

THE VIFA

VERTICAL FARM ACUPUNCTURE

“An urban needle to solve poverty sickness”



PROJECT BRIEF

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BACKGROUND

Ridwan Kamil as visionary mayor of Bandung comes with many of awards from national and international, HE has many of development program for now and future. Ridwan has developed a concept of Vertical village cable car, monorail which contributing local architecture firm and international architecture firm to realize his concept. So, we want not to against the existing development concept but we want to propose a concept to support current development with our Vertical Farm Acupuncture concept.

Sometime we forget that Indonesia is agrarian country a country which agriculture is one of important thing for Indonesian society. the big cities development nowadays being a role model of others small city and we see mostly land conversion is happen in many of cities, the land converted to be industrial zone, commercial zone and residential zone. "Food reform is an important issue in our economic assessment. Because we know that the Government's target is food sovereignty. In BI (Bank of Indonesia) we are also concerned with food inflation as one of the causes of high inflation to date,"*. Central Bureau of Statistics (BPS) recorded the number of poor people of Indonesia 28.01 million or 10.86 percent in March 2016, decreased compared to September 2015 which recorded 28.51 million people or 11.13 percent. so how if Bandung being role model for vertical farming development in urban areas as a solution to completing urban development with sustainable social infrastructure?

The site is considering to existing potential like Teras Cihampelas as ones of point of interest, existing circulation, and revitalization concept instead of relocation idea.

The site from its structure consist of 5 kinds which is Street, Commercial zone, Slums area, River zone, and Normal residential. in this case we underlined the housing on the edge of the river, we focused on the orange area as prototype to be implemented in Tamansari river side, after analyses we got a hypothesis that the most house build on the edge of Cikapundung river than the most they poor. so here the design plays the role to responds to make them being ones of vertical farm users to be farmers. when waiting for harvesting they can do another works.

MAIN FORMULA

PROJECT FORMULA.

Taking from the fact that in Bandung, which is a city of urbanization with so many existing programs, renewable resources environment, and foods as the core of human needs, coupled with problems such as poverty, current needs, nature disasters, and food crises, is expected to be a solution that can answer the facts and problems such as new work, sustainable thinking, natural resources energy, and new urban agriculture. With the aim that economic points if incorporated with a social and supportive environment, will result in a sustainable development.

DESIGN FORMULA

The design that we will propose is The ViFA which is a proposal to complement and support existing government programs so it's won't interfere other programs, such as vertical village, park, and monorail. Supported by resilient needs such as farming, self energy, economy and climate the ViFA is also try to solved the problems surrounding economy, energy, well being, urban development, and society.

DESIGN STRATEGY

RESILIENT

In this section, we try to answer the needs or functions in the space of ViFA such as learning, social, working, trading, energy treatment, decomposing, ground water quality, and waste management.

Socio Economy Education. Creating local work opportunity with farming as country culture, providing micro market for village area, green park to share, and flexible space for learning and meets with shady trees. the idea is to create harmony between programs on ground floor, so the local kids can play and learn here.

Energy. The tropic country comes with more benefit of renewable sources, like sun, wind, and water that should to be maximize. with hybrid energy sources concept aiming to create zero energy loop. gravity and Archimedes forces of water will be maximized to create output as energy.

Environment. Improving ground water quality and ground quality with decomposing system and water recharge after each treatment to let the ground zone is treated and has enough power to sustaining.

PRODUCTION SCENARIO

Production Scenario is talking about the product that will be produce by The ViFA and where the product will be brought by data from our study case.

Study Case.

In this case we doing little research in internet how much the farmer get with hydroponic, we get a conclusion a farmer can reach 2-4 Million IDR with small site 36 m2 and the average is 3 Million/month IDR.

Scenario.

- Production is underlining vegetables and fruits to support Indonesian main food rice.
- Brand to make trusted product with identity and system that worked by local community.
- Internet as media to reach wide scale market, give online opinion, educating urban farmer.
- Urban people as consumer of the market, to make symbiosis mutualism with sustaining between that both.

In this case we doing little research in internet how much the farmer gets with hydroponic, we get a conclusion a farmer can reach 2-4 Million IDR with small site 36 m2 and the average is 3 Million IDR each month, with good system the goal is to make this project comes with more benefit for social people surround residential.

WATER MANAGEMENT

Managing water by design and system can be doing to keep the environment having sustainable development system.

