

THE NEXUS PROJECT

KAMPONG DERET CO-HOUSING REMEDIATION PROJECT

TRANSFORMING THE CILIWUNG SLUMS INTO AN ECOLOGICAL CORRIDOR THAT GROWS WITH THE COMMUNITY AND CITY FORCES

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PROJECT BACKGROUND

In the search of achieving sustainability of our structures and lifestyles, we have all been led to believe that built technology will always be the sole solution and needs. We built floor, roof, and wall to enclosed ourselves from the harsh environment, from the worsen climate change, and toxicity environment. All we have done by far is turning our backs to these problems and take Mother Nature's source for granted without taking conscious regard of its consequences.

It's not the size that matters. Small projects can make a big impact. Community supported construction of sustainable and appropriate facilities are an effective social development concept, proving that architecture in underserved areas is more than development aid or environmentally-friendly construction, but a means for building a community. The proposal combine the indigenous and local materials and technologies with clever yet compact design solutions that protect and enhance the natural environment and also place great emphasis on actively engaging the local population in the construction process. Buildings constructed by the local community result not only in a series of sustainable structures, but also a newfound sense of identity, self-reliance and enhanced social cohesion, generating positive impacts upon the social environment by creating opportunities for education, job creation, and training for employment. The construction process is effectively forms an important part of the transfer of knowledge, whereby local acquire new building skills that may be reused and taught to others. It's a matter of empowering local craftsmen to learn for themselves that freely available materials like clay, stone, and wood encompass the properties necessary to build in their respective geographic and climatic context, and that a village that works together also grows together.

This project located in Kampung Melayu, one of the largest slum areas in Central Jakarta, Indonesia. The proposal tries to leverage the site/s unique characteristic, shaped by Ciliwung River, one of the notorious polluted rivers in the world which has been the main concern of the Jakarta's Government. It demonstrates that Green building is not just about the architecture, but also about being socially engaged. We integrate social and environmental performance for improved quality of life, demonstrating a successful approach combining the adaptive use of building materials, climatic mitigation, aesthetics and community development. Suitable for wide-scale application and the multiplication of the projects' features, their far-reaching potential help their respective communities to develop a healthy pride and hope and, at the same time, to create a solid base for their development.

SOCIAL INEQUITY AND CLIMATE CHANGE

Statement: Climate change, which is held to be man-made and catastrophic, occurs in the shape of a new kind of synthesis of nature and society. While the inequality of life-chances arises from the ability to dispose of income, educational qualifications, passports, etc., their social character being very evident, the radical inequality of the consequences of climate change takes material form in the increasing frequency or exacerbation of natural events—floods, tornadoes, etc.—which are in principle familiar natural occurrences and are not self-evidently the product of societal decisions. The expression “force of nature” takes on a new meaning: The natural law evidence of “natural” catastrophes produces a naturalization of social relations of inequality and power the political consequence: The conception of the natural equality of human being tips over into the conception of a natural inequality of human beings produced by natural catastrophes.

The fact is well known: Global warming, melting polar ice caps, rising sea levels, desertification, and increase in the number of tornadoes. All of it usual treated as a natural catastrophe. But nature is not in itself catastrophic. The catastrophic character is only revealed within the field of reference of the society affected. The catastrophic potentials cannot be deduced from nature or from scientific analyses, but reflect the social vulnerability of certain countries and population groups to the consequences of climate change.

The idea that natural catastrophe and social vulnerability are two sides of the same coin is familiar wisdom to a way of thinking that sees the consequences of climate change as a co-product. In recent years, however, social vulnerability has become a key dimension in the social structural analysis of world risk society: Social processes and conditions produce an unequal exposure to hardly definable risks, and the resulting inequalities must largely be seen as an expression and product of power relations in the national and global context. Social vulnerability is a sum concept, encompassing means and possibilities, which individuals, communities, or whole populations have at their disposal, in order to cope-or not-with the threats of climate change (or financial crises).

A sociological understanding of vulnerability certainly has a crucial relationship to the future, but also has historical depth. The “cultural wound”; that, for example, results from the colonial past, constitutes an important part of the background to understanding border-transcending climate conflicts. The more marginal the available economic and political options are, the more vulnerable a particular group or population.

PRODUCTIVE URBAN ENVIRONMENT

Currently cities possess a heavy carbon footprint. To become sustainable, future cities must aspire to be carbon negative. We need to find new ways to offset the city’s embodied energy and increase the production of sustainable energy, food, transport, and dwellings, while advancing public health and the quality of life. To do this, we first need to question the conventional wisdom of environmentalism and many of existing definitions of cities.

Pointing out the significant fact that most energy loss occurs during the delivery stages from power plants to distribution systems, we suggests a new focus and scale for saving energy, challenging the current architectural obsession with

producing energy-saving buildings. This shifts emphasis away from individual building to regional and national power grids distant from urban areas. This enlarged framework suggests that it may be more useful to think about cities as one element in larger system.

Although rural and urban have been historically polarized, with the former supplying food for the latter, contemporary agricultural practices are becoming increasingly diverse. Changing definitions of farms and farmers have encouraged farming in almost any location. Across metropolitan regions, derelict and underused urban land, agricultural land held in trust, community gardens, school; and university campuses, and even suburban back and front yards are now producing food. New channels of distribution have also emerged. Farmers markets, CSAs (community-supported agriculture), restaurants and markets specializing in local produce. And even gleaners who distribute fallen fruit all contribute to making local food widely available. Surprisingly, their benefits go far beyond the merely economic. In addition to providing jobs and augmenting incomes, urban agriculture can foster civic and community engagement, bring people closer to the rhythms of nature, maintain ethnic and cultural traditions, educate children about food and eating, provide high0quality produce, and, not least, offer the pleasure and beauty that are part of growing and eating delicious food.

