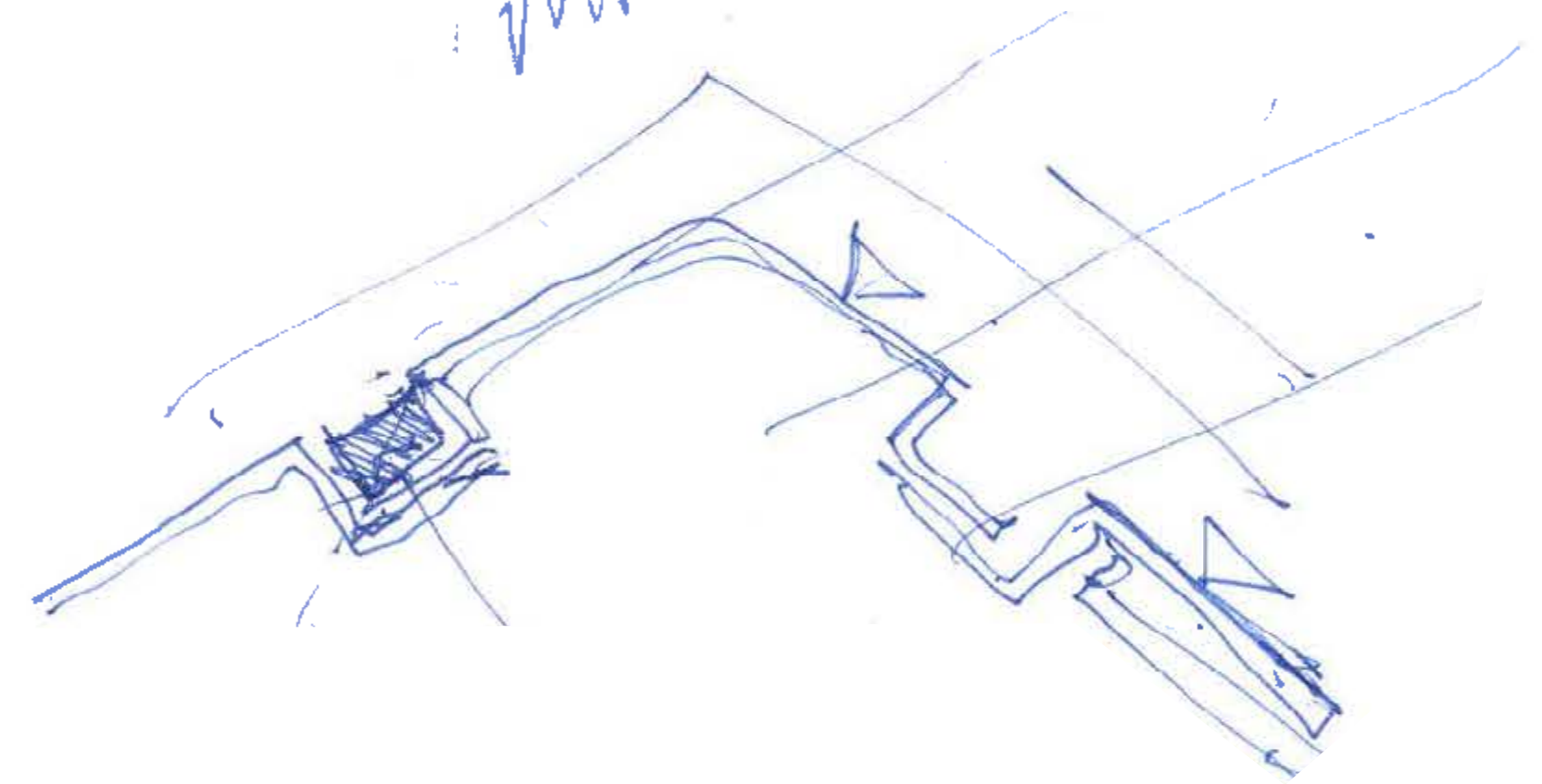
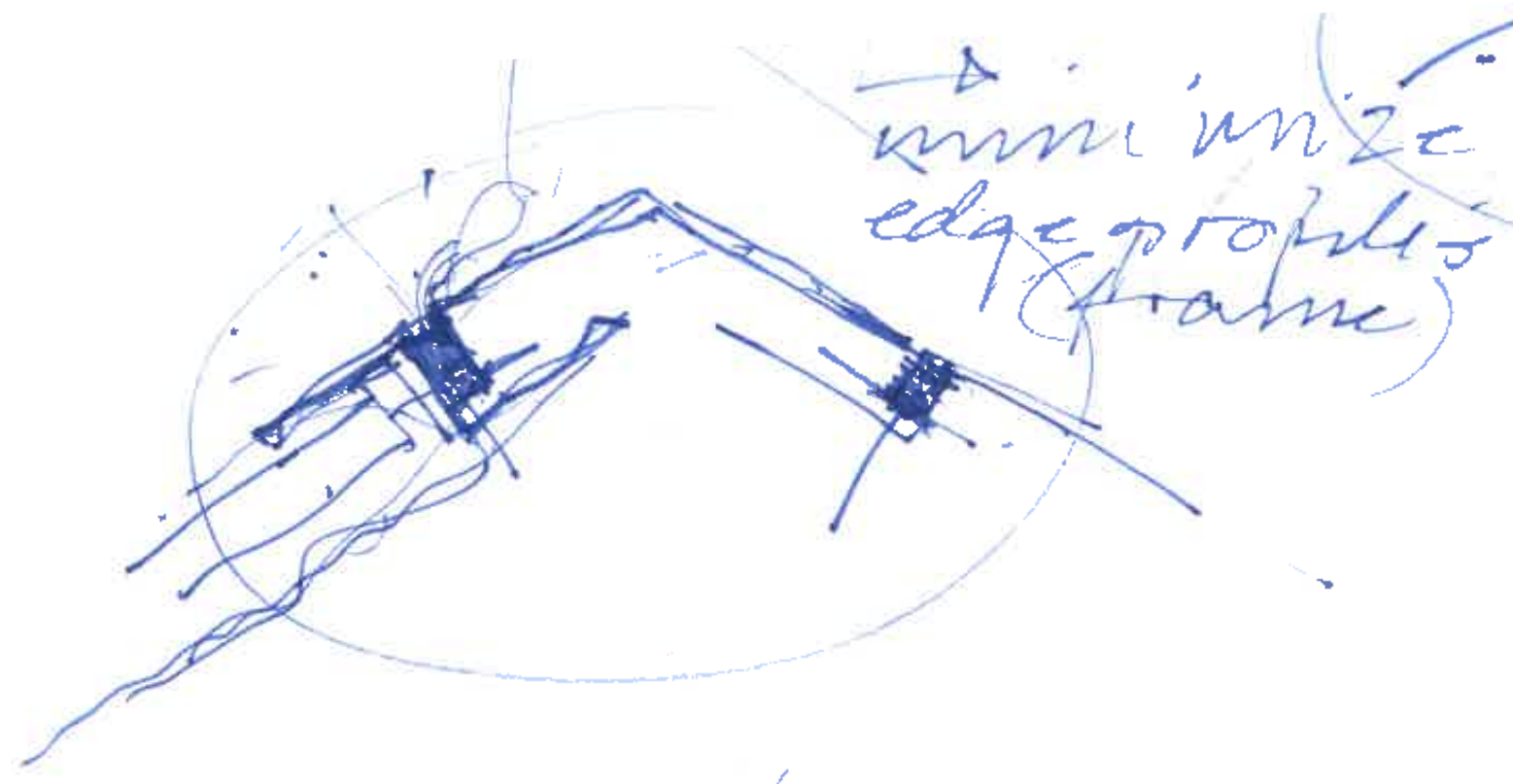
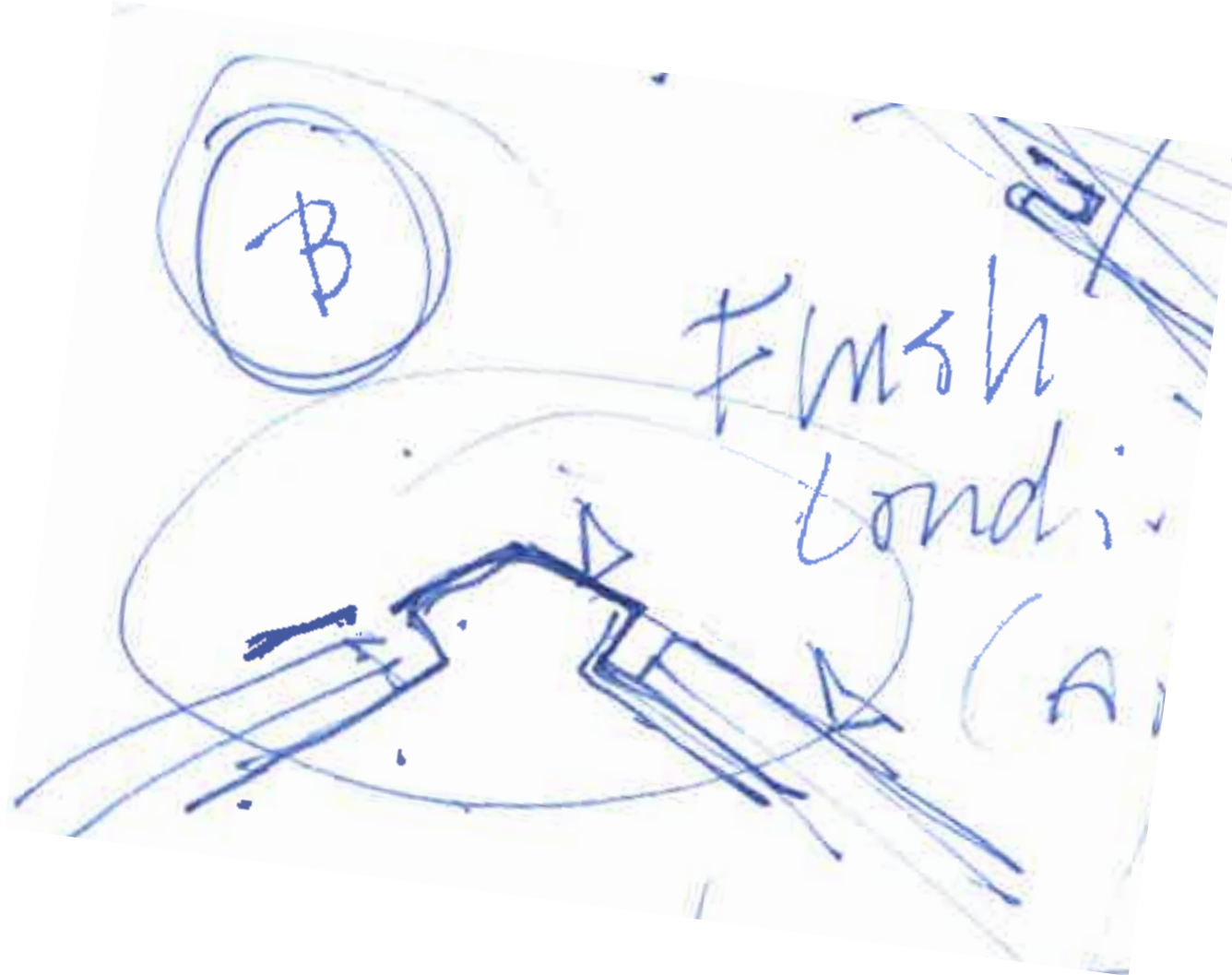
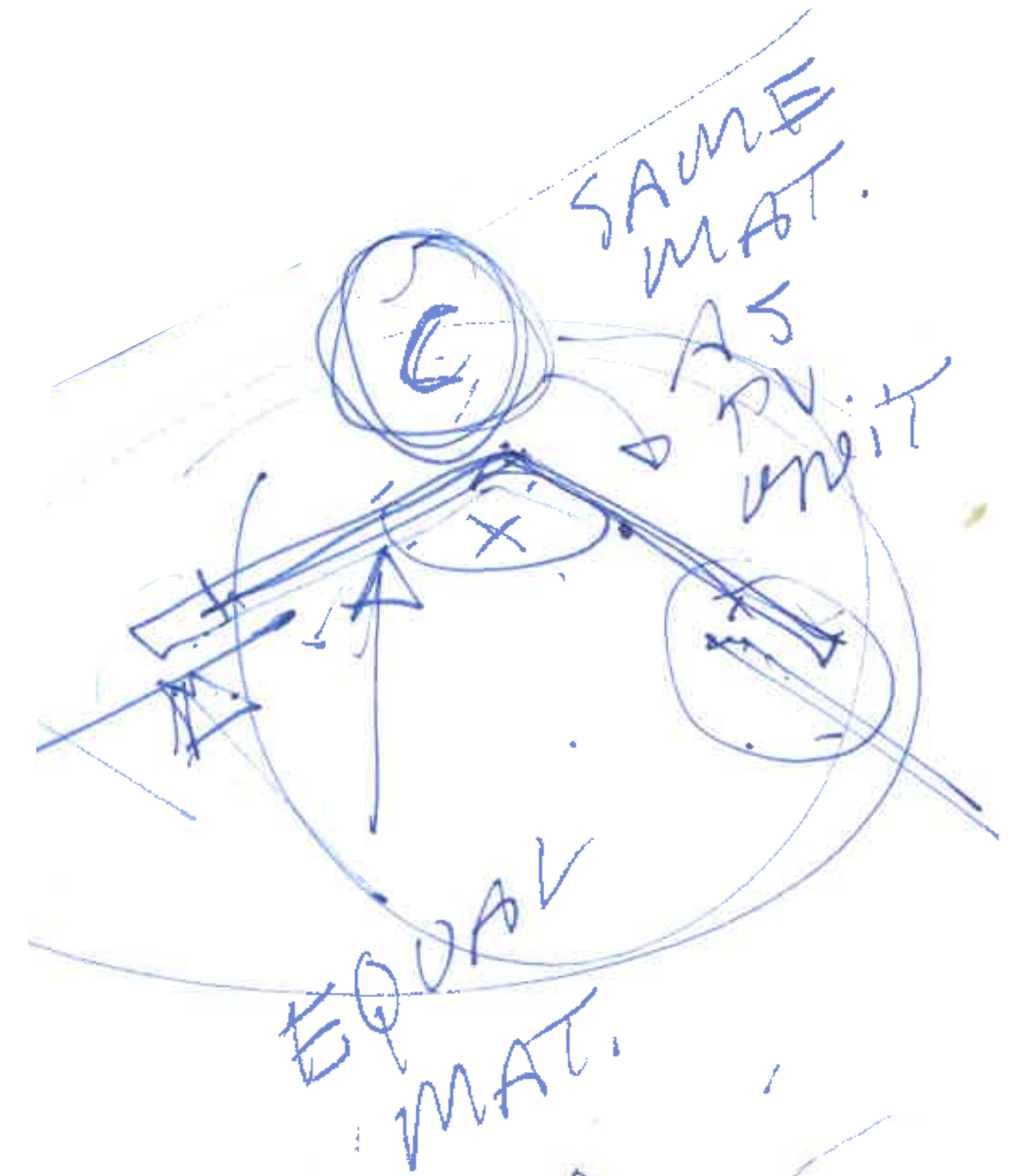
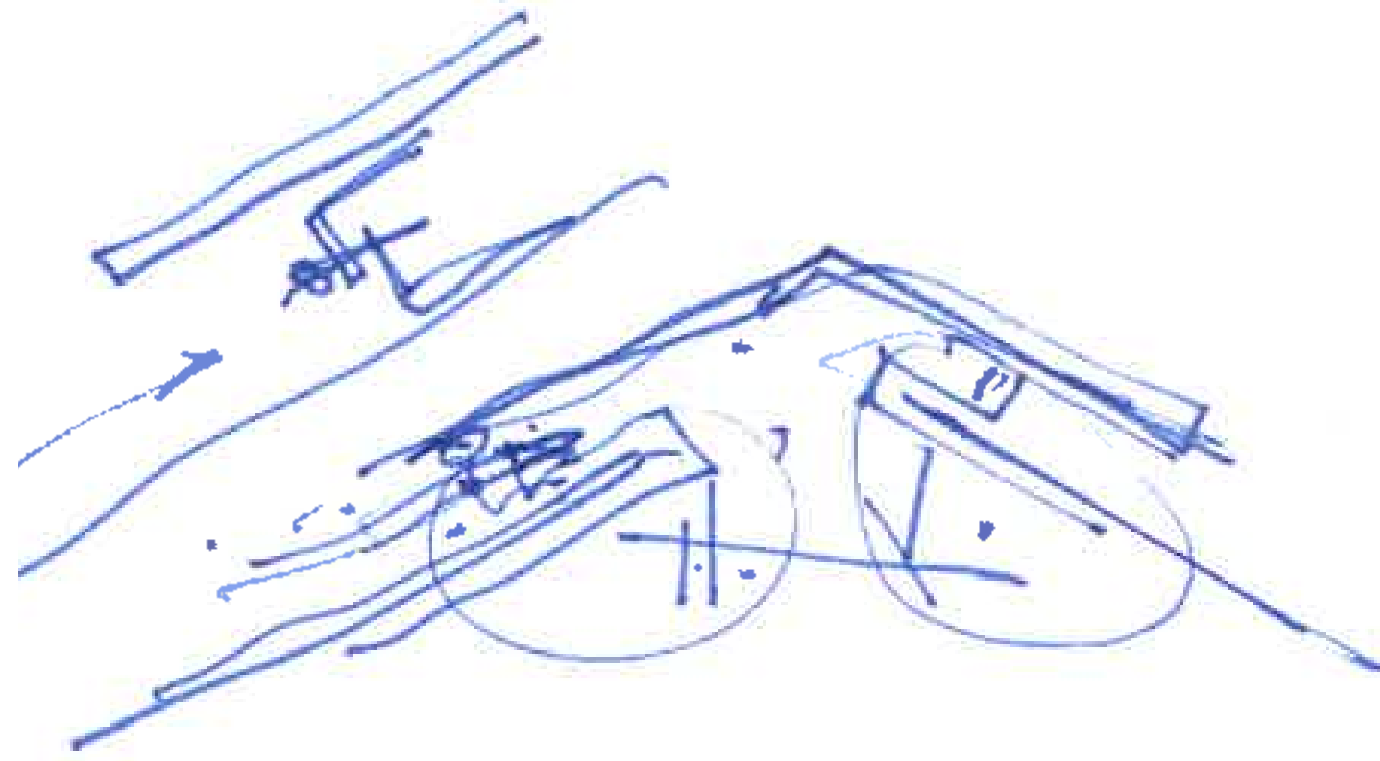
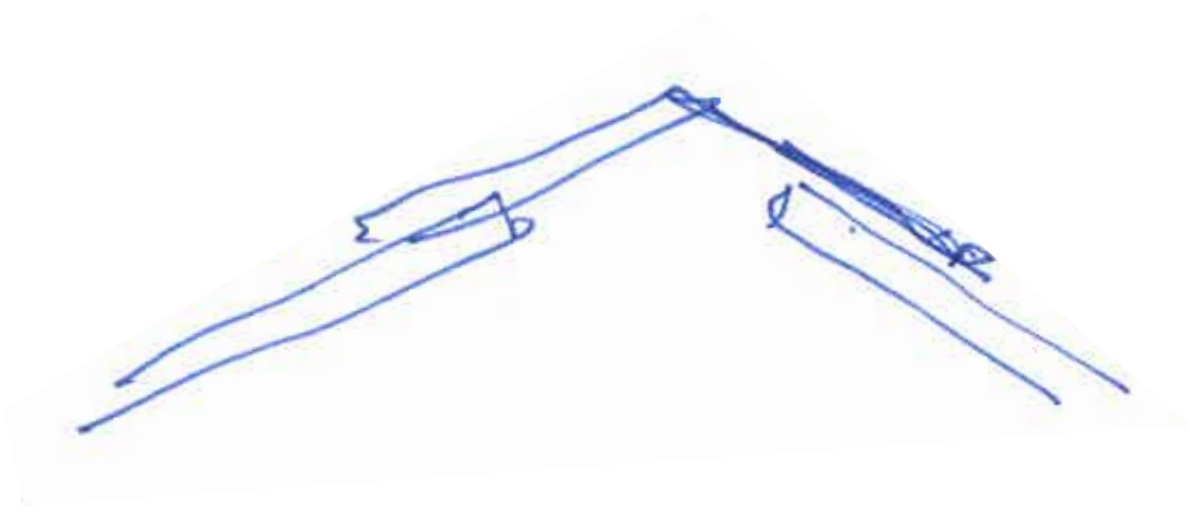
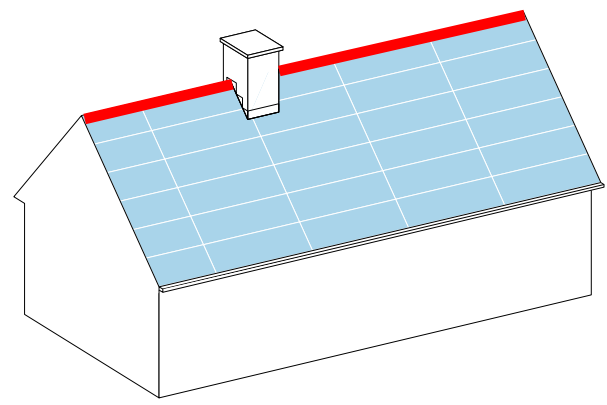
SUBTLE COLOUR

