

Into the climate

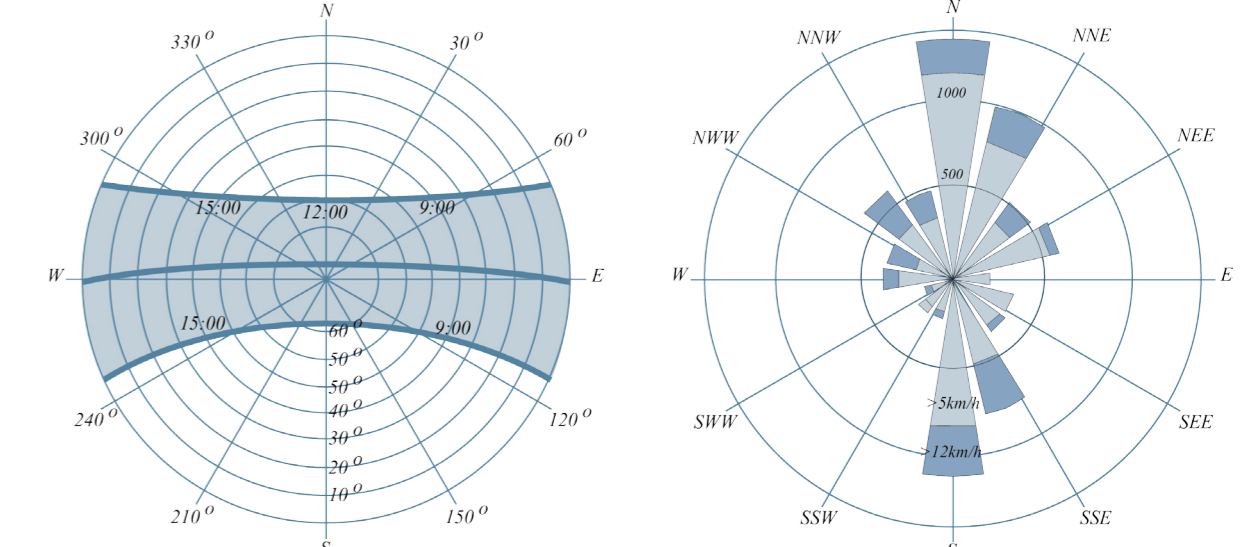
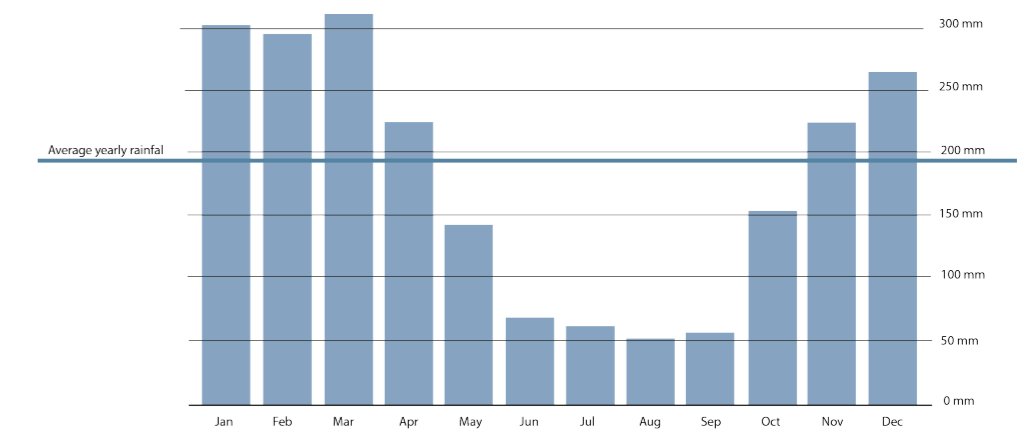
Introduction



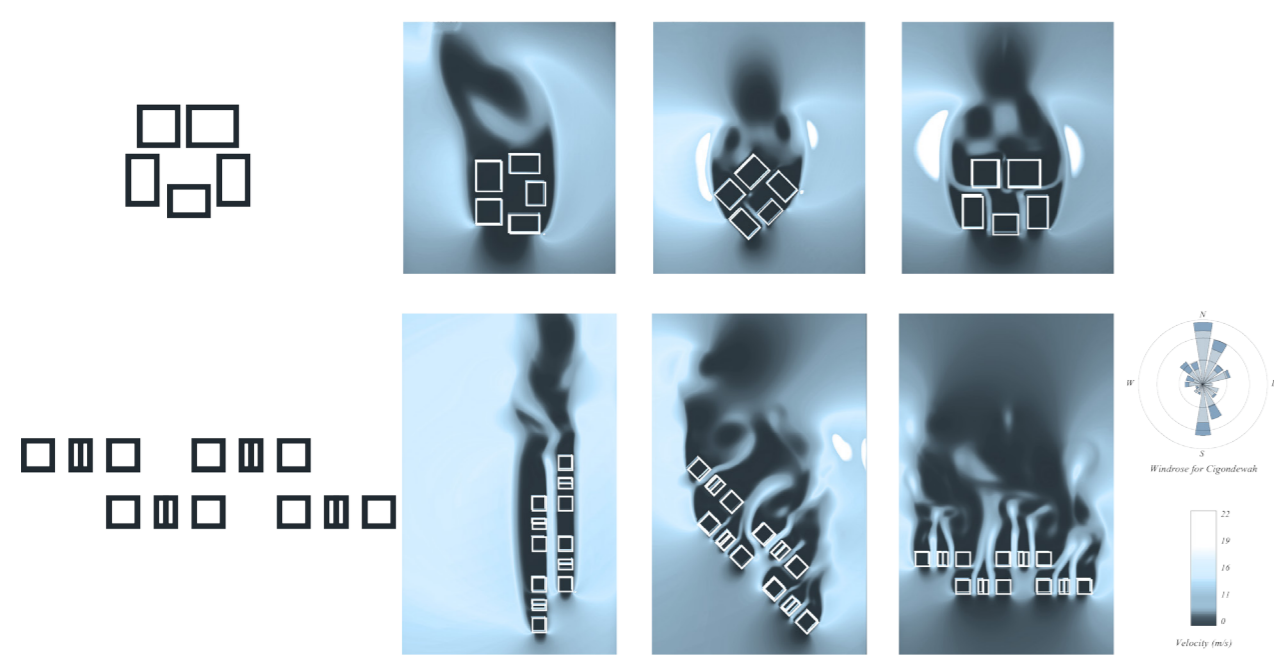
1. Location - Indonesia, Bandung, Cigondewah



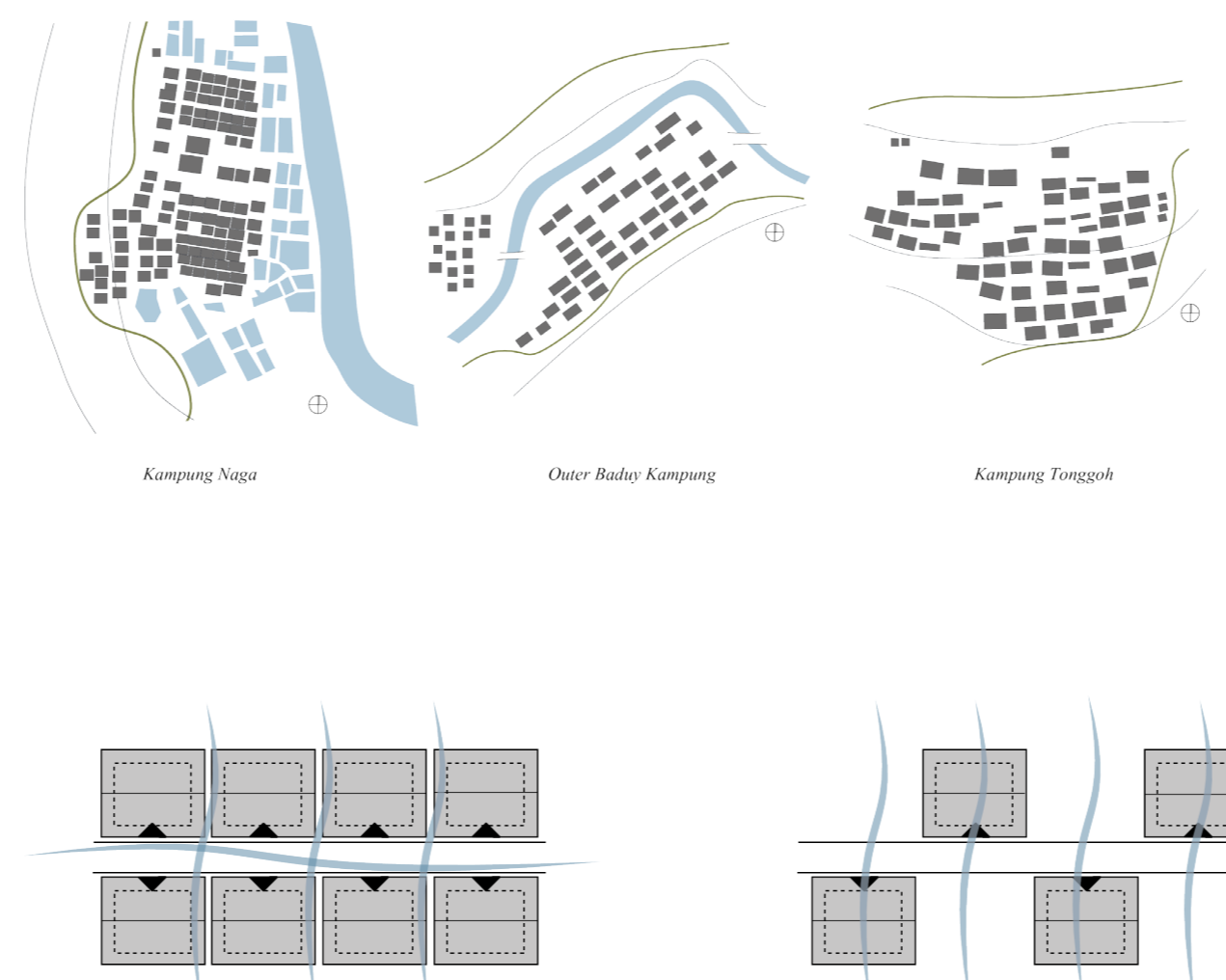
2. Situation - Cigondewah, kampungs RW2 and RW12



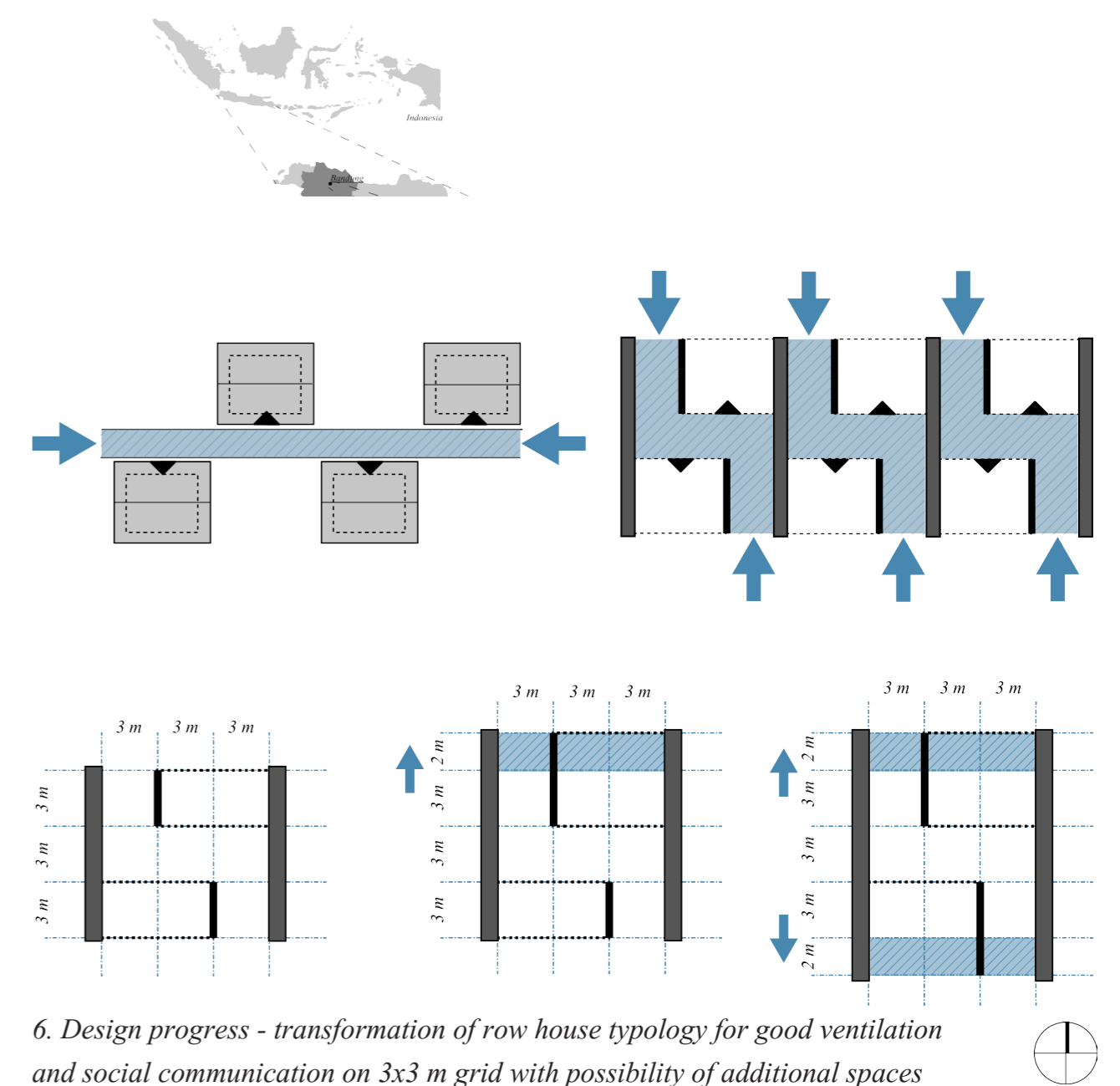
3. Climate data for Cigondewah - rainfall, sun path and wind speed and direction



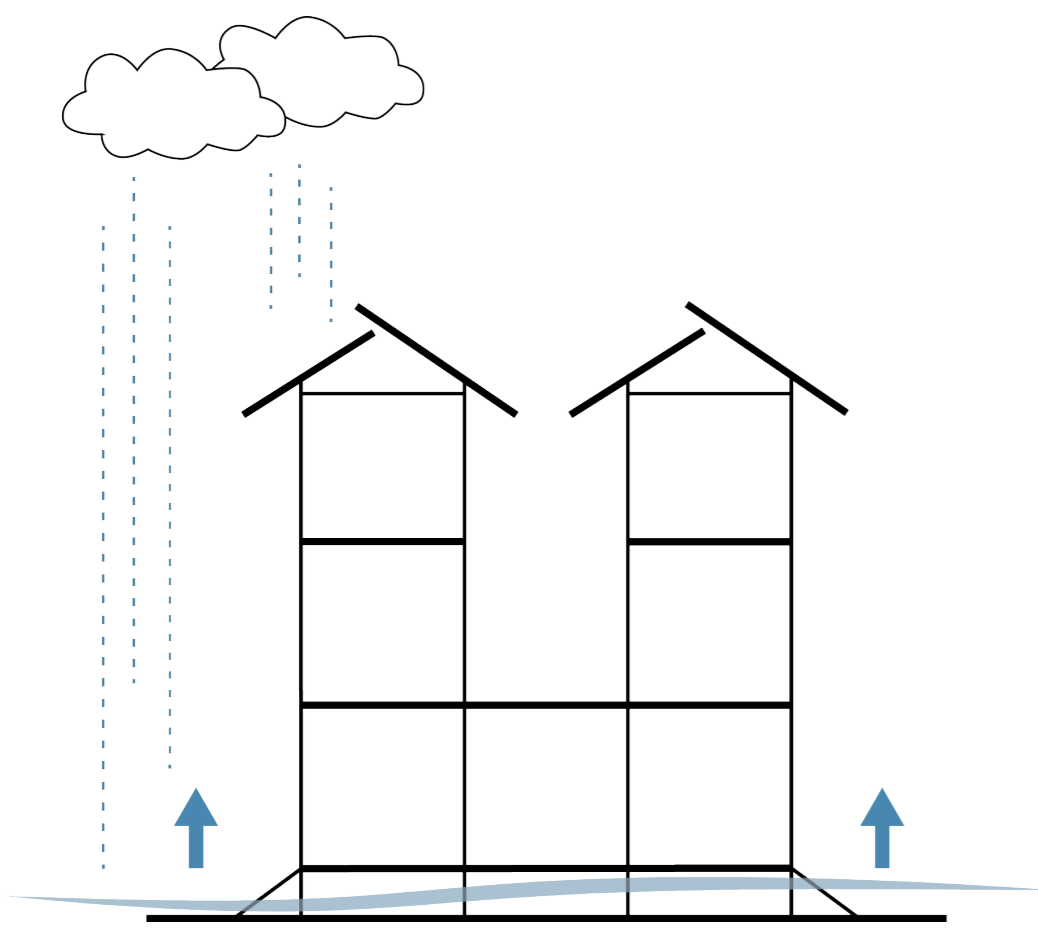
4. Wind analysis - courtyard typology and row house typology



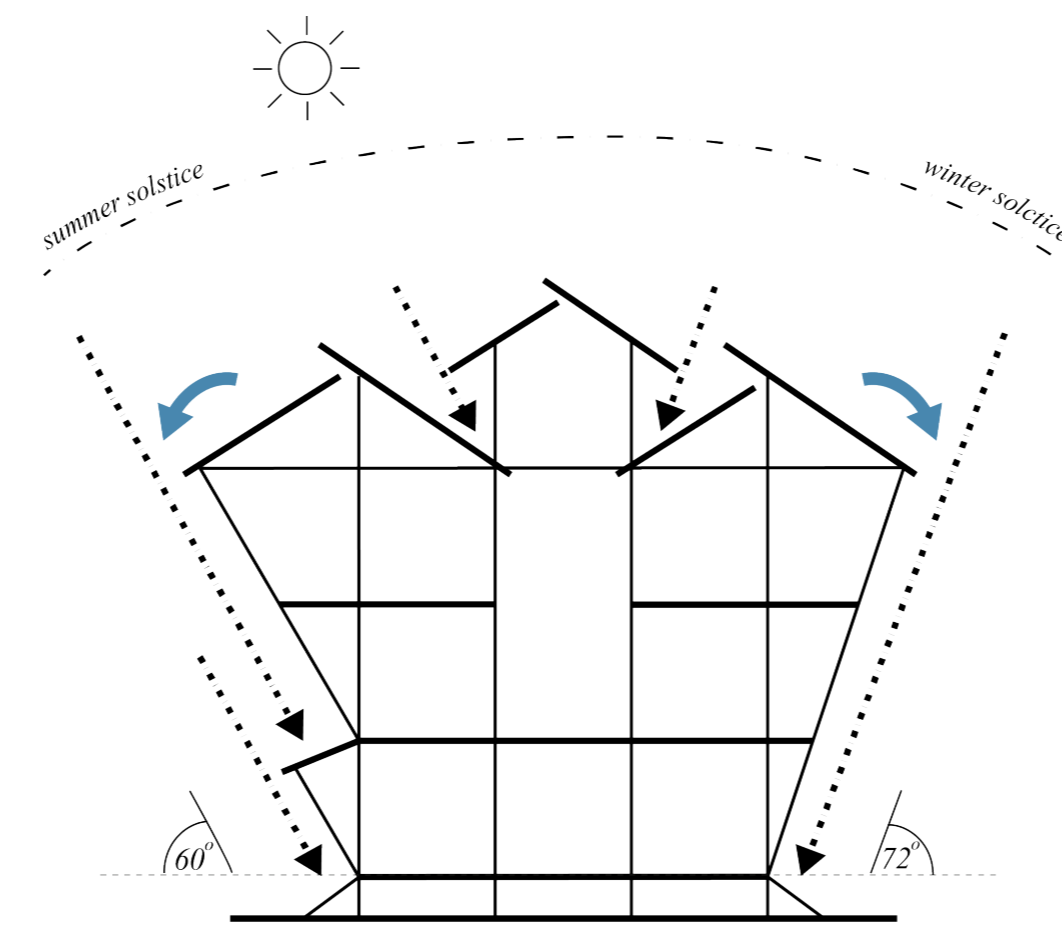
5. Vernacular urban layout and ventilation



