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(Indonesia)**

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Realrich Sjarief received his B.Arch from Institute Technology of Bandung, and M.Arch from University of New South Wales. He had previously worked for Norman Foster well known for cutting edge Building Technologies; before then establishing Realrich Architecture Workshop/RAW on 2011. His practice has reestablished the long history of craftsmanship in his builder's family, lasted for 3 generations; 60 years of practice since Indonesia's early Independence years. At that time the practice has no name. The relationship between the supervisors and staffs was intimate and personal to service some clients. The practice is well known on trust, quality, and its authentic design innovation in the mastery of building construction in Indonesia. RAW's projects strive for uniqueness over humble character of local material. The idea of RAW is that every building which developed wholeheartedly will create such a timeless, surreal, and mastery quality in its simplest form, through the simplest approach.

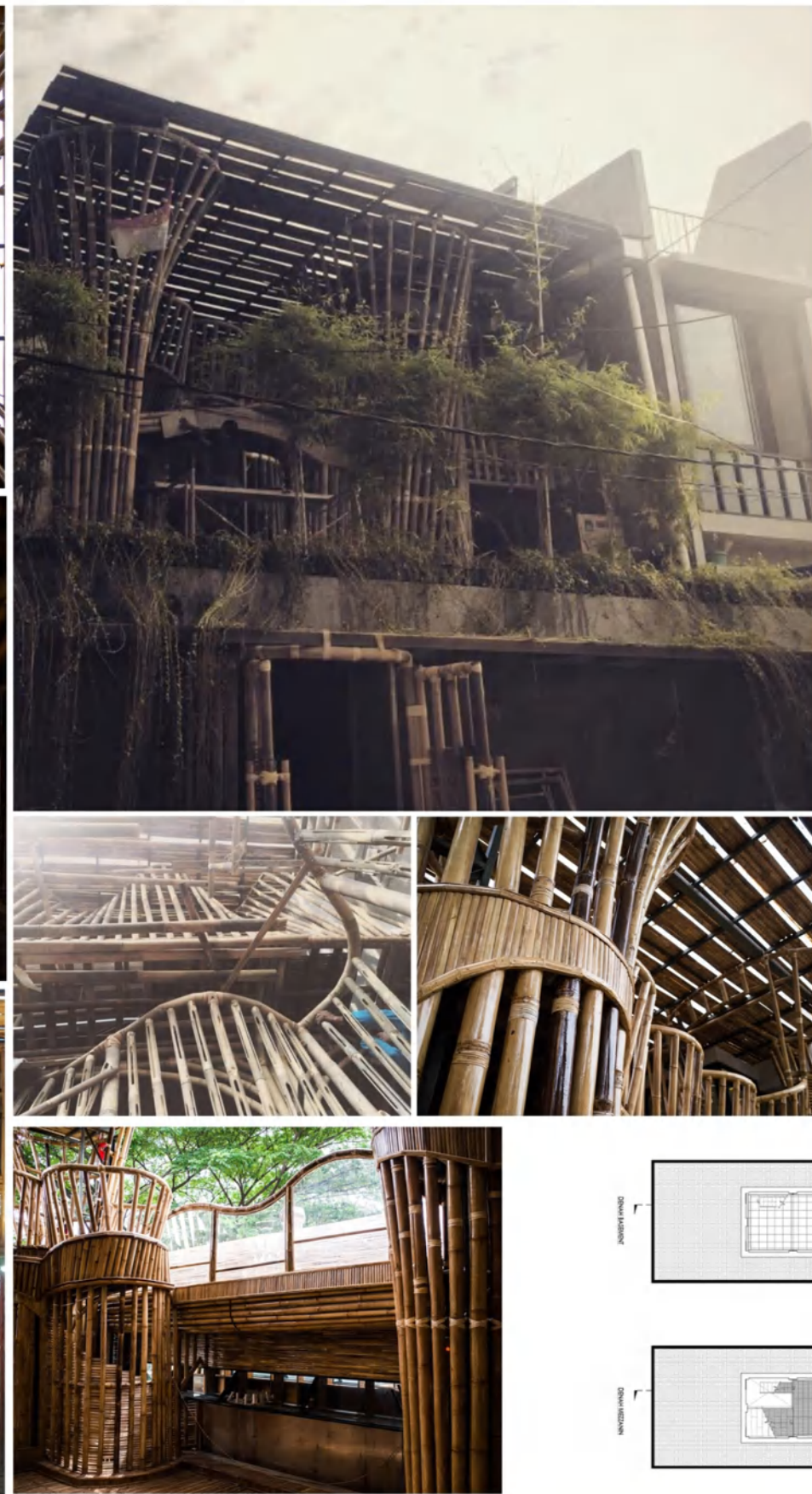
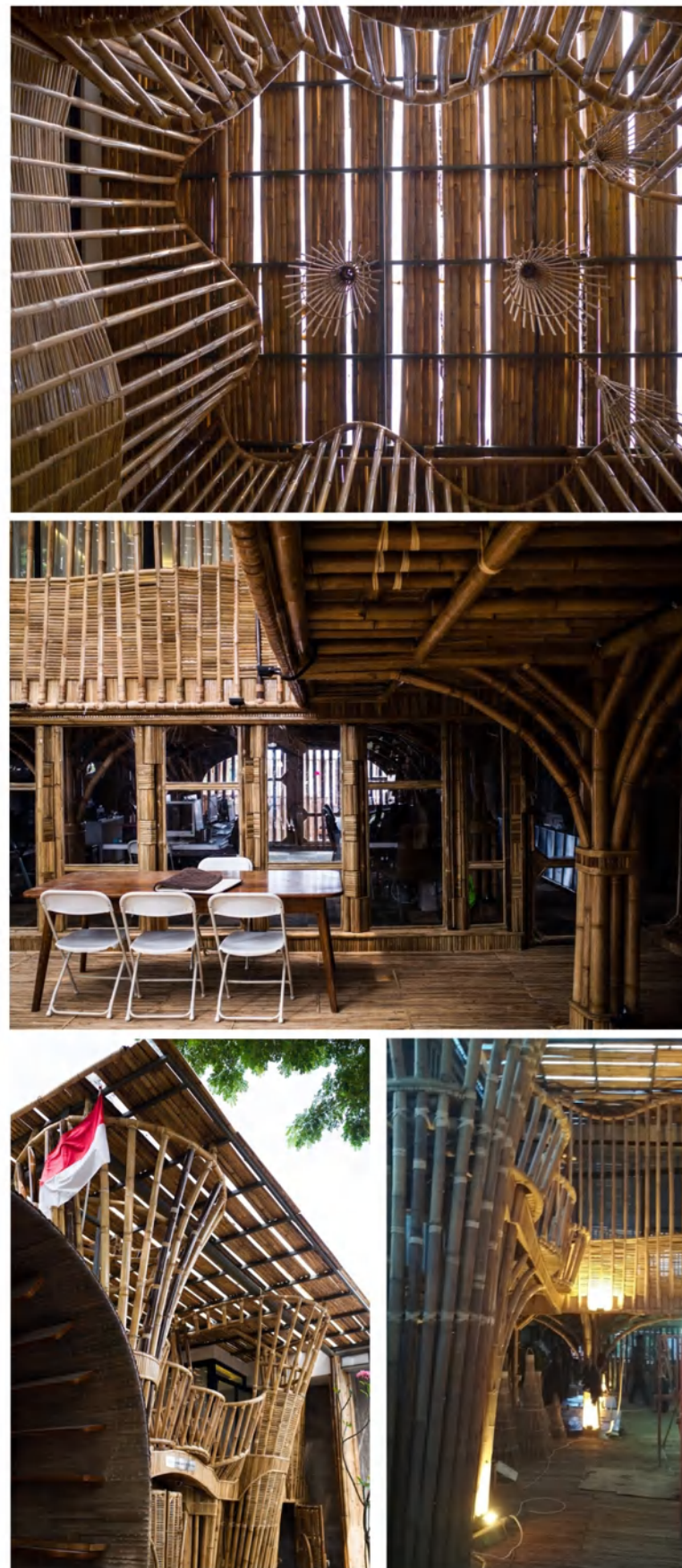
TOPIC 1 : GUA BAMBU (THE BAMBOO CAVE)