DESIGN CONSIDERATIONS OVERVIEW

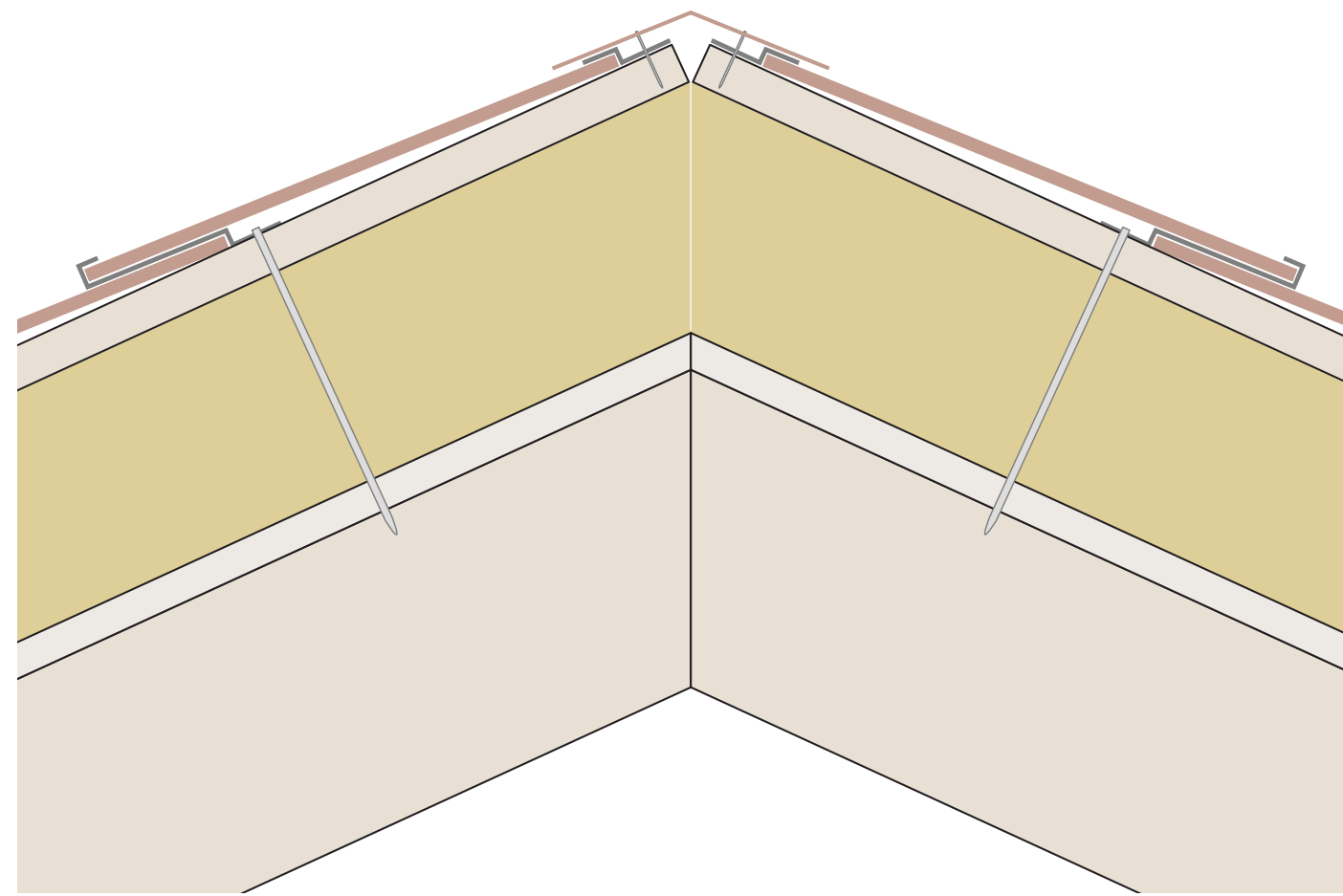
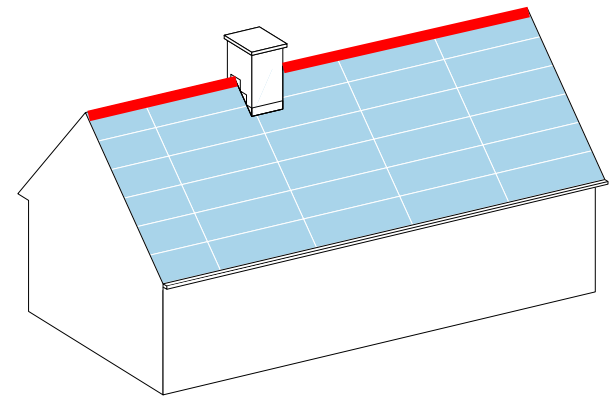
- How to aesthetically integrate a ridge cap that fits different roof pitches?
- How to conceal flashing so that it lies underneath the panels?
- How to solve the gable edge and ensure a water tight seam? How to ensure that dummy panels integrate with the PVs? How are they cut and mounted?
- How to solve the added height of the insulation and the interface with eave edge?
- How to access, maintain and replace PV panels?