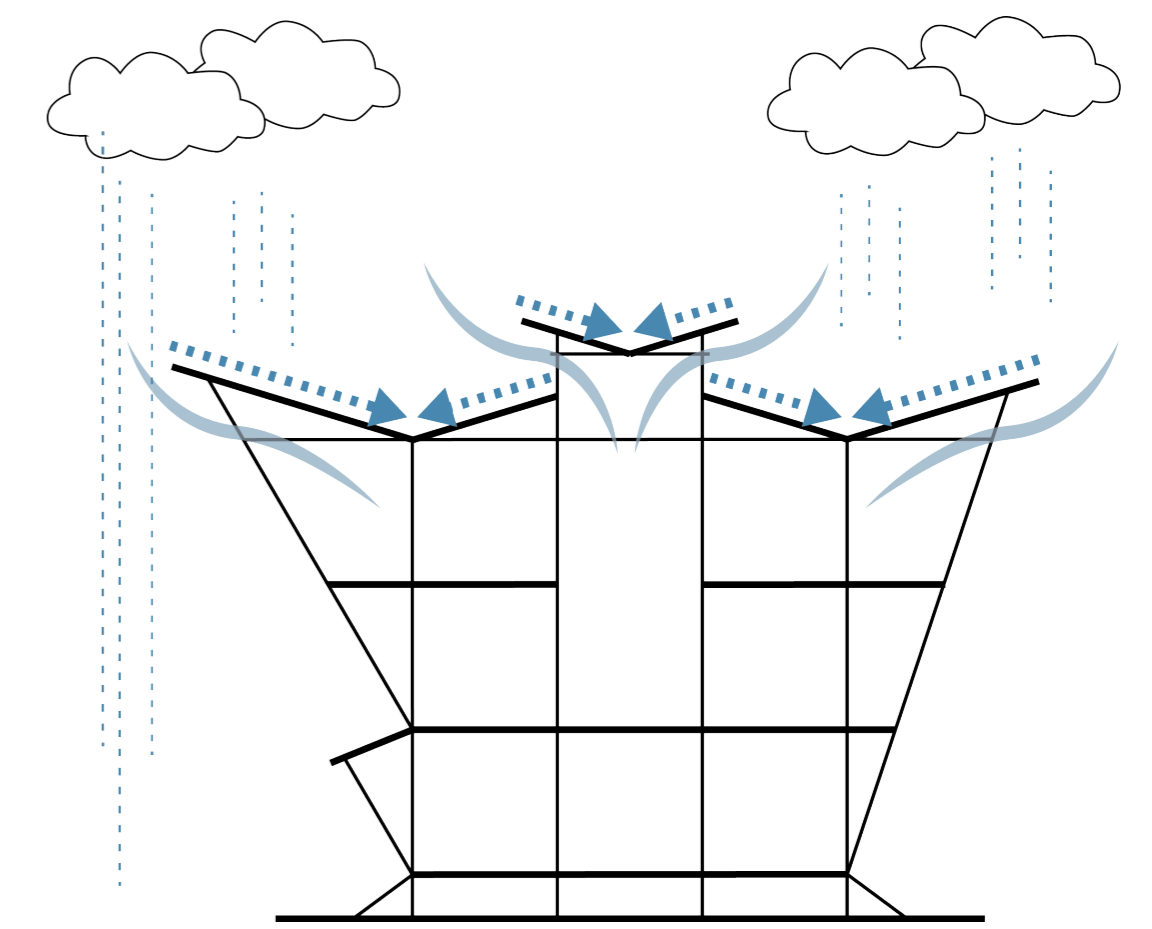
6. Design progress - transformation of row house typology for good ventilation and social communication on 3x3 m grid with possibility of additional spaces



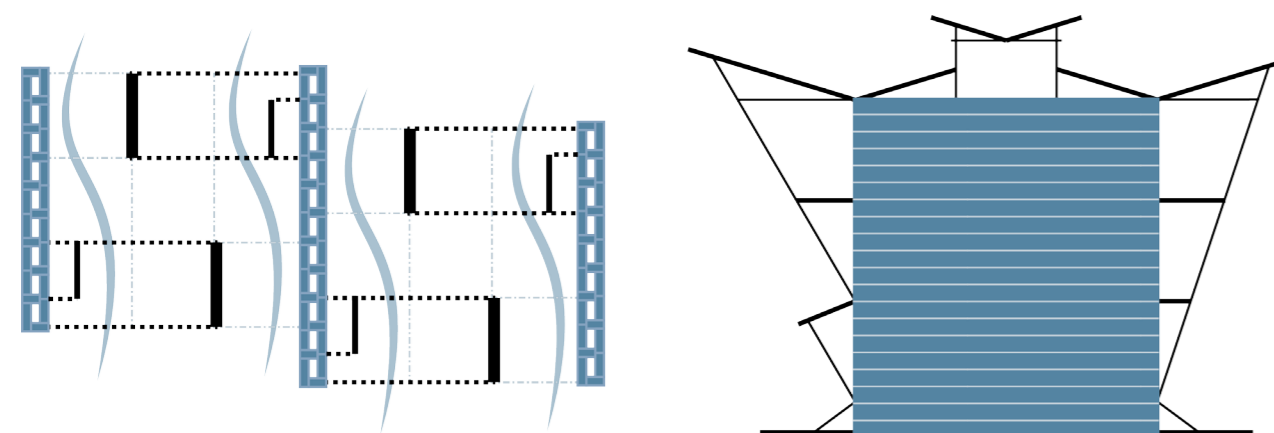
7. Climatic principles - step 1 - lifting the house for better ventilation and flood protection



8. Climatic principles - step 2 - tilting the facades to the front to achieve shade all year round

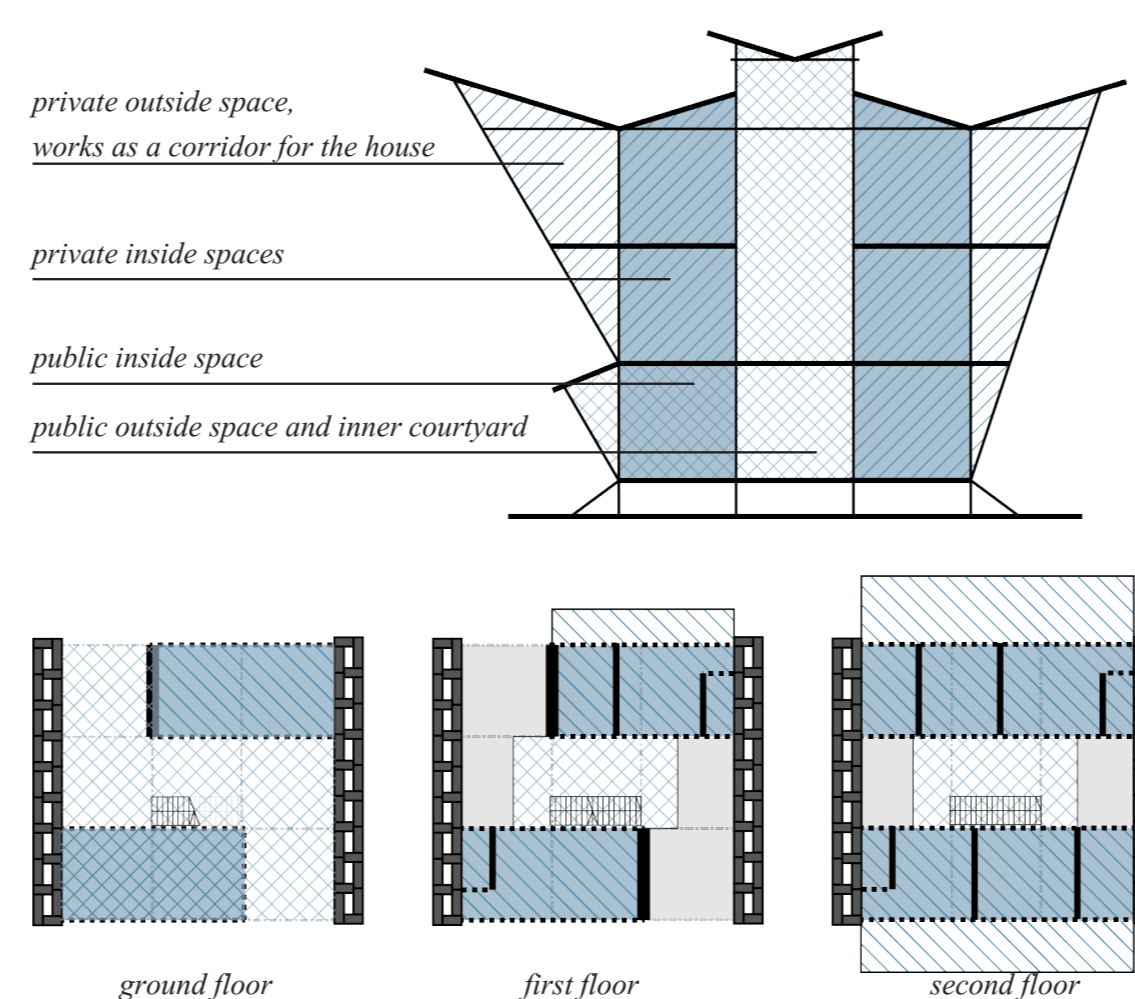


9. Climatic principles - step 3 - adding butterfly roof for better ventilation and rainwater collection

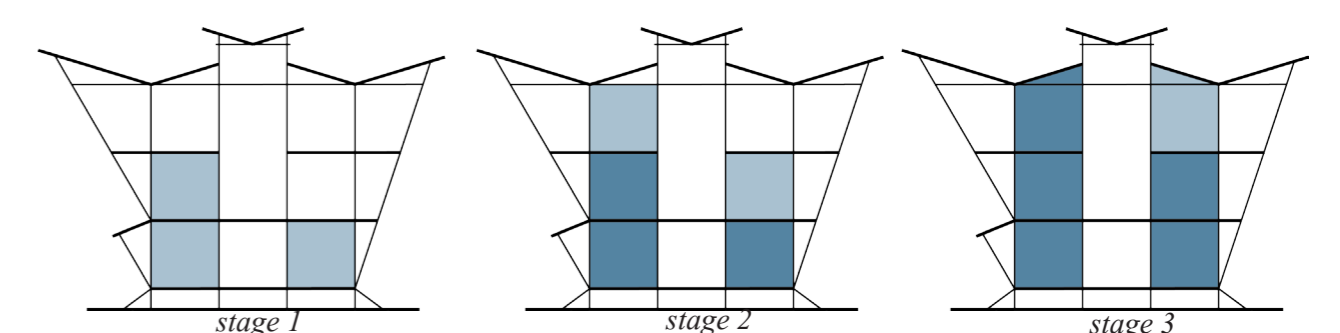


- advantages of rammed earth brick wall:
1. shared wall with two buildings
 2. hiding space for all installations allowing the structure to be fully open
 3. directing the wind through the building
 4. keeping the humidity inside the building on the level of 55%
 5. sound insulation and fire wall

10. Solid rammed earth walls and its advantages



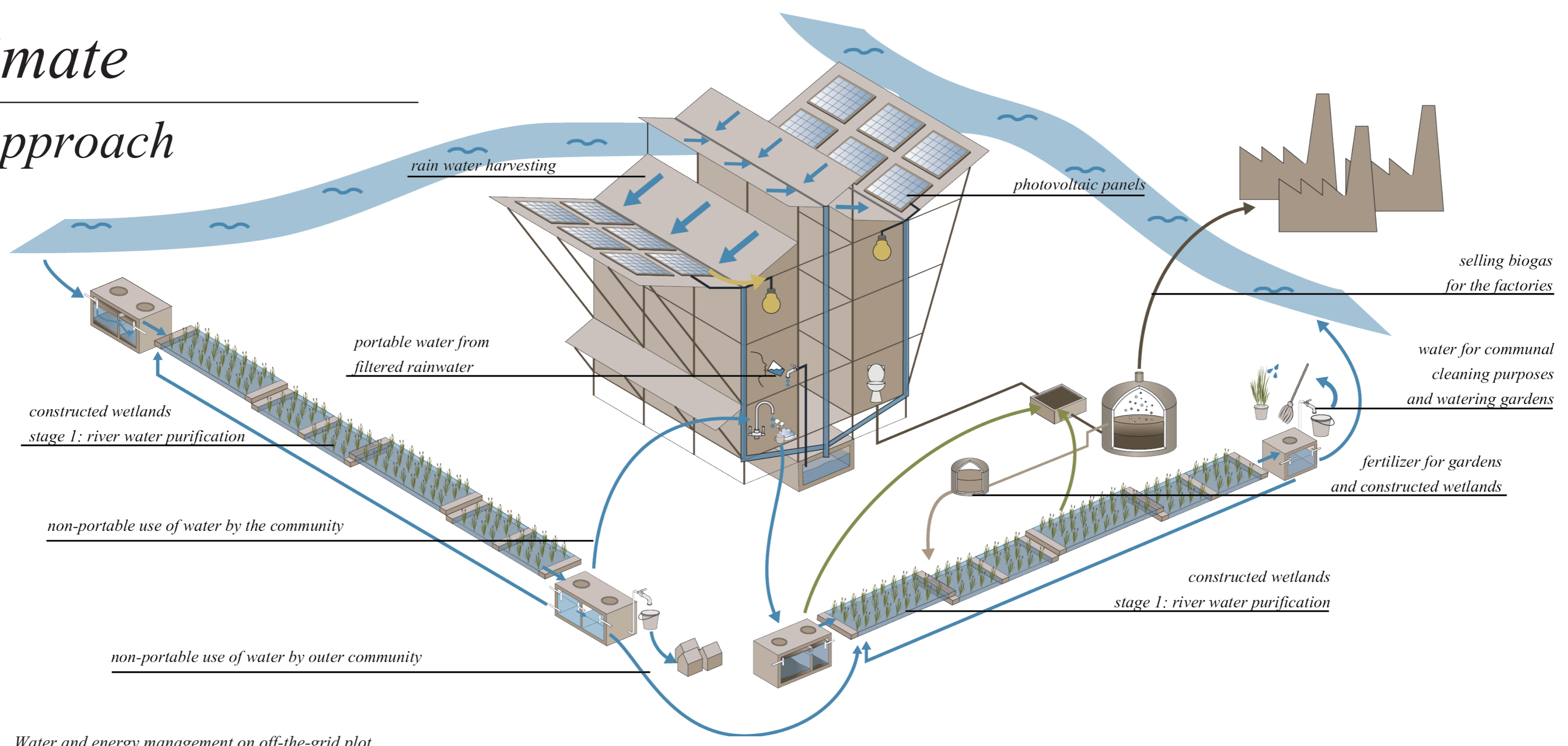
11. Zoning of the building - public and private, inside and outside



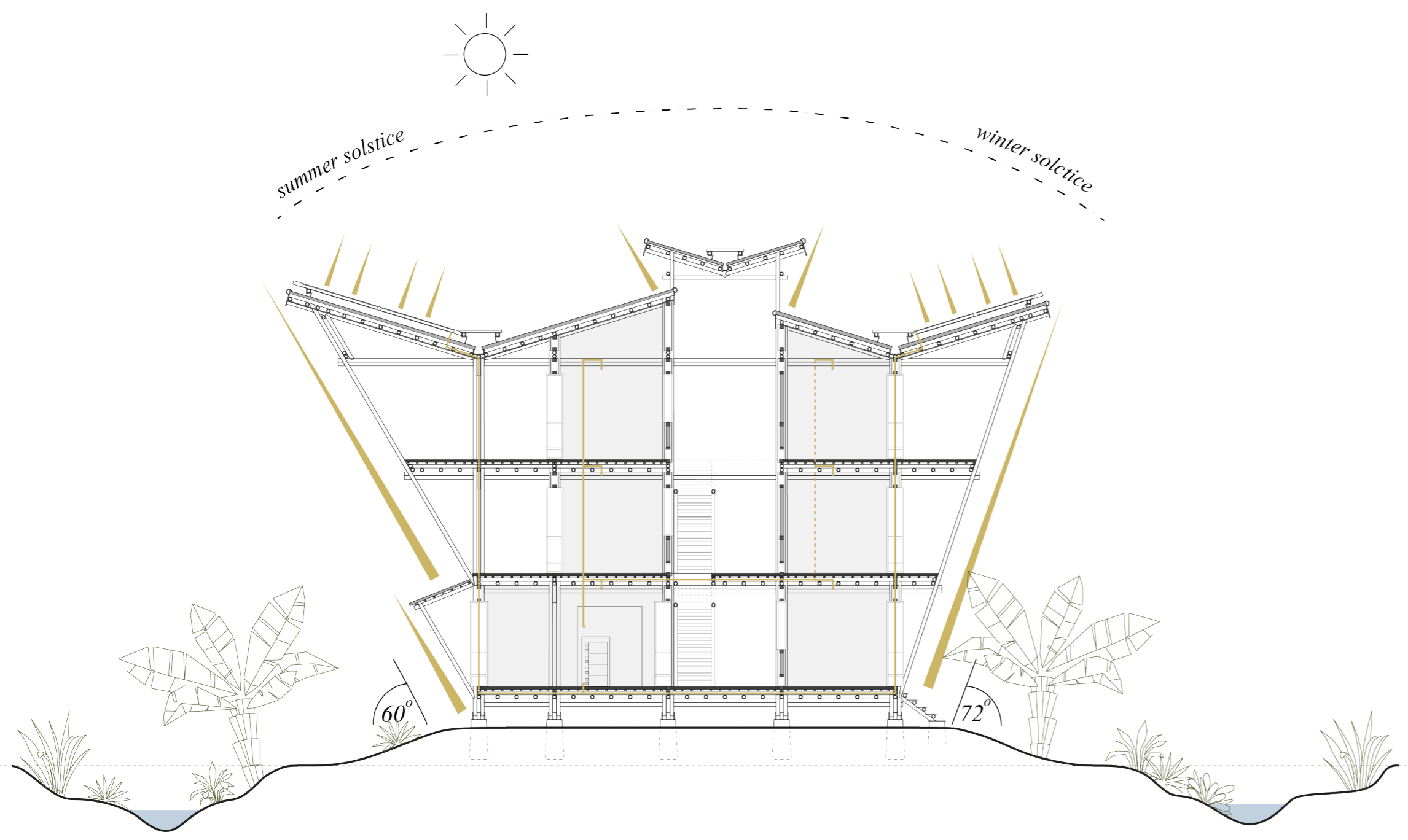
12. Incrementality

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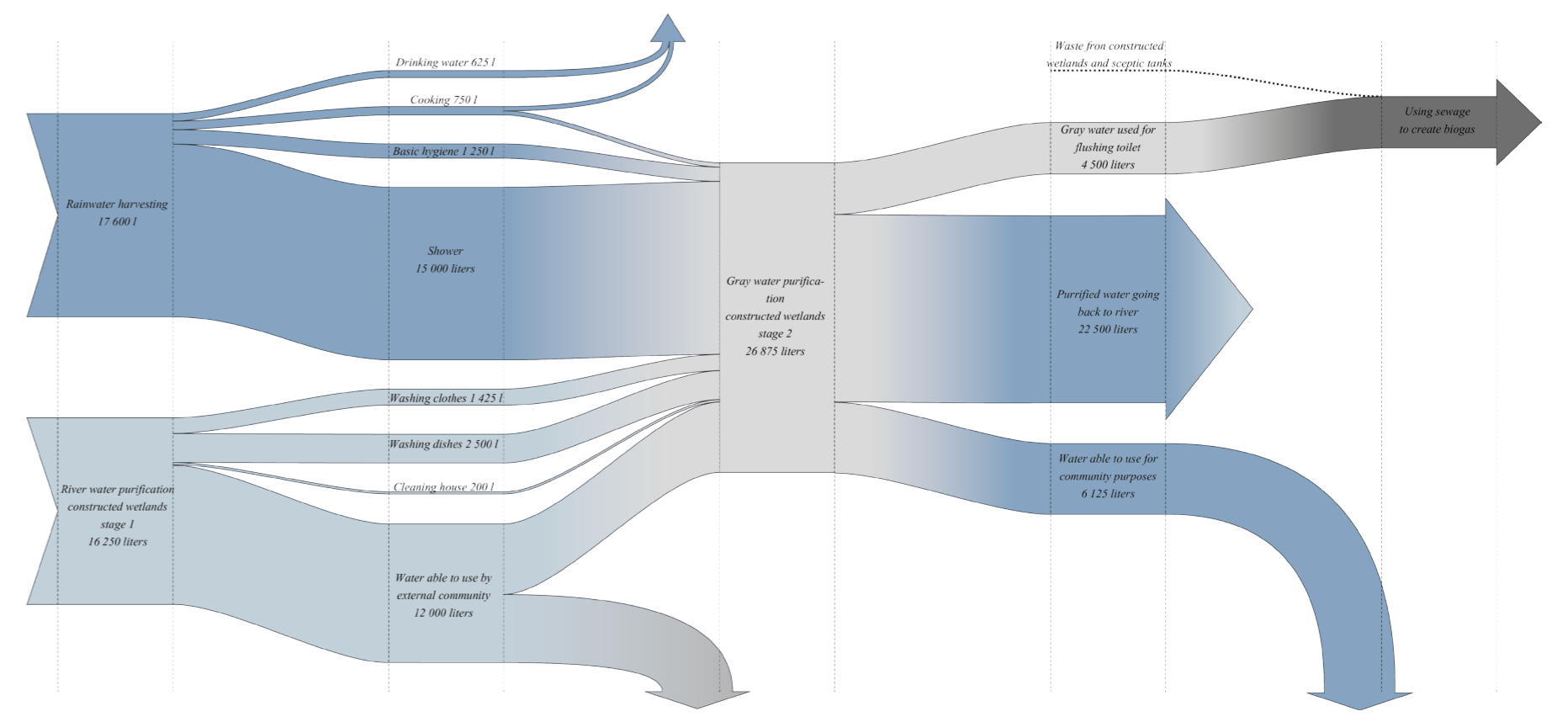
Sustainable approach