Water Harvest.

Designing the roof of outer greenhouse and outer circulation area with water harvester harvesting system used for planting and growing, also for self energy to support the needs of water.

Water Recharge.

Bandung placed between 4 mountains and located in Bandung basin so the water treatment is needed to recharge ground water and to anticipate flood probability in this zone.

Water for Drink.

After collecting the water with hybrid system some of water is treated to being drink-able for public and especially for building users. this concept is to respond water issue and water crises.

CARBON FOOTPRINT REDUCE

The several ways to considering the local area potential to the existing material on Bandung is applied to reduce footprint of carbon construction, also reuse something that can be reused so The ViFA has the great potential to reduce its carbon footprint for greater climate resilience.

Local Area Material.

Bamboo material could be main material produced by bamboo village in Lembang Bandung, so the forest could be managed for recovery. Bamboo as reinforce system for minimizing the heavy of precast concrete.

Reuse.

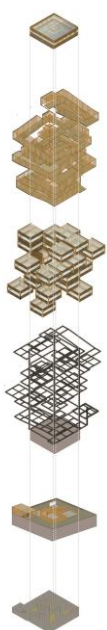
Reuse unused material after construction and collect worker plastic and bottle glass for planting media in greenhouse and park.

Community Contribute.

Make local community as part of design process to live this social infrastructure through share planting, reused unused material of family member, and use plastic waste for media planting in greenhouse

EXPLODED DESIGN PROGRAM

By exploding the design, we try to describe the detail about how The ViFA is.



Top Utility.

Providing top utility for supporting ground utility system including water tank with micro hydro generator, WC, and solar panel on roof. on this zone, the window on 2 faces applied to collect air

Access.

The ramp with 7degree as access with 3m of dimension is connecting each greenhouse, also use for planting with vertical method to provide clear air with passive concept.

Green House.

The greenhouse with module 6x6 using modular design and bamboo material. each highest greenhouse includes water harvest system on roof edges.

Structure.

The main structure is steel with grid system and cantilever system, this material is easy to find in urban area such as Bandung.

Social Space.

Social space as meet point including green space with micro market, and little library to educate people about farmer and hydroponic system

Ground Utility Area.

Ground utility as main utility rooms to control water, renewable energy resources, rooms for specific worker, also the electricity for design.

USERS SCENARIO

User scenario created for the planning of users who will be expected to form a network as a container of investment so that it can be sustainable long-term for future generations.



Local People. The city nowadays being the most populated with the people from rural who want get jobs in city but because they cannot survive then they build house in the riverside with illegal the local area is bordered by it problem zone on the site so users of this project area the poor people and jobless, so we provide the design to offer users a job to support city resilient and developing city quality.



Collages. With three fundamental commitments, we underlined the third one which is **community service**, so the scenario is agriculture and management student, lecture or researcher together develop the program of society together with teaching and learn agriculture and economic with production scale focused of hydroponic system



Community. Urban farming community and other greens community as major said Bandung developed with love, urban community really important to urban development to create a harmony between working and urban consciously, urban community will be being a part of sustaining the program as volunteer or sharing about activity and also to campaign green lifestyle in Bandung city. also underlined this social infrastructure also contributing city government of farming to sustain.

GREEN MARK NRB 2015

Summary	
Main Energy Efficiency	Point Score
Leadership	17
Topicality	30
Renewable Energy	8
Water System	6
Material	18
Waste	3
Indoor Air Quality	8
Spatial Quality	10
Smart Building Operation	7
Advance Green Effort	19
Total GM Score	126

RATING		FORECAST POINT EARNED	
PLATINUM	70<	 126 POINT PLATINUM AWARD	
GOLD +	60-70<		
GOLD	50-60		

CONCLUSION

“The ViFA is a design to support government revitalization programs not to erase the current programs, our idea is infill design strategy to make a harmony of current Cikapundung revitalization programs with responding to local problem. our proposal is green design of vertical farm as new garden field to solve poverty in Tamansari Bandung”

Sticking the VIFA on an urgent area such as acupuncture needle will come with benefit. So, we obligated to solve this 10% beginning from small area which is Village itself as the smallest government administration. The vision of this design is to clear poverty of Tamansari village and support Bandung government program “One Village One Product” with considering to existing development, current proposal development so the VIFA is comes with harmony program and the final goal is sustainable urban development.