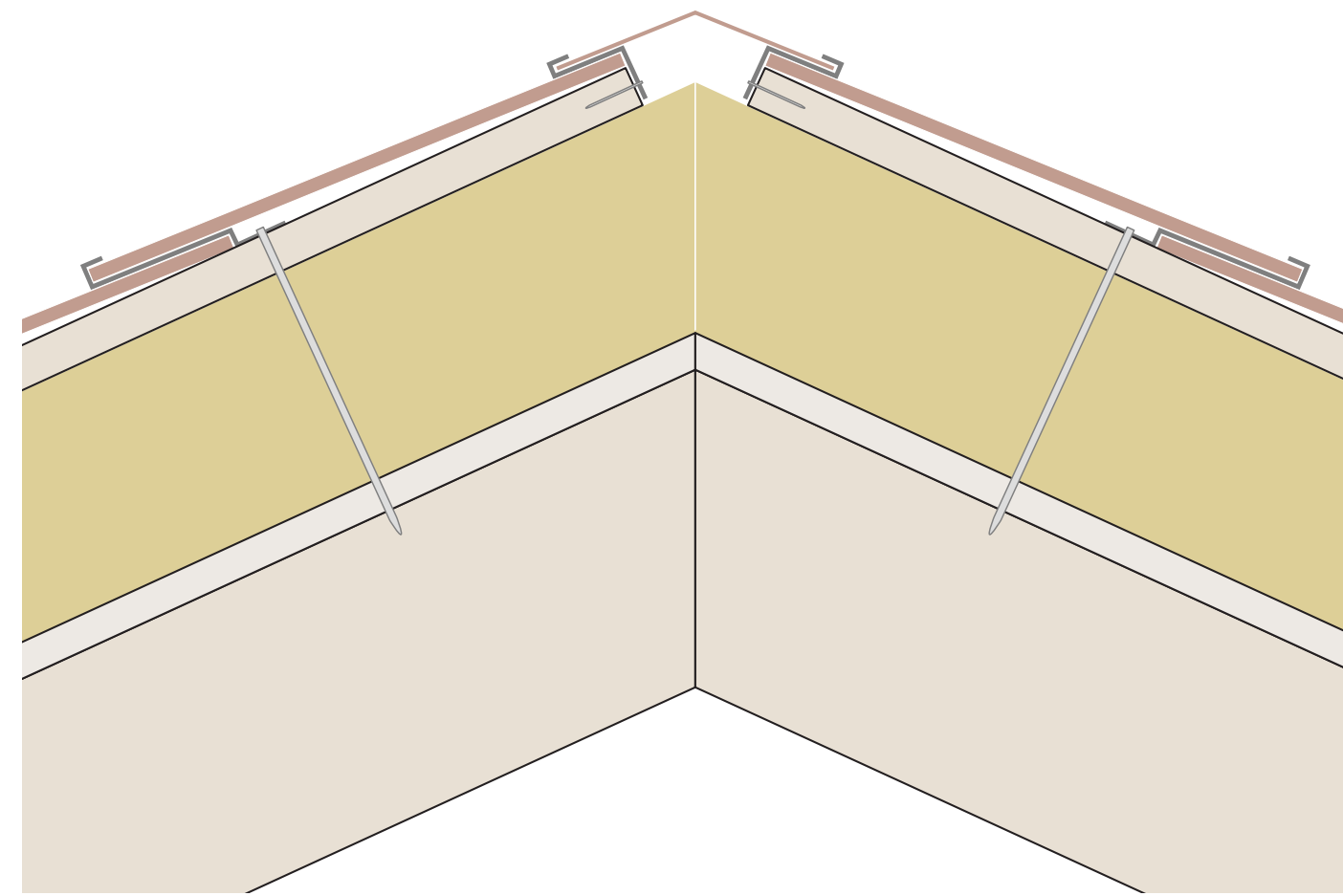
RIDGE
SKETCHES



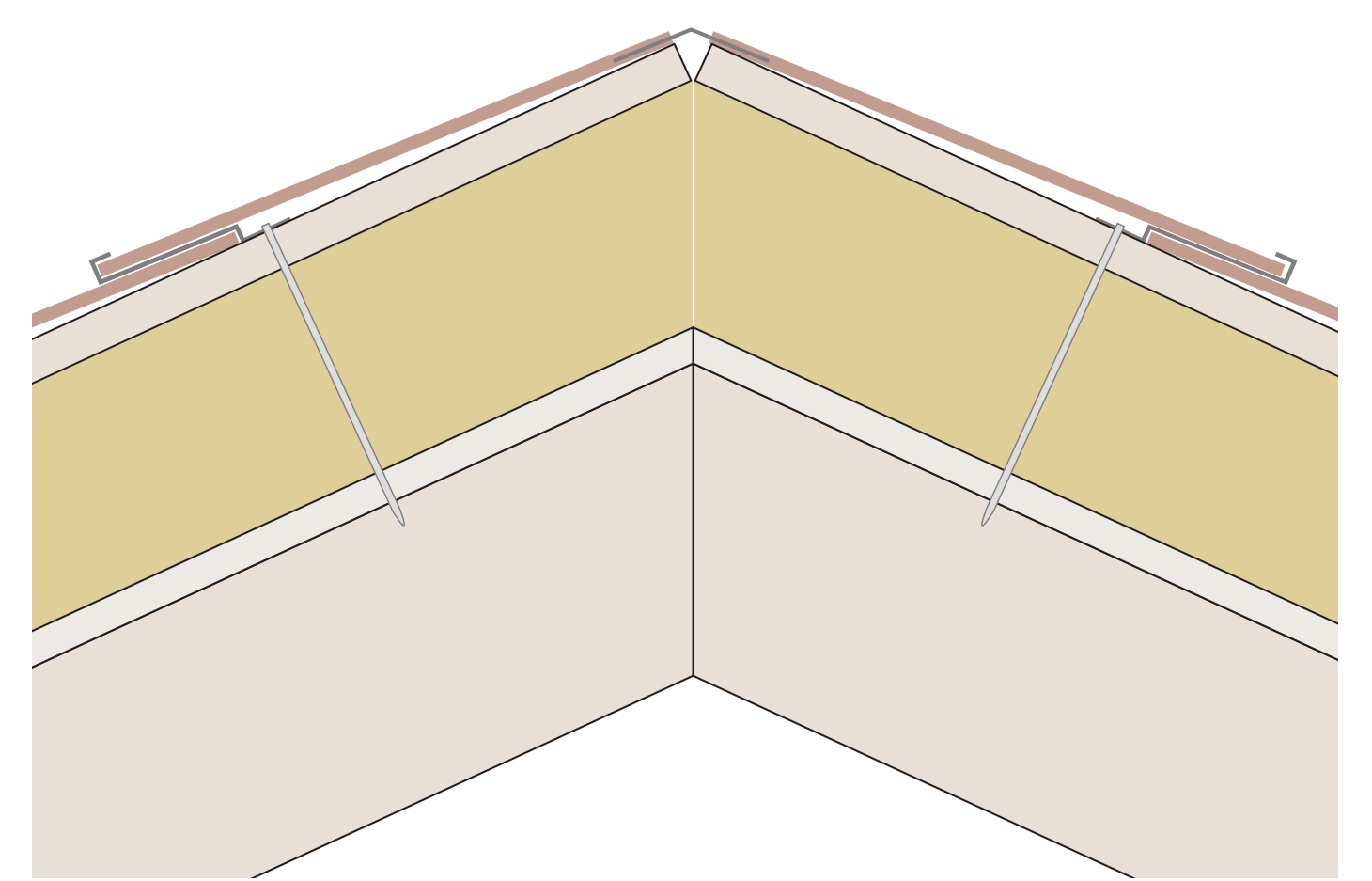
RIDGE
RIDGE CAP OR LAMINATED PV



CAP OPTION 1

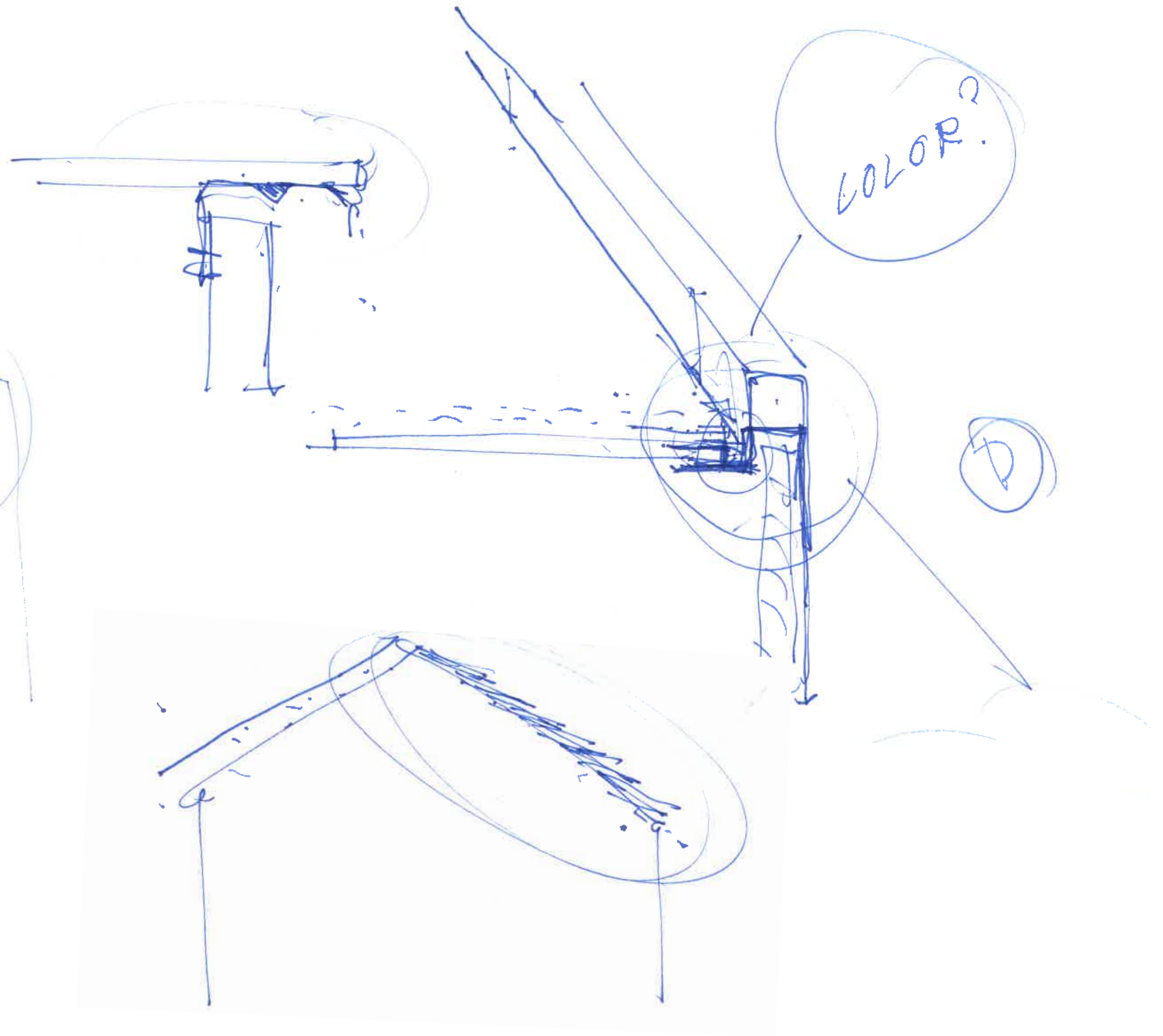
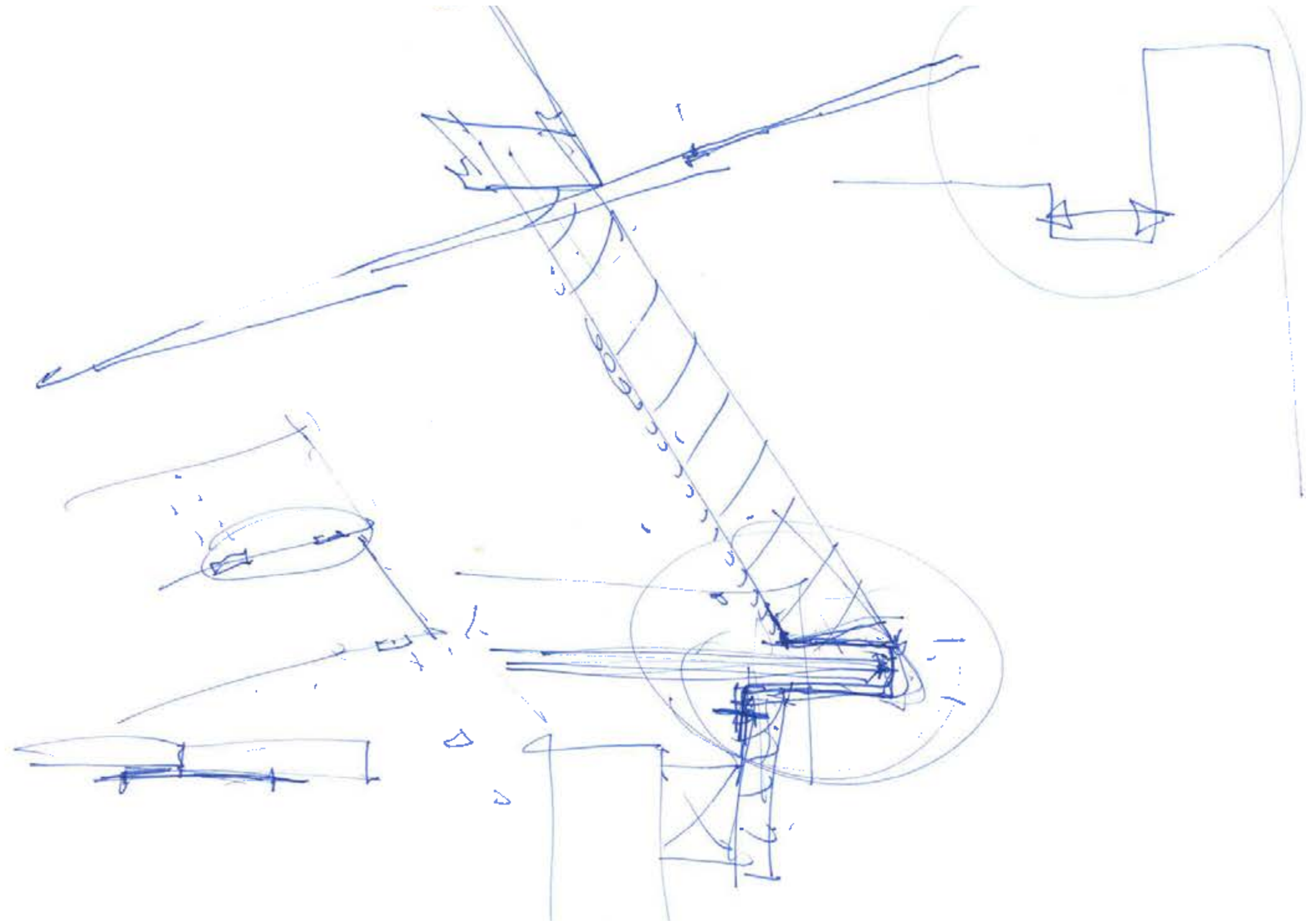
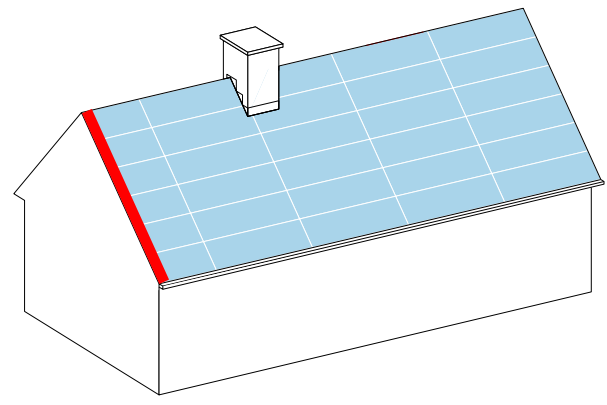


CAP OPTION 2

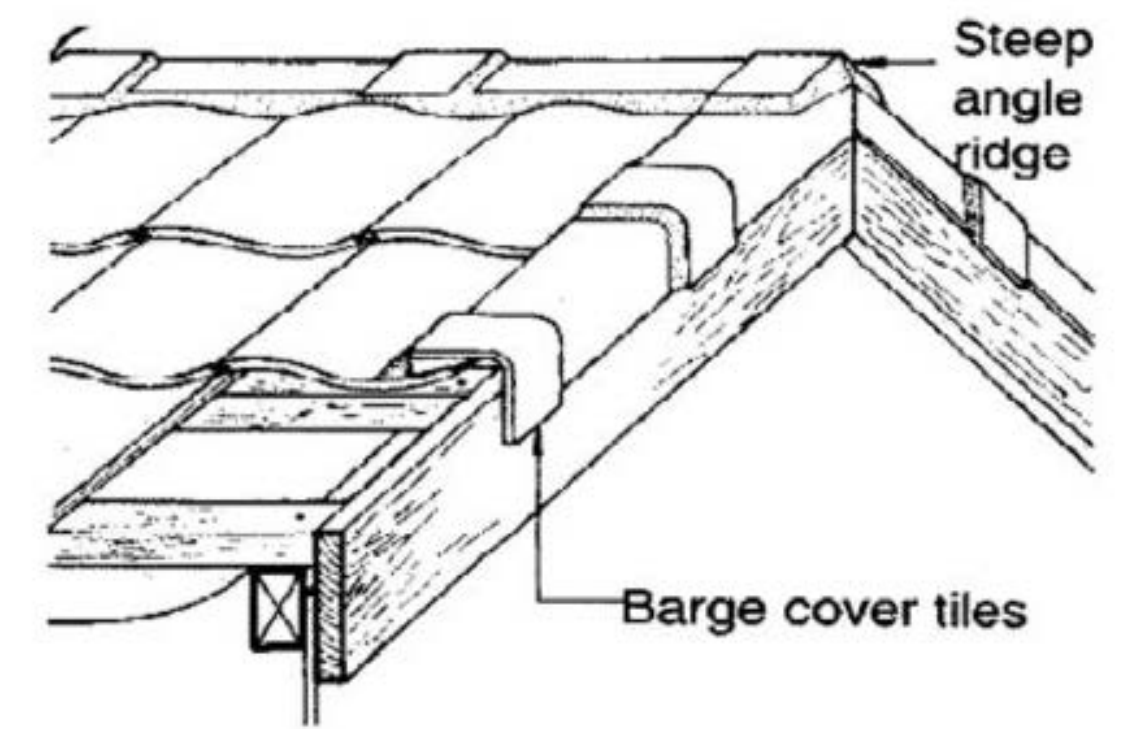
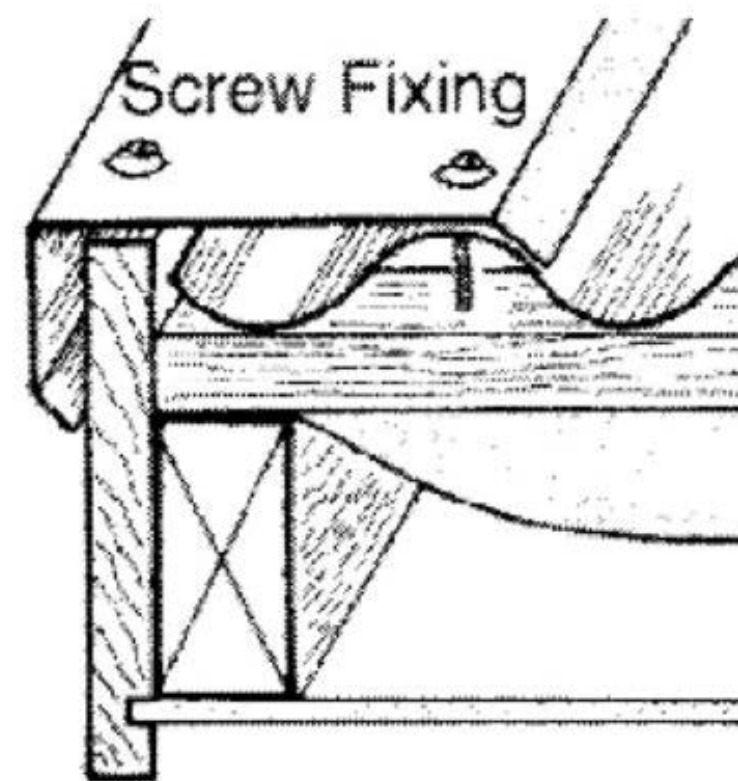
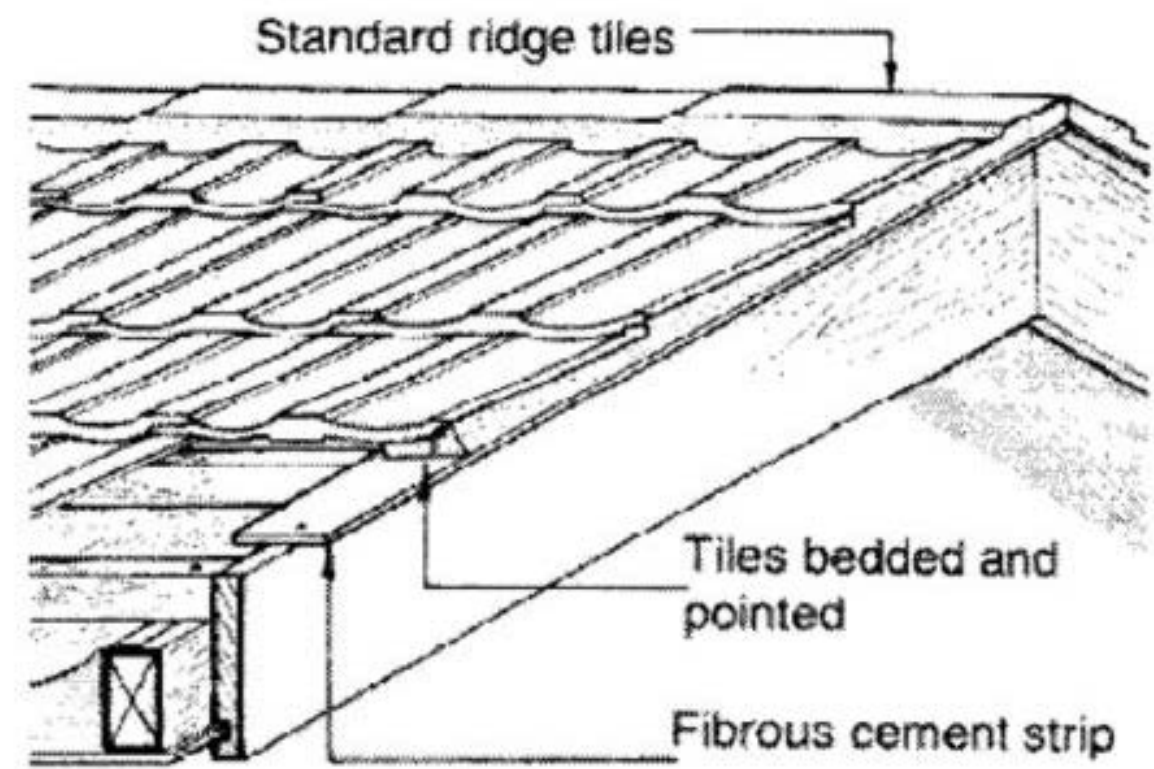
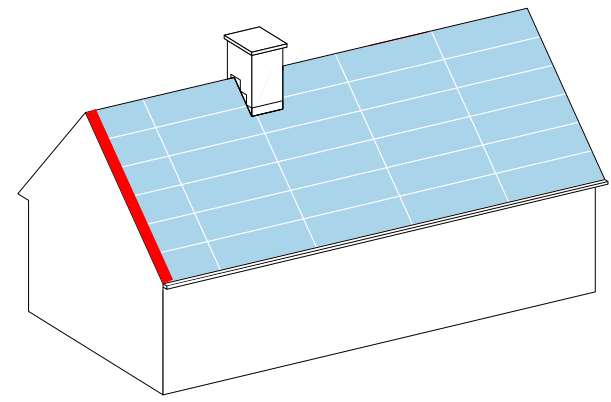


LAMINATED

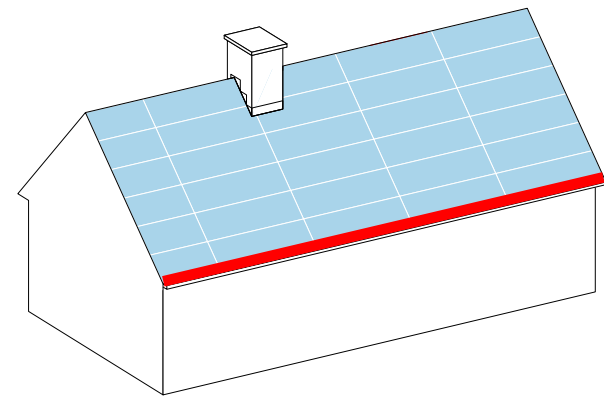
GABLE
SKETCHES



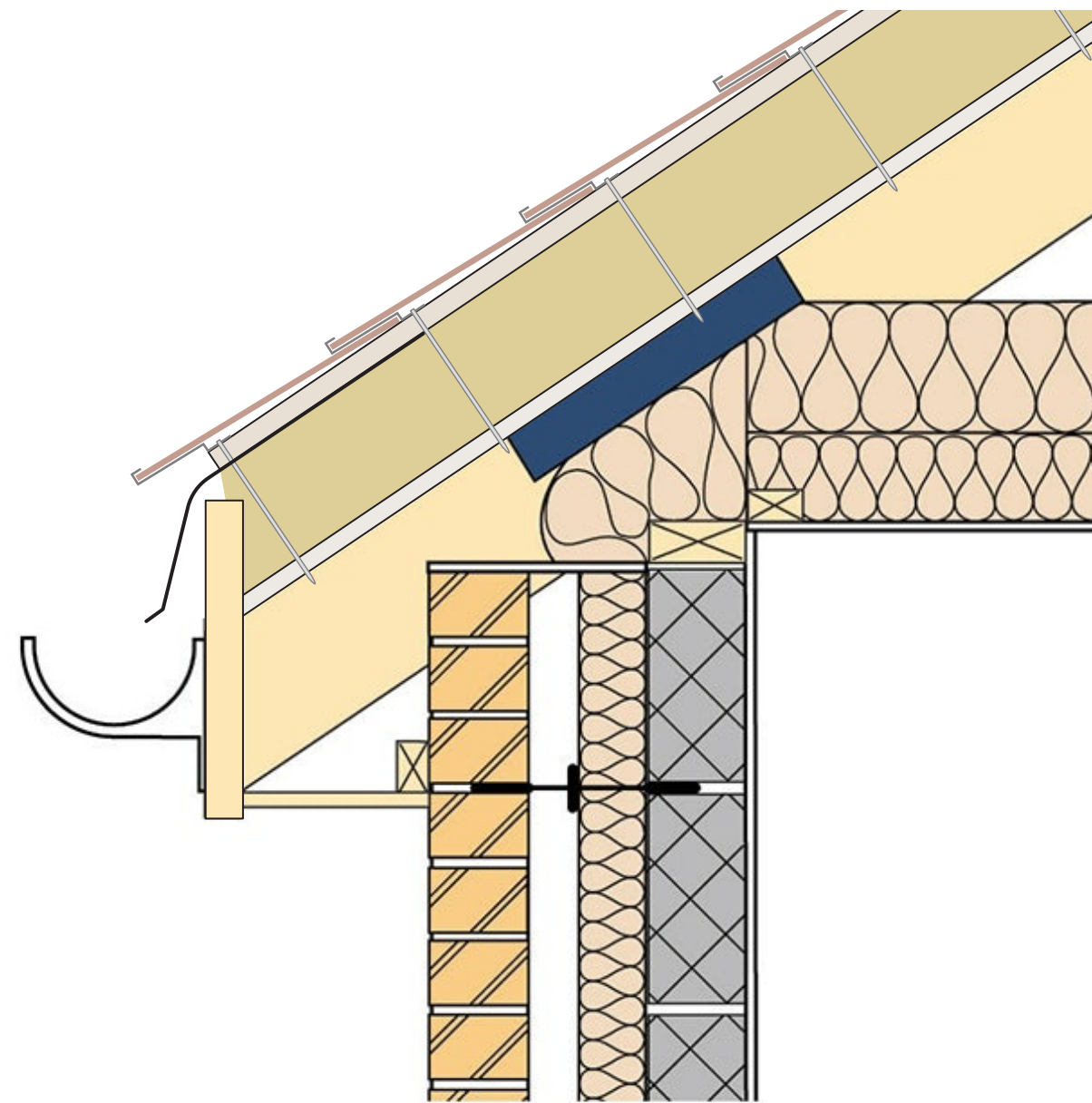
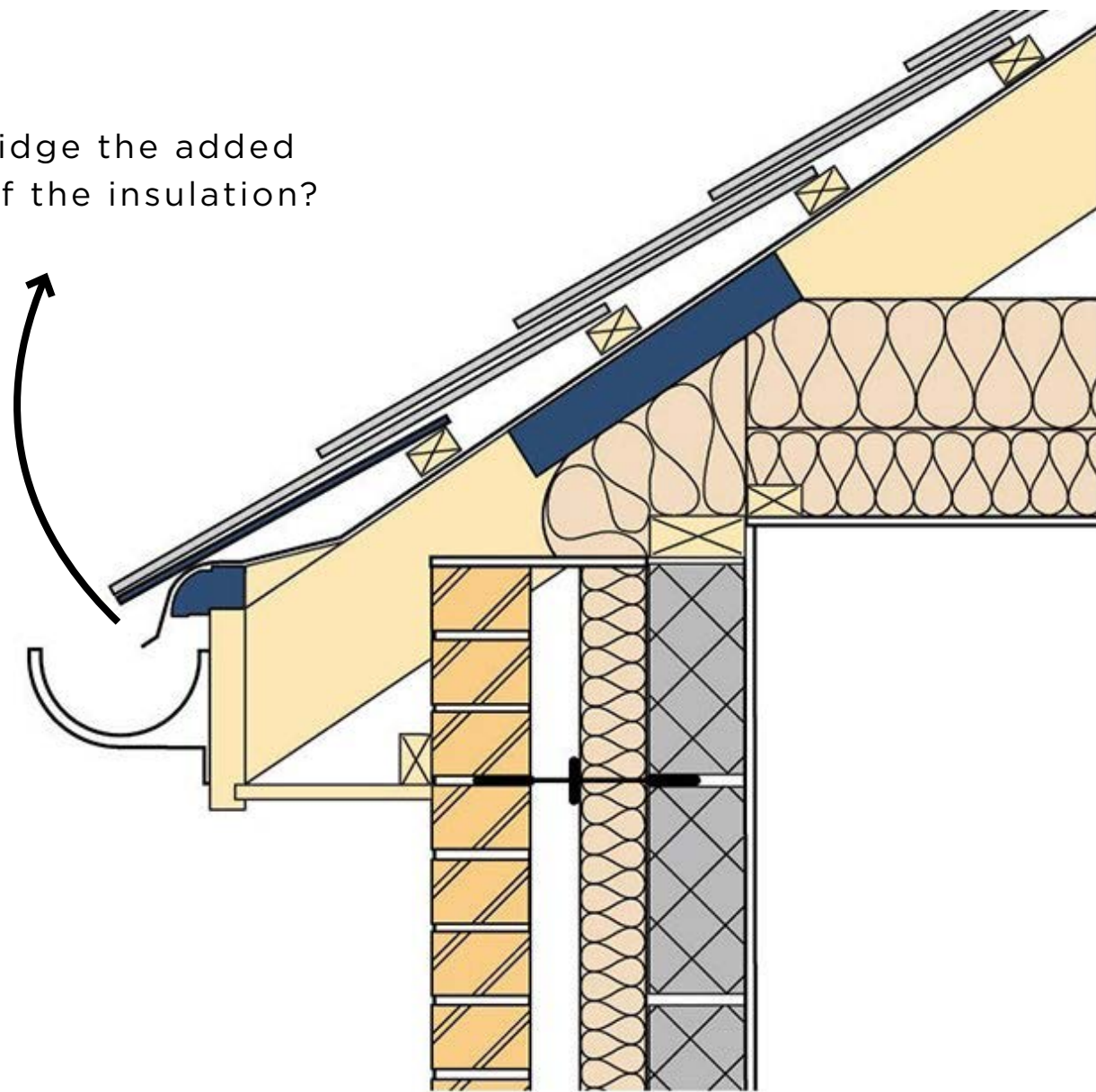
GABLE
BEDDED, CAPPED OR LAMINATED VERGE



