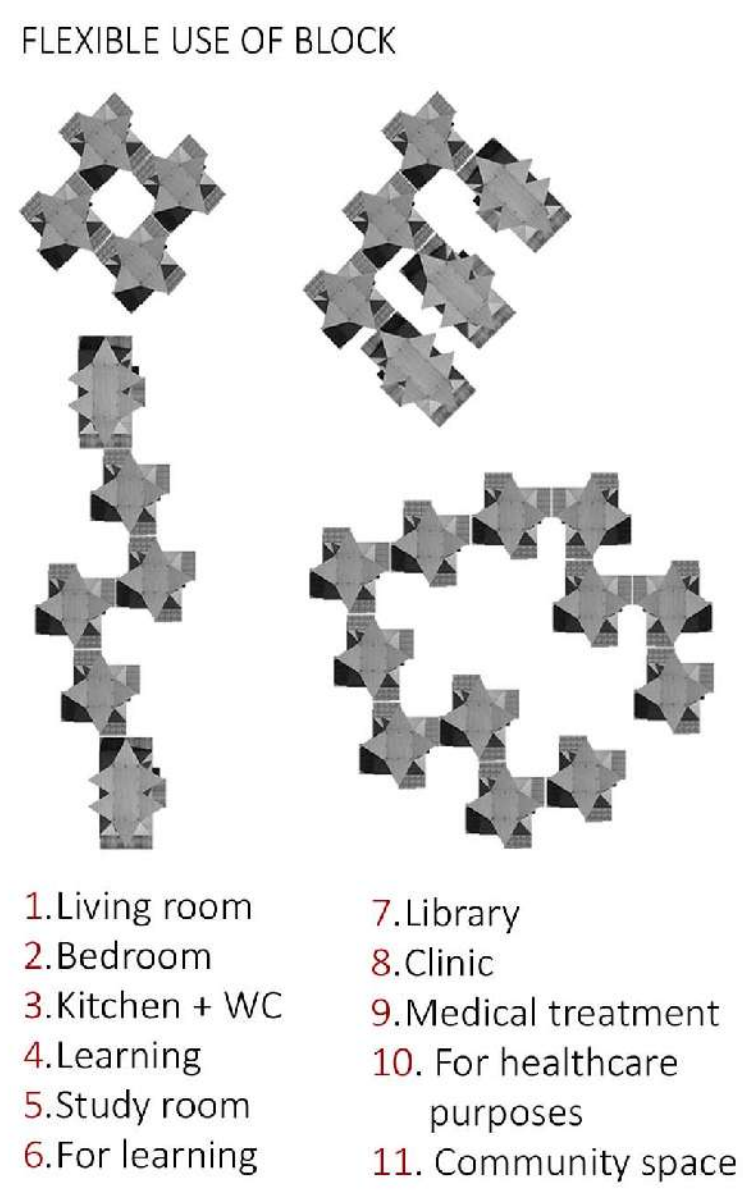


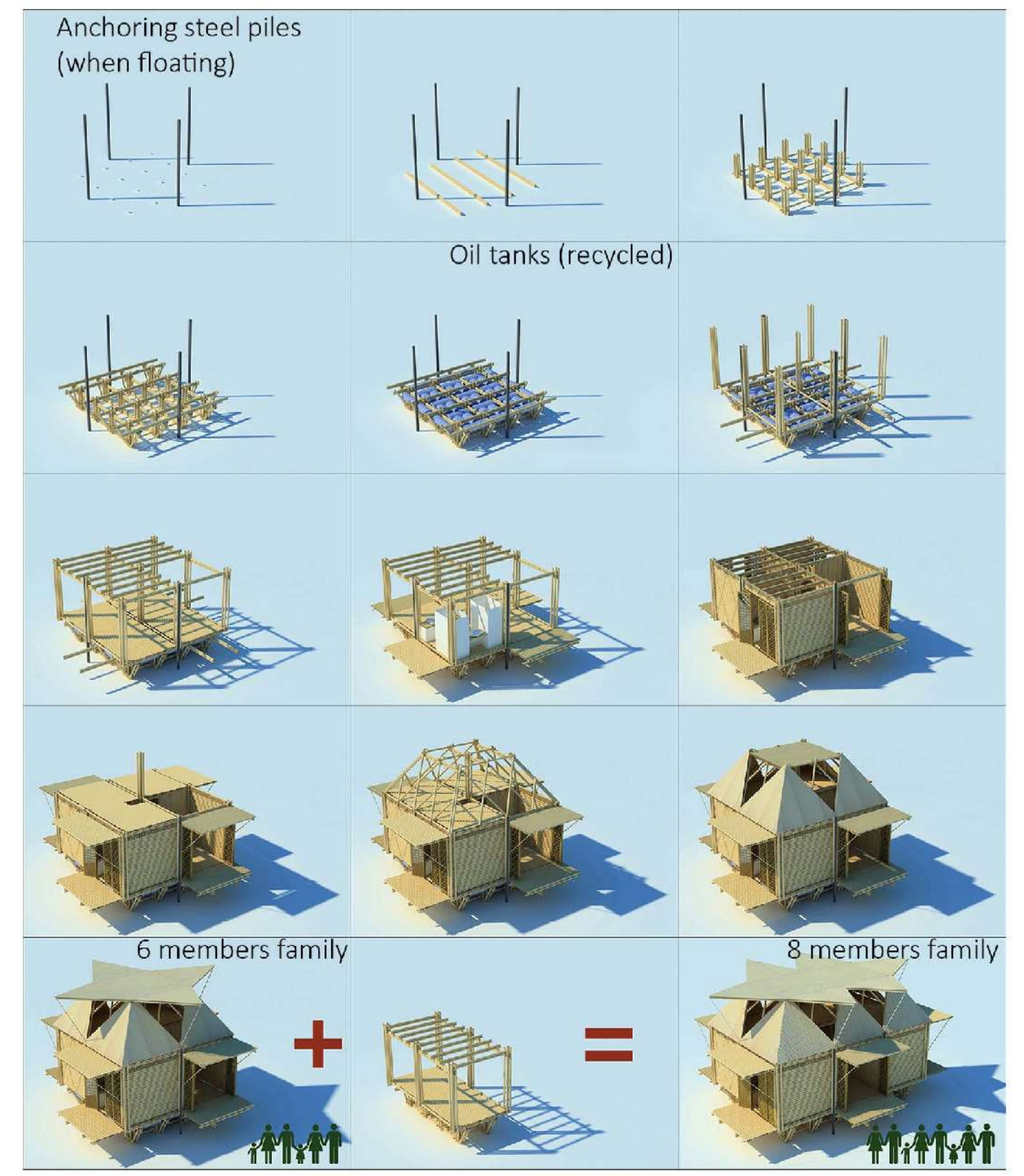
context (storms, floods, sweeping floods, landslides, drought ...)



concept (low cost + flexibility + fast self build)



steps (fast & self build)



scope (rebuilding the community)