TOPIC 2 : DANCER HOUSE

TOPIC 3 : THE SCHOOL OF ALFA OMEGA PHASE 2

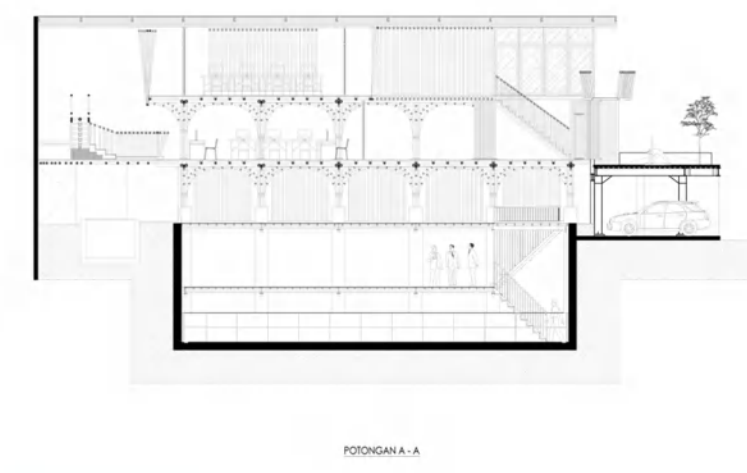
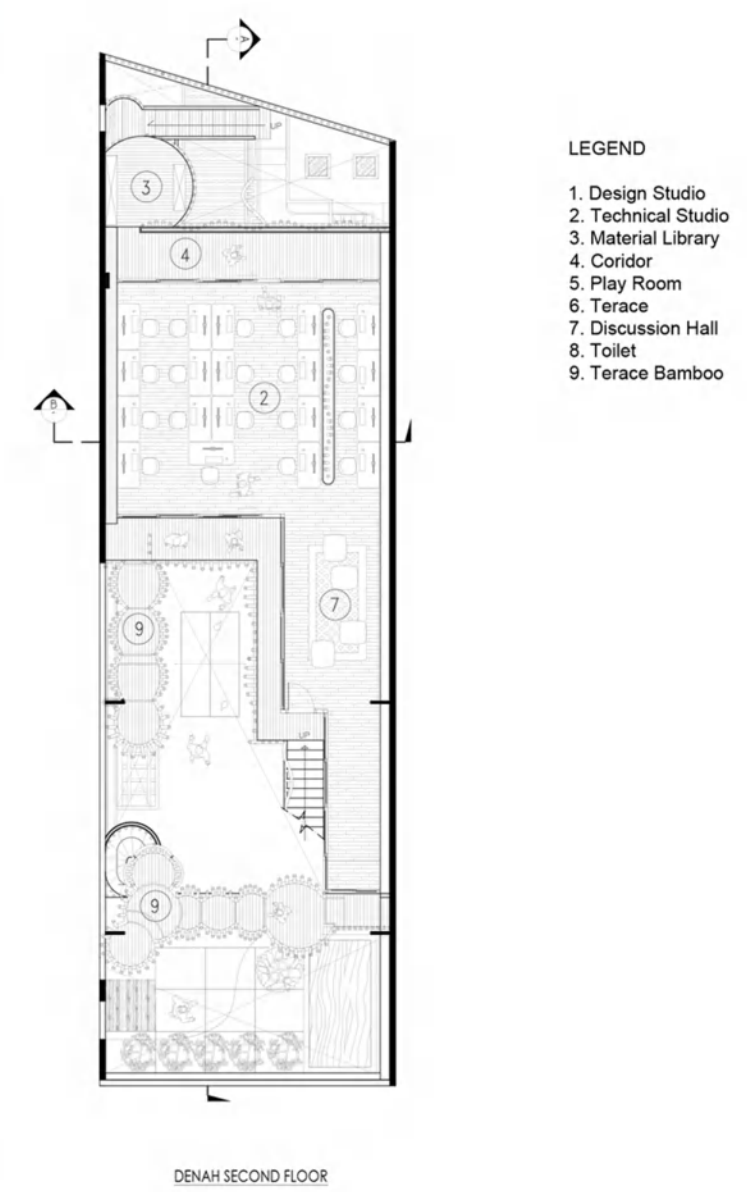
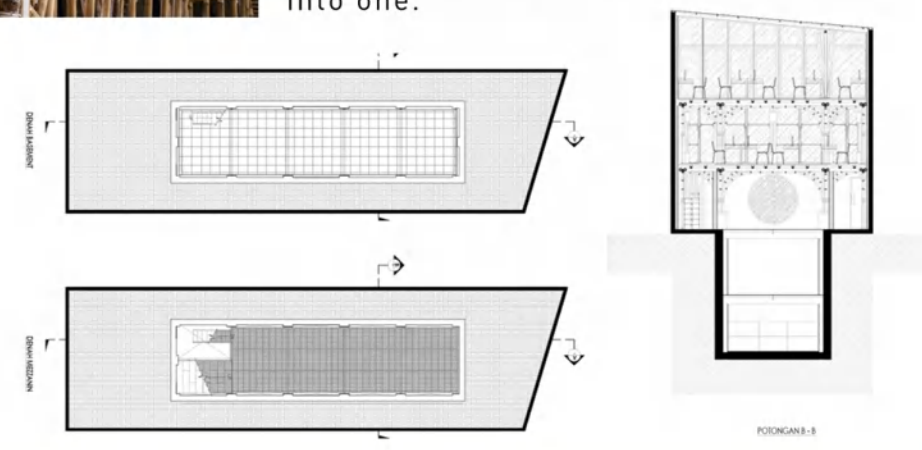
RAW Architecture Mastery in Natural State