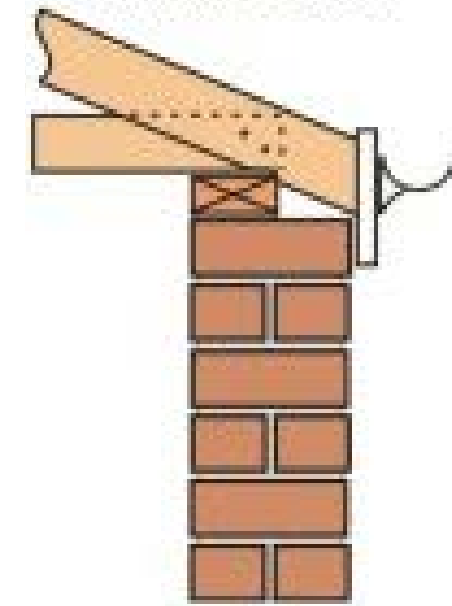
EAVES
FLUSH OR OVERHANGING



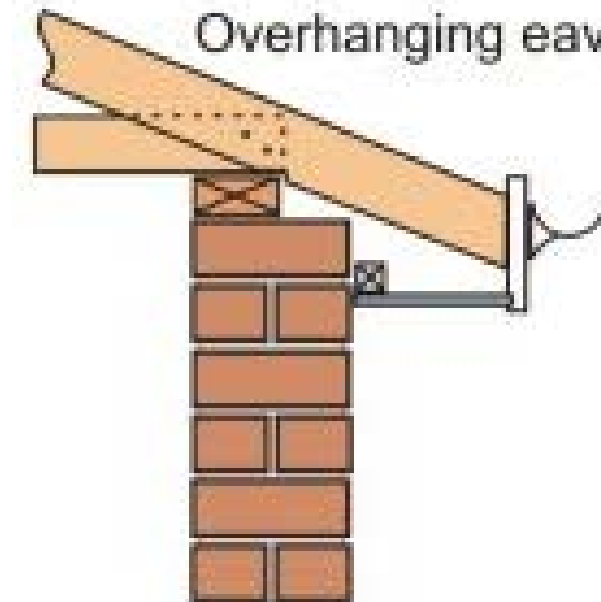
How to bridge the added thickness of the insulation?



Flush eaves

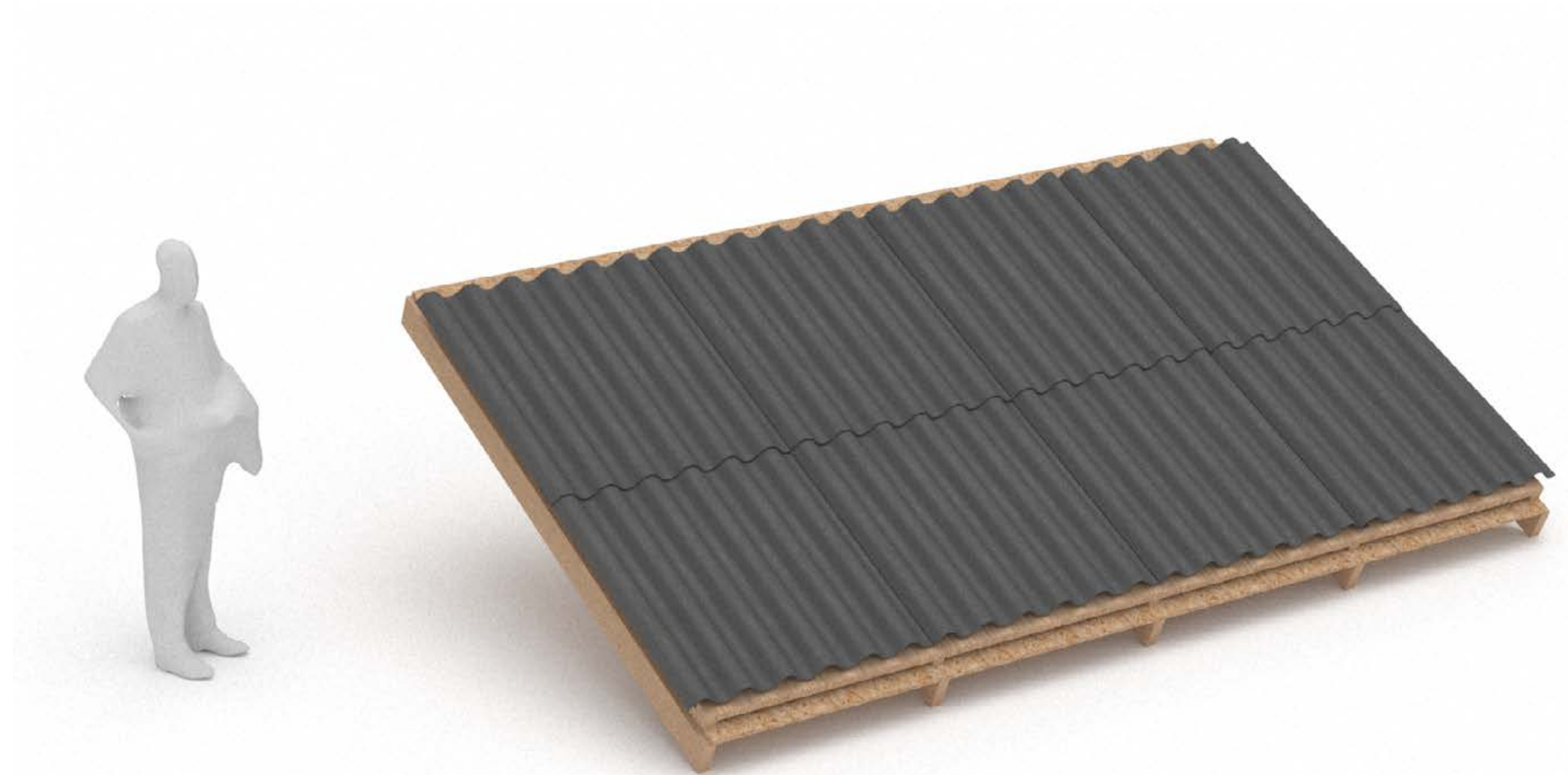
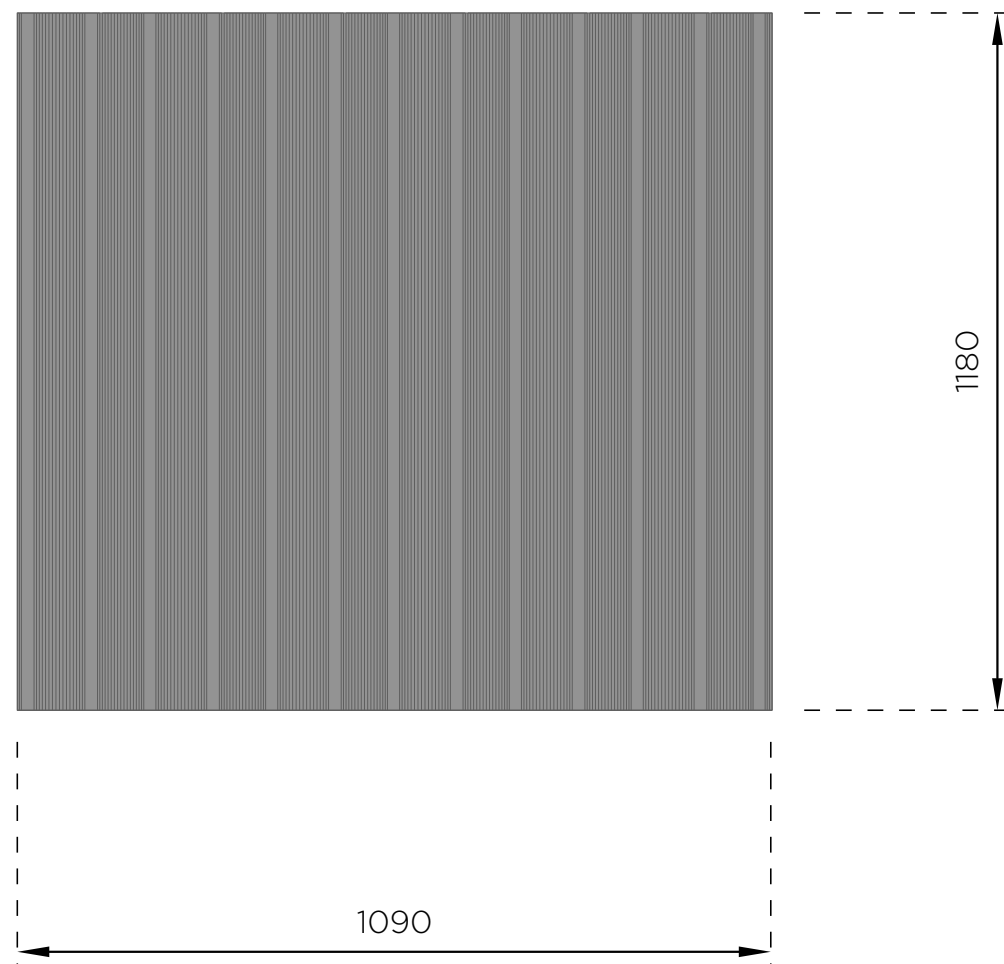


Overhanging eaves



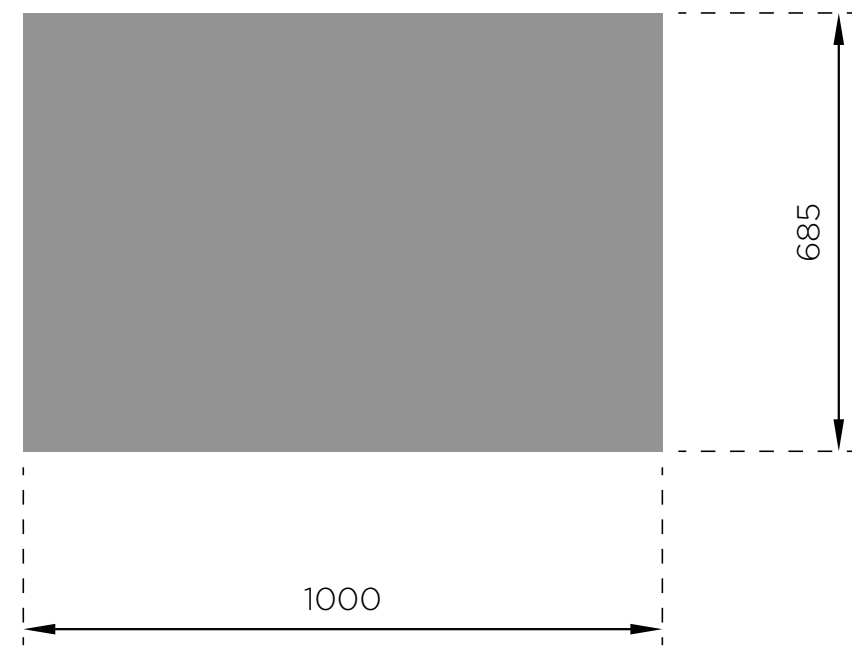
REFERENCE - ETERNIT B6

WEIGHT: 17,84 KG



OPTION 01 - STAGGERED

WEIGHT: ~6,85 KG

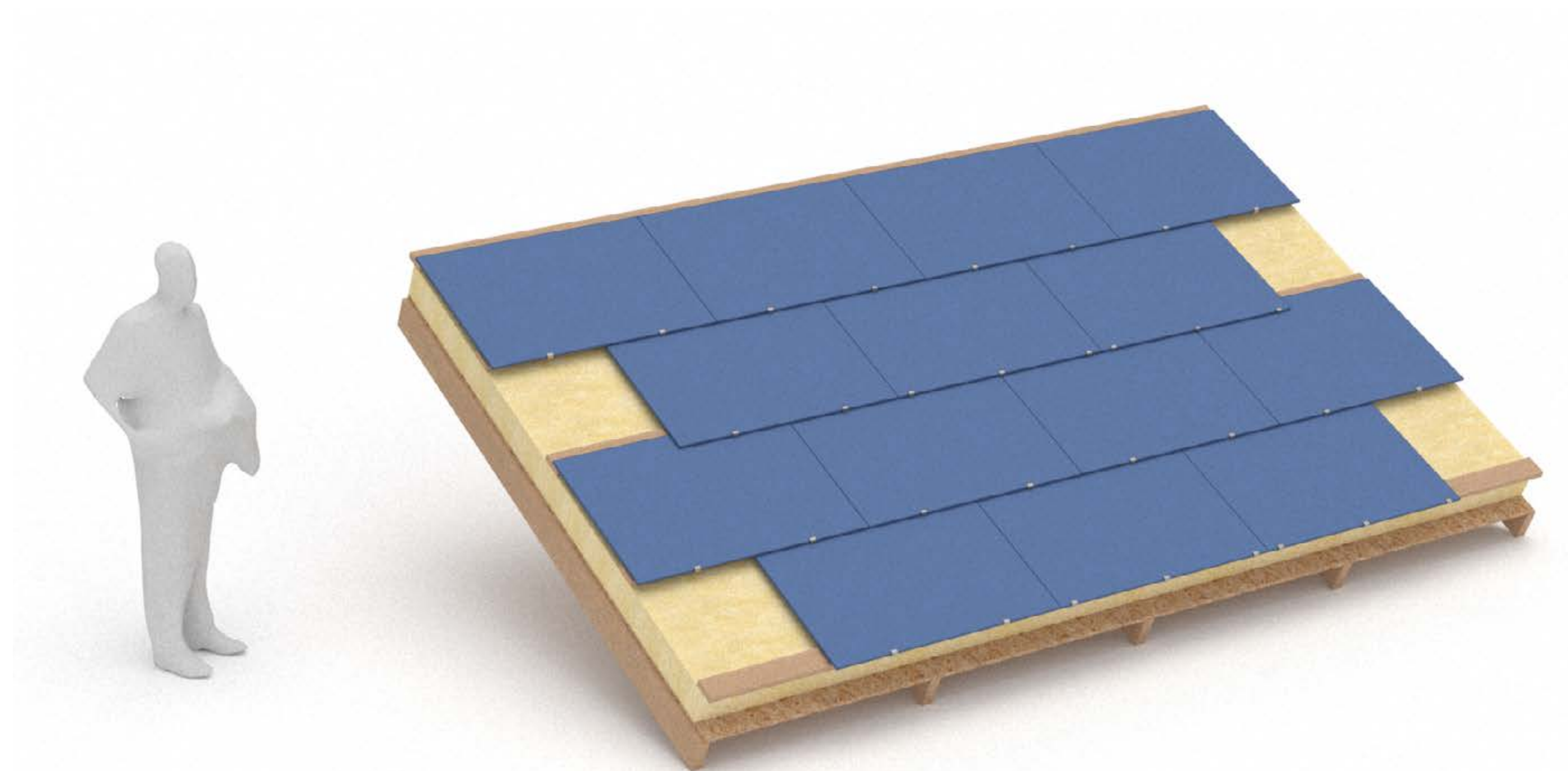


PROS

- manageable by 1 worker
- aesthetics recalling shingle pattern

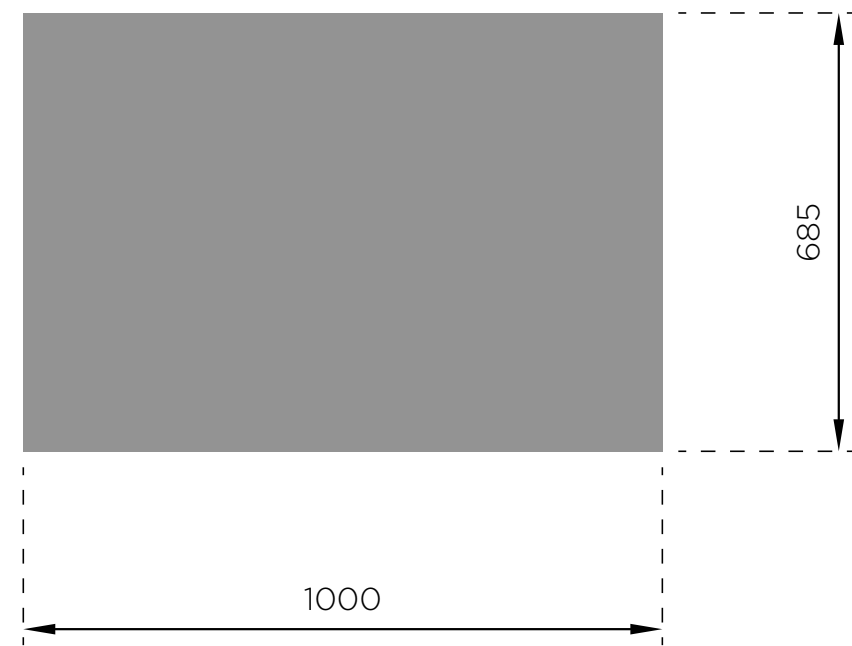
CONS

- more modules per surface area
 - slower installation
- irregular edge zones due to staggering