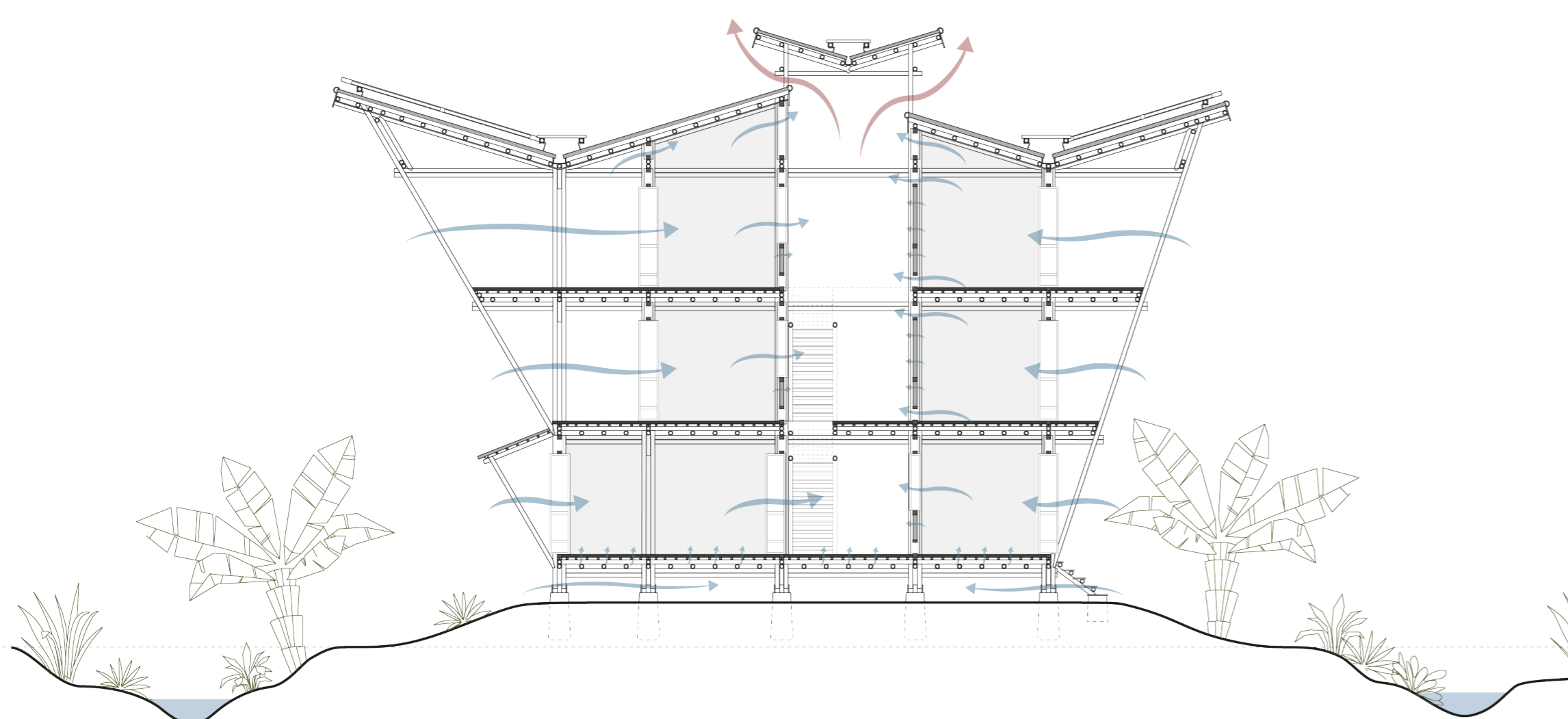
Water and energy management on off-the-grid plot



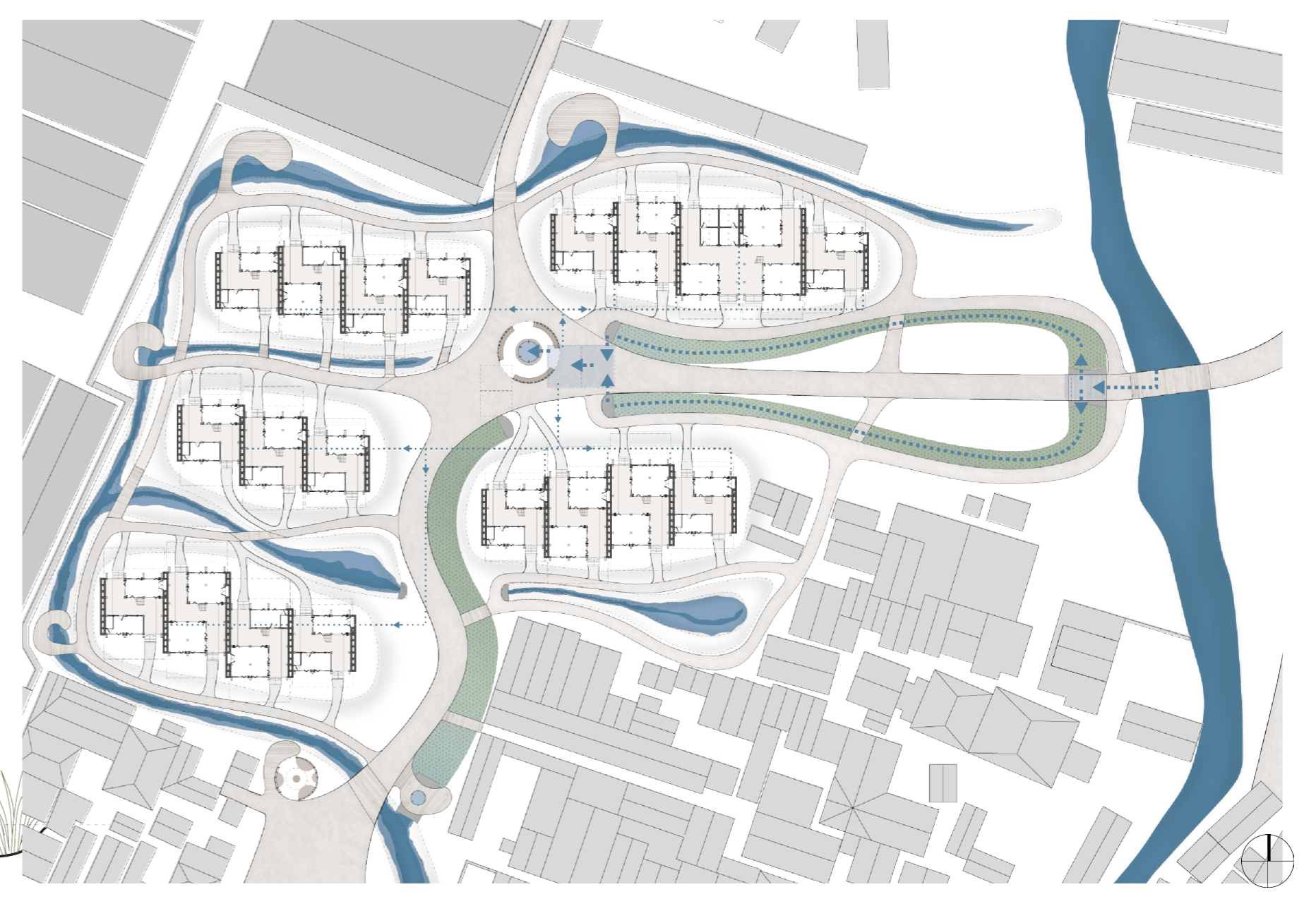
Sun protection and gaining the energy form it



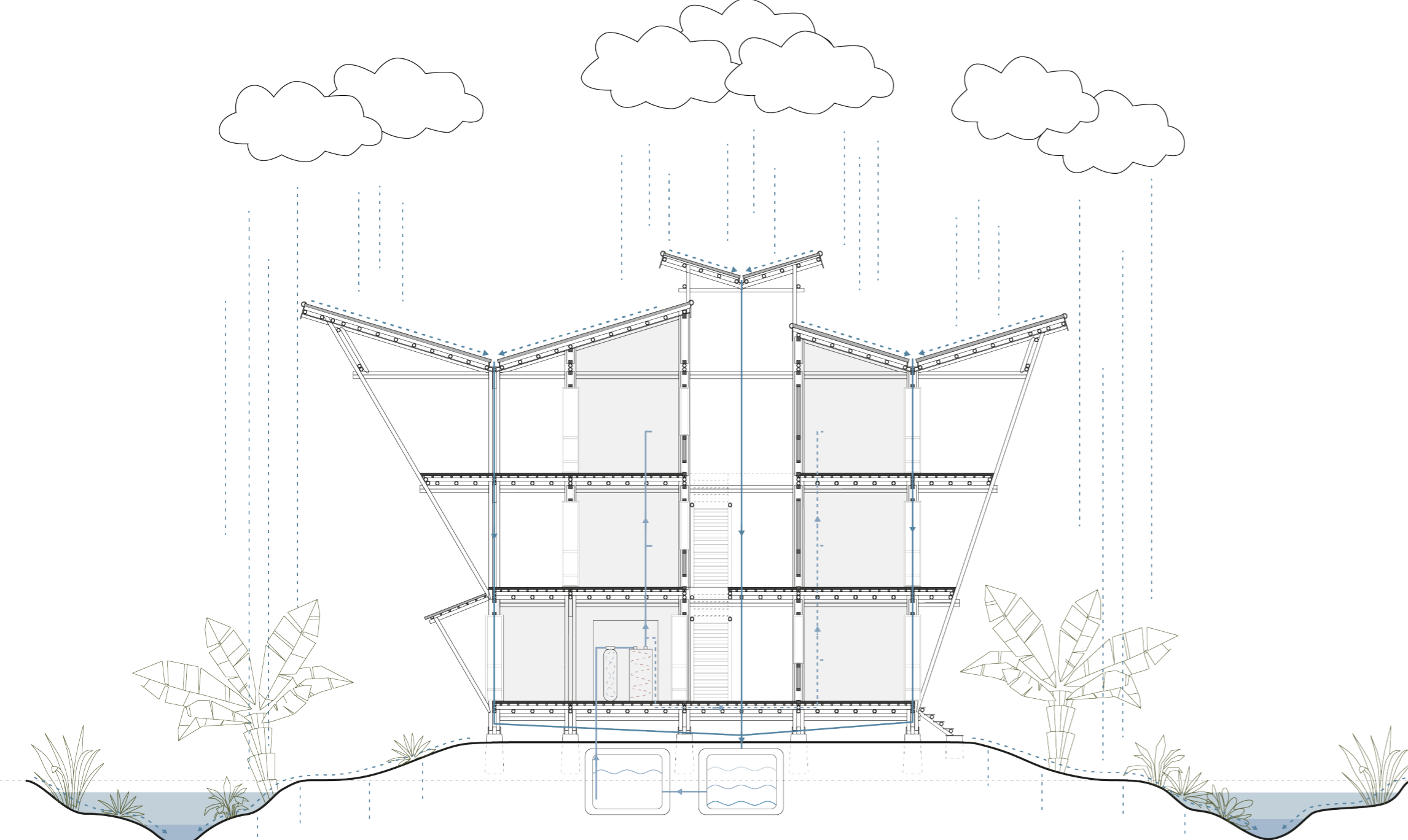
Water flow diagram



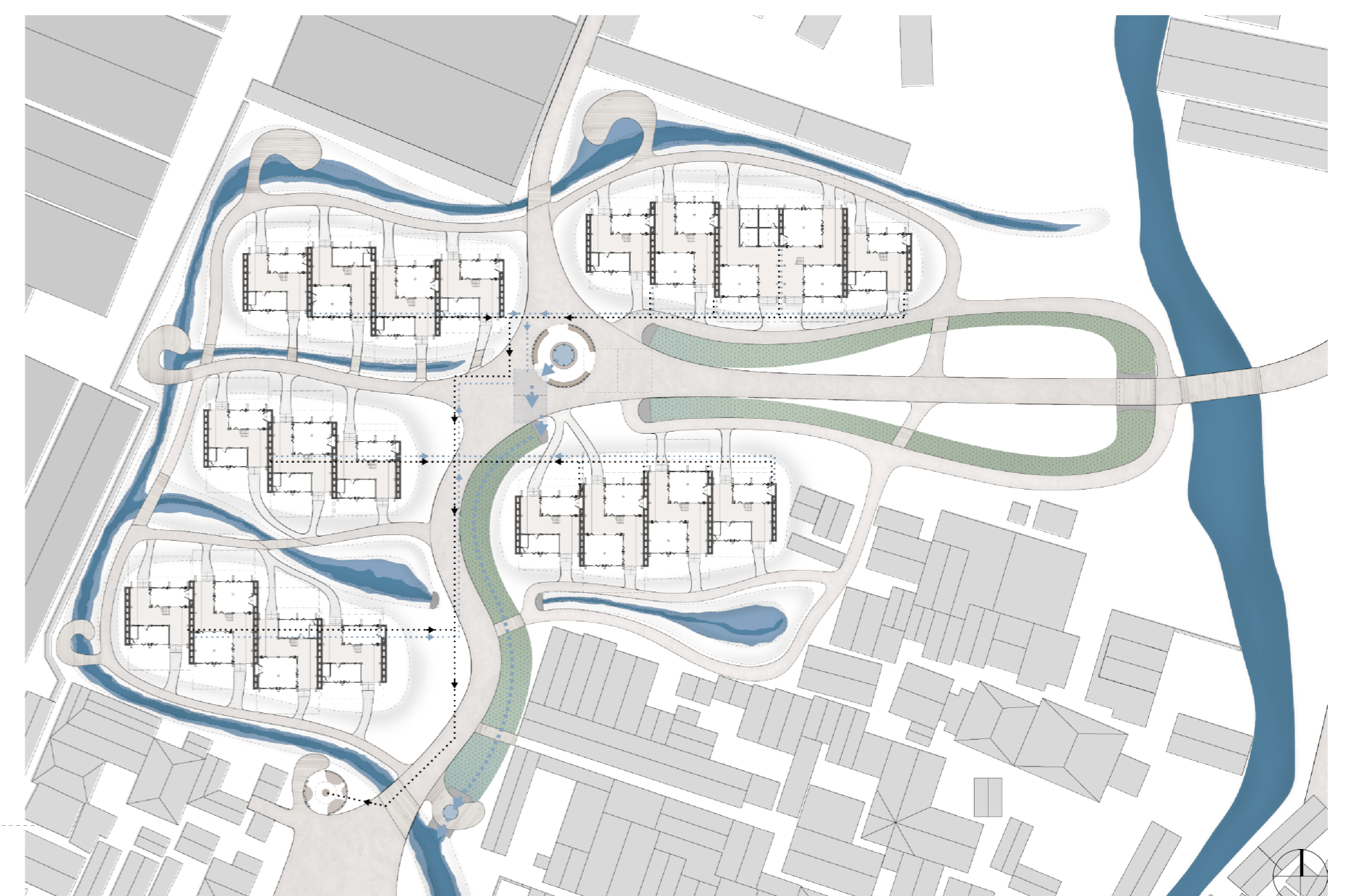
Ventilation through permeable structure



River water purification through constructed wetland system



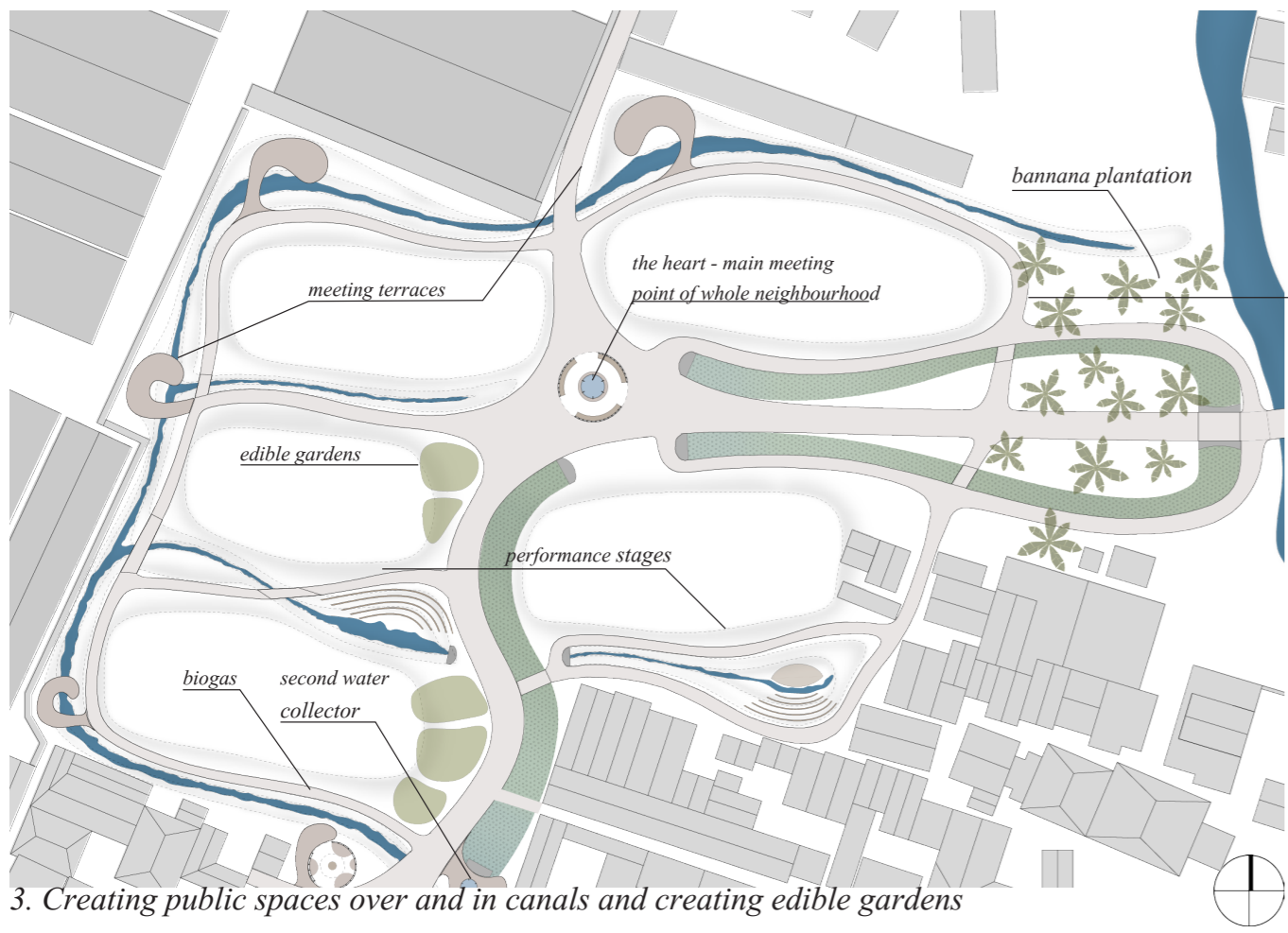
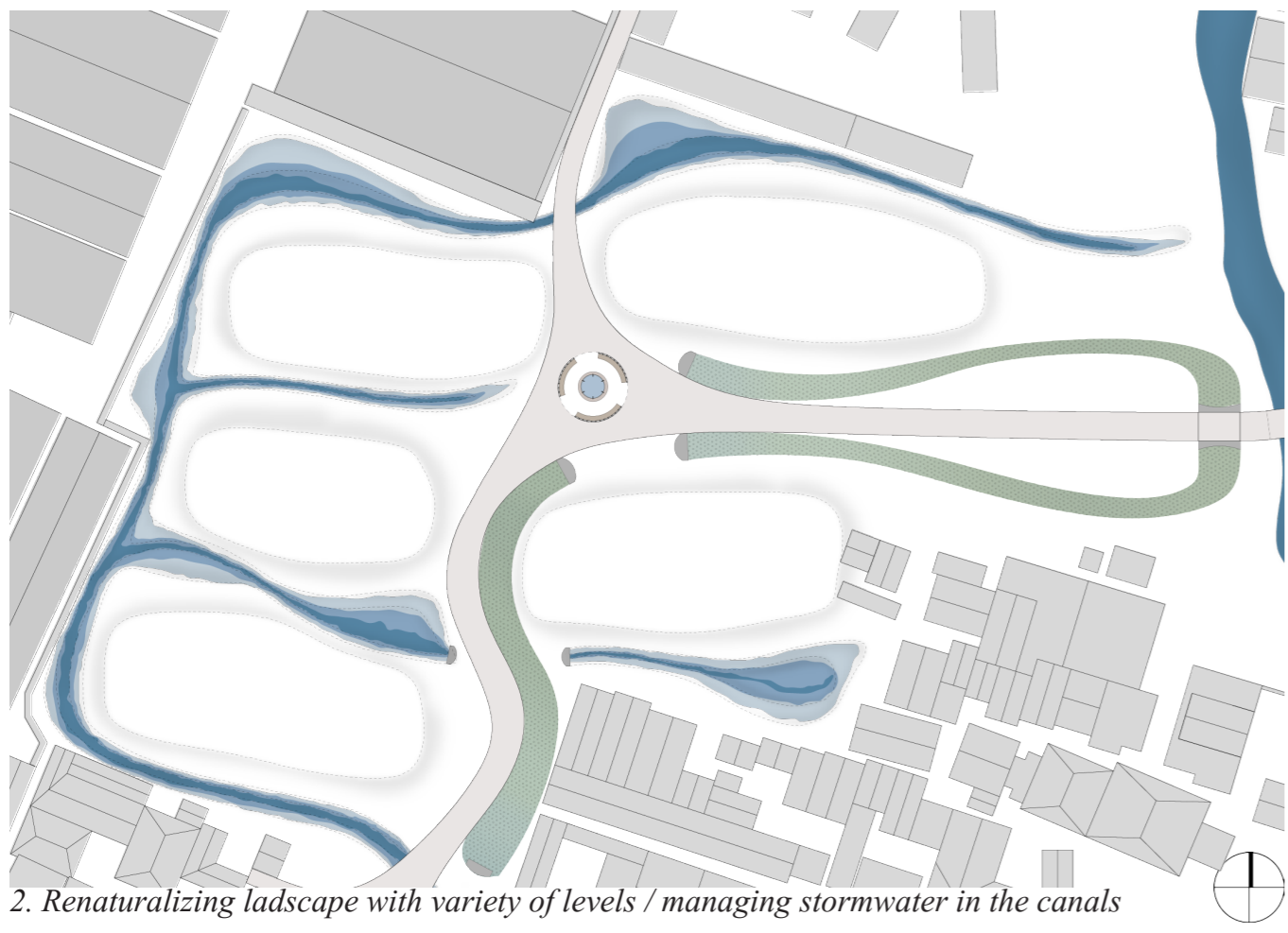
Rain water harvesting and stormwater management