The construction of a Bamboo referred to as a Bamboo Cave was completed in a period of 4 months, the 3 floors above use a bamboo structure with a program that can change - as large a room as possible as flexible as possible coupled with the separation of roof construction hanging on the outer wall of the building Construction of under-roof buildings and underground construction uses concrete materials and steel construction to improve construction efficiency.

The upper floor structural material used is mostly small bamboo with a diameter of 8-10 cm and bamboo supporting the main beam of 12-15 cm as high as 3 floors, bamboo which is often used to make scaffolding with the availability of bamboo material that is less than 1 km from the location of manufacture. character, the dimensions of the bamboo stems used make the construction form a column of clumps into large columns consisting of small bamboo joined together. In several design iterations, Bamboo is very fast to construct, the material is easily available, strong and efficient so it is quite suitable for changes such as adding structure, reducing structure, replacing bamboo that has poor quality. This is where material flexibility is supported by the people who build it into one.





BAMBOO'S CAVE

RAW ARCHITECTURE

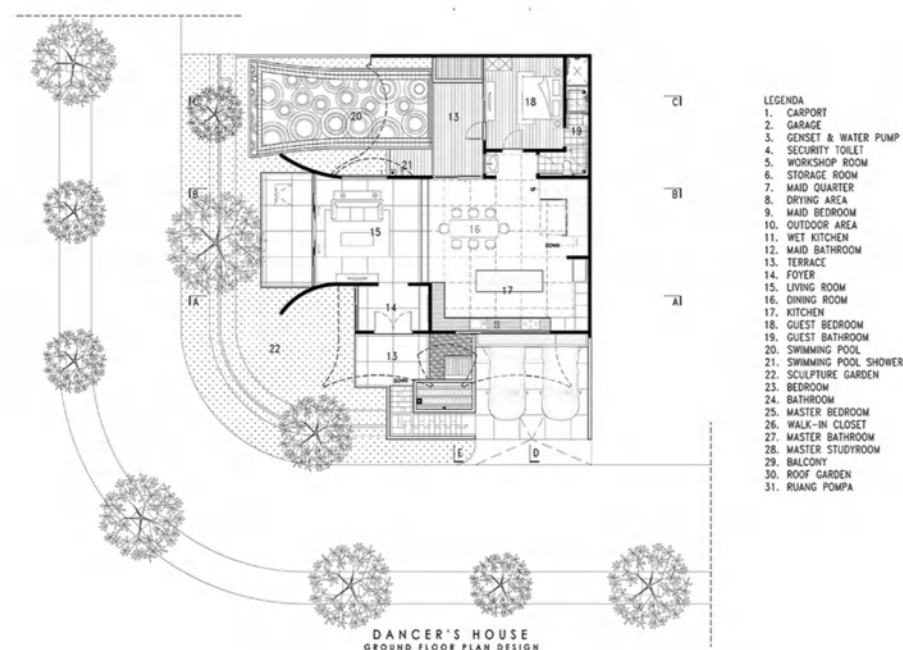
RAW ကုမ္ပဏီ
Architecture Mastery in Natural State



THE CONCEPT

In 2013, RAW developed series of curvilinear form, which has same aspect of technical performance, but challenging the brutalism of craftsmanship & tropicality through concrete structures. The design of Dancer House is one example of project which exercise the modification of form and program with open plan circulation, in the tropical climate of Bumi Serpong Damai Tangerang, Indonesia.

Dancer house emphasized the play between program and presence, how the duality of character can be synthesized in the form of house. The curvilinear form proves to be an exercise in tectonic language of a bare concrete, provides new manner with conventional construction.