OPTION 01 - ALIGNED

WEIGHT: ~6,85 KG

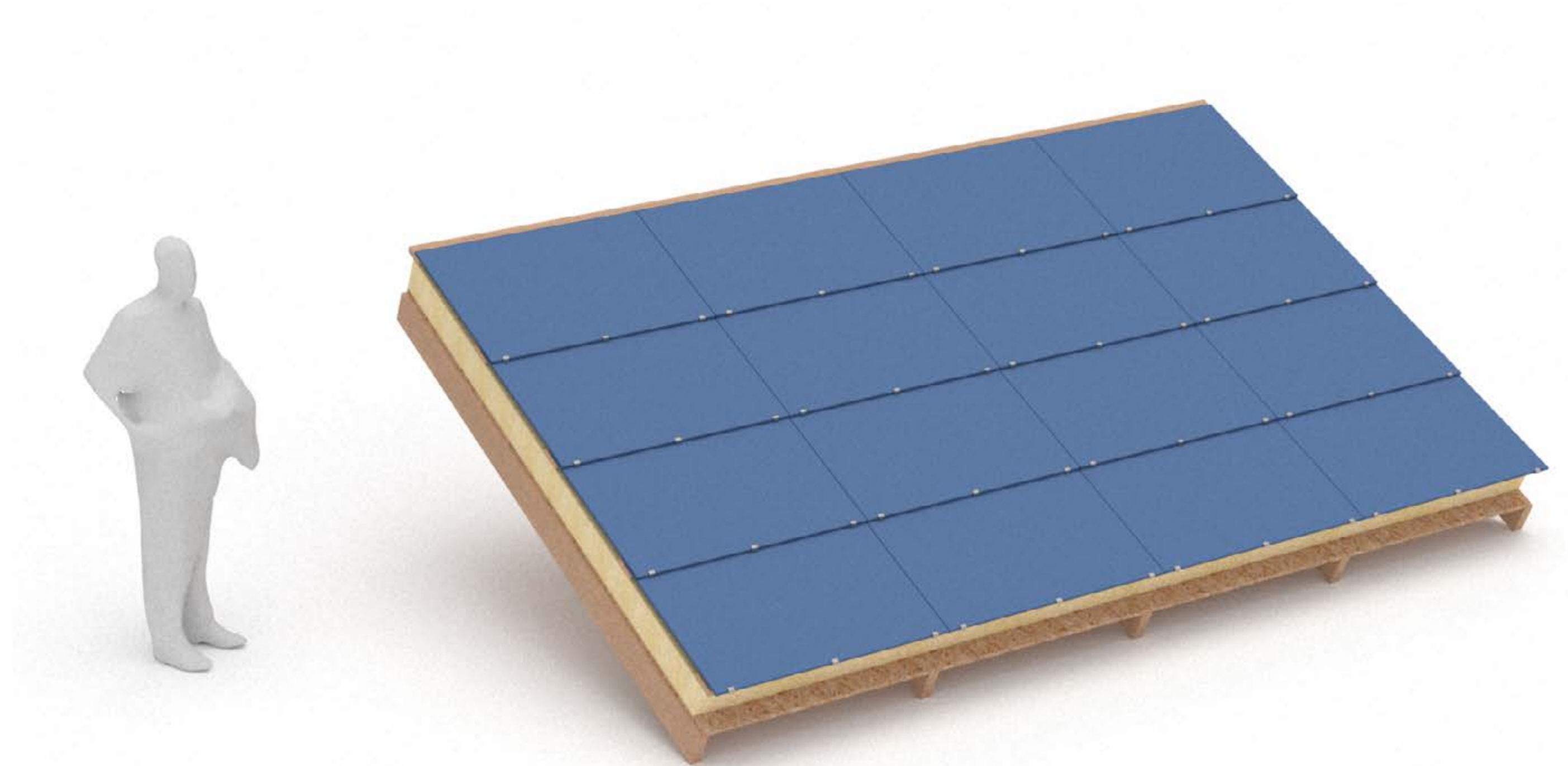


PROS

- manageable by 1 worker

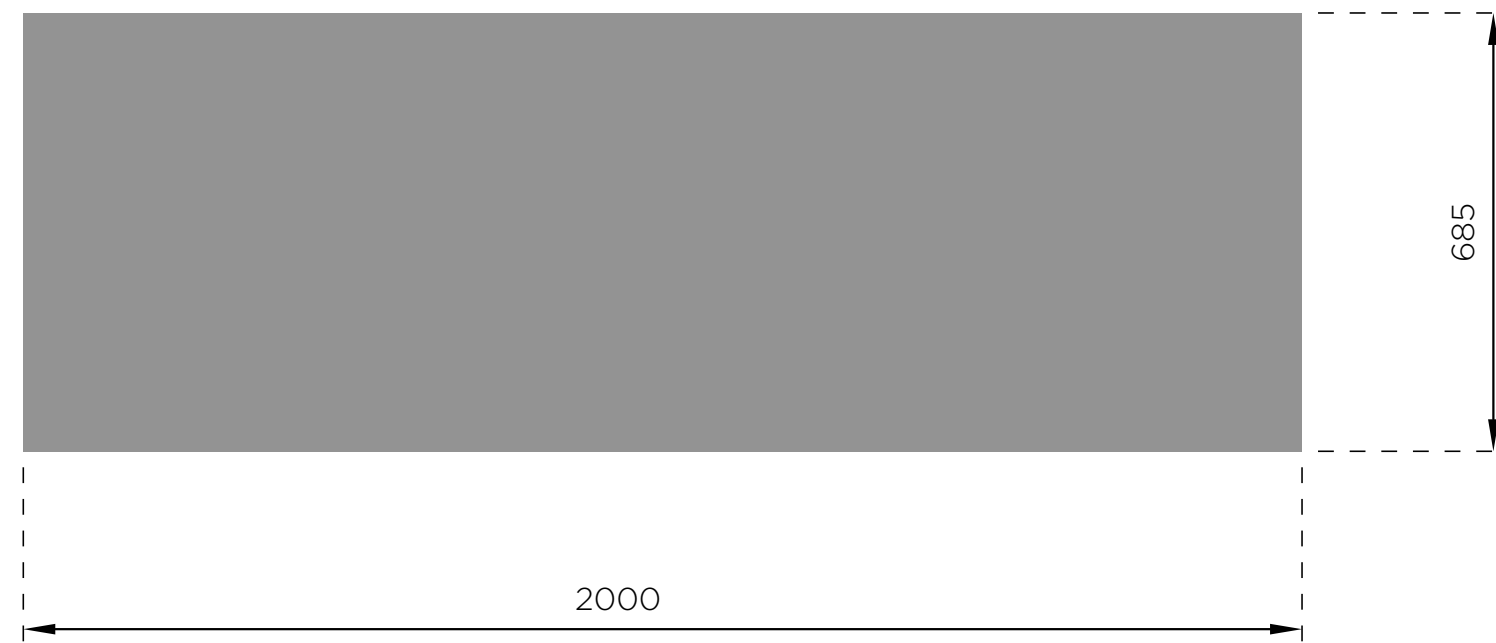
CONS

- more modules per surface area
 - slower installation
- monotonous / repetitive pattern (could be solved with a more randomized printed pattern)



OPTION 02

WEIGHT: ~13,7 KG

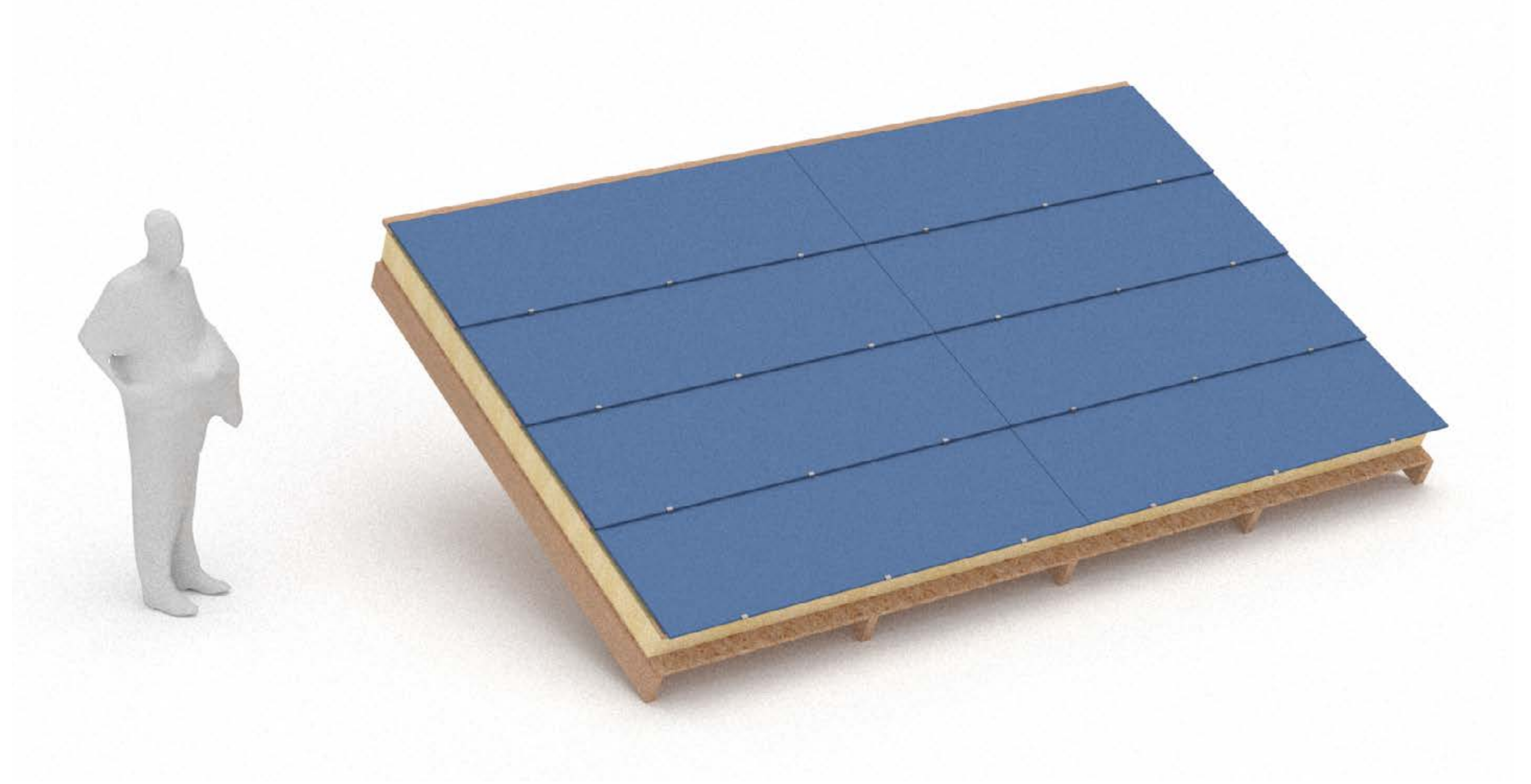


PROS

- possibly manageable by 1 worker
- aesthetically pleasing proportions

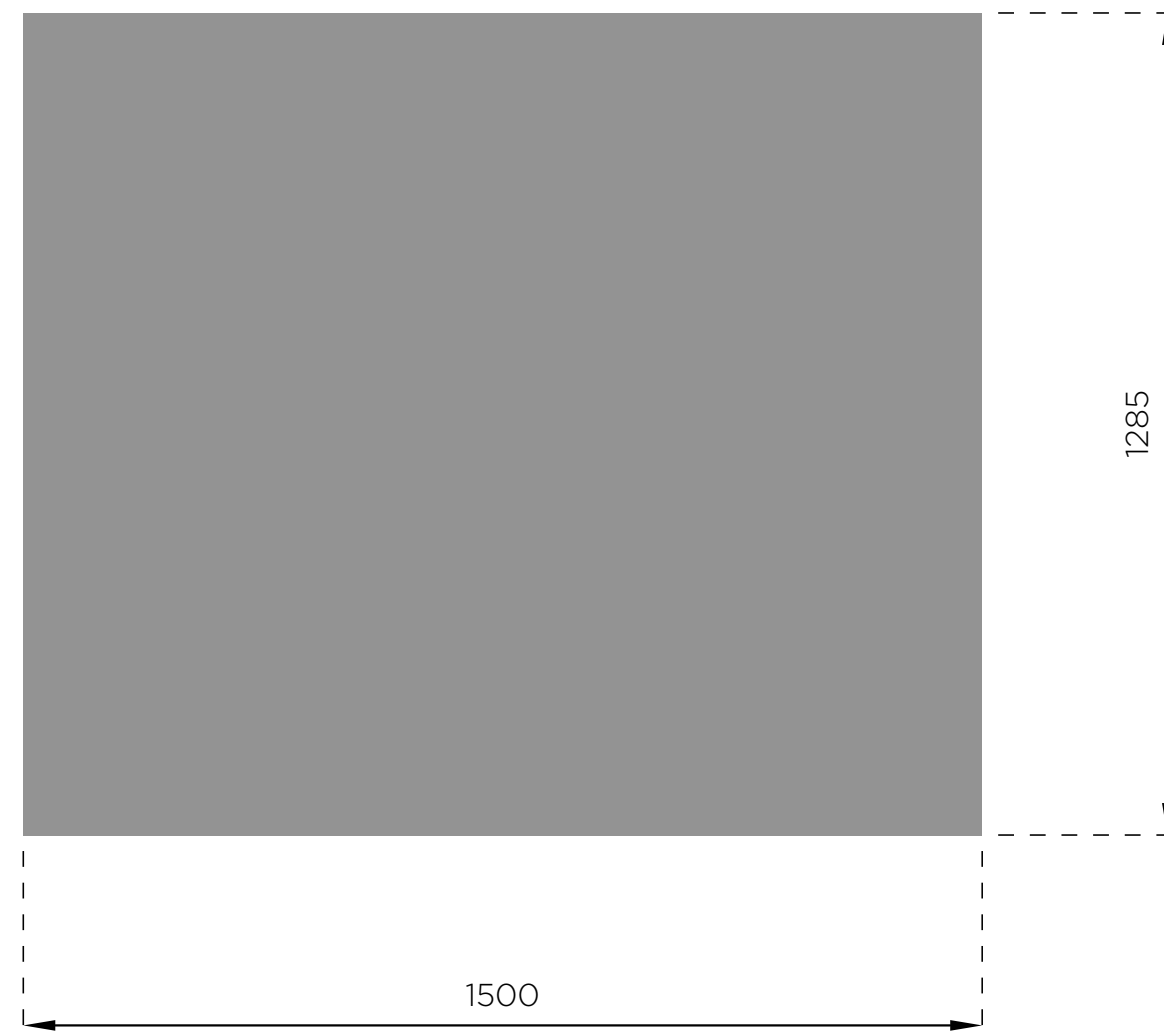
CONS

- challenges regarding protruding elements and edge zones



OPTION 03

WEIGHT: ~19,3 KG

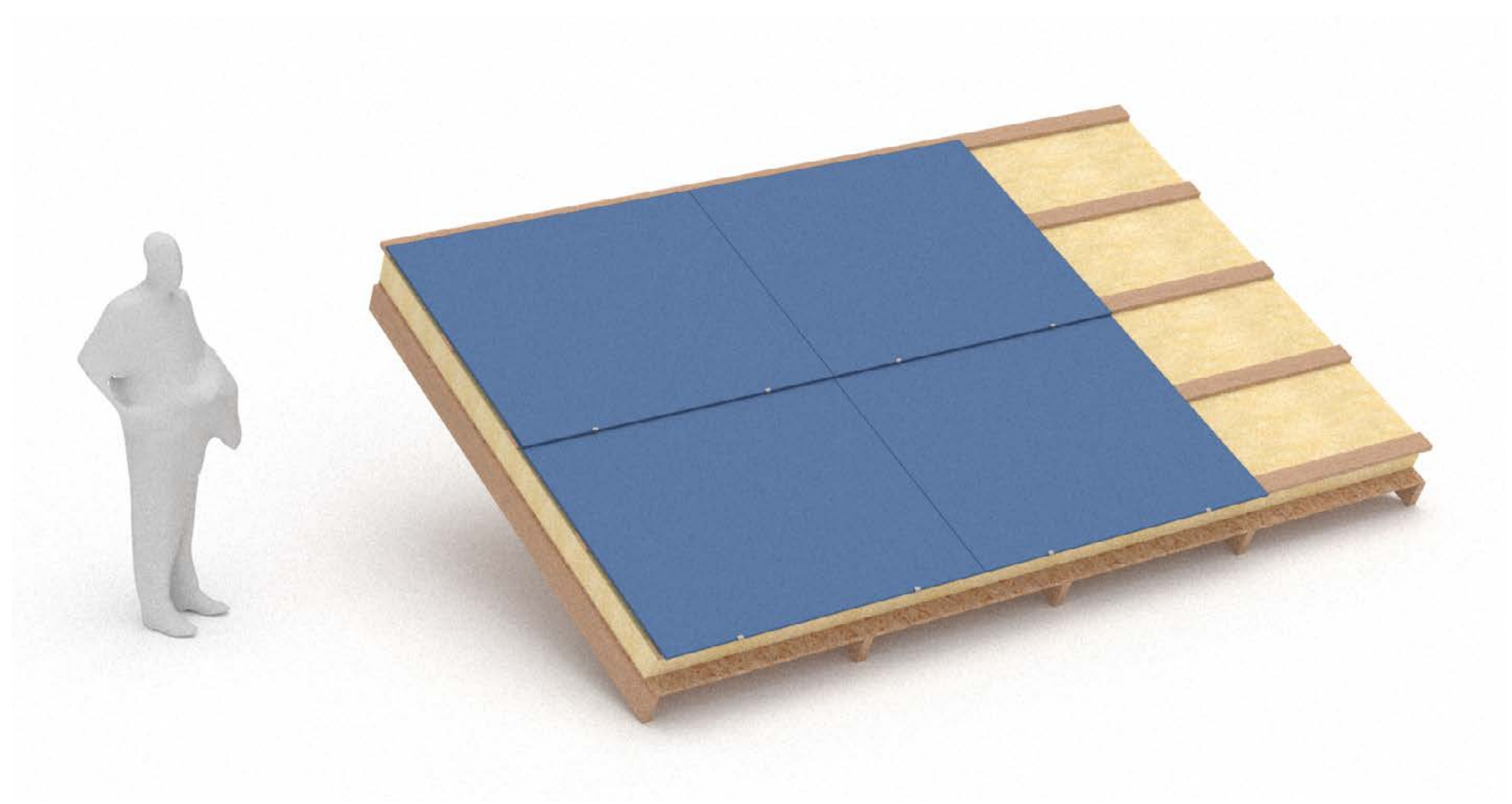


PROS

- fewer modules per surface area
 - faster installation
- possibility of smaller subdivisions