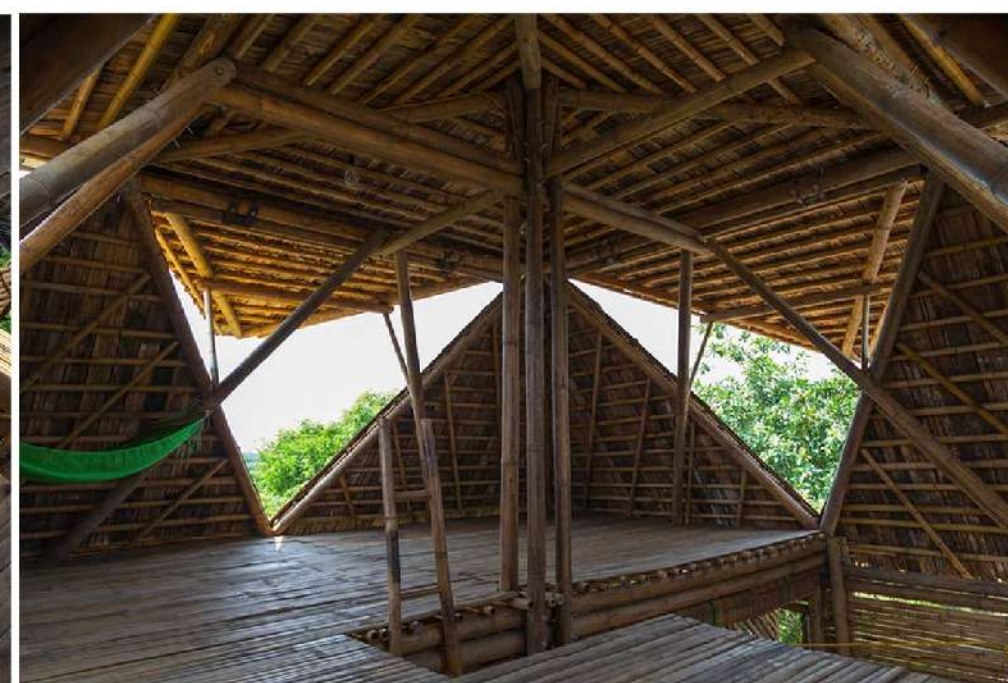
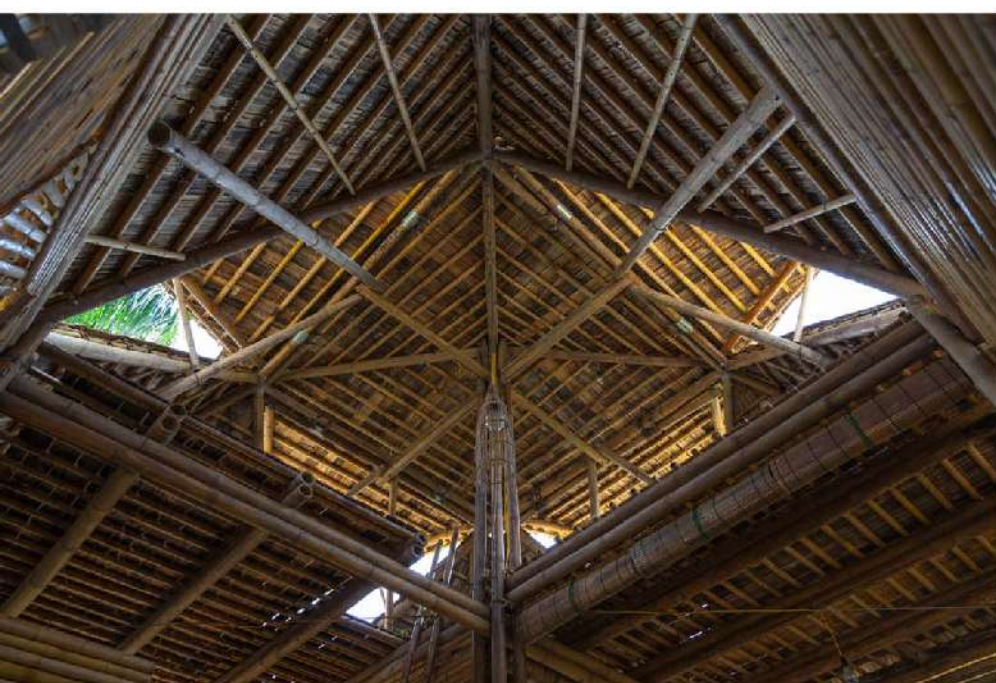


result (the 1st prototype completed)

In Vietnam, the natural phenomena are severe and various: storm, flood, sweeping floods, landslides, drought, etc... The damage every year, which is considerable compared to the world scale, takes away about 500 persons and 1.2%-GDP-equally assets and reduces the involved areas' development.

One solution to houses and homes for millions of these people is the goal of this BB (Blooming Bamboo) home. From the bamboo module of d=8-10cm & d=4-5cm diameter and 3.3m or 6.6 length, each house is simply assembled with bolting, binding, hanging, placing... This pulled monolithic architecture is strong enough to suffer from phenomena like 1.5m-high flood. Currently, H&P Architects is experimenting the model to suffer 3m-high flood. The space is multifunctional such as House, Educational, Medical and Community Center and can be spreaded if necessary.

From the fixed frame using d=8-10cm bamboo, the house cover can be finished according to its local climate and regional materials (d=4-5cm small bamboo, bamboo wattle, fiberboard, coconut leaf...) in order to create vernacular architecture.

