

Architect's Responsibility in Environmental Damage Control

by Siti Sujatini

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Siti Sujatini

"Faculty of Engineering, University of Persada Indonesia, Jakarta 10340"
Telp : (021) 3926000 ext 5902. Fax : (021) 3914878
E-mail : siti_sujatini1@yahoo.com

ABSTRACT

Along with population growth and development, it happens that the physical development of the city begins with the rapid developments in the suburban. This was marked by numerous changes in land use from green open area into an area built, resulting in uncontrolled growth of cities (Urban Sprawl). Increasing the number of people followed by improvement of the infrastructure is directly or indirectly been drained of natural resources, which ultimately resulted in a decrease in carrying capacity. To avoid a crisis of natural resources, sustainable development must be realized, where development should be considered against the social, cultural, and economic. Here, many parties must play a role in creating sustainable cities. Therefore it needs a strategy for urban development in order to manage natural resources. Development must rely on all the actors and for the good luck together.

Architect is one of the actors who play a part in creating a sustainable city that damage of environment can be controlled. Much to be done by the architect to crate a fiend, urban environment, urban space planning with comprehensive and integrated models of participatory planning and over-the-board planning or cross-sector planning process is performed in consistent, sustained and sustainable.

Keywords

Architect's Action, Damage of Environment, Development

1. INTRODUCTION

Man is a component of the natural environment along with other natural components of human beings live together and manage the natural environment. Using science and technology has developed people ga¹ easy and natural to organize according to their needs. Architect as one of the actors that play a role in designing and constructing the built environment ranging from macro level (city and urban planners, landscape architects) to micro level (building design), often less attention to the harmony of nature, in terms of utilization of natural resources and use of technologies that are not friendly to nature. Therefore, the Architect has a big hand trigger environmental degradation result in decreasing quality of human life. Implementation of government policies related to the regulation that refers to carrying capacity and meet the requirement of safety, health, comfort and ease in its implementation faces many obstacles. Some thinkers in the field of planning and urban design, and the built environment in urban areas argued that to achieve ¹¹ainable development process, it is necessary to plan and design that is based on ecological and non-anthropocentric environmental ethics. Non-anthropocentric environmental ethics saw man as a living community in the world, as well as all others living things, and have ¹⁰ equal footing with other living beings (Taylor, 1986). Since the second half of the 20th century the development of non anthropocentric environmental ethics as a result of environmental crises. This paper aims to determine the extent to which Architect makes an impact on environmental damage then makes a recommendation to the Architect in controlling damage to the environmental based on sustainable planning. This paper is also expected to provide input to government on policies related to regulation in the planning, design and development, to the relevant actors, and society.

2. RESEARCH METHOD

This research is a case study and a field, with the characteristics of the problems associated with the background and current conditions and their interaction with the environment and to provide a complete picture of the case. Book is study done by reviewing the written sources such as documents, reports, legislation, and others. Collecting data through field sources associated with the natural situation is accomplished by direct contact with the ground situation is through observation, interviews, focus on group discussions (focused on group discussion). Done in descriptive analysis techniques aided by visual media such as photos, drawings and so forth.

3. RESULTS AND DISCUSSION

3.1. Definition of Indonesian Environment

According to Law no. 23 in 1997, The Environment is a unity with all things space, power, circumstances, and living creatures, including humans and other living things. While the scope of Indonesia' environment includes the space, where the Republic of Indonesian in implementing the vision of the Archipelago's sovereignty, sovereign rights and jurisdiction. In the environment there are ecosystems, the order of environmental elements that are integral part of a comprehensive and mutual influence in shaping the balance, stability, and productivity of the environment.

3.2. Damage of Environment

Based on the causes, Damage of Environment can be divided into 2 types :

- a. Damage of Environment due to Natural Event
- b. Damage of Environment to Human Factors.

Man as ruler of the environment on earth plays a major role in determining the sustainability of the environment. Man as God's creatures who understands the world could change the face of the pattern of simple life to modern life forms today. But unfortunately, often what the man is not balanced with thinking about the future life of the next generation. Much progress achieved by humans brings adverse impacts on environmental sustainability

3.3. Architect Role

Architecture according to the Oxford dictionary: art and science of building, design or style of building (s) is the art and science of designing buildings. This understanding can, more broadly, covering all architectural analysis and planning process all the physical buildings needs, ranging from macro level of town planning, urban design, landscape architecture, down to the micro level that is designing the interior / exterior. Architecture also refers to the results of the design process. The role of the architect, always-to-date and follow the will of the client, always will be no dialogue between communities and between the owner with architects, and between architects with other related fields. And the result is an output called the architecture, as a product and a solid discipline. Proverb says Architecture is a silent language not spoken, but to understand the users. In a book written by Vitruvius De Architectural, disclosed that a good building should have aspects :

- a. Beauty/ Aesthetics (Venusitas)
- b. Strength (Firmitas)
- c. Function (Utilities)