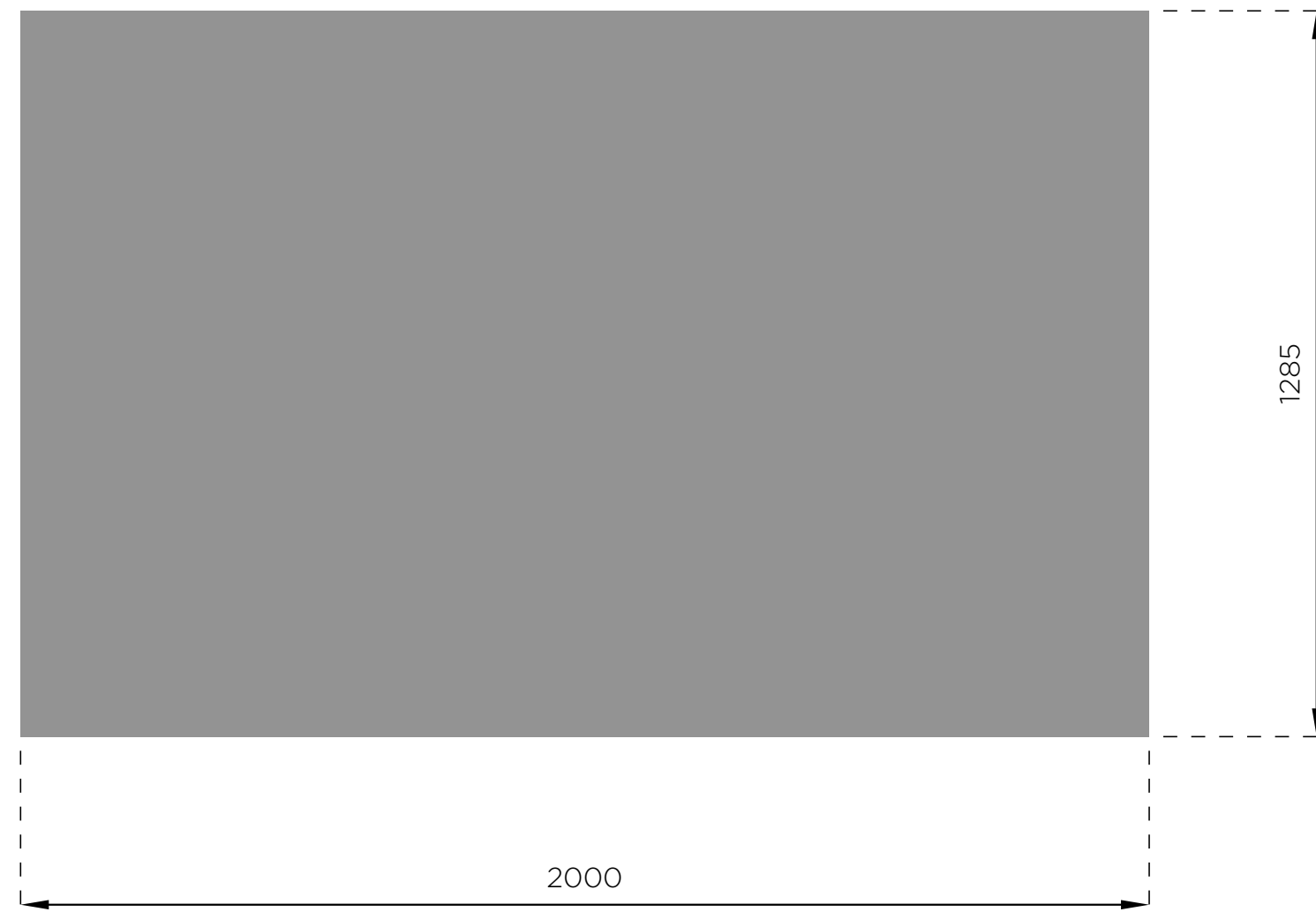
CONS

- surpasses weight requirement for 1 person installation
- challenges regarding protruding elements and edge zones
 - low aesthetic value



OPTION 04

WEIGHT: ~25,7 KG

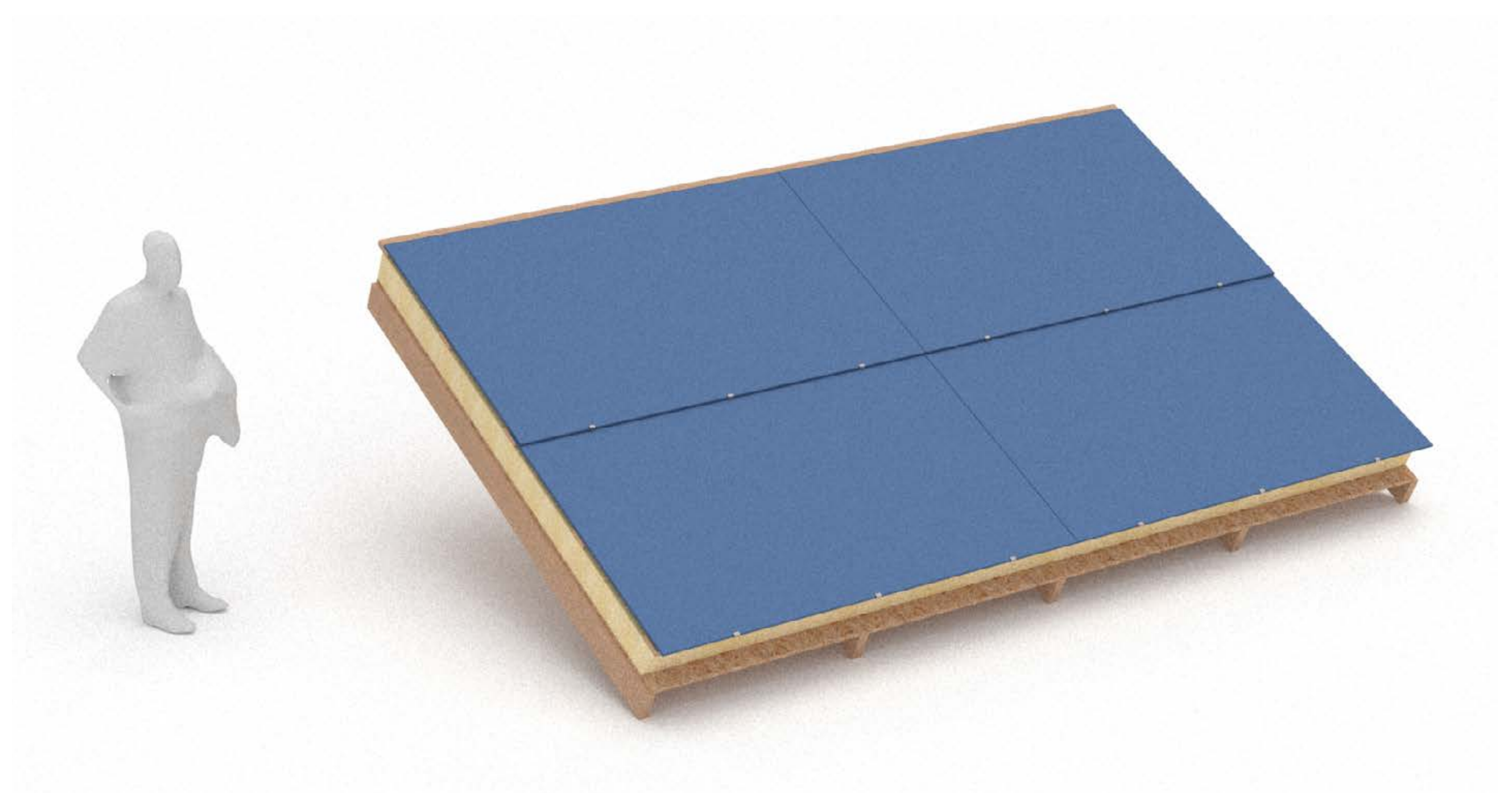


PROS

- fewer modules per surface area
 - faster installation
- possibility of smaller subdivisions
- nicer proportions due to elongated shape

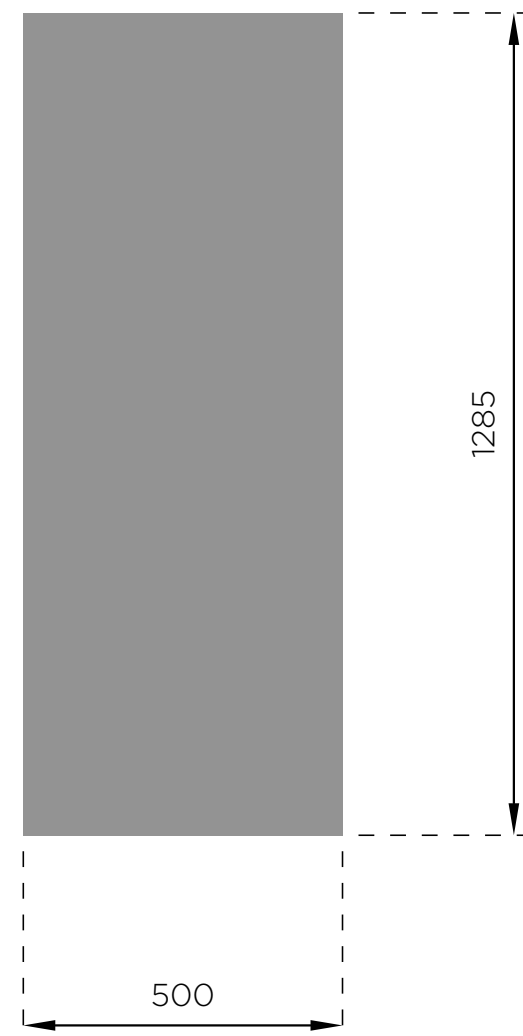
CONS

- surpasses weight requirement for 1 person installation
- challenges regarding protruding elements and edge zones
 - may not integrate aesthetically for smaller roofs



