Primary school in Peri-urban Bandung, Indonesia

Located between textile factories and kampung housing exist the remnants from an agricultural era. Urbanization and water pollution form a threat for these green areas. My research focussed on how to harvest, purify and use this water on site. The purification process is established by the use of phytoremediation, that can also be seen as a water reservoir and an educational landscape experience. Materials and plants are related to the landscape and can, in parts, be harvested as local bamboo that is used for the project.

Water purification is established by using phytoremediation to purify the water. This process is also used within the school itself to harvest and purify water. The purification process is established by the use of phytoremediation. The process is located above and underground as a water reservoir and as a water purifier.

The materials used are related to the landscape and can, in parts, be harvested as local bamboo that is used for the project.

The modular wall system, on the other hand, tries to find a connection with the orthogonal grid of the kampung and its predominant direction. This modular system allows for a planted rainwater harvesting. Some typological variations occur in the design of the modules, allowing for different aesthetic qualities. The form is based on a changing peri-urban environment, it is adaptive to the changing requirements.

Cut openings

Fishpond

Underground watermanagement

Water purification concept

Public routes

Public space & playgrounds

Urban design in the kampung

The domes focus on each other for visual and physical connections. The landscape in between functions as a playground and public space. Public routes are integrated in the landscape design. The domes are visual connections and a space for a changing environment. This allows for adaptibility through changing requirements.
The chosen layouts connect with the typologies mentioned before. However, it is important to note that the chosen layouts are but a drop in the bucket of the possibilities. The main dome acts as a performance space and public auditorium. The hill on the east functions as a "break MF" (den), for the children. A flat area is on the side of the hill to house latch or mixed peoples. The classrooms with the door below and a main door lead can lead to a tree house or pavilion in the gardens etc. The spaces that are most closed can be used as a regular classroom or meeting rooms.

The space between the modular walls and the distinct acts as a place to take some time out and rest. The community gardens will serve the same as a green in the public.
Interior and sections

**Layout of landscape**

- Shelves
- Acoustic absorption wall
- Windows

**Modular possibilities**

- Standing table (adult)
- Sitting/standing/ climbing
- Standing table (child)
- Sitting table (child)

**1650x550x550 box assembly**

- 1650x550 Laminated bamboo board 20mm
- 550x550 Laminated bamboo board 20mm
- 10mm wooden dowels

**Modular box connection**

- 10mm connection bolts

**Sound insulation input**

- 100m Coconut coir matts
- Steel anchors
The dome consists of 6 layers. From straw bamboo comes towards the thatching on top. They form a rigid whole that is very resistant and stiff. The top elements form the pinnacles and act to let in light and catch rainwater. Furthermore, in case of weather, the top will have which results in an increased effect in air flow by the design and that could make an interesting roof for more places. My dome is assembled working the same way as the rest of the layers. Segmented bent beam assembly the segments are connected with wooden clips. TheSegments bent beam assembly and the reinforced elements could transfer forces in case one element fails there are no safety issues.

Substructure

Dome structural layers

Top element 3D nodes

Thatching Rings

Diagrid CCW

Diagrid CW

Ribs and Rings

Dome structural layers

Top element 3D nodes

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Diagrid CCW

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Construction and details

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