The house shape derived from Indonesia traditional house called Rumah Gadang. In which the pointed arc resembles the praying hand, it frame the landscape and denotes the characteristic line of the house. The design also adopted bioclimatic approach such as centralized stairs as wind & light tunnel as the space to breath. The importance of Dancer House, is that the work succeeded to assimilates important factor such as man, site, and creator both symbolically and pragmatically.



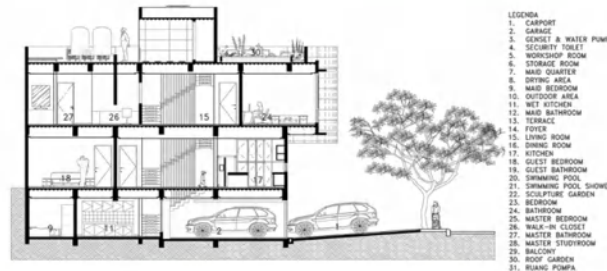
1. (Night). Front view of the House
2. Ground Floor Plan
3. (Day). Front view of the house
4. (night). West side of the house



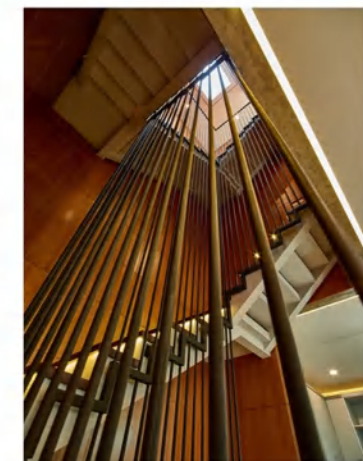
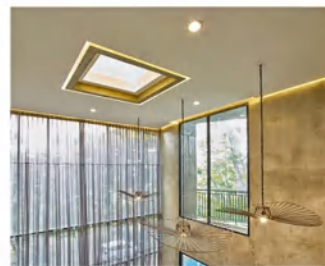
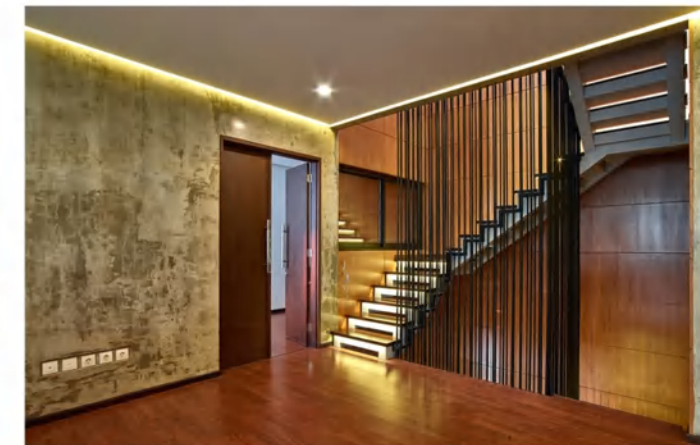
DANCER HOUSE

RAW ARCHITECTURE

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- LEGENDA
1. CARPORT
 2. GARAGE
 3. GUEST & WATER PUMP
 4. SECURITY TOWER
 5. WORKSHOP ROOM
 6. STORAGE ROOM
 7. NAD QUARTER
 8. DRYING AREA
 9. NAD BEDROOM
 10. OUTDOOR AREA
 11. WET KITCHEN
 12. NAD BATHROOM
 13. TERRACE
 14. PORCH
 15. LIVING ROOM
 16. DINING ROOM
 17. KITCHEN
 18. GUEST BEDROOM
 19. GUEST BATHROOM
 20. SWIMMING POOL
 21. SWIMMING POOL SHOWER
 22. SCULPTURE GARDEN
 23. BALCONY
 24. BATHROOM
 25. MASTER BEDROOM
 26. WALK-IN CLOSET
 27. MASTER BATHROOM
 28. MASTER STUDYROOM
 29. BALCONY
 30. ROOF GARDEN
 31. RUANG POKJA



The Challenge for Craftsmanship. The modest size of the site allows the project to be intensively focused on details. This where the artisan and craftsmanship rooted in, The project experimenting with tension and capacities of concrete material, playing with contour of the site by dug and fill technique, also questioning the concept of tropicity by utilizing what's available on site.