Gray and black water management

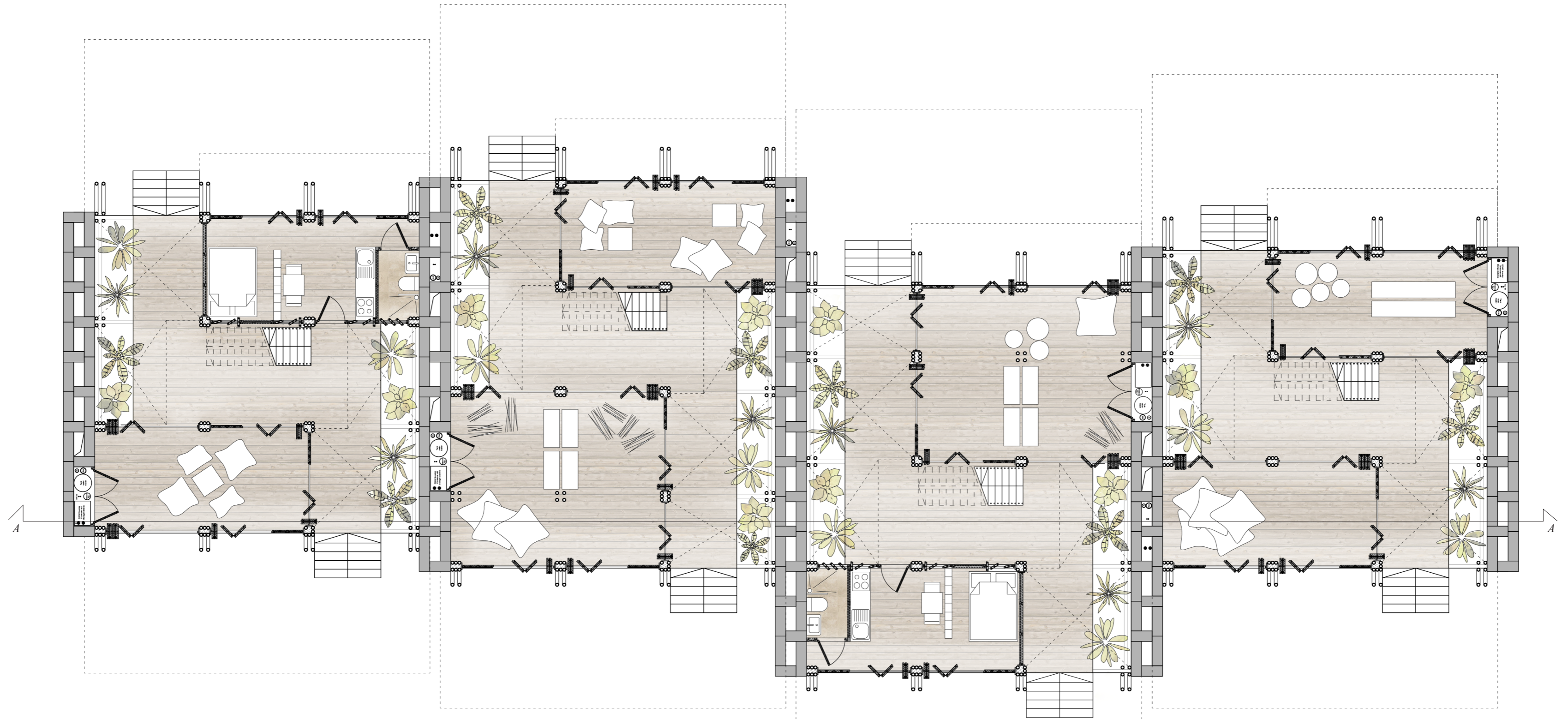
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Urban plan



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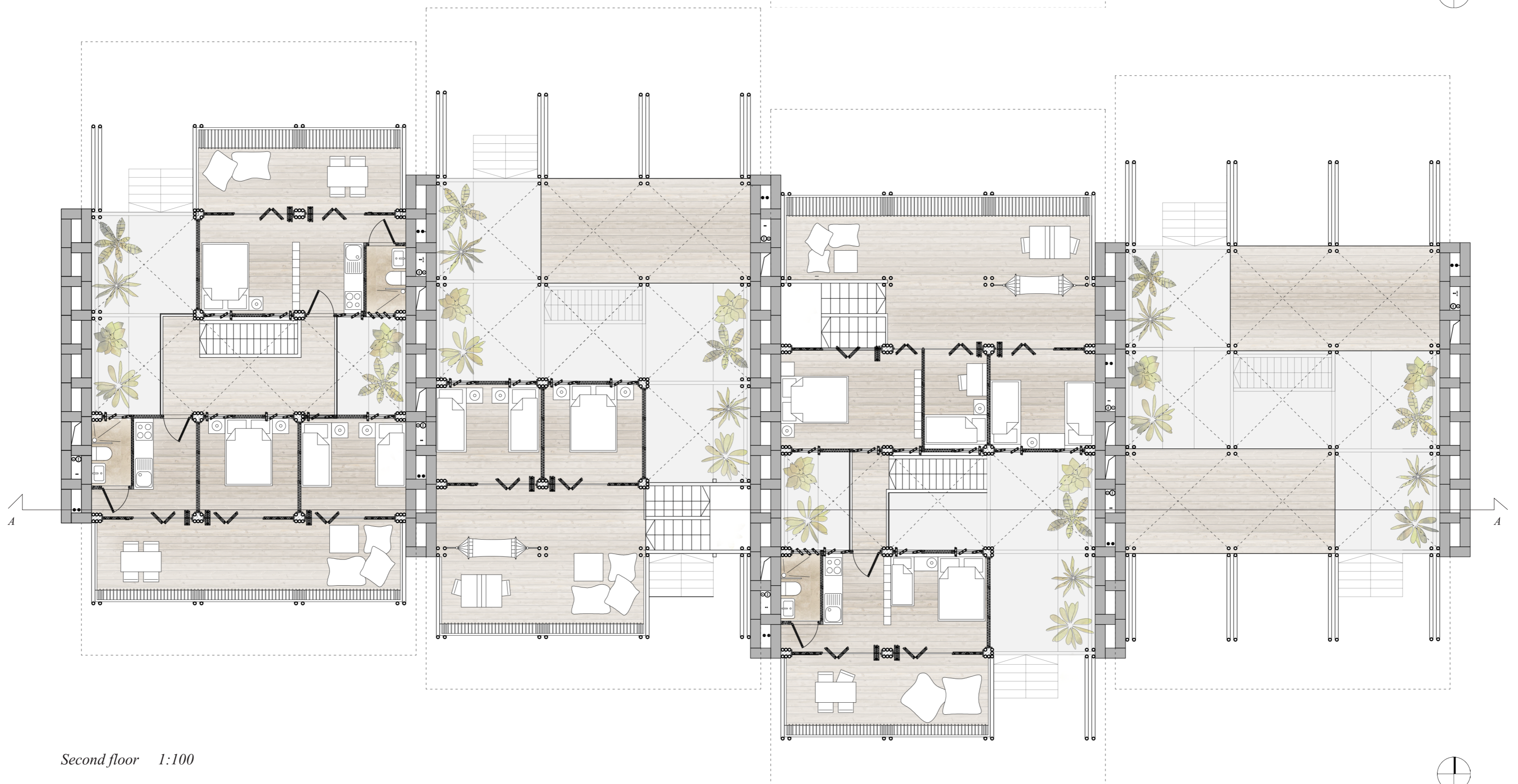
Different ways of developing typology 1:100



Ground floor 1:100



First floor 1:100



Second floor 1:100

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Facades 1:100



North facade 1:100



Inner facade section A-A 1:100



South facade 1:100



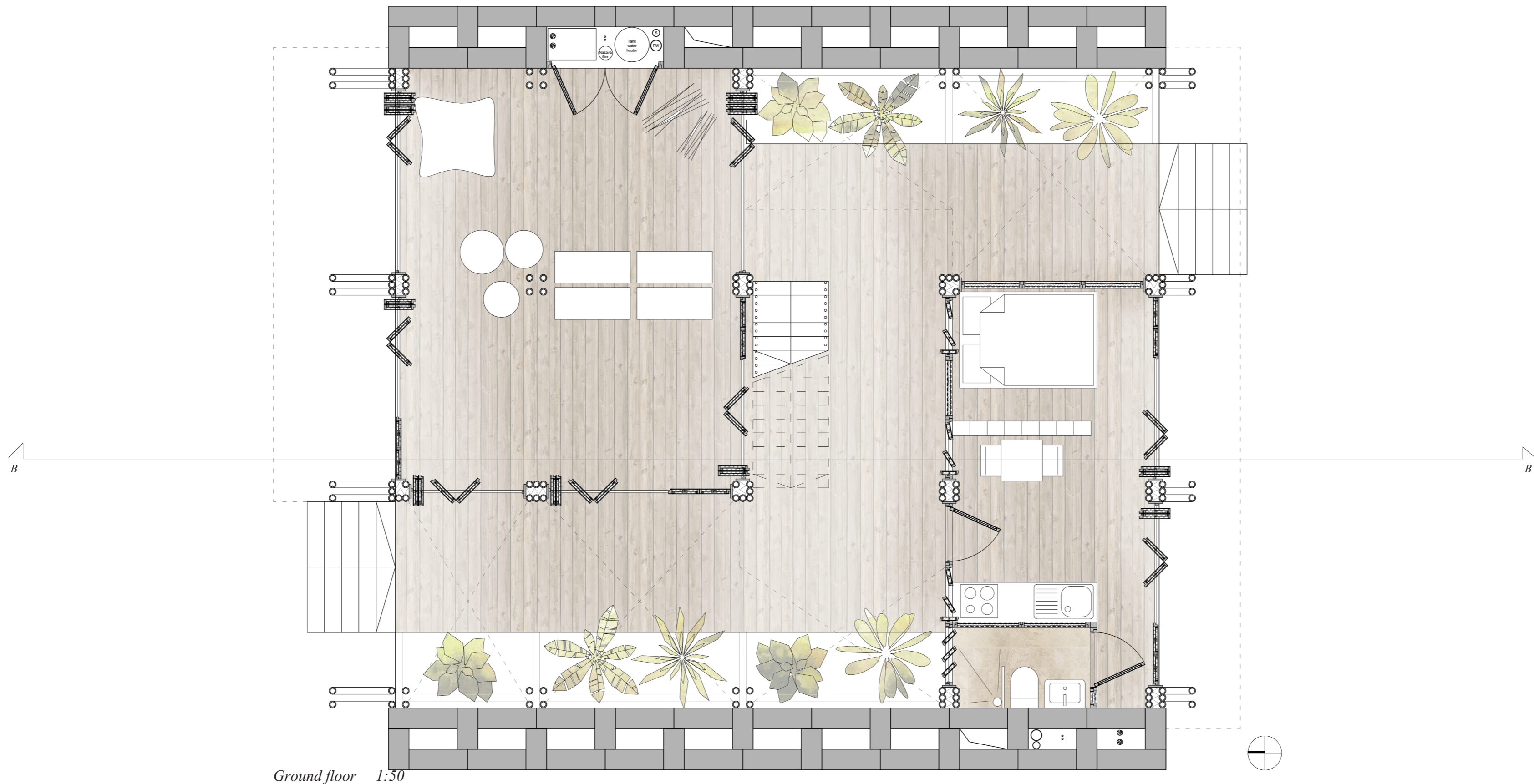
Vista



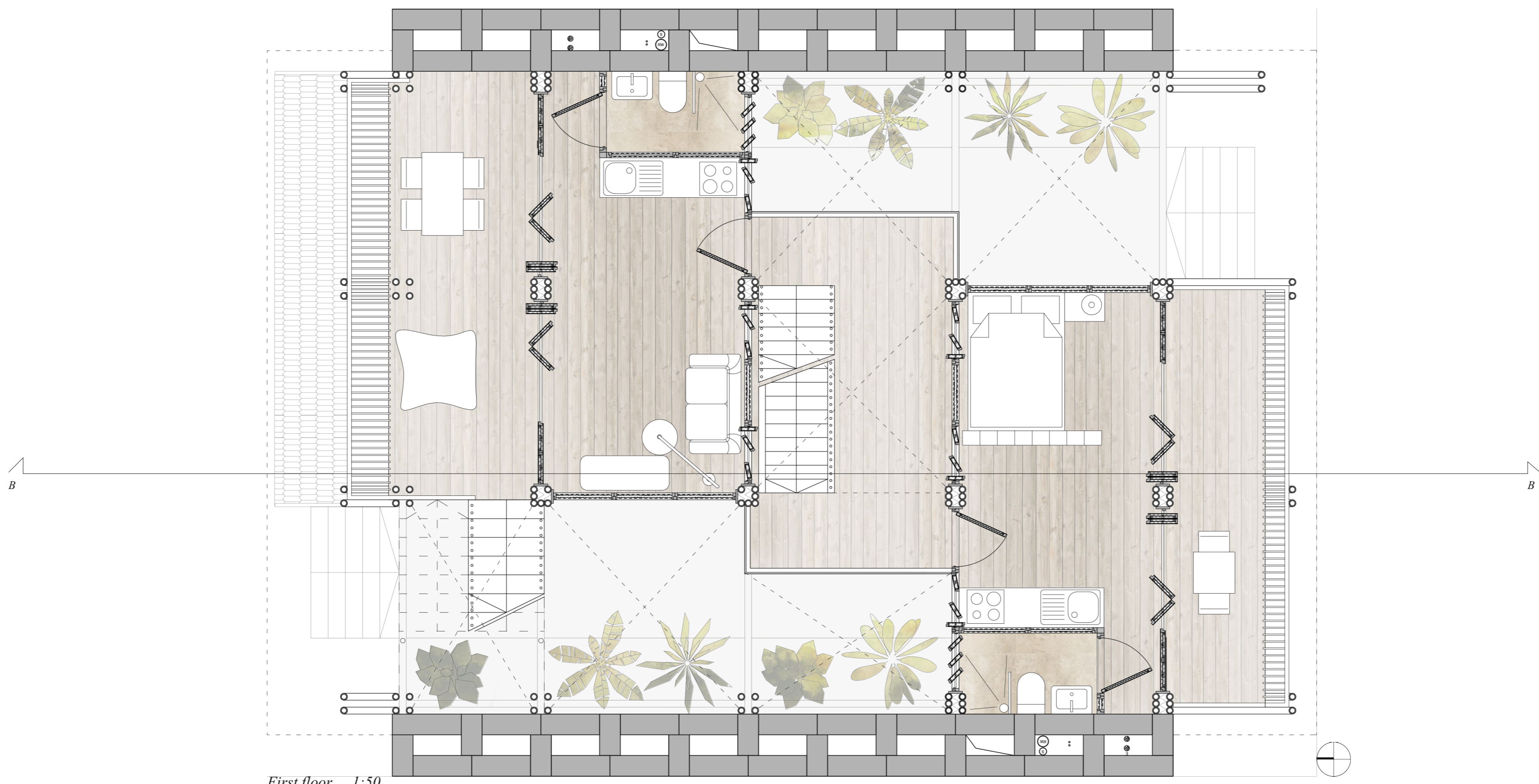
West facade 1:100

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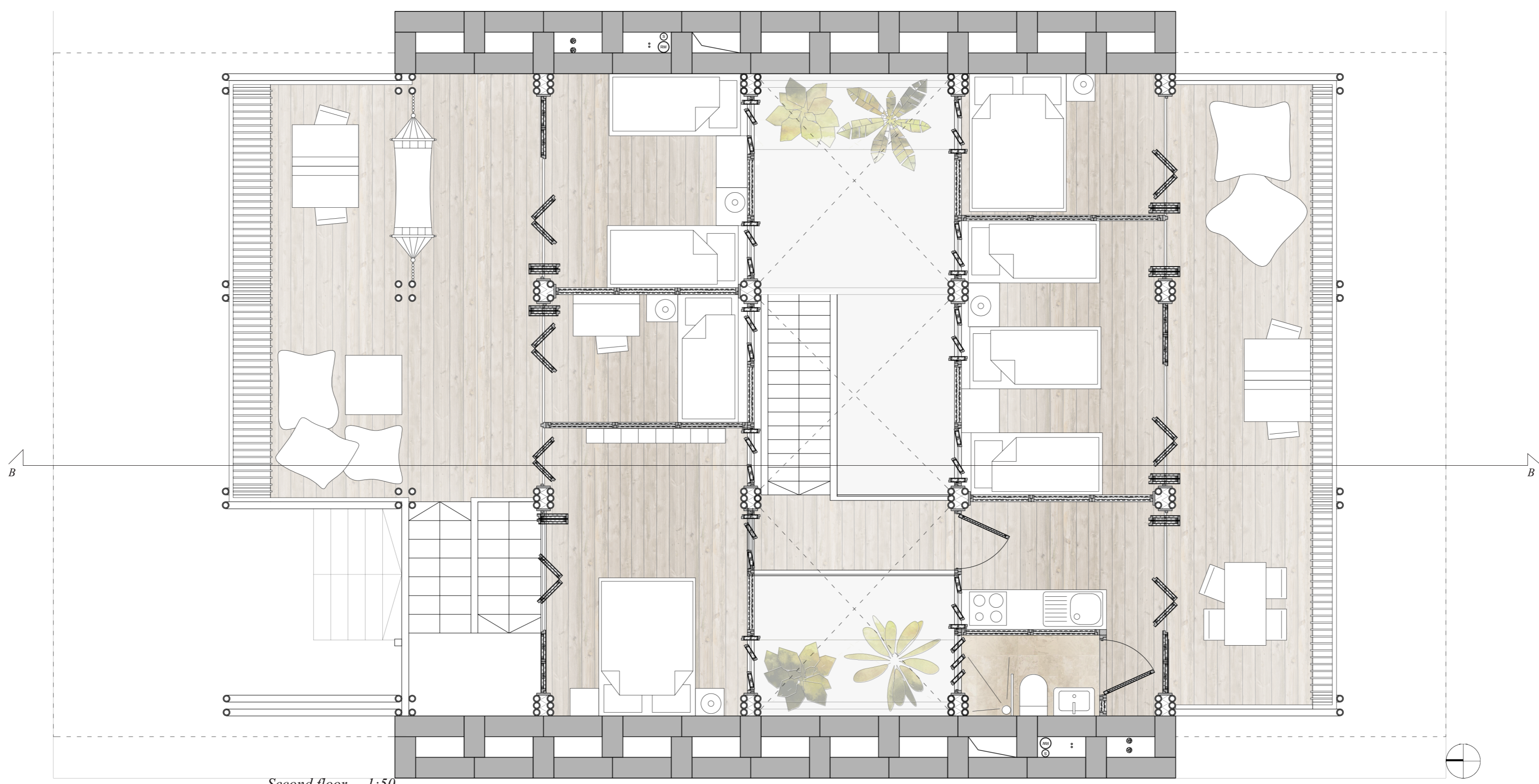
Plans of a unit 1:50