OPTION 05

WEIGHT: ~6,4 KG

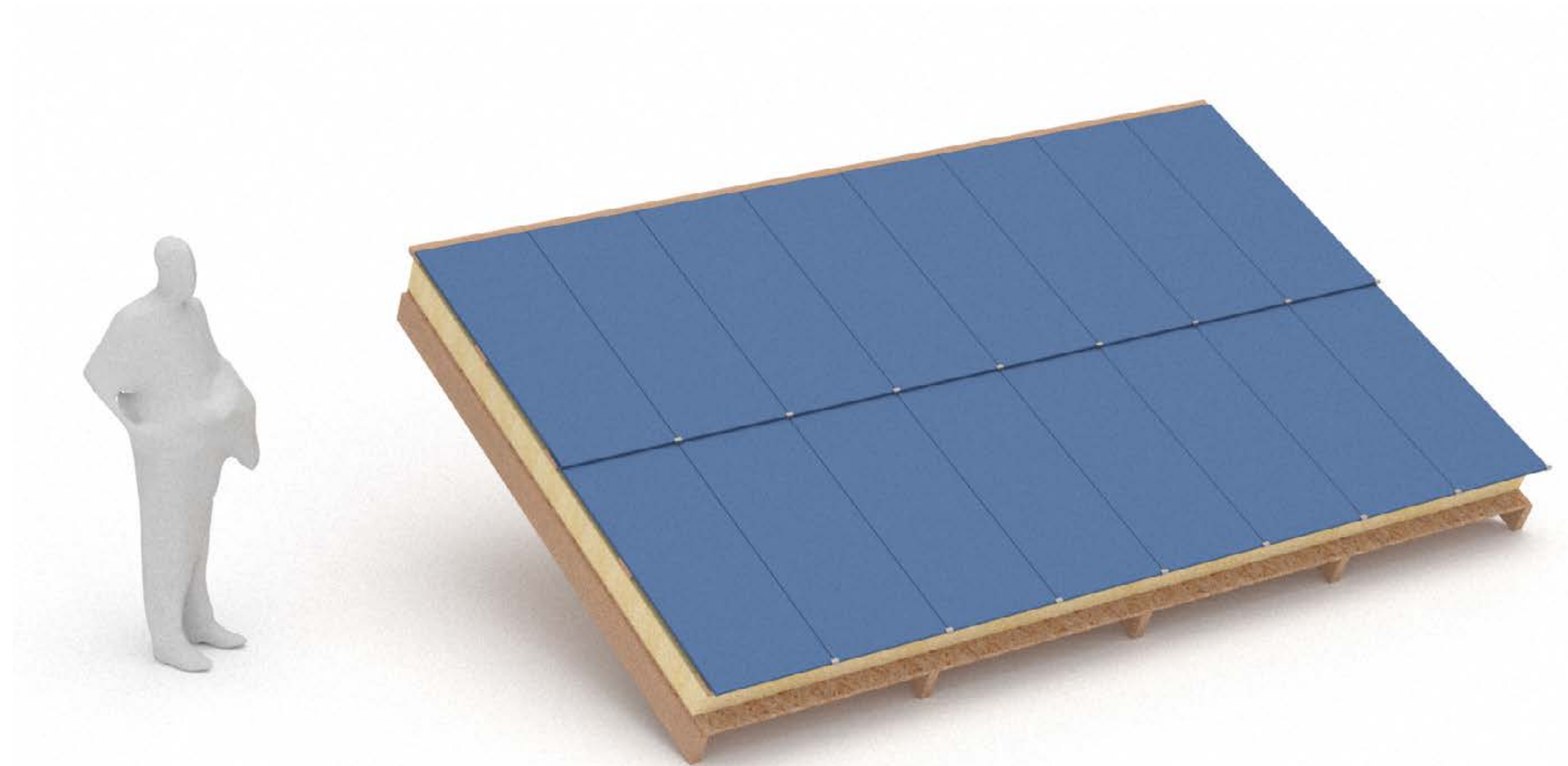


PROS

- manageable by 1 worker
- could work well as facade module on vertical surfaces

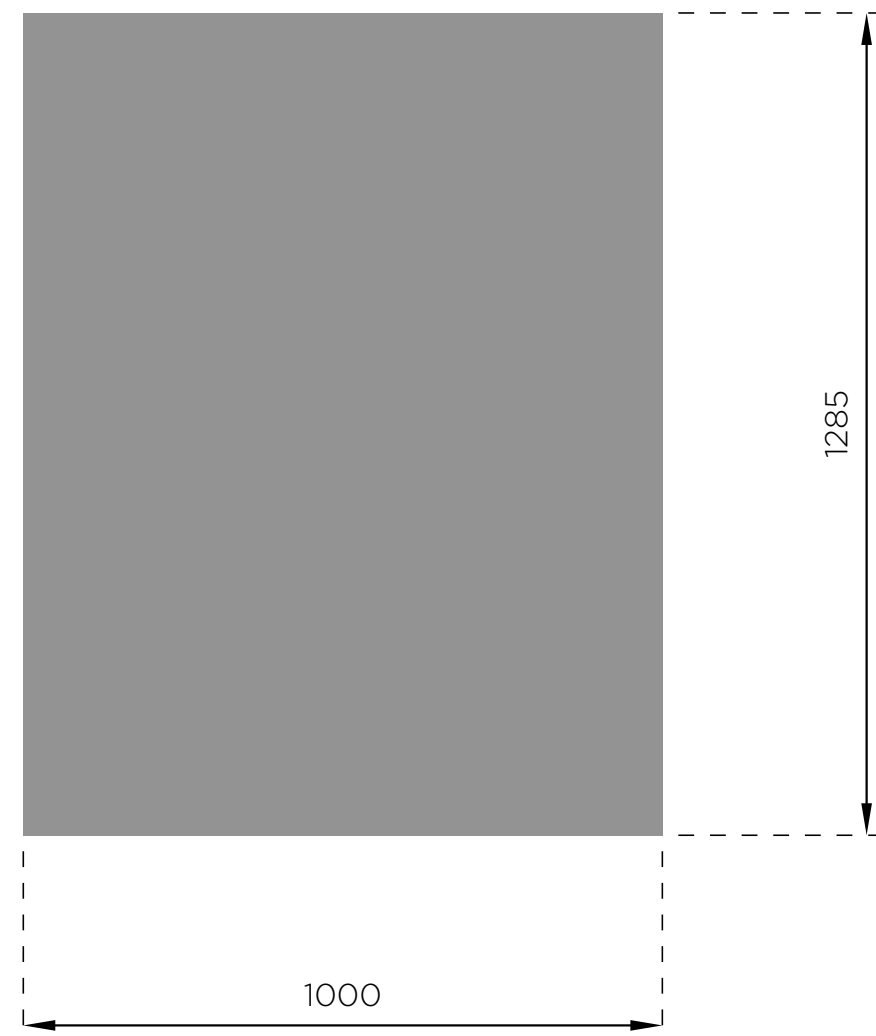
CONS

- more modules per surface area
- slower installation



OPTION 06

WEIGHT: ~12,85 KG

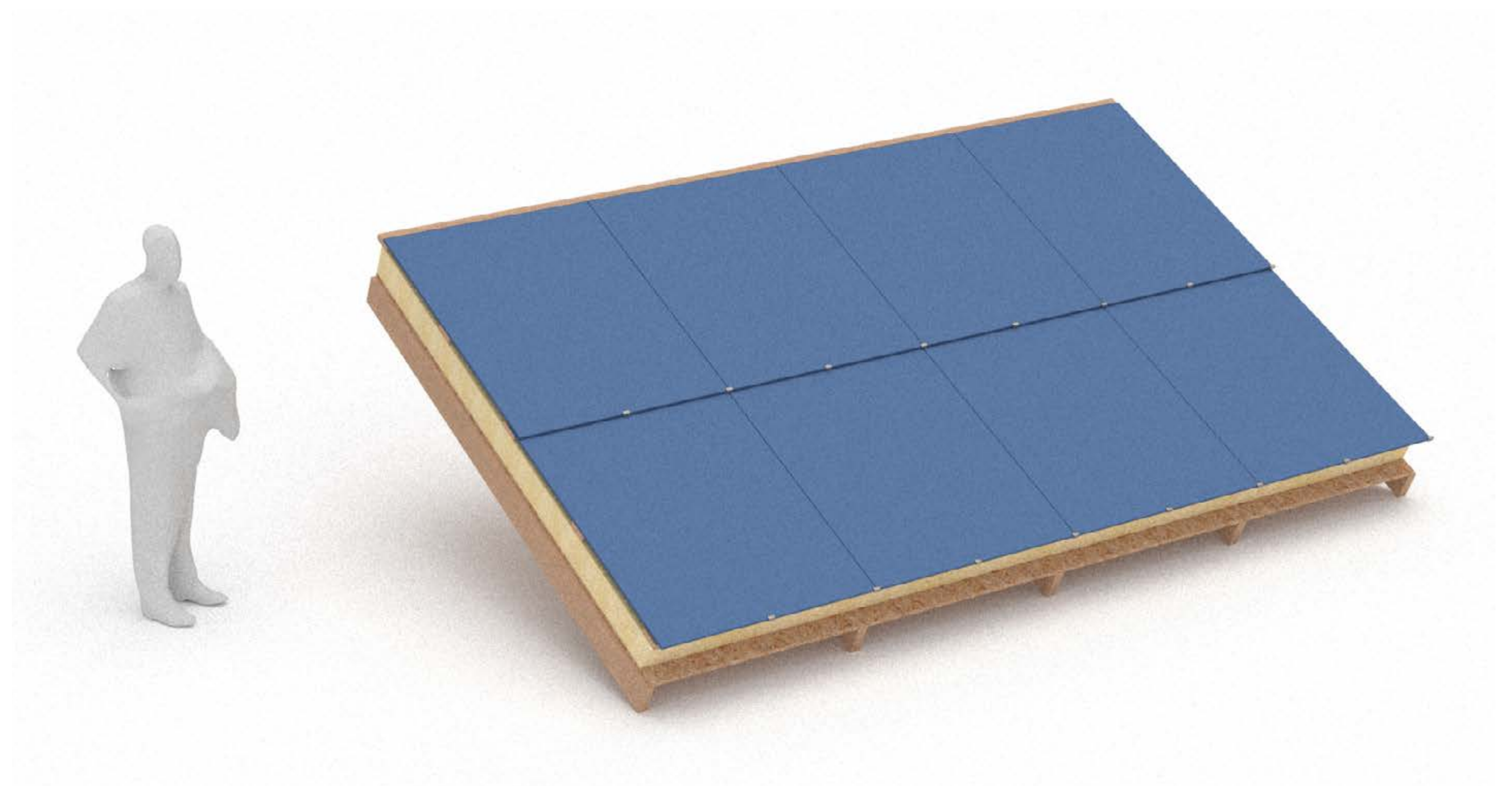


PROS

- possibly manageable by 1 worker

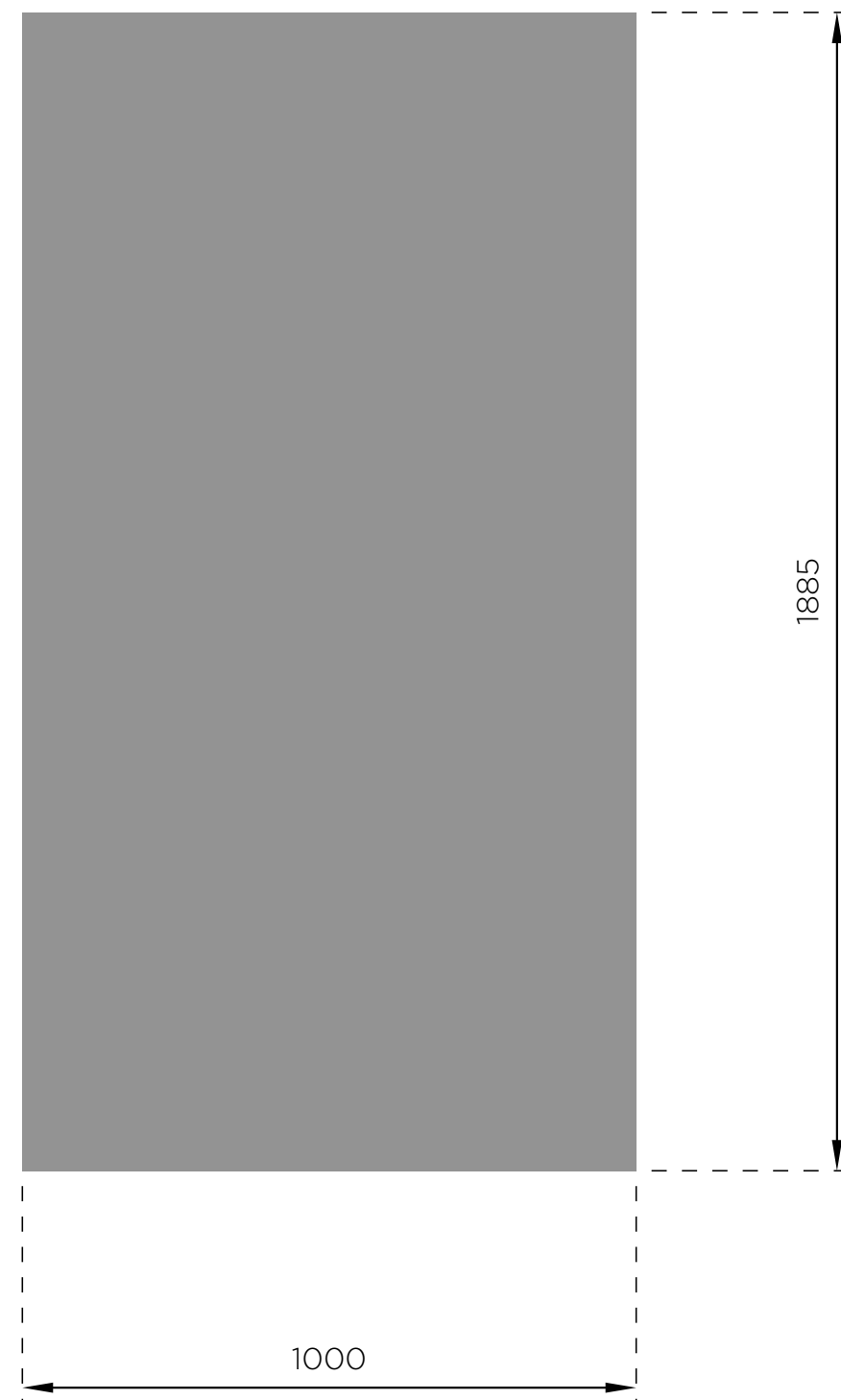
CONS

- challenges regarding protruding elements and edge zones
 - low aesthetic value



OPTION 07

WEIGHT: ~18,85 KG

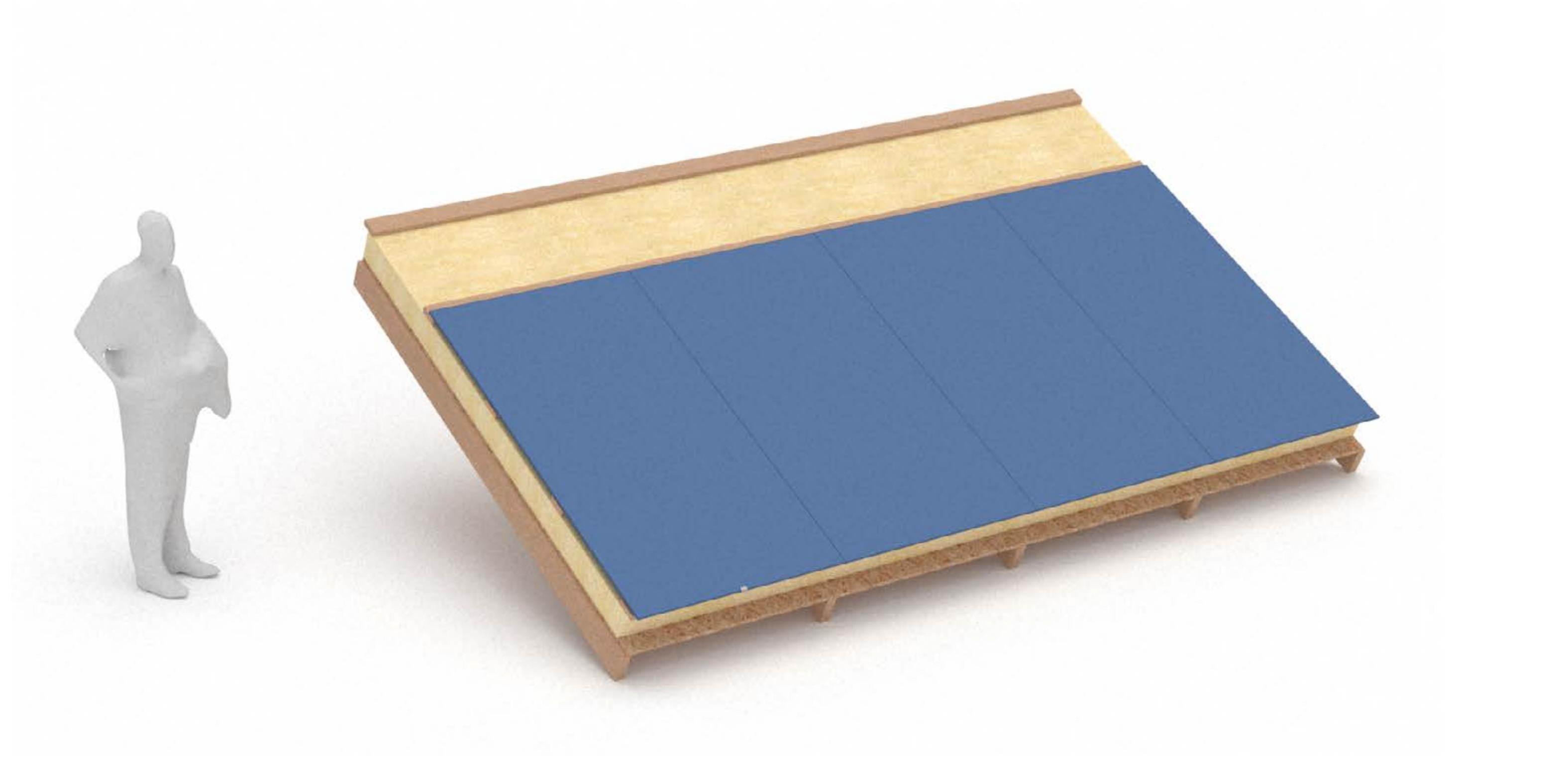


PROS

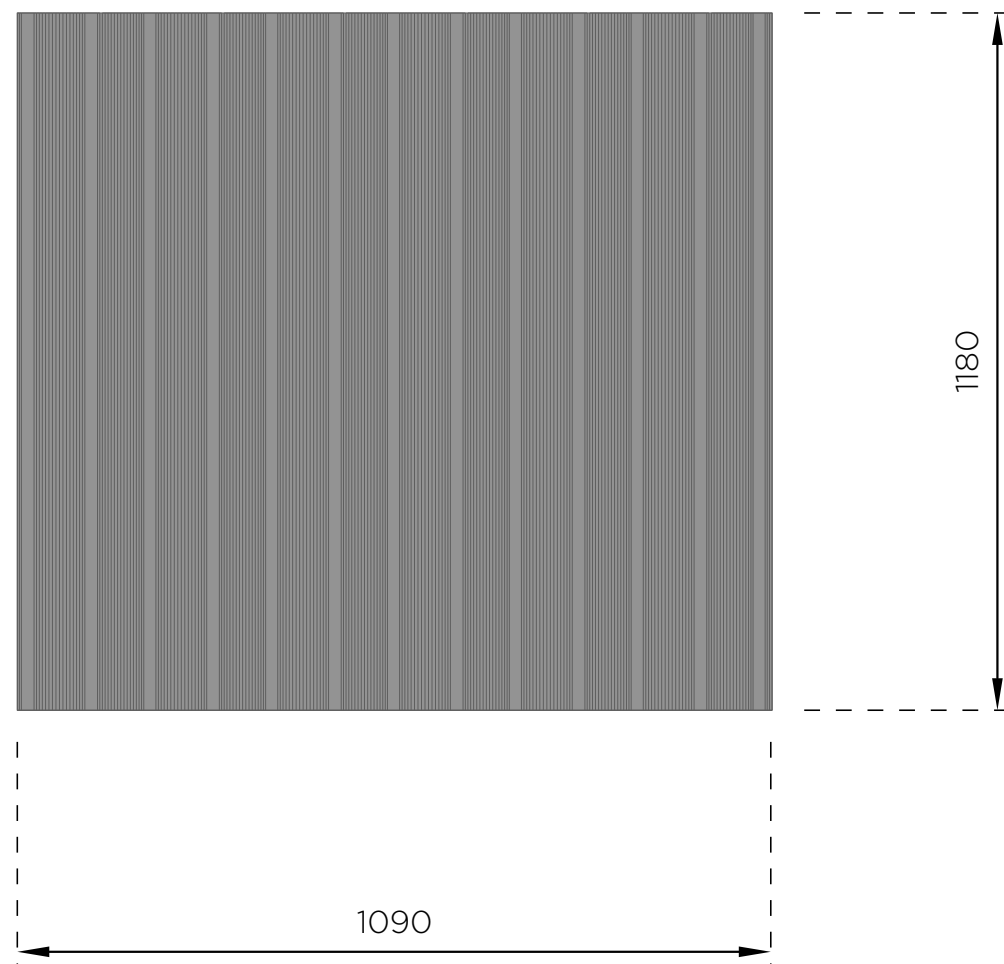
- fewer modules per surface area
 - faster installation
- possibility of smaller subdivisions

CONS

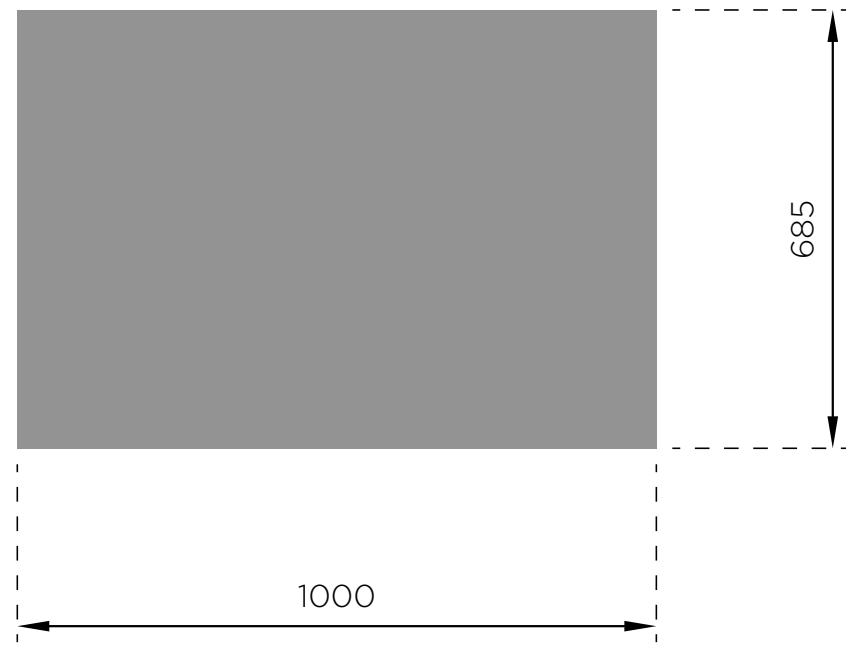
- surpasses weight requirement for 1 person installation
- challenges regarding protruding elements and edge zones
 - may not integrate aesthetically for smaller roofs