A Dance for Humanism. The curvilinear form, not only capture but also allowing the structural integrity of concrete to be tested thoroughly. An 8 m west-faced direct window is a decision that possible permitted only by the existing 2 pine tree. The arc dancing pattern derived from the house rational program grid.



ALFA OMEGA SCHOOL

RAW ARCHITECTURE

RAW Architecture Mastery in Natural State

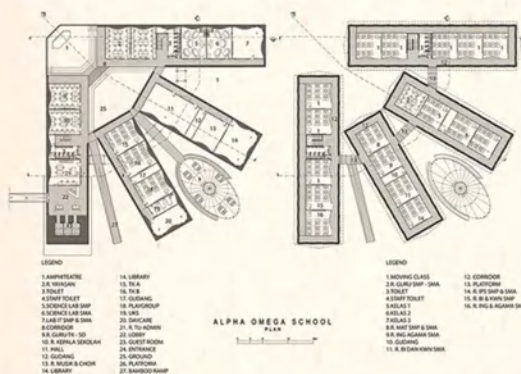
Vernacular + Tradition + Locality + Indonesia

Alfa Omega School

Alfa Omega School is a development which responds to local climate, local material, local builder and local craftsmanship in Salemban which stands on existing local paddy field. The building integrates 4 modular buildings with efficient access point in one central court yard due to limitation of native land zoning of what can be built and what can not be built.

The target of the project is to create an optimum collaboration, or bridge relationship in economic and creative process of construction in two important levels of masonry and bamboo construction which can enrich the economic impact of surrounding. First by using two main local builders from surrounding such as stone masonry, steel welder from Salemban area, and Second, bamboo craftsmen from Sumedang area. There are 3 design principles:

First, Local Material. The materials used in the construction are selected based on performance, availability, and durability which can be sustained for 25 years ahead. There are 4 basic major materials available: bamboo, concrete, brick and steel. Steel structure is used because of two main reasons, first the structural load on unstable soil in existing paddy field, second, responding to optimum time frame, durability, and economic side. The structure is combined with bamboo in roof to create parabolic shape which enhance the character of Nipah which can be tilted or bent while keeping the cost constraint on budget. The brick is stacked in solid void pattern to allow cross air circulation in the facade. Meanwhile the polished bare concrete is used as floor finishes as its durability for daily school activity.



Local structure on site elevated for avoiding flood

Second, Local Craftsmanship. The Local craftsmanship seek to answer 3 goals such as:

1. Optimum resource
2. Time constraint.
3. Collaboration of craftsmanship+architecture.

Material resource are found within 5 km from site to accelerate pace and reducing carbon footprint. In 4 months range, the craftsmanship are categorised into two types: (1) Light structure is built for 30% circulation area which used bamboo and Nipah entirely with triangular frame structure per 600 mm built by 40 labour from Sumedang. (2) Heavy structure is built for modular classrooms by Salemban craftsman constructing masonry and steel framework. By first 2 months, light structure craftsman had constructed dock, followed by roof and ceiling details. In followed 4 month they joined in heavy structure part. The school is built in 4 months time.

Third, Local Climate. The school designed as passive cooling building, which relied heavily on natural cross air ventilation in structurally open high ceiling and solid-void brick on each side of school's wall. The structure of the corridor is cantilevered by 2000 mm which create natural sunshade by shadowing excessive heat from sun while providing protection from heavy rain fall. Nipah's roof, brick's solid void facade, bamboo's ceiling and concrete's floor finishes provides low thermal conductivity materials allows building to cool down in average whole year, interior temperature to 27 celsius degree. it the opening in the building designed for 100 percent daylight until afternoon, and 100 percent LED in the night time.

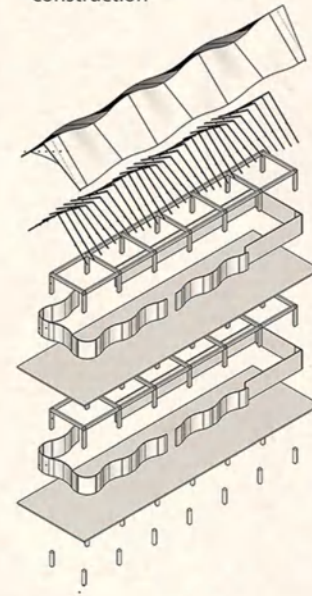


Design Principles

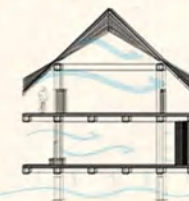
1. Local Material.- reducing carbon footprint by using local material which can be found within 5 km radius