Ground floor 1:50



First floor 1:50



Second floor 1:50

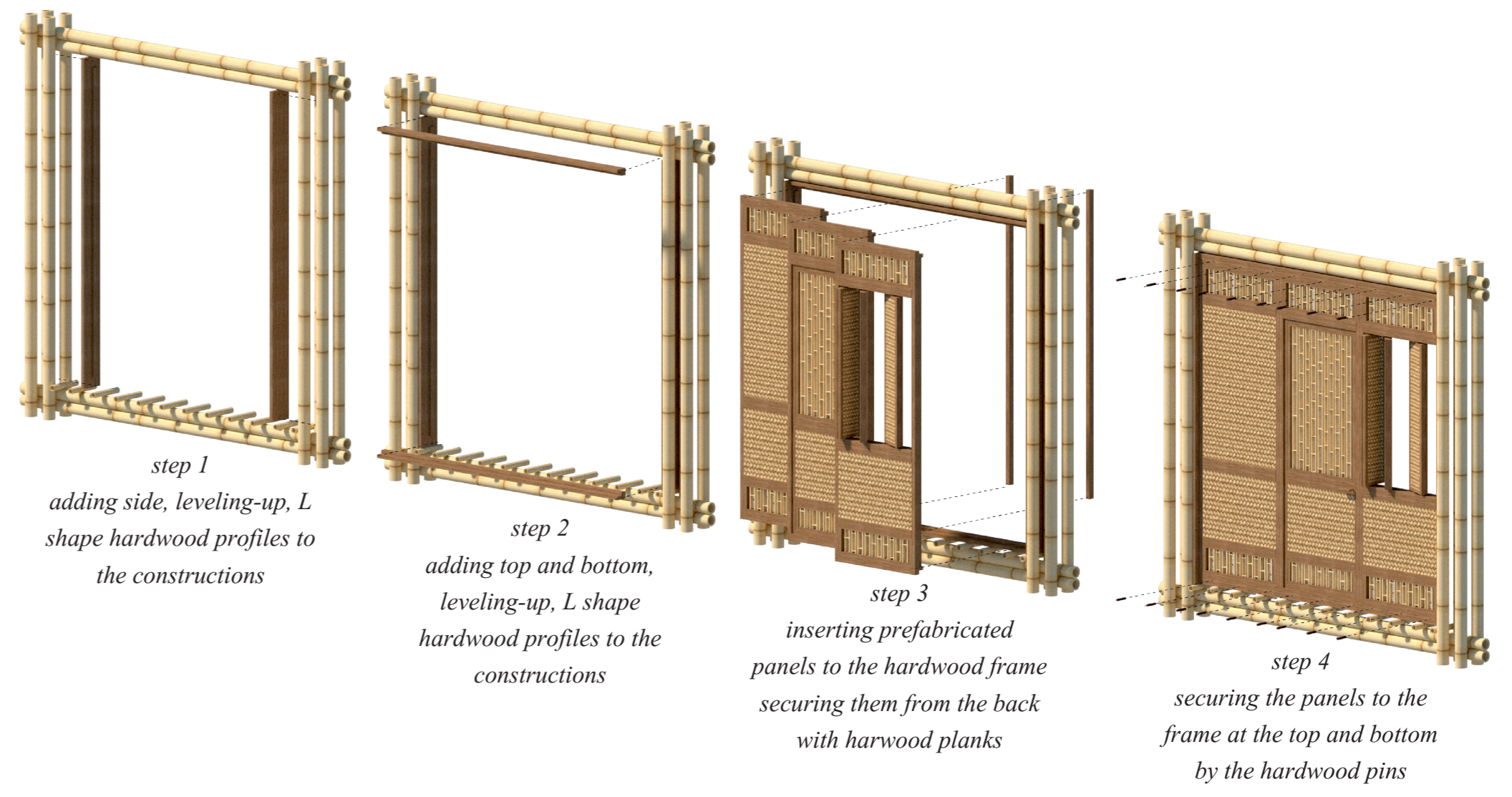
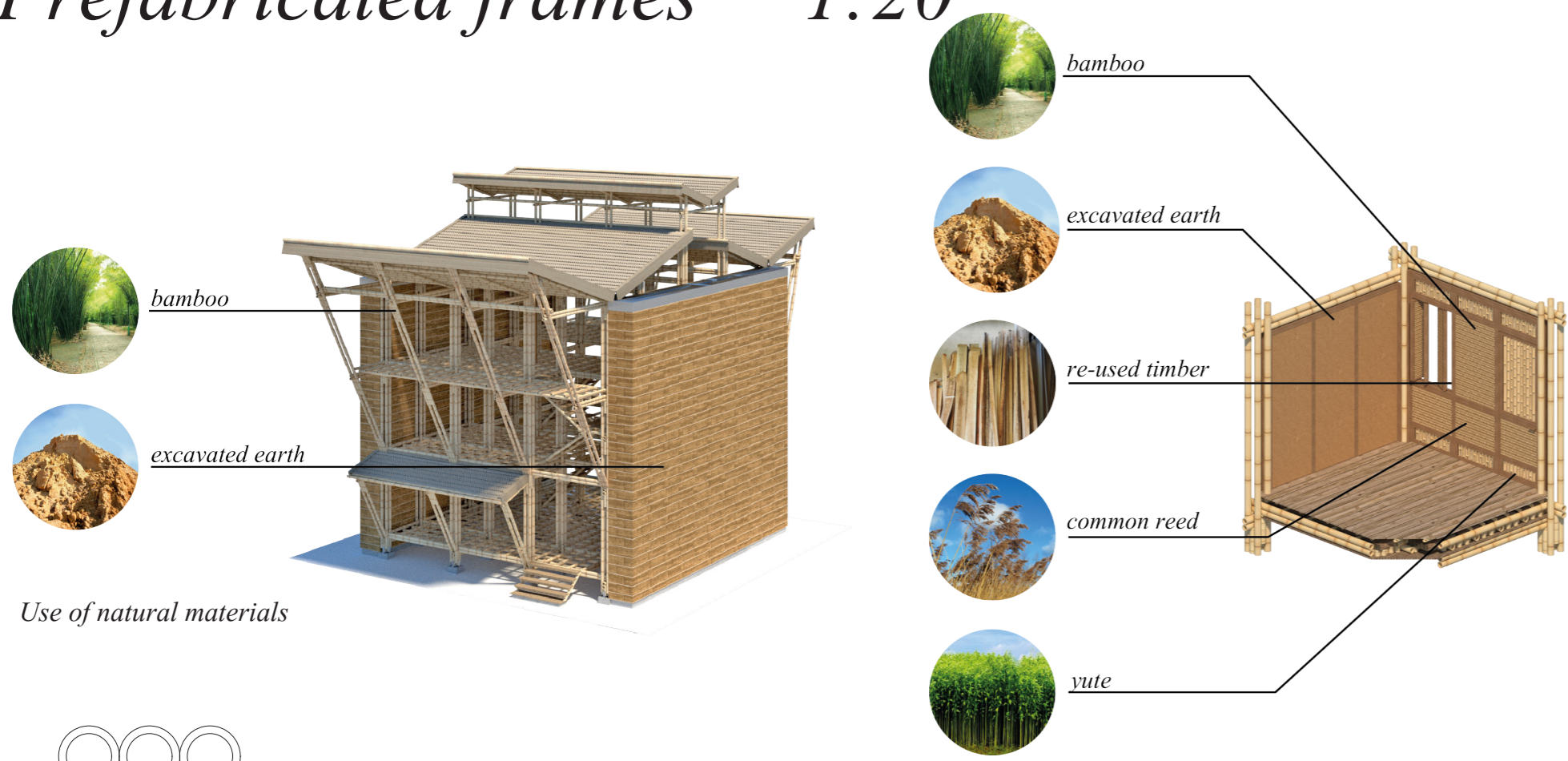
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Sections 1:50

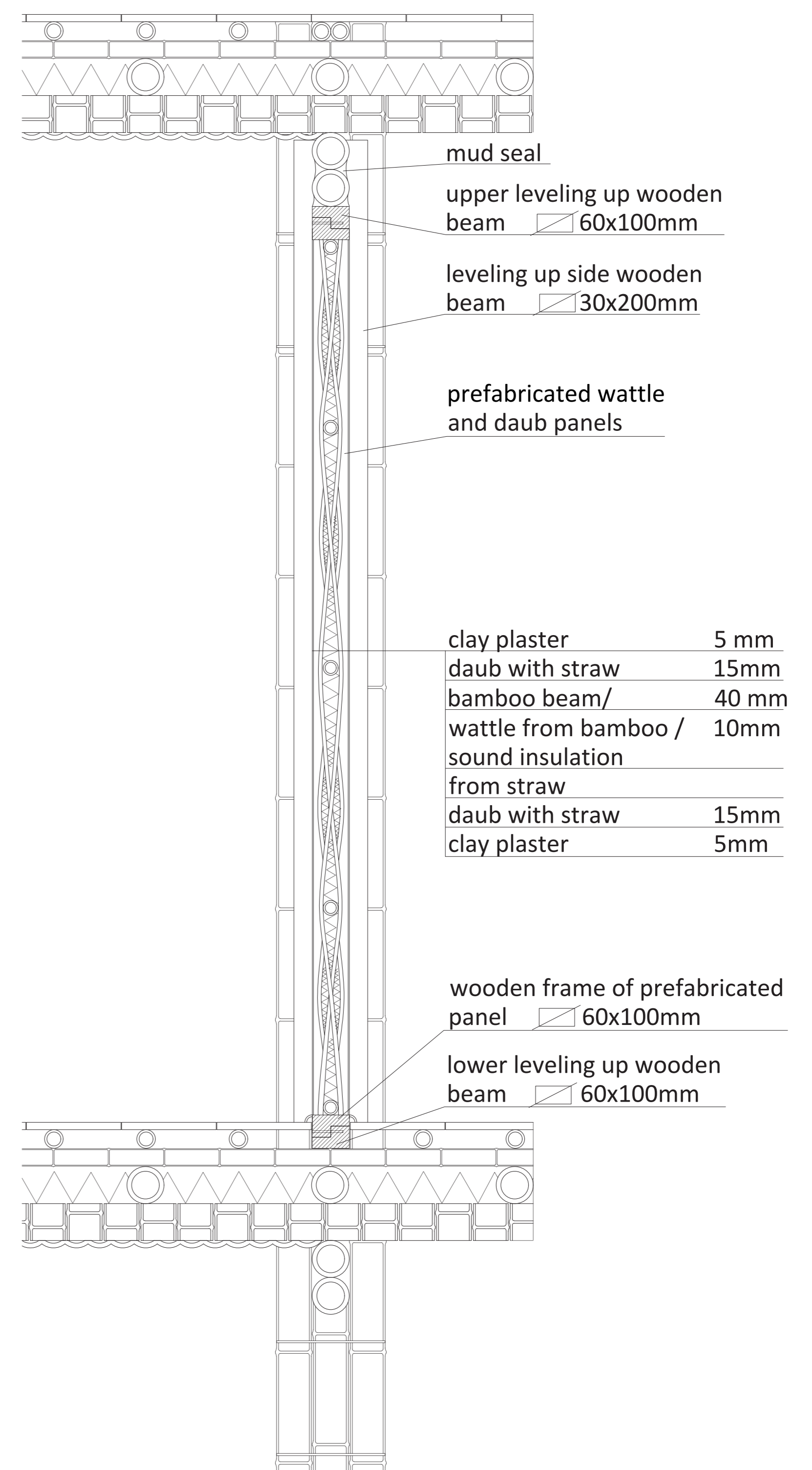
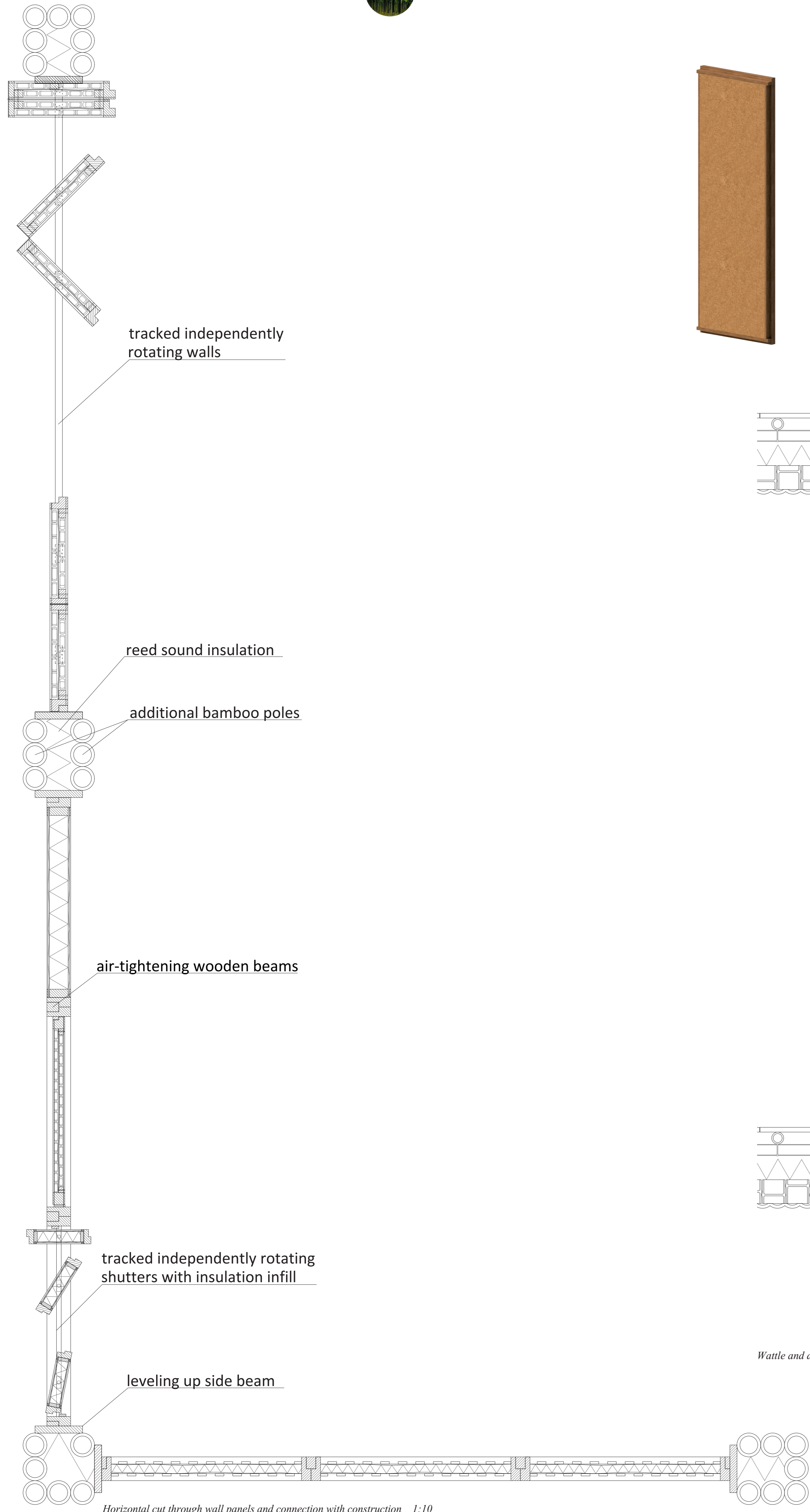
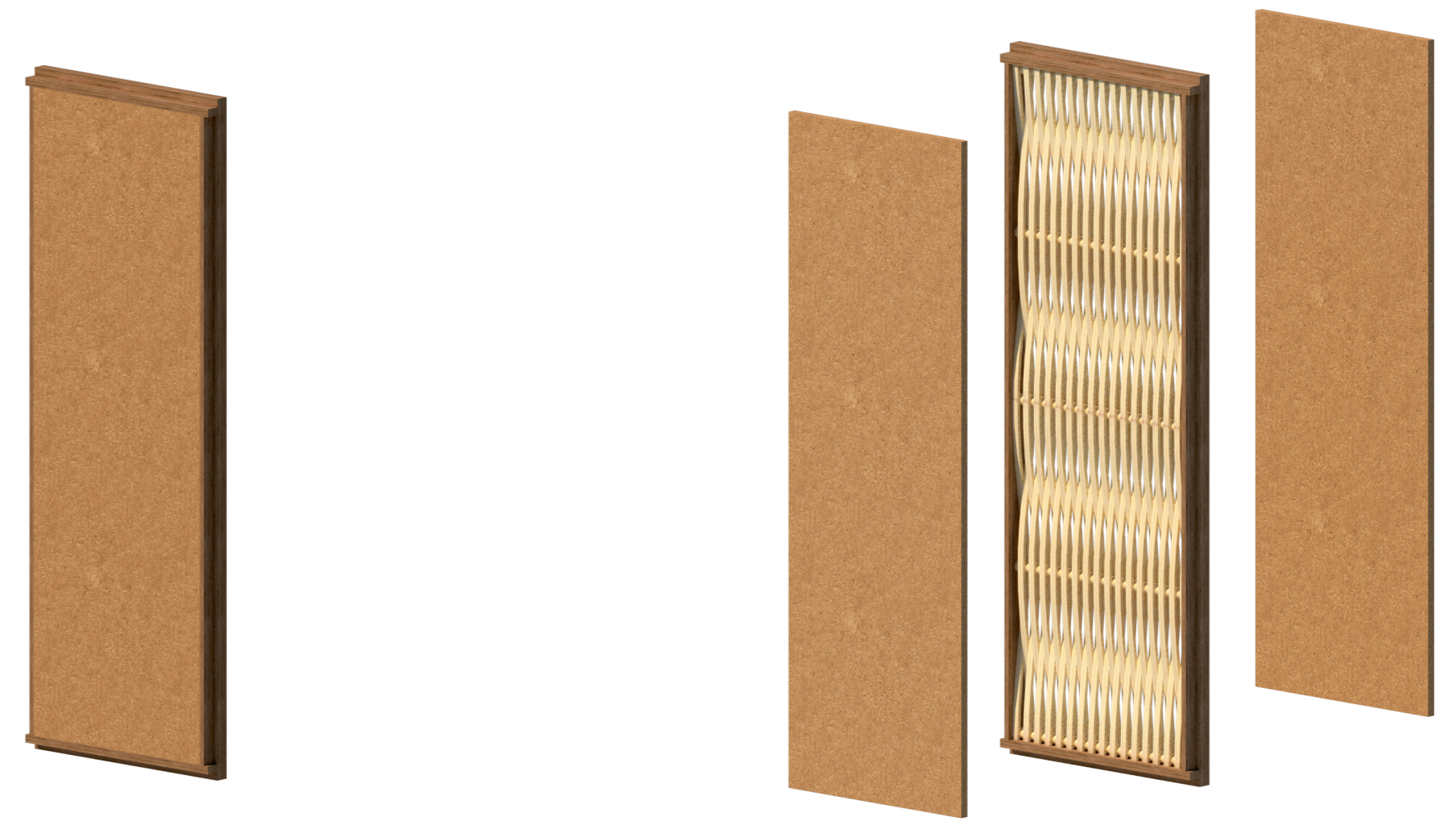