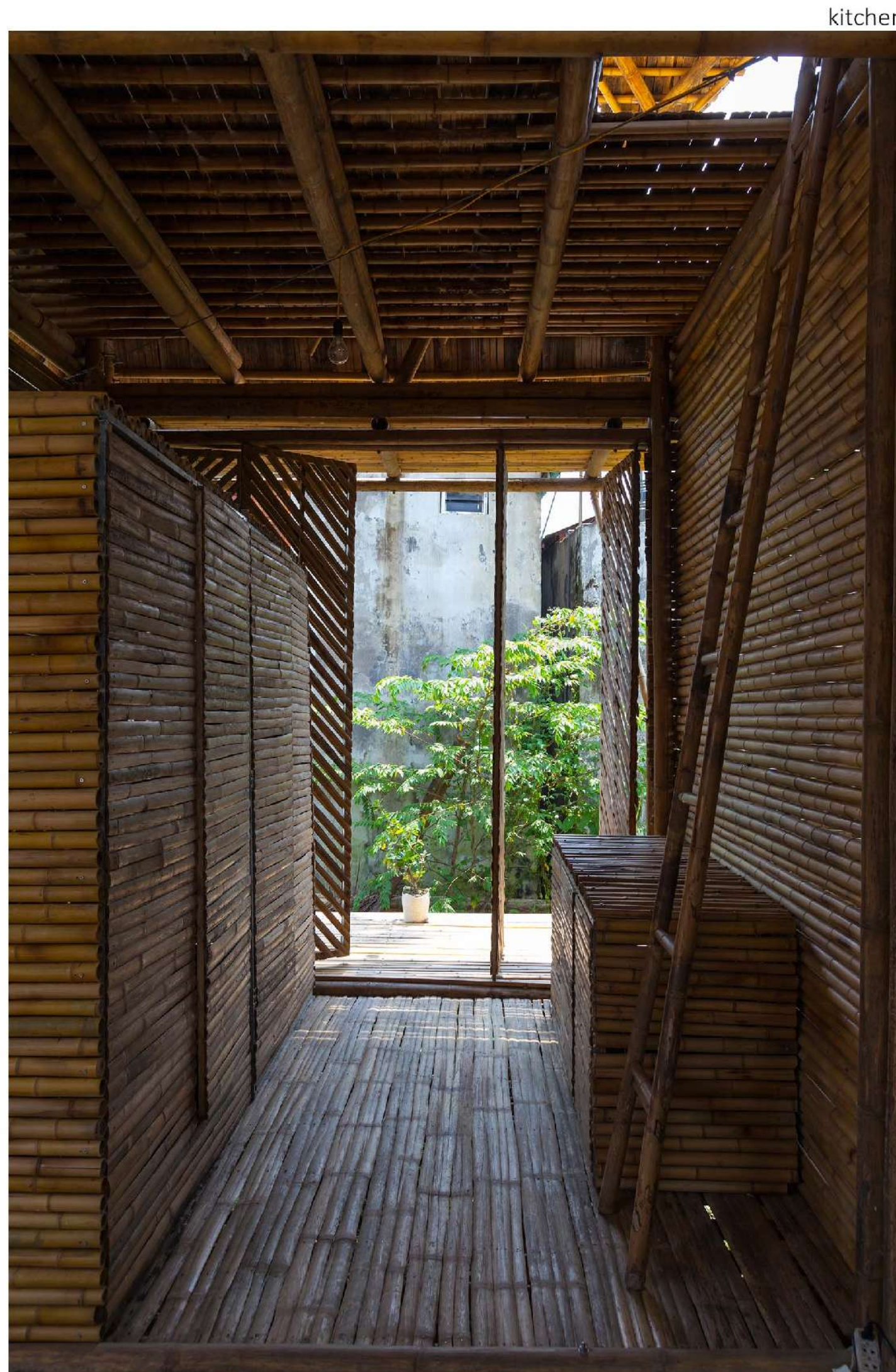


Blooming Bamboo Home

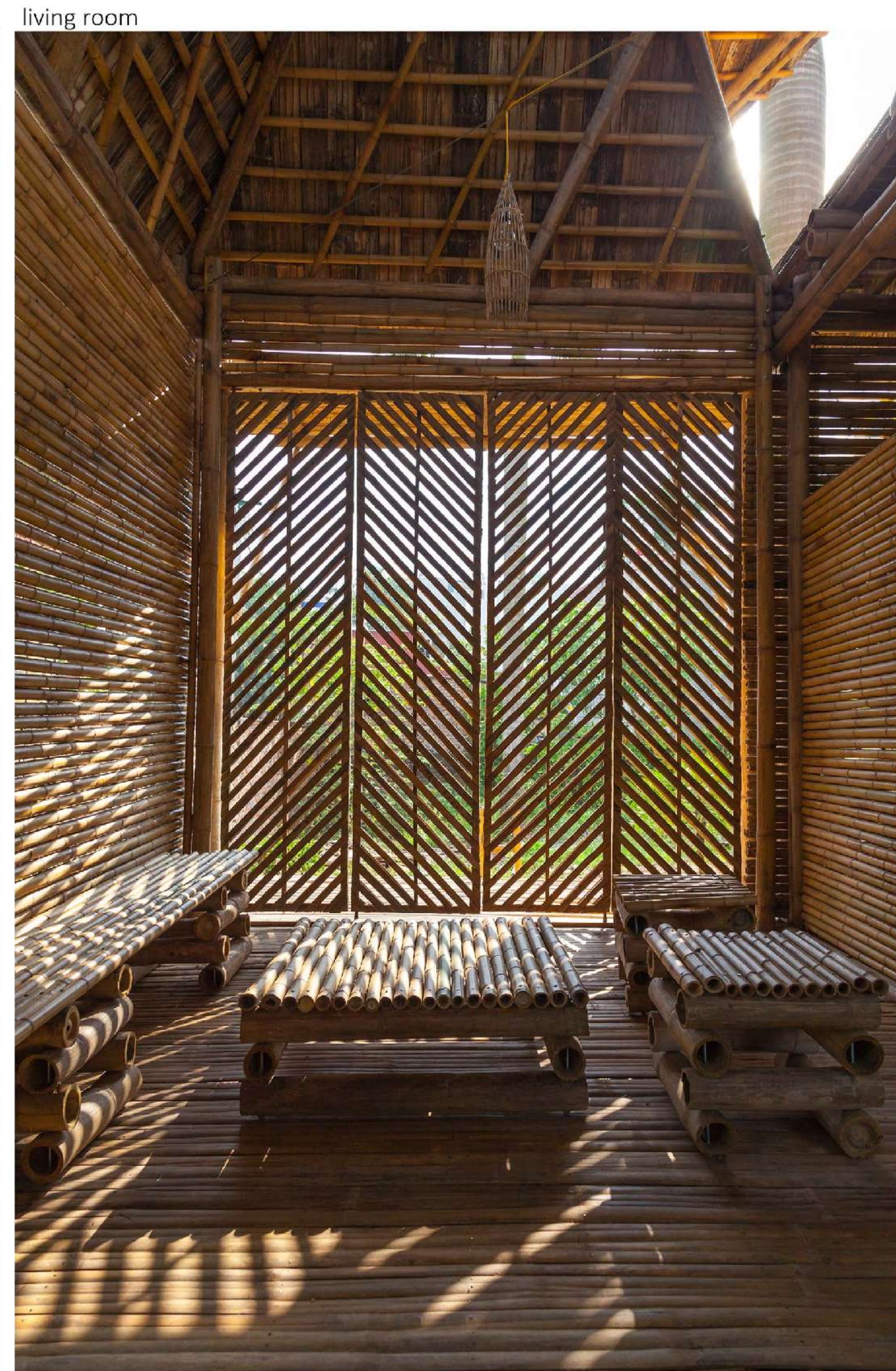
H&P Architects

Bamboo is a significant symbol of Vietnamese people – the “green steel” of 21 century. The solid, straight and high bamboo trees represent the resilience, indomitability and bravery to counteract the natural disasters. The body of the tree is often treated as a valuable material to build houses because it is not only stronger than oak wood and lighter than concrete, steel, but also eco-friendly. The productivity of a bamboo cluster is 25 times faster than a normal forest. Bamboo grows constantly, after 3 – 5 years it can be exploit without replant. The traditional treatment method is soaking bamboo in mud and smoking it, then bamboo becomes as durable as timber with average life expectancy 10- 20 years. Bamboo can be connected by the lashing ties and drawsticks.