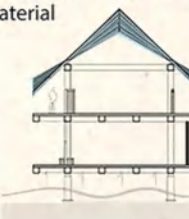
2. Local Craftmanship, based on light and heavy type of construction



3. Local Climate
Providing cross air circulation



Using Low Thermal conductivity material



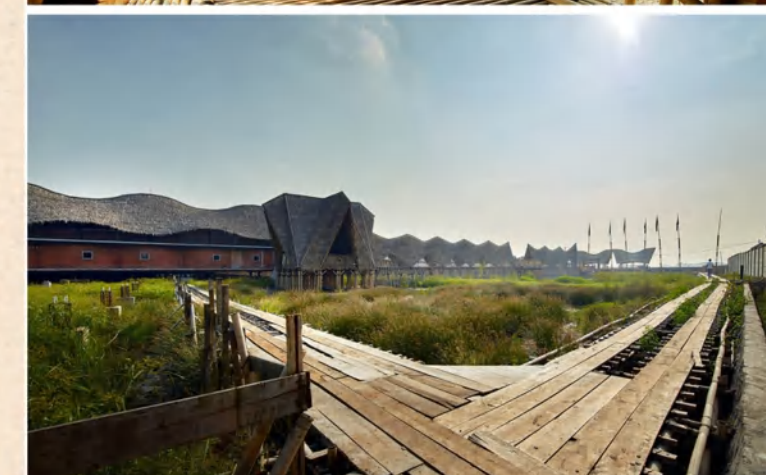
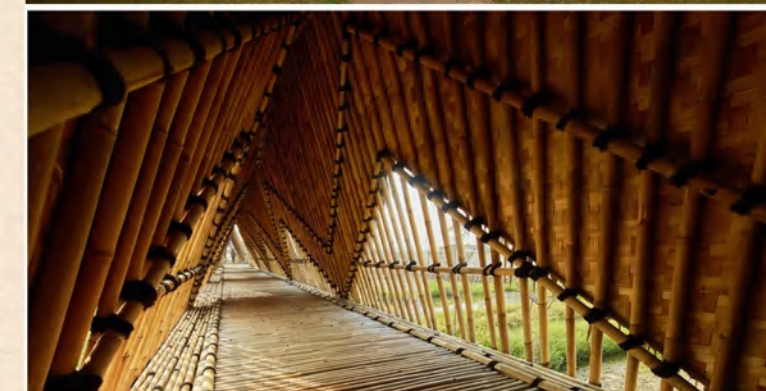
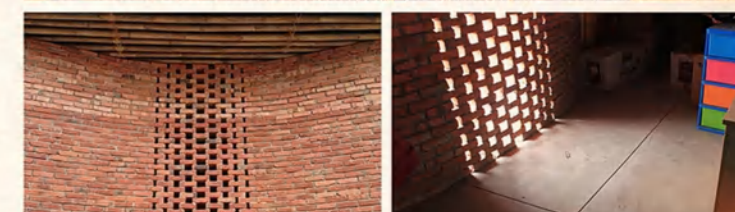
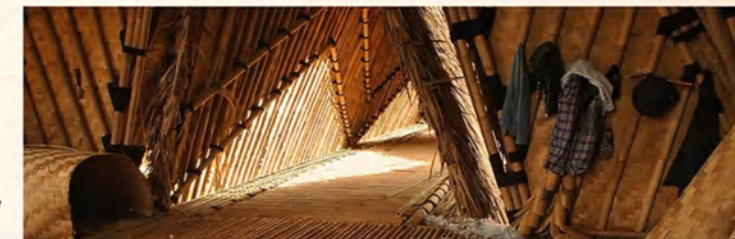
Local material + craftsmanship in Light Structure building



Local material + craftsmanship in Heavy Structure building (2 storeys) based on steel construction (optimal time and economic constraint + durability)



Local Climate, Cross Air Ventilation

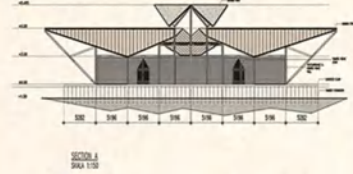
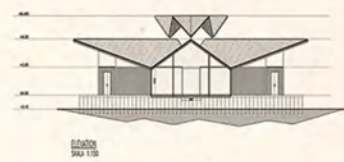
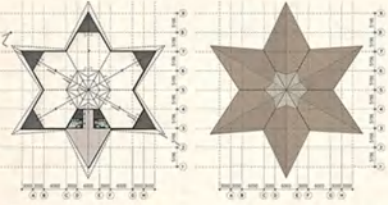