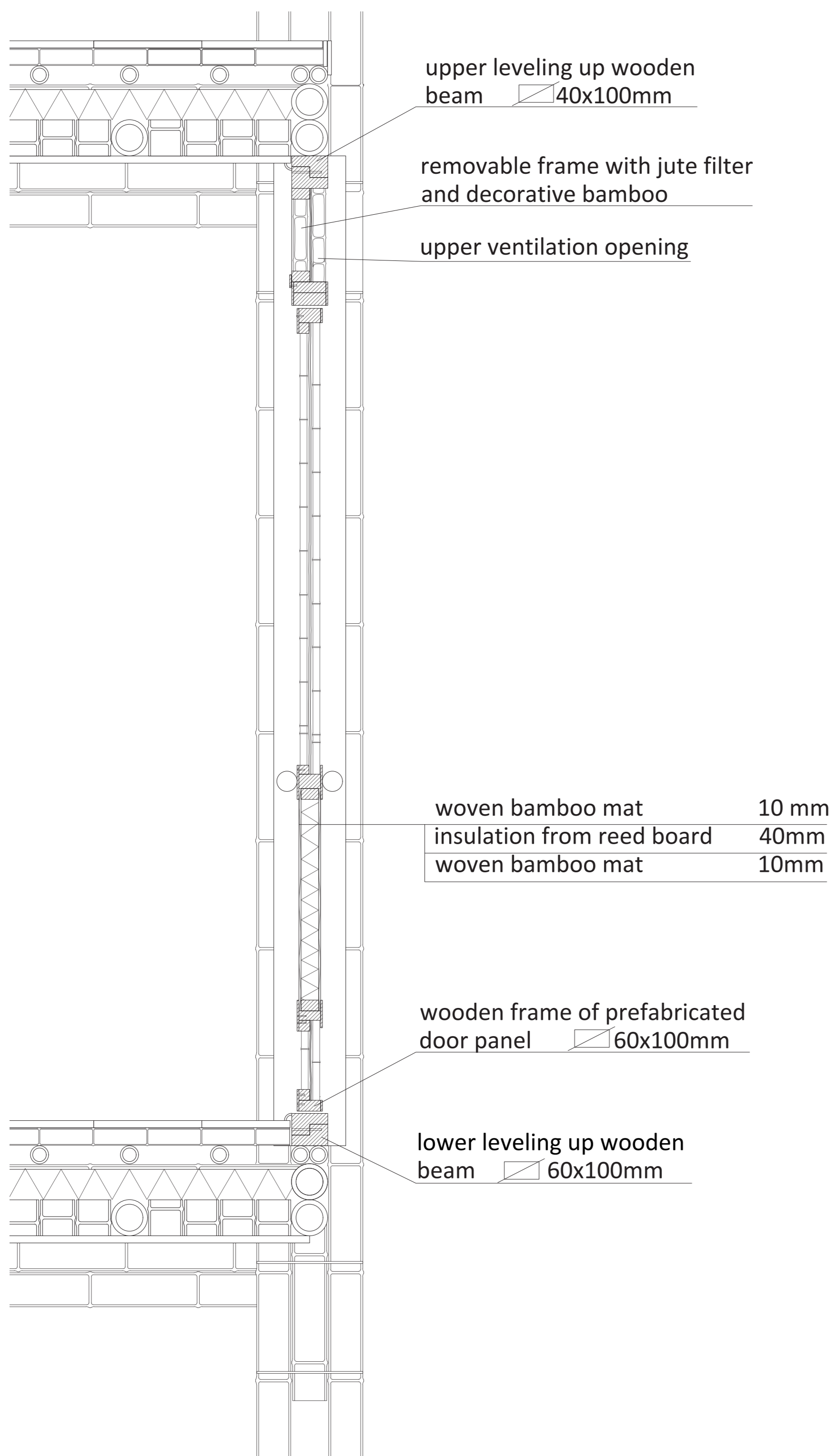
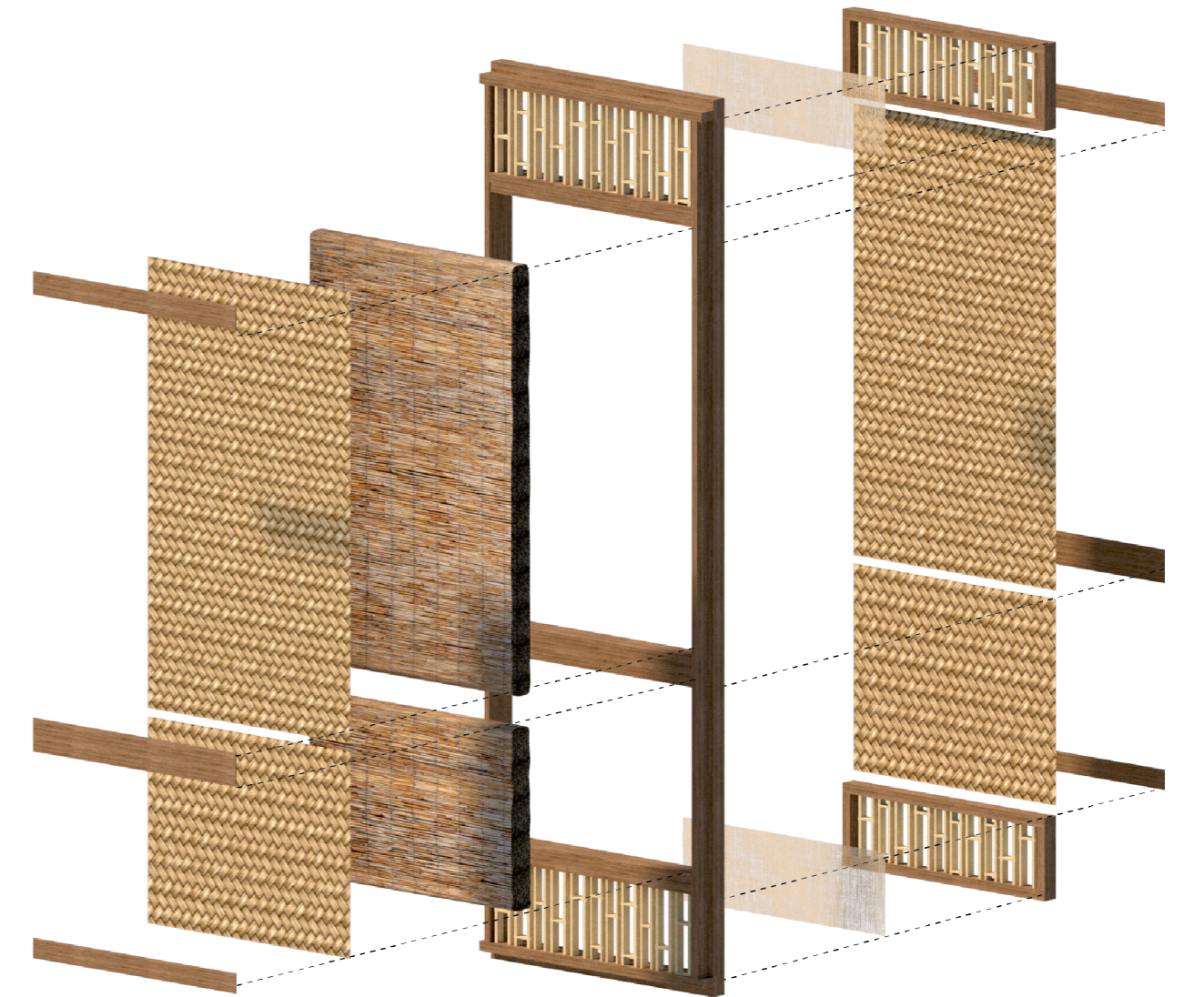
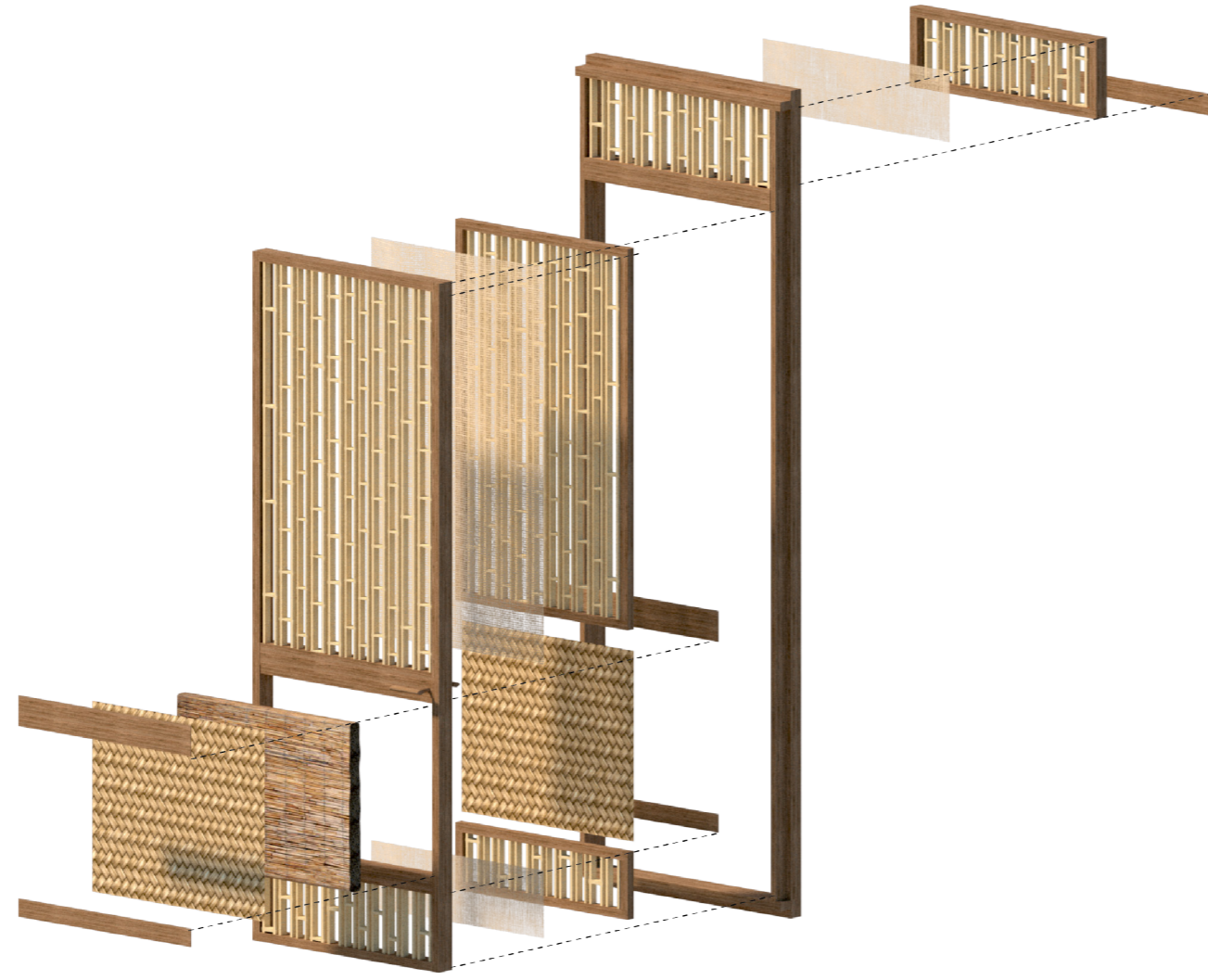
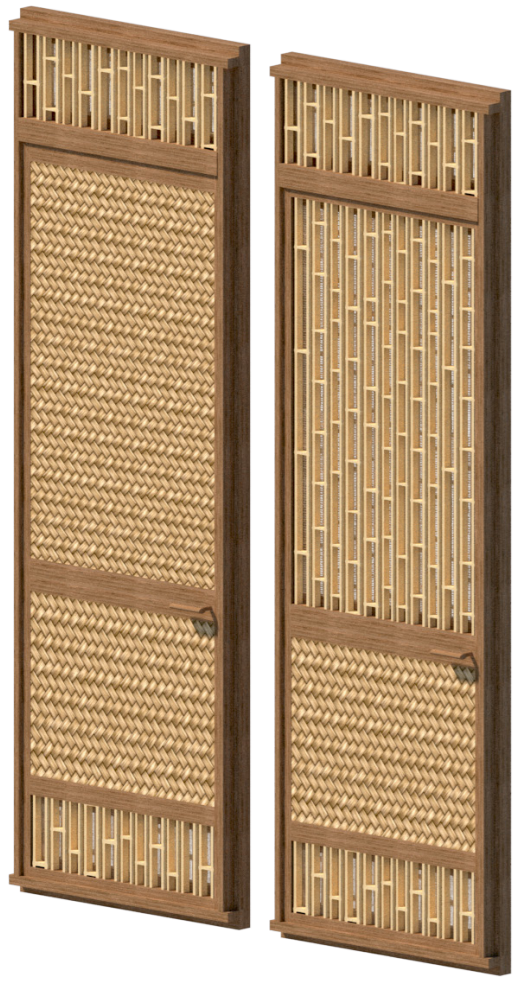
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Prefabricated frames 1:20