- 1 living room
- 2 vertical garden
- 3 open roof detail
- 4 outdoor terrace
- 5-6-7 options for dividing the space



kitchen



living room

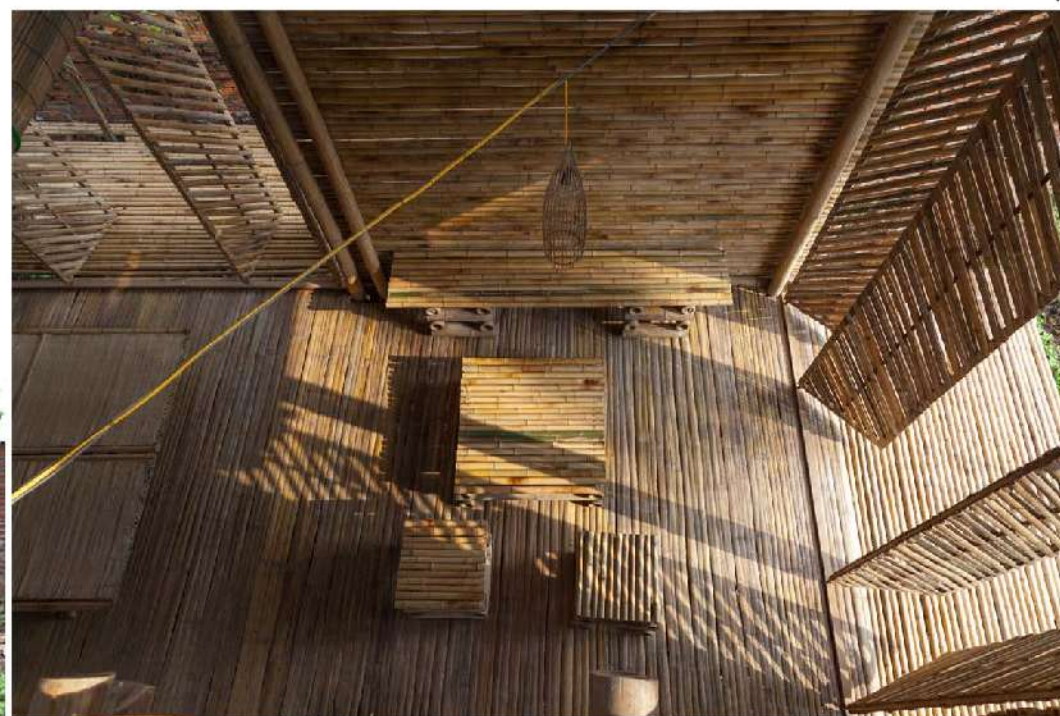


bedroom

When we researched for the flooding area, we determined to satisfy three criterias: low cost + fast self build + flexibility to widespread the application. The practical result is:

- Total materials and equipment cost for a sample house is 55 million VND (~ \$ 2,500). The product is a 44m² space (when closed) and 62m² (when open), convenience for a family (6 people) living with natural disasters.
- Construction quickly and easily within 25 days. People can build up by themselves because the every components are modularized. They can also proactively prepare materials in place and gradually improve the house during living time according to their abilities.
- Ability to apply widely in easy circumstances consistent with the diverse, flexible use of space, can be mass-produced goods due to their modular and easily removable com as well as replacement components, variety of roofing materials.

The plan of 4 modular houses entirely made from bamboo is fully functional necessity for a 6 members family: living room, kitchen, toilet facilities, laundry, classrooms, worship space and place for sleeping/ rest . Water filter, water treatment system are set under the floor to take advantage of rain water and reuse it- first of all we need a fresh water supply in the house to use as temporary resource to use in the flooding season. Verandah and roof can expand to 4 sides to get the natural light and ventilation for the house. The surface of the wall with the wind trap are covered by vegetable trays in order to contribute the meal in flooding time.



With bamboo pole (diameter 8-10 cm and 4-5 cm) is modularization (3.3 m x 3.3 m), each house is simply assembled with bolting, binding, hanging, placing .. The structure is anchored, braced, strong enough to withstand natural disasters, exceeding the flood level of 1.5 meters. People will improve the cover for the house depending on the climate and the natural materials available at the site (4-5 cm bamboo wattle, plaited bamboo, coconut leaves ...) to create local architecture. This solution not only meets the functional requirements but also the requirements of sustainable economic and aesthetics.

- 1 mezanine
- 2 outdoor terrace
- 3 closed house
- 4 open house
- 5 roof detail

Blooming Bamboo Home
H&P Architects