REFERENCE - ETERNIT B7



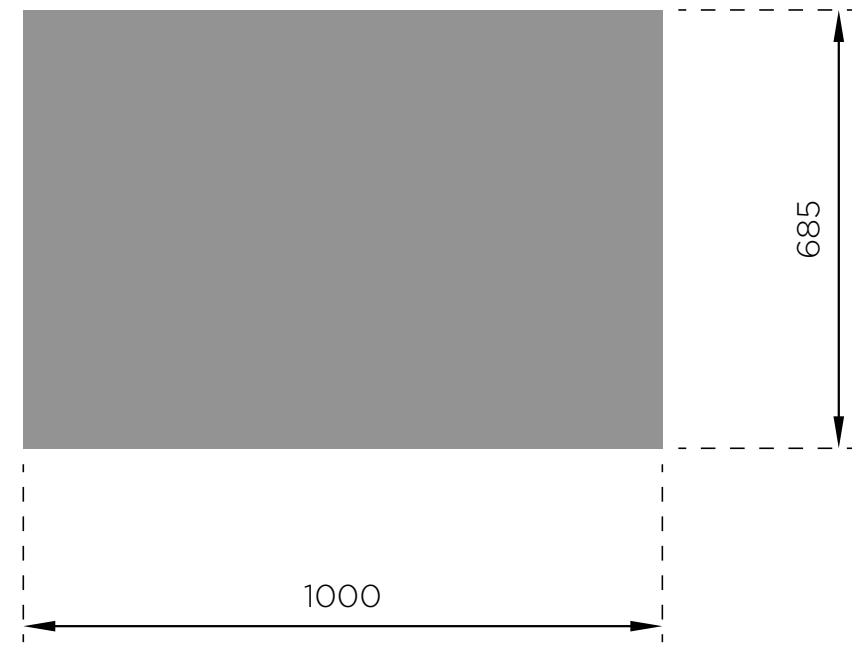
OPTION 01 - STAGGERED



 PV ROCK ROOF ELEMENT

 MOCK PV ELEMENT

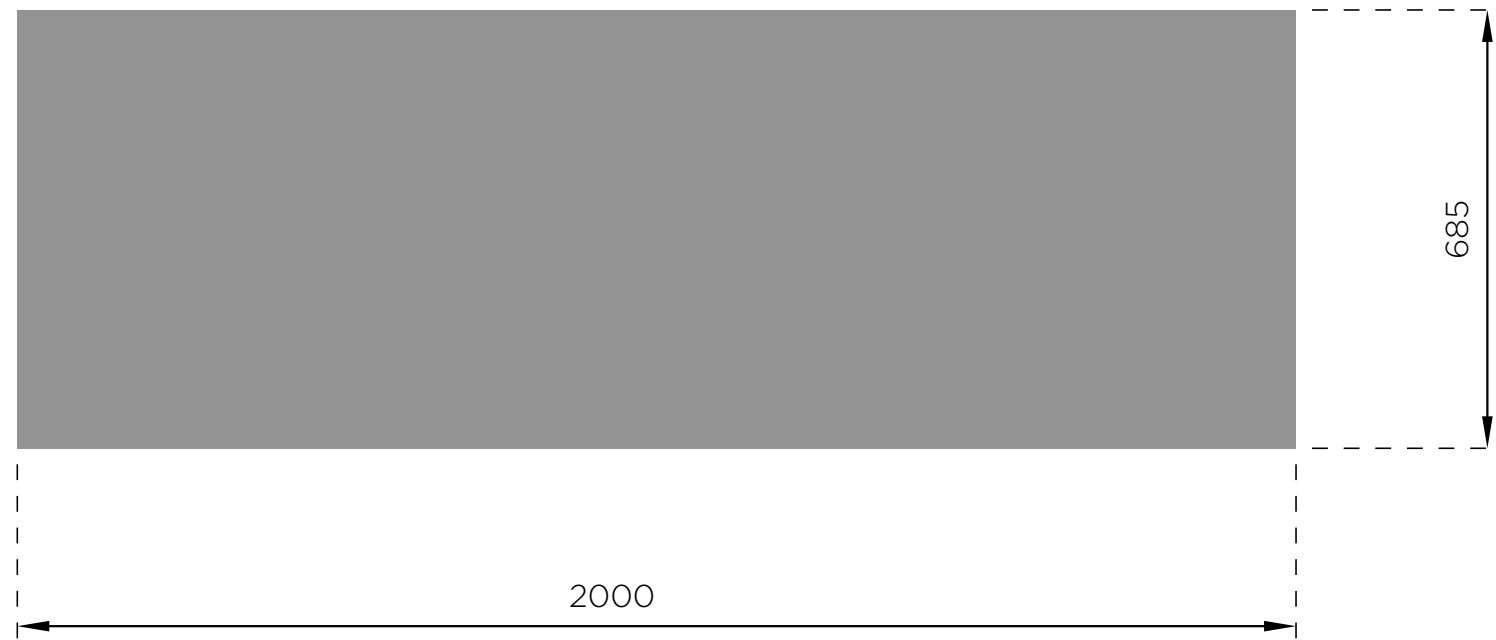
OPTION 01 - ALIGNED



PV ROCK ROOF ELEMENT

MOCK PV ELEMENT

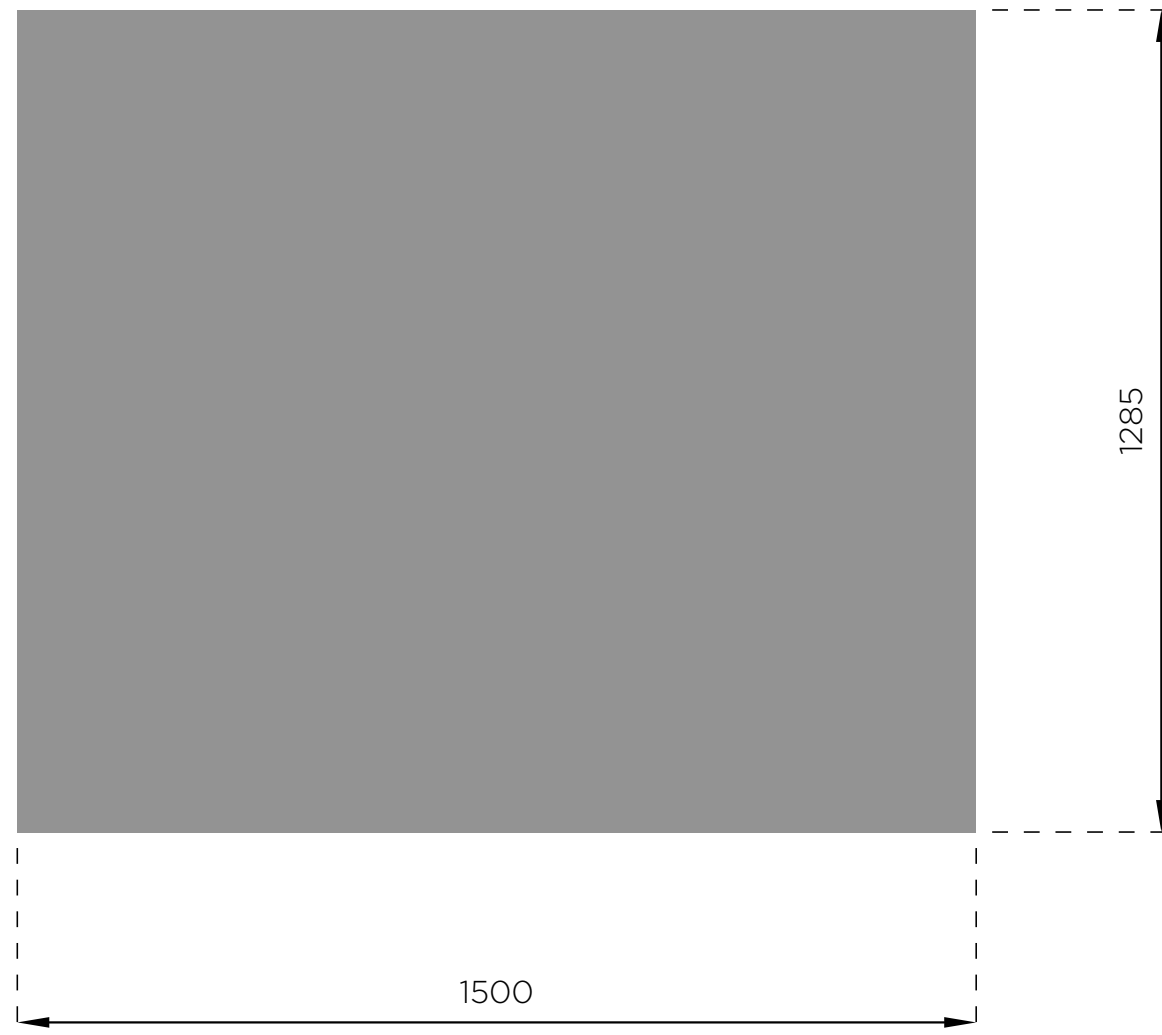
OPTION 02



 PV ROCK ROOF ELEMENT

 MOCK PV ELEMENT

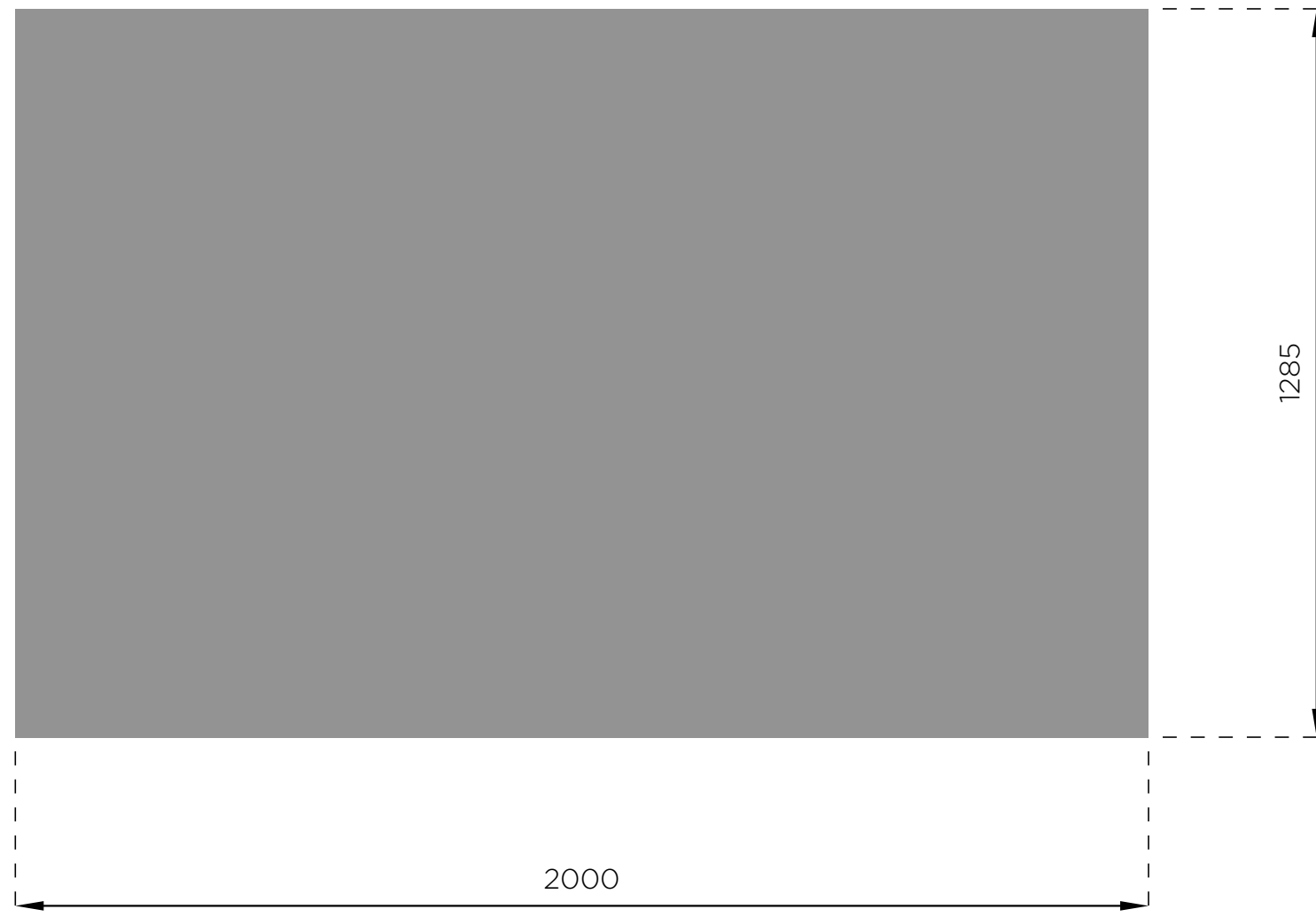
OPTION 03





PV ROCK ROOF ELEMENT

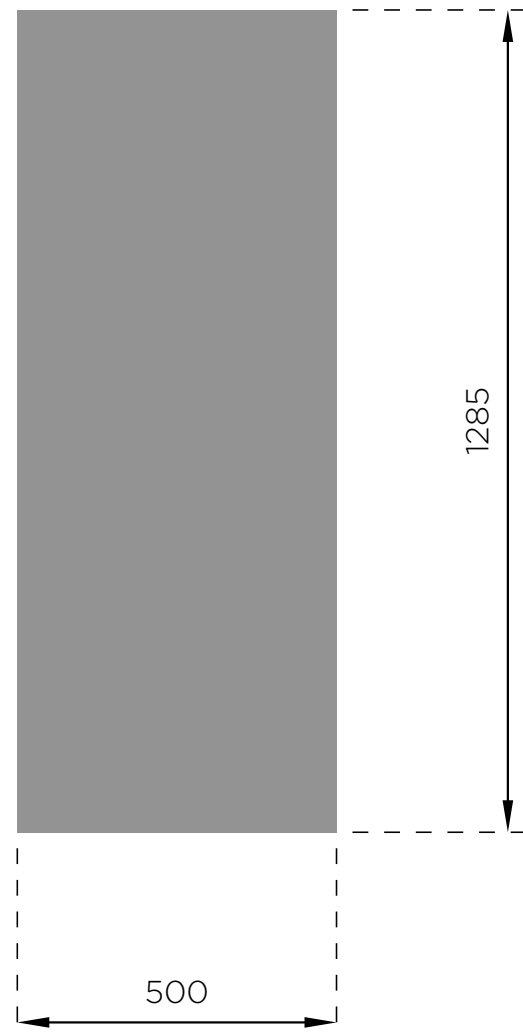
MOCK PV ELEMENT

OPTION 04



-  PV ROCK ROOF ELEMENT
-  MOCK PV ELEMENT

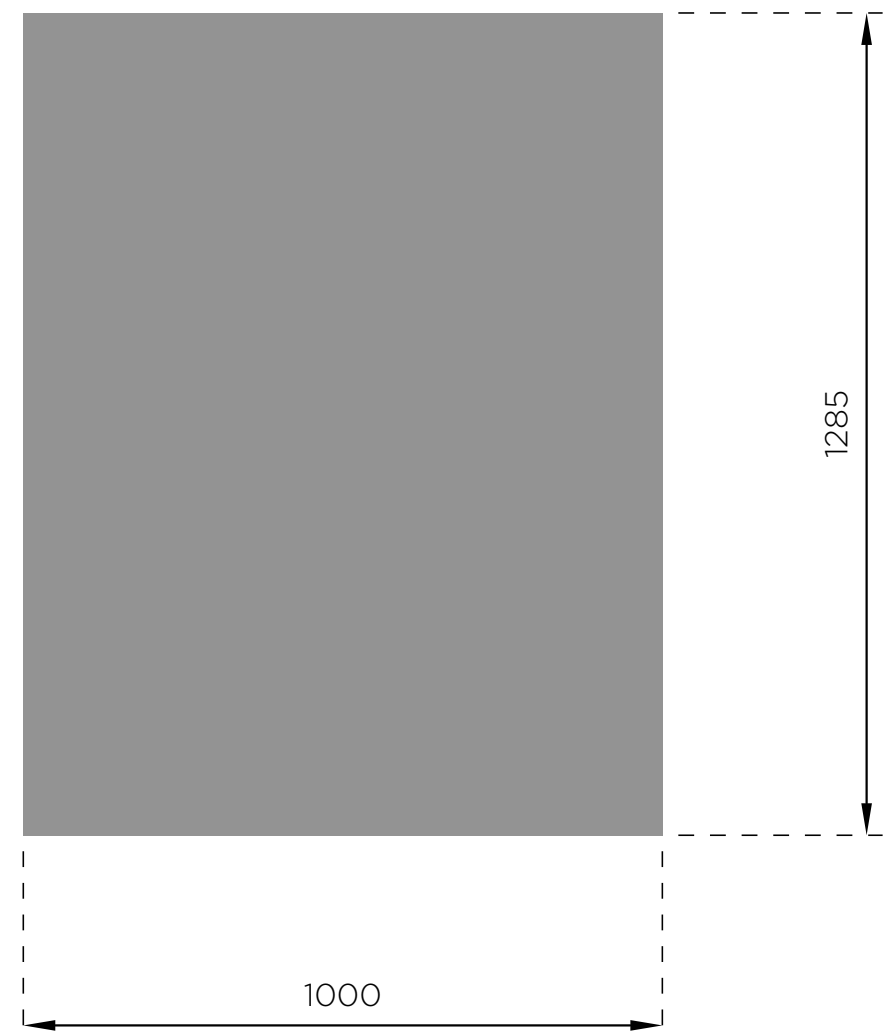
OPTION 05





 PV ROCK ROOF ELEMENT

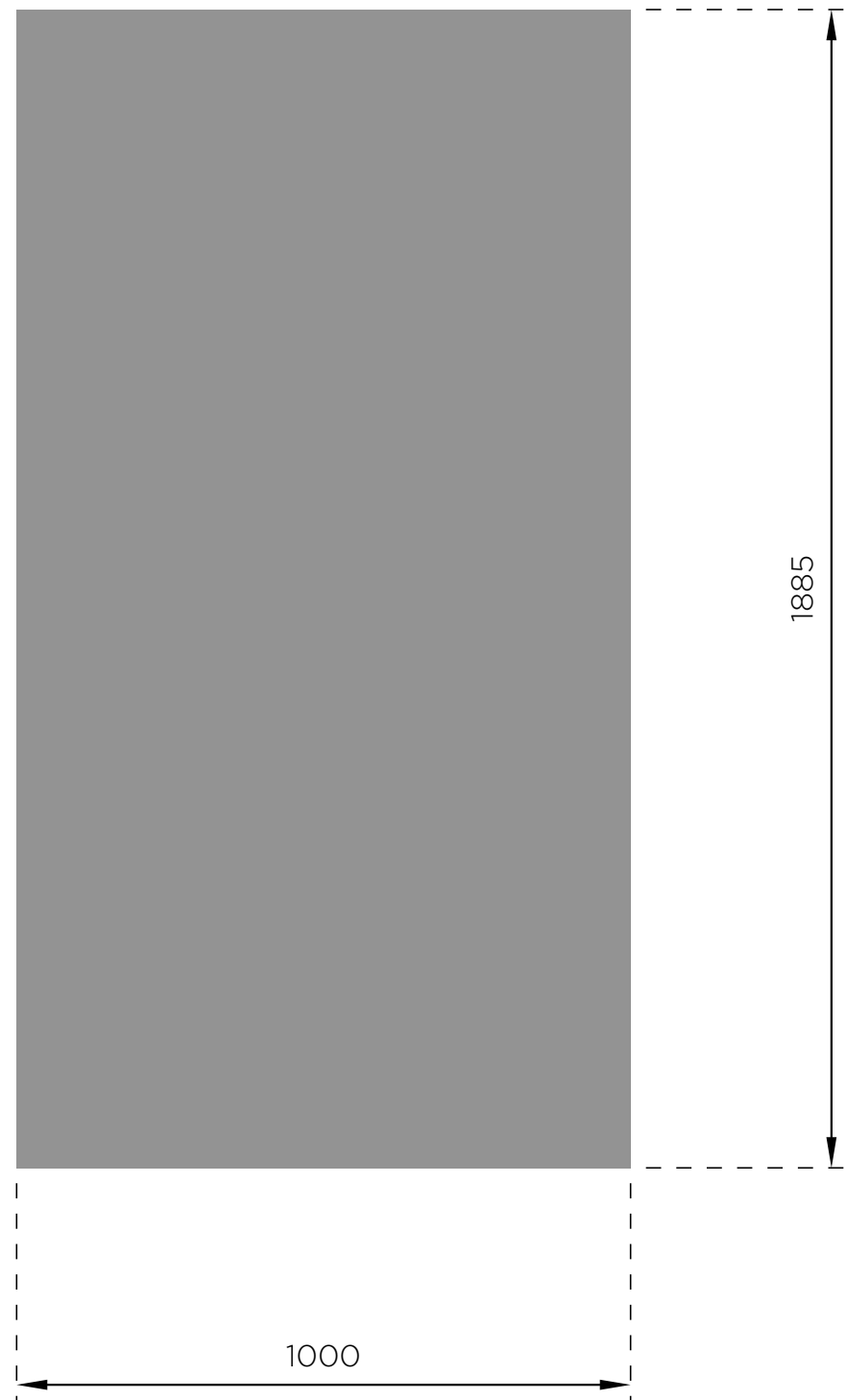
 MOCK PV ELEMENT

OPTION 06



-  PV ROCK ROOF ELEMENT
-  MOCK PV ELEMENT

OPTION 07



 PV ROCK ROOF ELEMENT

 MOCK PV ELEMENT