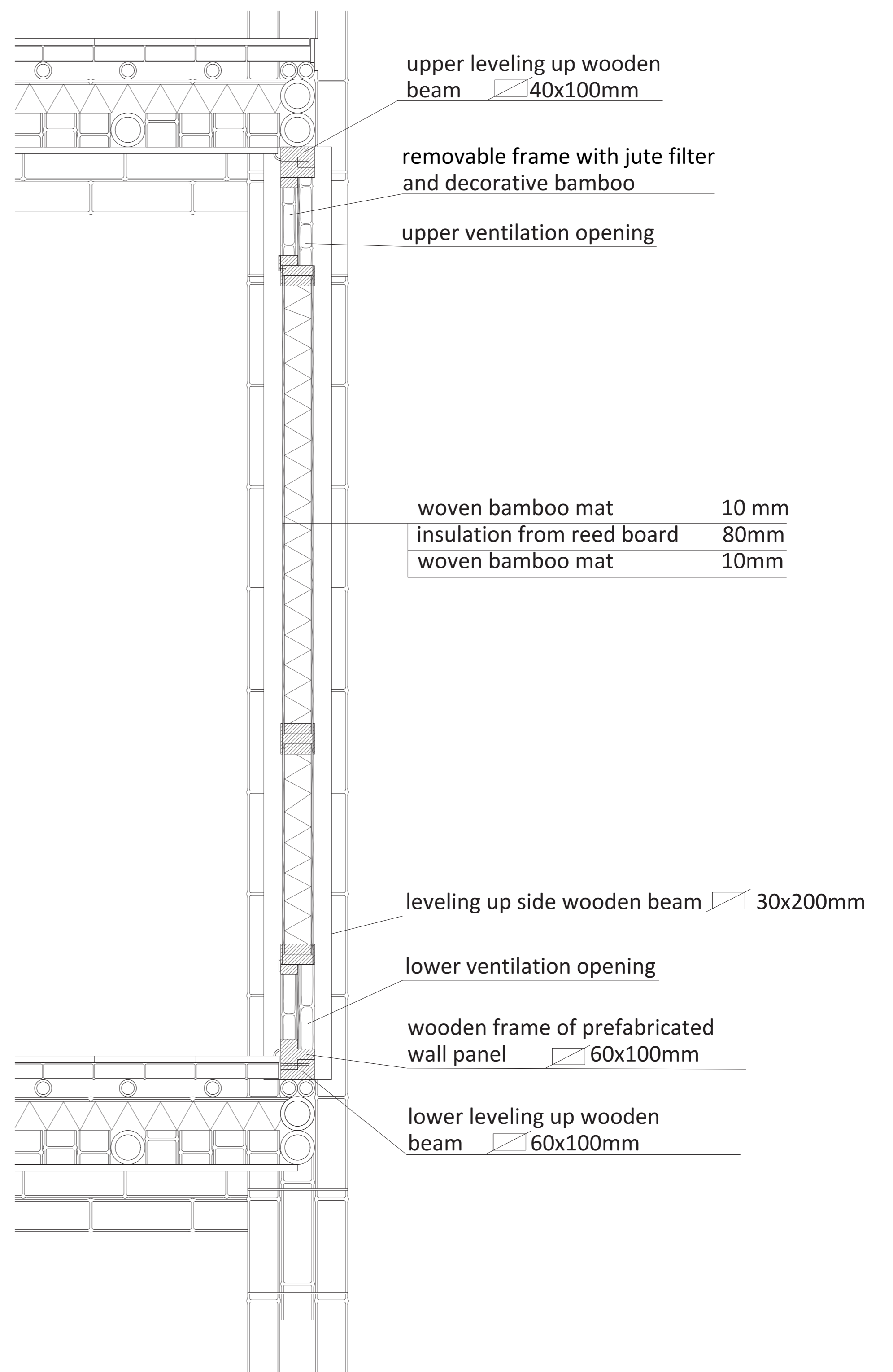


Inserting panel methode





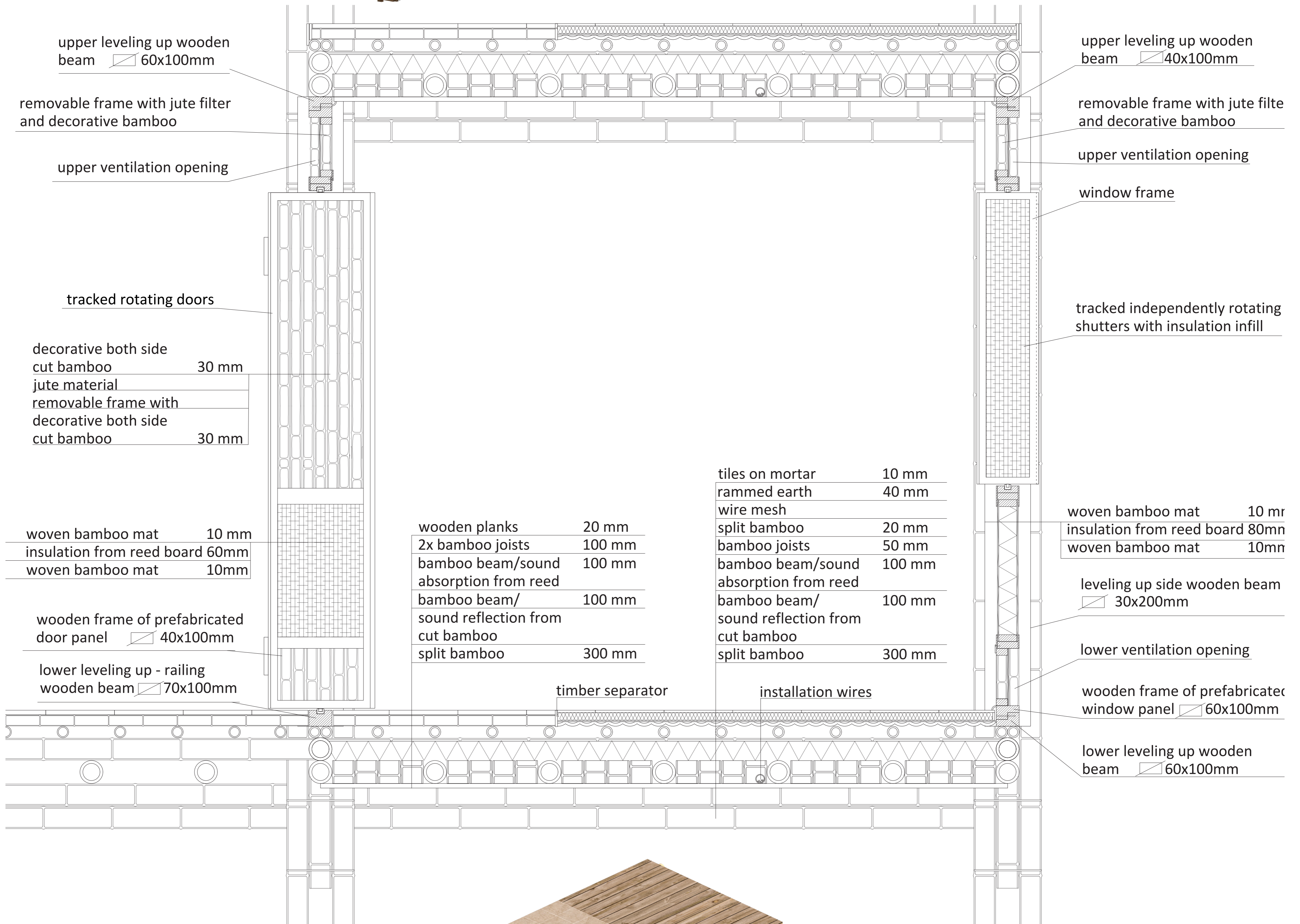
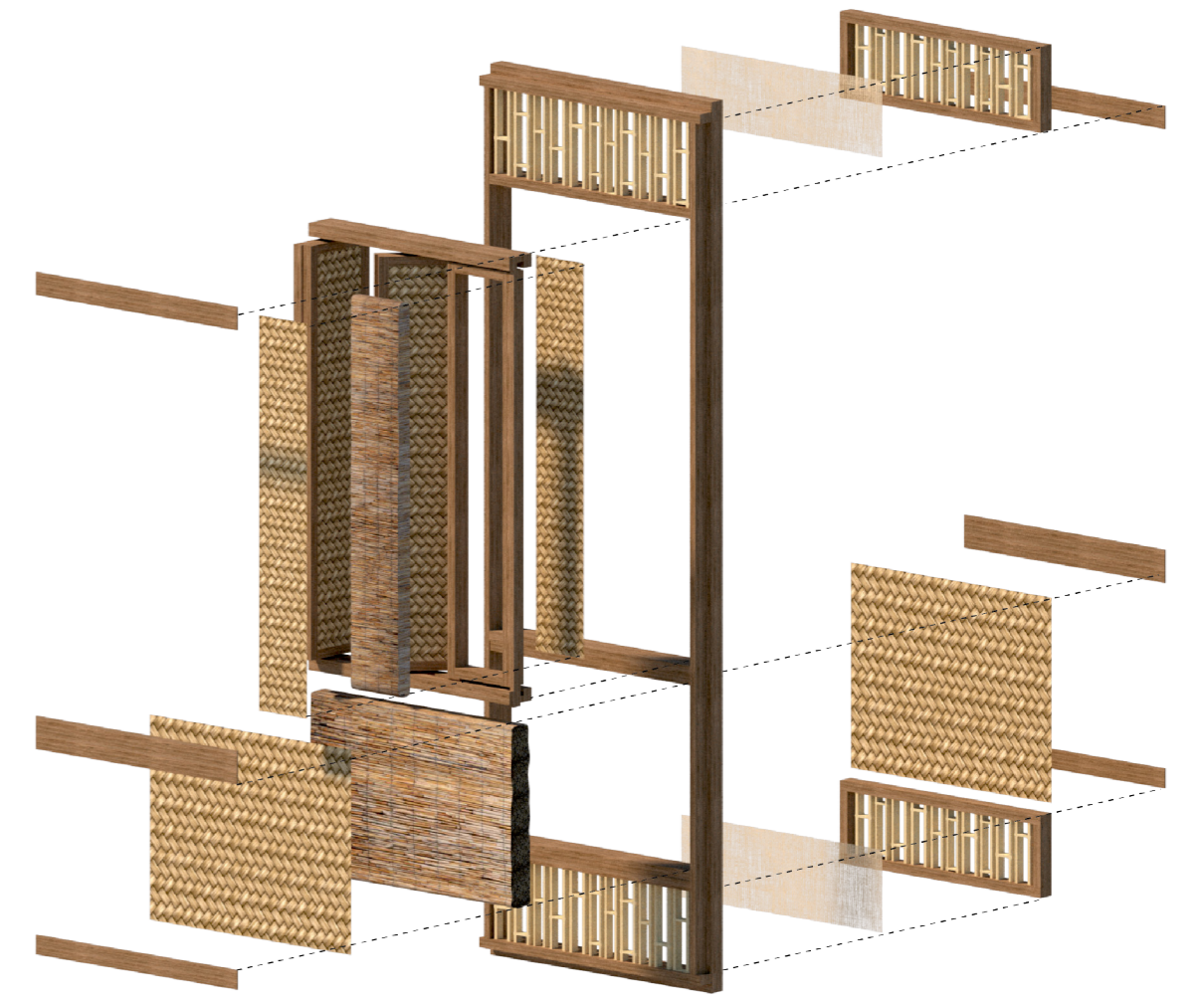
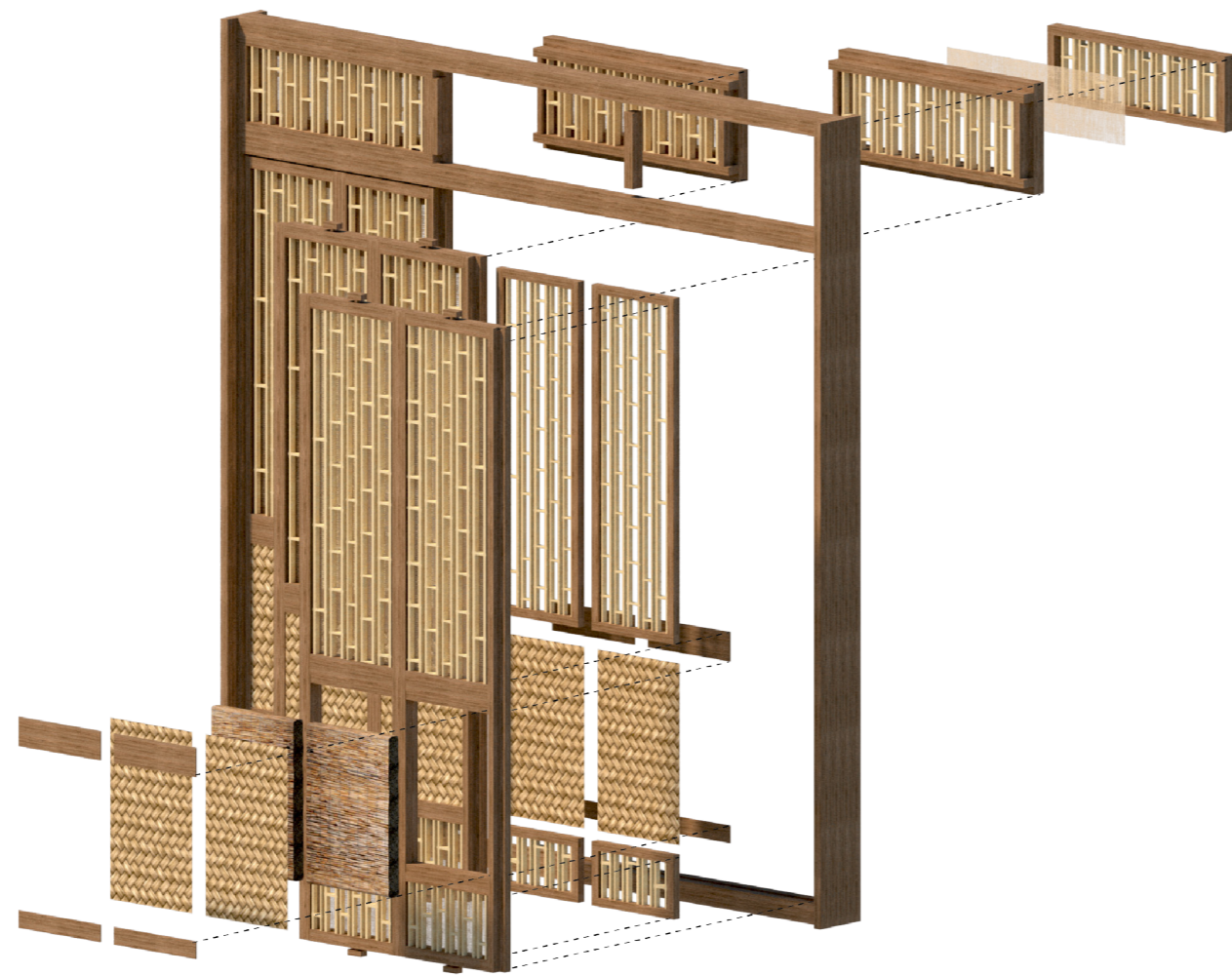
Door panel 1:10



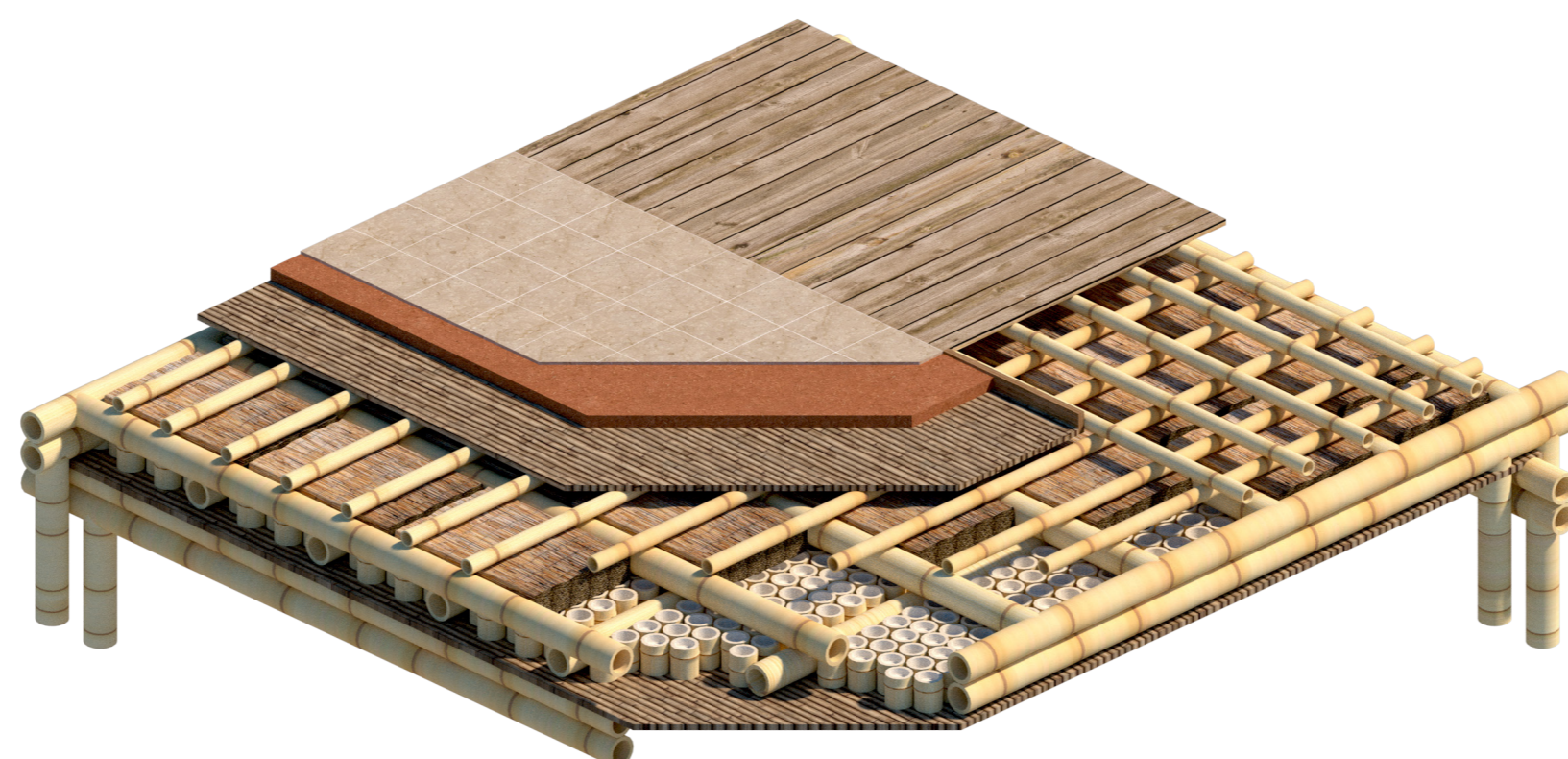
Permeable wall panel 1:10

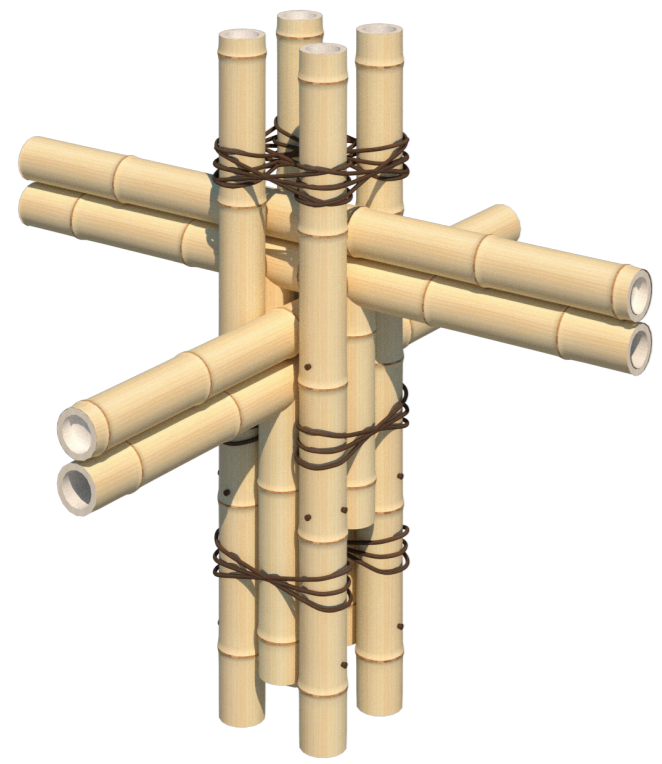
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Prefabricated frames 1:20

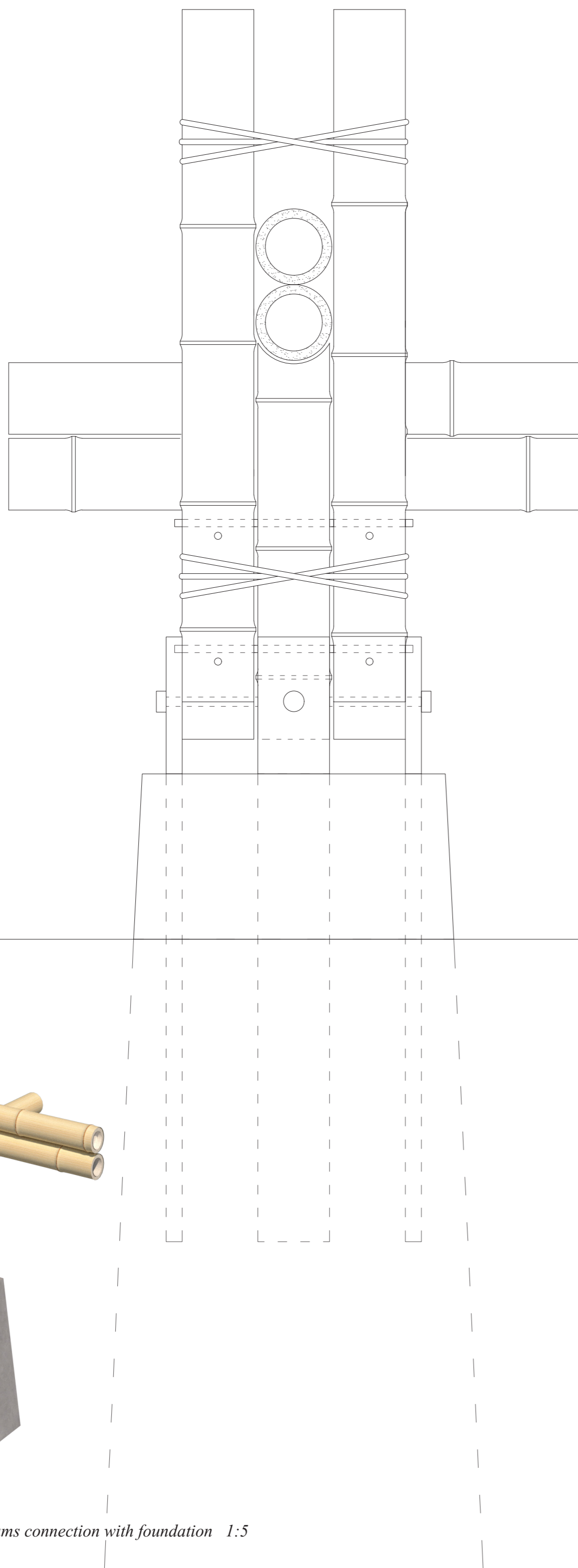
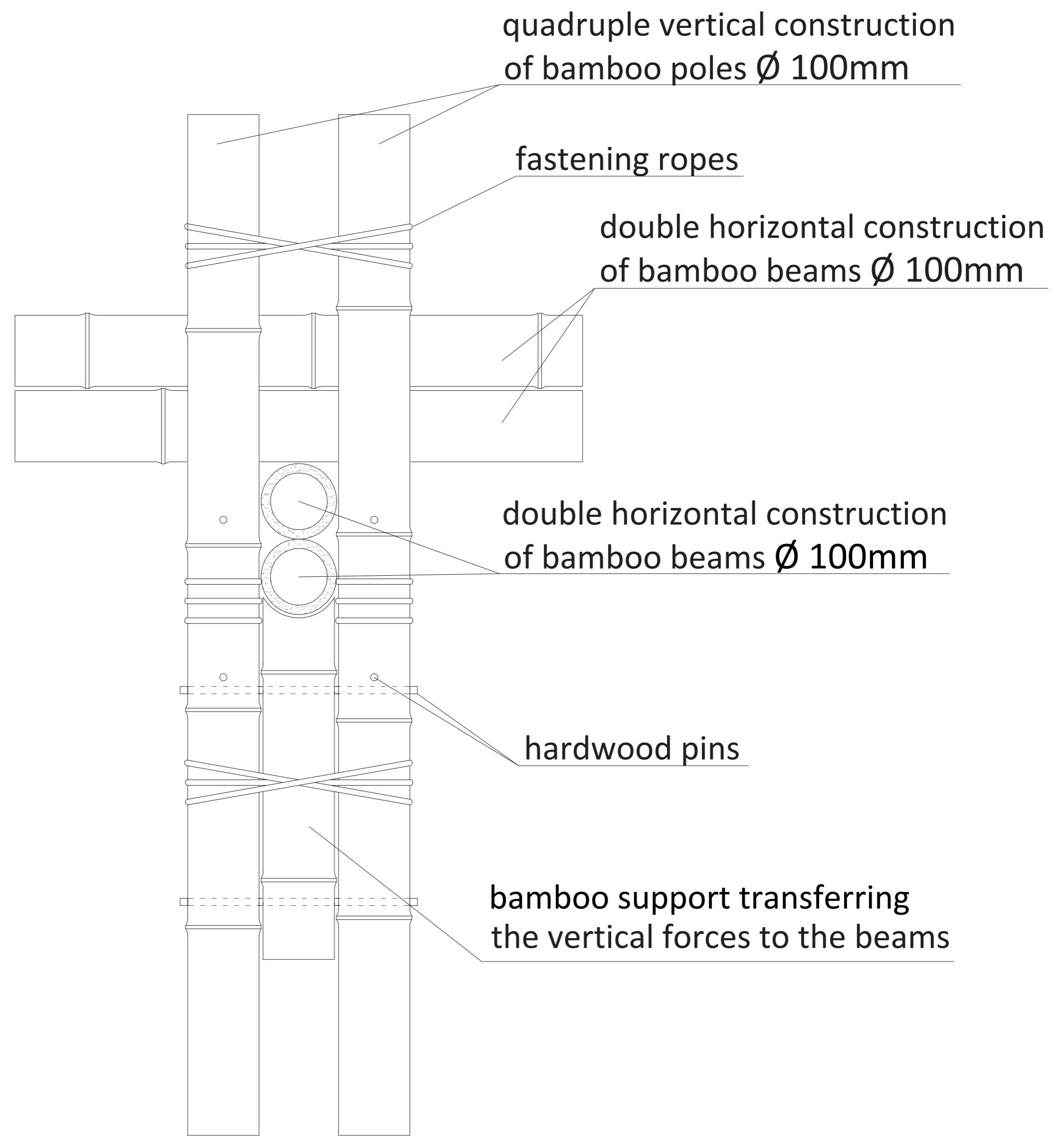
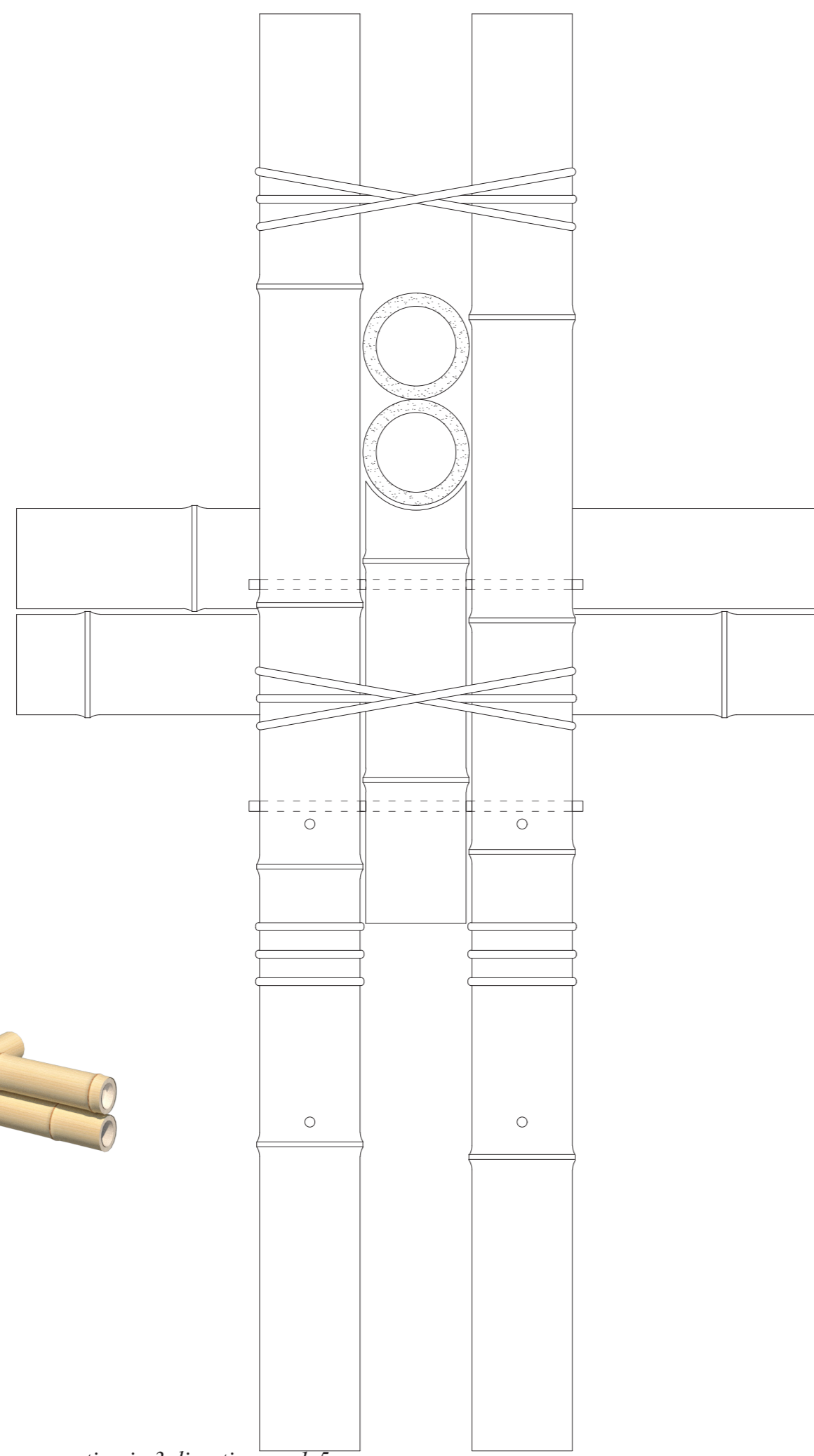