ALFA OMEGA SCHOOL

RAW ARCHITECTURE

RAW Architecture
Architecture Mastery in Natural State



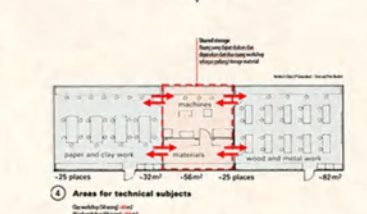
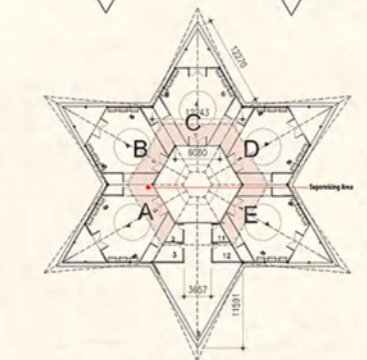
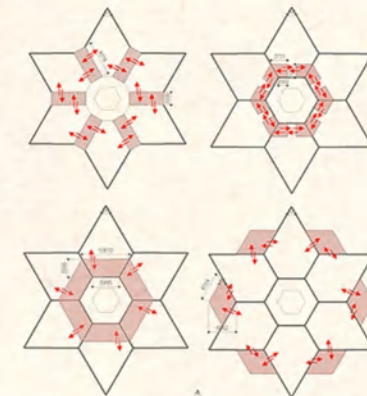
Alpha Omega Workshop is a complementary facility for students to learn and practice how to make a craft or experimental product by themselves. The aim of the project is to see how conceivable bamboo material can be adapted in particular construction to form non permanent structure due to local code. From on-site production to detail application, also how its integrated to practice of sustainability at whole, involving local community, without sacrificing its building performance. The building is responsive to tropical climate situation By uplifting the floor and raise its roof for openings, cross ventilation system of building is ensured thus reducing cost of air conditioning and creating air stacking effect at the centre of the building.

Second, Shape forming based on optimum efficient flexibility and efficiency. The base of the form is triangular shape for its rigidity. The hexagonal base developed as its number of 5 classes and utility. It is formed because of the flexibility in hexagonal form, for connection between each workshops room which the center of the workshop can be use as exhibition area. This layout is integrated with centralized triangular form which culminated at the center of the building forming air gab in between the triangle for allowing air stacking effect pass trough the opening. The hexagonal form is exercised through the pattern of weaving technique as translucent panel material allowing sunlight coming through the facade while avoiding noise passing through the facade. The facade panel is exercised in 600 mm x 1200 mm panel to speed up the construction on site.

1. Local Craftmanship. The Building has a purpose to reduce carbon footprint by using local craftsman and material. Bamboo is chosen because of its availability.



2. Shape forming based on optimum efficient flexibility and efficiency.



There are 3 main design principles:

First, Local Craftmanship. The project intended as temporary building, which required it to be a knock-down design. Bamboo had been chosen as main material because of its renewable, flexibility, and plain maintenance for years. Its structural columns were made from 3-4 parallel bamboo being tied together. There are 5 type of Bamboo being used throughout the project. Every joints of the building are done with coconut fiber knot without any nail to avoid risk of cracking each rod. This practice expressed as form of paying respect to traditional Indonesian bamboo joinery. Two benefit of total bamboo usage has reduced the cost of building about third of project. Its on-site fabrication has allowed the project to reduce carbon footprint greatly. The project involved Sumedang craftsman and local resource in 5km radius.

Third, Passive Cooling. To maintain interior temperature, the central roof structure are raised which create natural cross ventilation system. There is a gap between the wall and the triangular roof (that has 6 meters of height after floor finish). The roof made from bitumen, solid yet flexible material with low thermal conductivity. This way, the building will kept bright via sunlight without taking excessive heat. A lining of bamboo is applied for added base of the building, which also intended to strengthen soil texture under the building. The building use layered wall consist of bamboo weave and polycarbonate material that allows natural light to enter the building while resisting heat to enter. The floor, using polished concrete which also have low thermal conductivity and highly durable for long usage.

land clearing after used as landfill
Raised base to prevent flooding



Bamboo can be found within
2 km from site