Architecture is the balance and control between the three elements, where aspects have the same portion so that there can be no single element in excess of other elements. In the modern definition, architecture must include consideration of function, aesthetics, and psychologic. However, it can be said also that the element itself already includes both aesthetic and psychologic elements. Architecture is a multi-disciplinary field of science, which includes mathematic, science, art, technology, humanities, economics, social, politics, history, philosophy, and so forth. Required ability to absorb a variety of disciplines and to implement them in an integral system. Vitruvius states: "Architecture is the science that arise from other sciences, and is equipped with the learning process: assisted with the assessment of the work as art." He also stressed the need for an architect to understand the social, medical, law, economics, philosophy, etc. Philosophy is one of the principal in the

architectural approach. Rationalism, empiricism, structuralism, post-structuralism, and phenomenology are some of the influence of philosophy on architecture

3.4. Effort to Achieve Sustainable Development

Environmentally sound development is the quest to improve human quality gradually by taking into account environmental factors. Environmentally sound development is known as Sustainable Development. The concept of sustainable development agreement outcome of Earth Summit in Rio de Janeiro 1992. It contains two important ideas :

- a. The idea of needs, especially basic human needs to sustain life.
- b. The idea of limitation, namely the limited ability of the environment to meet needs of both the present and the future. Government efforts to achieve equitable and prosperous life for its citizens without having to cause environmental damage followed up with the concept of sustainable development.

3.5. Criteria for sustainable development in urban areas based on ideas formulated three "Pro" above can be described as follows (by Madrim Djody) :

- a. "Pro Social Justice", Justice and Equality means of access to natural resources and public services (water, soil, air, environmental sanitation, social facilities, transport), respect for cultural diversity, gender equality.
- b. "Pro Economic Welfare", which means that economic growth is intended for the welfare of all members of society (not just the elite), can be achieved through innovative technology that minimize negative impact on the environment.
- c. "Pro Sustainable Environment", which means non-anthropocentric environmental ethics (the view that humans are not doing the oppression of other living beings and the environment) to guide people's a life so that they always strive for sustainability and environmental balance.

The process of sustainable development can be restored if the interction between social environment, economic must be balance. If the third dimension can not be balanced, so the process of sustainable development will not materialize. If only the pursuit of economic growth without considering others, such as land use changes from green open areas to building area will cause environmental damage. In this context, axioma "design with nature" has long been suggested by landscape architecture, pioneered by the late Lan L.Mc.Harg since 1960, including here is a significant change in the system is awareness among planners, architects , and landscape architecture. Those born of the resource management movement are beginning to feel its influence in the landscape architecture profession. The main change comes in the transitional culture thinkers (the cultural mindset) of systemic design movement in Architecture in year 70's who later disappeared and was replaced by the sustainable development movement. From the case of the built environment and its relation with human beings, there is already a real difference in approach affects the life to come. Here, architects, academics, and other parties as one of the city development stakeholders, and designing the built environment is the party that was instrumental in providing consultative services for construction and development of the built environment. Architects is play an important role in designing buildings for shelter, work, recreation and others. Architect responsible for designing habitable buildings and used for economic and social activities daily. Basically, each development will definitely change the balance of the natural environment and transform it into the built environment. In design of the Built Environment, architects should consider one of them is climate change in wich something affect that will be made, and also people know that climate affects where he lived. There are many ways to approach climate change macro and micro-climate also (local) in various regions. Creating micro-climate (in a certain location) by green open space planning (to reduce solar heat, as water catchment areas, social space), cross- ventilation and natural lighting (to reduce the cooling load of air), making the canopy (tropical architecture).

Harmonization		
Architecture	Vs	Nature
Technology	Vs	Tradition
Global Knowledge	Vs	Local Knowledge

Figure 1: Architecture should strive for harmony with nature both in terms of technology and in planning

Technology does not always contribute to global warming, but also with the application of good technology and plan will be well built environment and sustainability. Environment to adapt to local climatic influences and global climate can be put to good use in order to realize a sustainable built environment.

Tropical Architecture as one of the traditional architecture that aims to exploit the geographical conditions in the tropics to reduce energy consumption. The principles of Tropical Architecture is later developed into the "Green Architecture " and "Sustainable Architecture".