Imagining what the future might bring, we imagine that sustainability offer a range of possible if highly speculative proposals for urban environments based on fitting people into natural environments. Envisioning a “city” that produces its own necessities, he offers designs based on manipulating organic forms using new technologies.

What kind of urban environment would these ideas produce? Certainly not the compact city many proponents of sustainable urbanism are currently promoting. Instead, taken together, they suggest an expansive form of urbanism, with dwellings and workplaces far more integrated with nature and agriculture than current cities. Combining the various ideas that are united around the idea of a productive urban environment, it is possible to imagine a variety of new landscapes that might emerge. Supported by a sustainable energy grid that can accommodate and distribute both large- and small-scale energy sources, this would be a green environment, with energy and transportation infrastructure, dwellings and workplaces, agricultural and natural spaces interwoven in new and still to be imagined combinations. Rather than reposing past models of urbanism based on density and roundedness', in the name of sustainability, perhaps we should keep our options open. Instead of normative urban ideal, we should move toward multiple yet highly focused directions that have the ability to produce completely different outcomes.

DESIGNED BY COMMUNITY – DESIGNING COMMUNITY

Apart from being an exclusive residential complex, THE NEXUS PROJECT also aims to serve the community in vicinity; as it is located in an ex-slum which didn't have enough opportunity to experience a community and public spaces. Now, we provide a meeting space, a multifunctional social space on the ground floor level that provided to allow the local people to gather and the children to play and interact. THE NEXUS PROJECT also incorporates a public library and lodge, school, bird sanctuary, public bath and community kitchen with attached self-provision food stall which allow everybody to play, interact, and socialize.

Due to a tight construction budget and concerning the density of the area and also to reduce impact on the environment, the project relies heavily on the use of inexpensive recycled and local materials in meant to save energy and to inspire the community to build affordable houses with high duplicability and durability towards the extremely climate changes over time.

BUILDING MATERIALS

Most of the buildings types largely constructed out of bamboo and used wood while the main structure consist of bio-concrete with stilt design to promote hygienic living and prevent the raising water level. Bamboo, which is inexpensive and easy to find around the site, is used to construct the lodge, stairs and as reinforcement for all floor concrete slabs. The project adapts a simple form of space and expandable possibility. The project also reuses the frame from an old tradition d towards practicing basic permaculture. Some spaces are used to plant fruits, vegetables, and herbs-the garden produces about 5-20 percent of the food needed. There is also a fish pond, and a place to breed rabbits and/ or chickens.

Rainwater harvesting will be relied on to water the plants. A water reservoir system is currently being constructed. The rainwater contained in the fish pond could also be used to water the plants, which will save about 10-20 percent of water consumption

HYDROLOGY SYSTEM

The natural topography of the site is sloping down to the River which give an opportunity to construct a retention pond on the higher land to provide clean water access for the occupants. The retention ponds will be retained as much as possible as it enables the channeling and retention of storm water in the low lying areas for storage and reuse. In the hydrology plan for sustainable storm water management within the NEXUS, a network of new streams, bio swales and retention ponds will be developed to support the existing hydrological flow of the site, and to help clean the rainwater run-off at various stages.

In line with the Public Utilities Board's (PUB) Active, Beautiful, & Clean (ABC) Waters Programme, bios wales are designed to be aesthetically and ecologically different along the clusters as they channel and purify rainwater from the path drains to the center. Various types of pathways are provided to either cross the bio swales-detention walls and boardwalks, or to run alongside-stepping stones and gravel paths, allowing THE NEXUS PROJECT community and visitors to enjoy the environment visually as well as getting up close to the biodiversity. Cleansing biotopes for the purification of water are also designed to be planted with flowering plants that would attract insects, i.e., butterflies, dragonflies, and damselflies, thus creating a pleasant park environment for users whilst enhancing the diversity of fauna. Filtrated water from the cleansing biotopes will be collected for use in toilet flushing and irrigation for the green roof of the public toilet.

ENVIRONMENT – HEDONISTIC SUSTAINABILITY

A sustainable and green architecture is often paired with the energy saving and using fewer resources, but it is a contradiction to the modern people lifestyle which accentuate hedonistic and consumerism. The question now is how to educate people for not using excessive amount of energy and keep all the resourced in the manageable amount? it is an endless effort for all the actors to realize this vision. How if we could use all the resources and the energy without worrying of the scarcity in the future? We come up with the "hedonistic sustainability" in a sum concept is to use the waste is one's process as the raw material to create new energy/ resource in short - to create a loop cycle of energy. For example could exploit the agricultural resource as

much as we could, then it will produce waste, next we process the waste to become bio gas for cooking, the cooking heat will then be converted for the energy to heat the bathing water and create energy to purified water which will be used to water the agricultural fields, and so - on. It means the more we plant/we eat/ we use energy & resource, the more we will get ! With this system we are positive to achieve a sustainable and long term change in the living environment.

CONCLUSION

Someday (We hope) sustainable design will be mainstream and not a unique effort by only a few sensitive designers. Instead all architects/designers and clients will work consciously towards solutions that solve not only spatial problems but are sensitive to the environment: utilize less energy, consume less water, use recycled products and sustainably sourced materials, include recycling in the operations programmed and have long life spans which will create less landfill in the future. Green solutions will be considered to add value to the project rather than increasing cost. It will be a paradigm shift. Part of our new future aesthetic will be to see buildings and interiors through “green” lenses and judge buildings and interiors, not just on “flash” details and exotic materials but on the exciting way the architect/designer utilize sustainable methods into their projects, such as integrated window shading or incorporating sustainably grown wood in a unique manner - creating lasting design solutions that are environmentally sensitive for now and for the future.