Sliding door and window panels with two types of floor 1:10

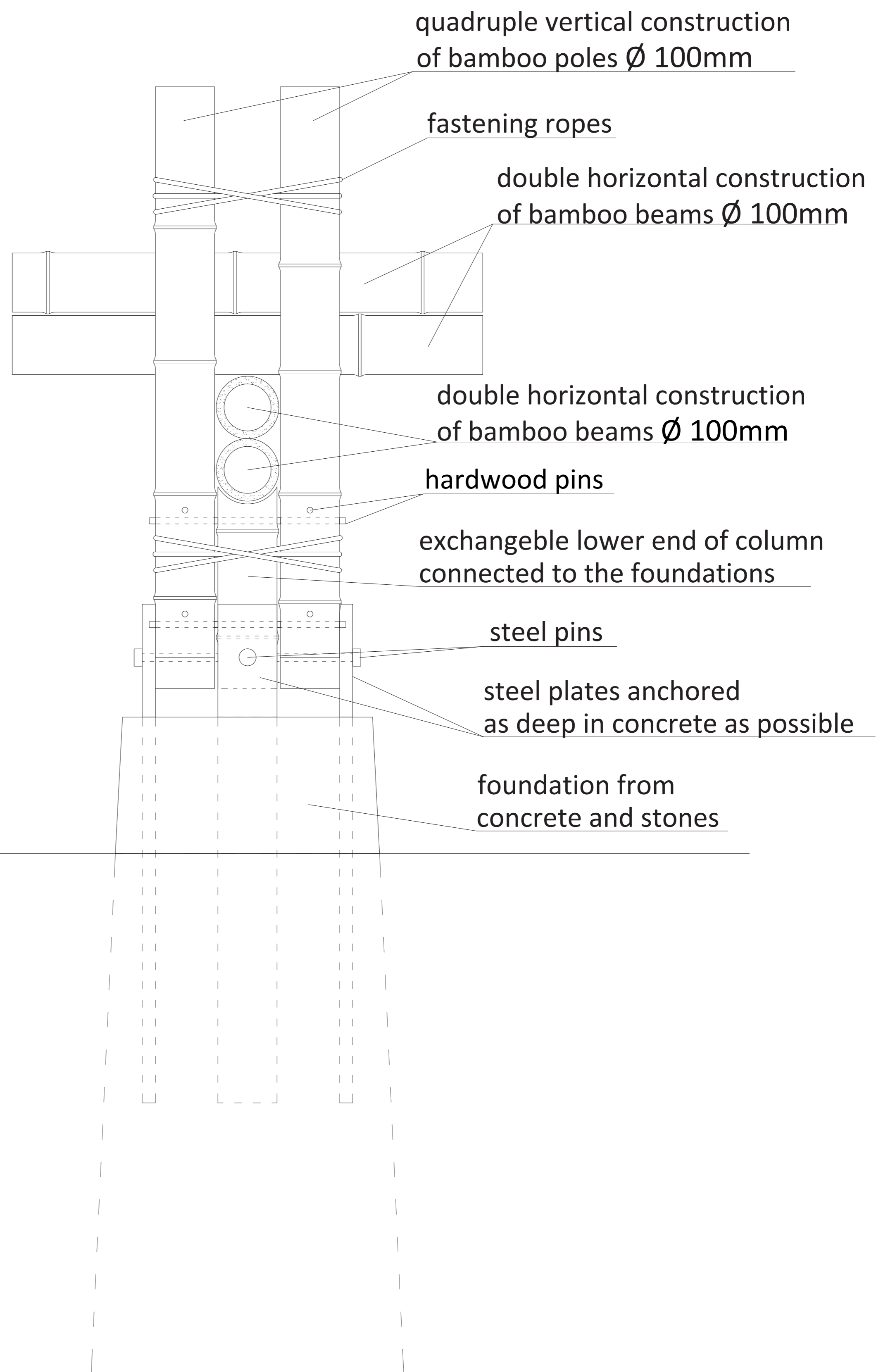




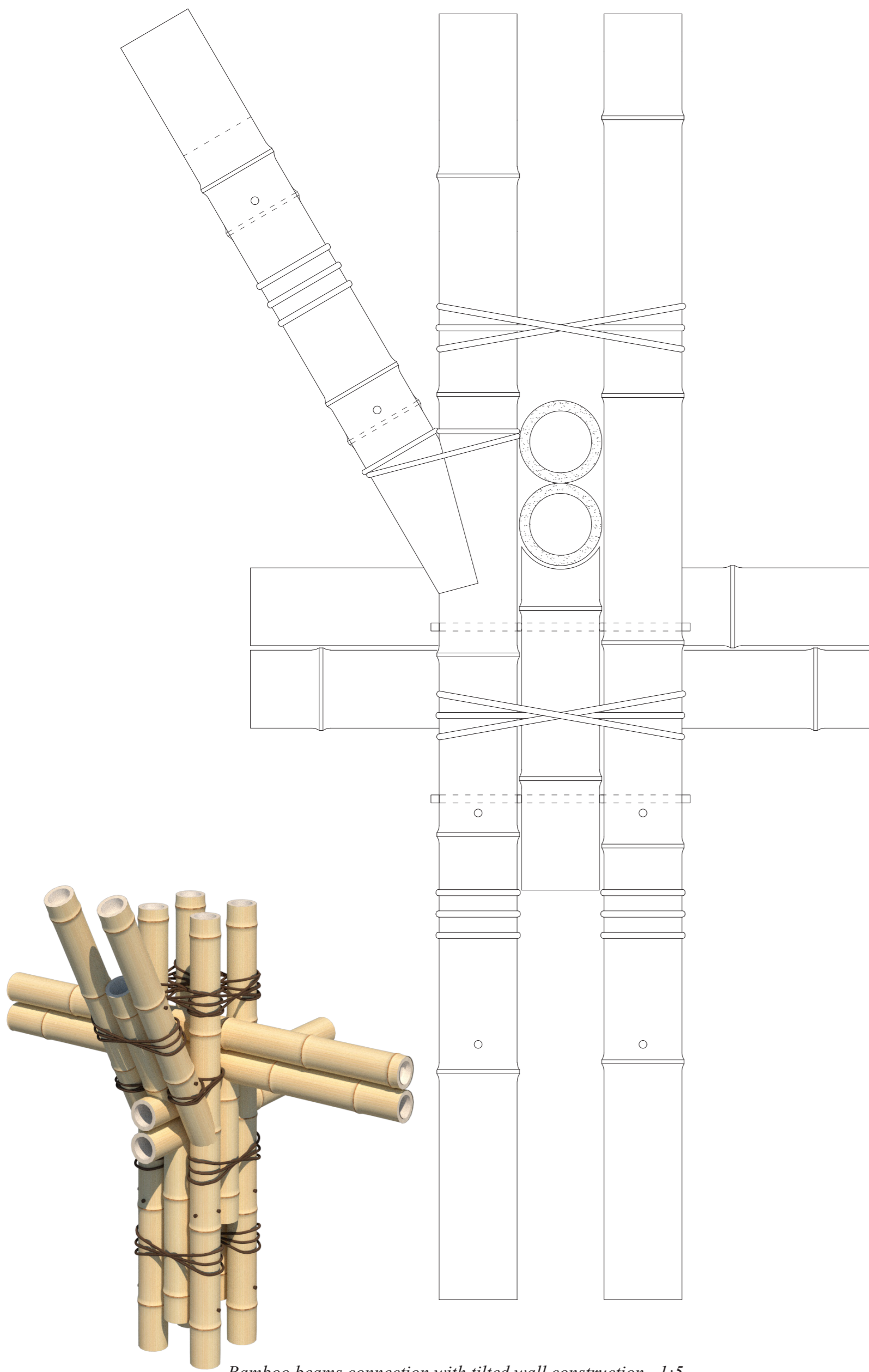
Bamboo beams connection in 3 directions 1:5



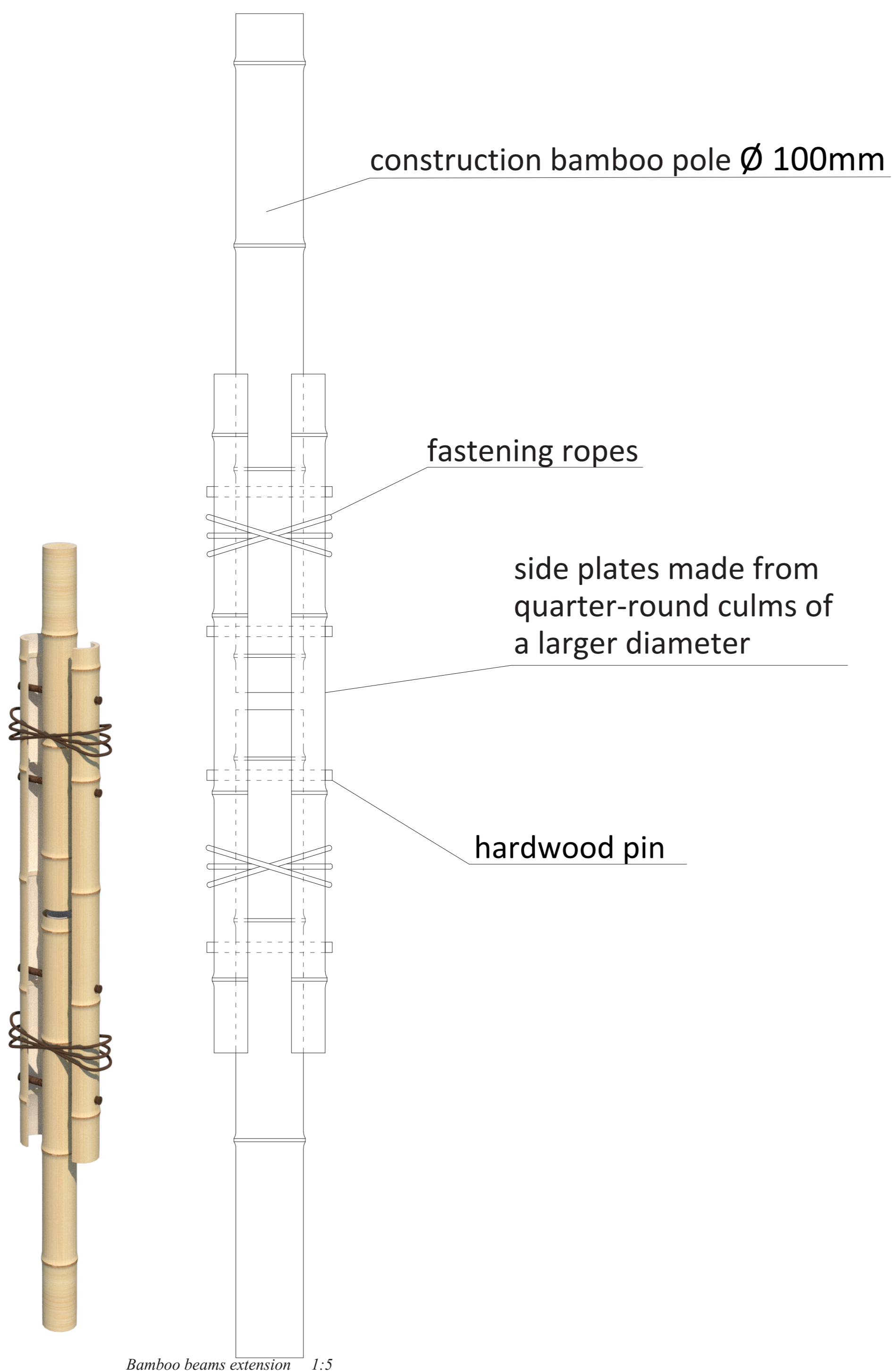
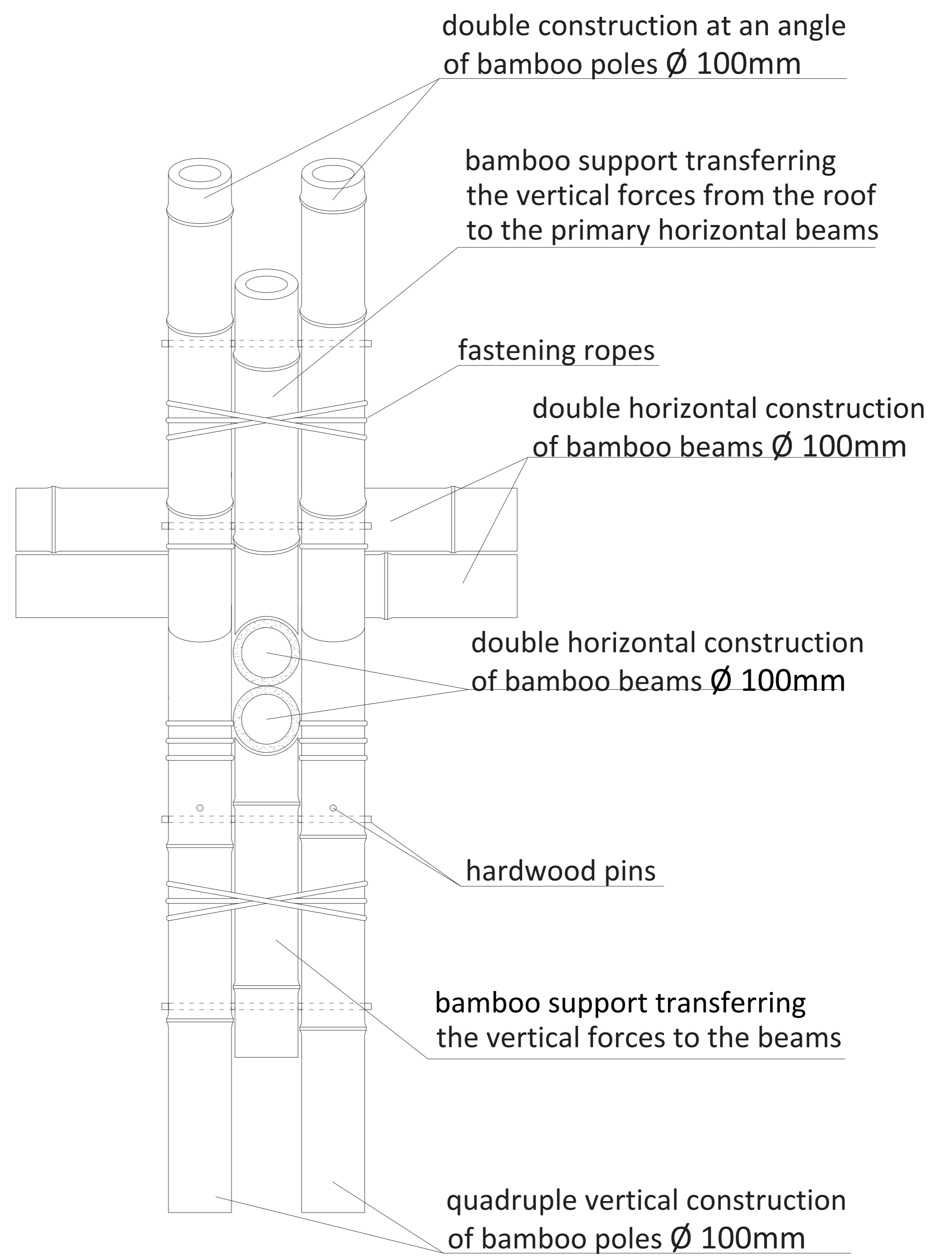
Bamboo beams connection with foundation 1:5



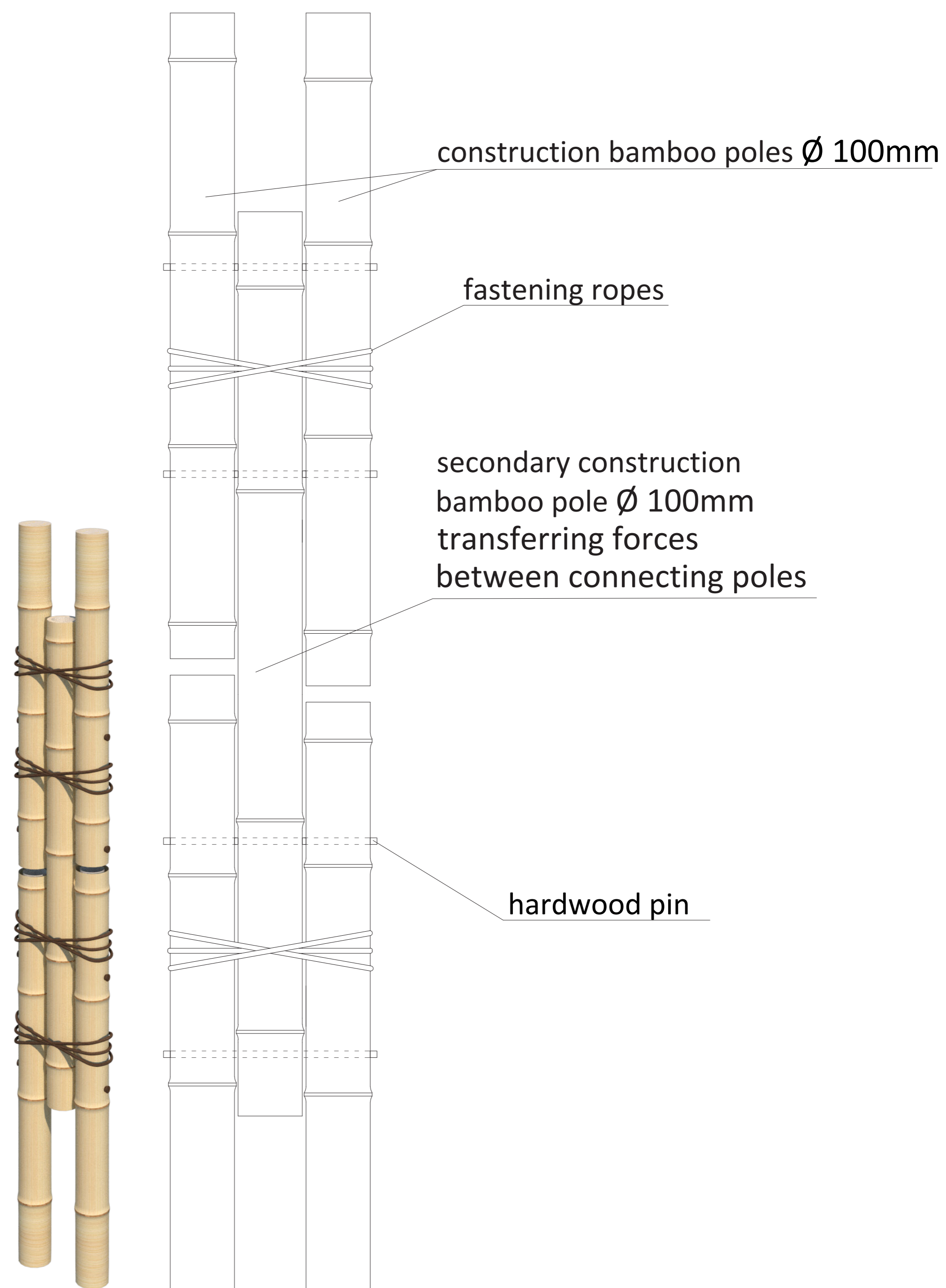
Connection details 1:5



Bamboo beams connection with tilted wall construction 1:5



Bamboo beams extension 1:5



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Prefabricated frames - inside facade 1:20



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Prefabricated frames - outside facade 1:20