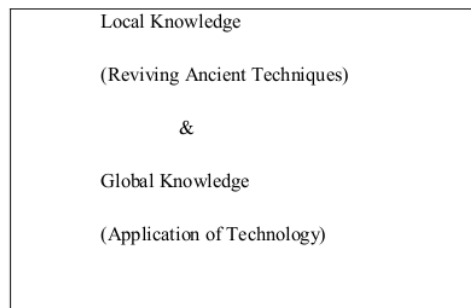


Figure 2: A cross between Local and Global Knowledge as a way to create a Green Architecture

In order to control damage of environmental, architects have a very important role not only building a strong response to climate change but also how to plan buildings or cities that can reduce the effects of global warming, given the Architect also indirectly contributed to environmental degradation. Theories of Development by Haley Institution, said that in every process of development occurs negotiation among the actors involved in each event (event) that took place, which is influenced by power relationships among the actors, who each have their own resources. According to Elias, negotiation is necessary because there is dependency among the actors, including the dependence of economic, juridical and communication / information. City regulations can be viewed as part of the development process, as negotiations between the product of the actors involved. The negotiation process will be influenced by the presence of economic dependence, legal and communications / information among the actors. New paradigm with the concept of good governance is born from the changing perspective of the planners and designers due to the emergence of ecological awareness since 1960. People are starting to be aware of the high costs required to overcome the problem of environmental degradation. Anthropocentric view of nature (which looked at the problem only from the point of human interest only, thus ignoring the problems of ecology as a sustainable of life result in lower quality of nature & artificial environment.

	Modern	Conservation	Participant
Target	Efficiency and growth	Natural Resources Conservation	Participation
Level Assignment	Rejuvenation of Government Funds for rural and urban infrastructure development	Management of beaches, mountains, Integrated Forest Management	Community Development Budget
Non-aesthetic purpose	Economic	Science	User
Decision Making	Top-down	Top-down	Bottom-up
Symbol Key	Power	Non-Consumptive	Uniqueness
Convergence (Coherent)	Directed	Based on ecological awareness	Direction of the self
Function Designer	Giver of Forms / Technician	Giver of Forms / Technician	The facilitator / technician

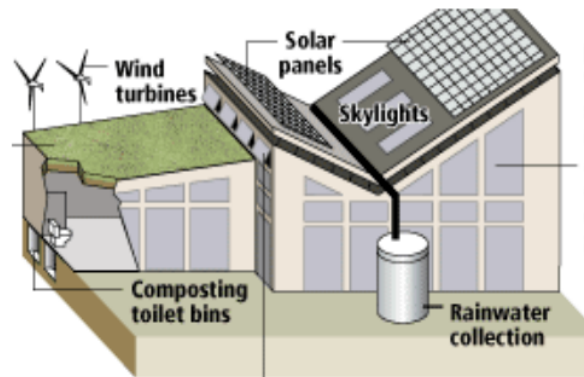
Figure 3: Modern Theory and Participatory Conservation in the Landscape Planning & Design

This paradigm has a partnership approach, community participation, transparency, accountability, decentralization, reduction of the role of government, effective, efficient and sustainable. In terms of macro scale, this includes aspects of conservation in the cross-administrative governance, and bottom-up orientation in which public participation is also an advantage (the principle of conservation and participatory).

Pengadaan ruang-ruang Terbuka



Figure 4: Create Open Spaces



Memaksimalkan Peresapan Air Hujan

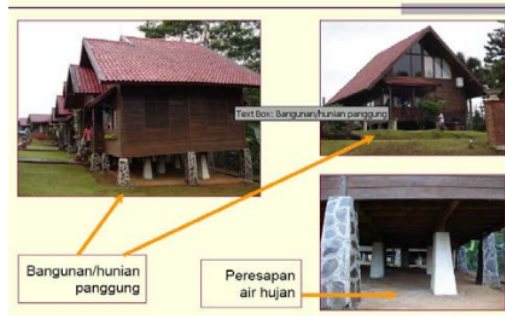


Figure 6: Maximize Rainwater Infiltration



Figure 7: Building Green also applied to High-rise Buildings.

4
REKOMENDASI GREEN ARCHITECTURE
penggunaan sumber energi terbarukan (angin)

GREEN ARCHITECTURE





Bahrain World Trade Centre-Atkins:
4 jumlah baling-baling dipasang di bangunan untuk mensuplai sebagian kebutuhan energi bangunan

Figure 8: Building with Modern Technology Greatly contributed to environmental damage, but can be controlled

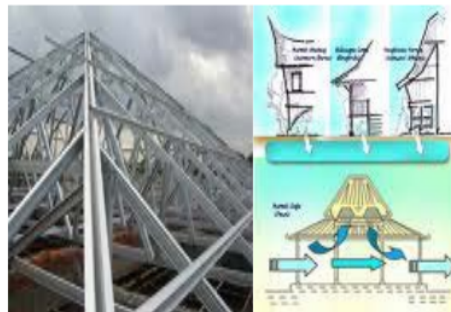




Figure 9: Environmental Damage starts from the Construction to the Operational Development


4
penghematan energi dalam bangunan
ventilasi silang (bangunan non-AC)

GREEN ARCHITECTURE

Memaksimalkan sirkulasi udara silang (ventilasi silang) dalam bangunan yang tidak berpendingin udara (non AC), terutama pada ketinggian yang memungkinkan aliran udara mengenai tubuh manusia (untuk efek dingin siang hari)







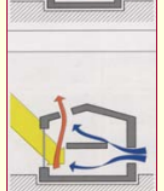


Figure 10: Energy Saving in Buildings (Ventilation Cross)

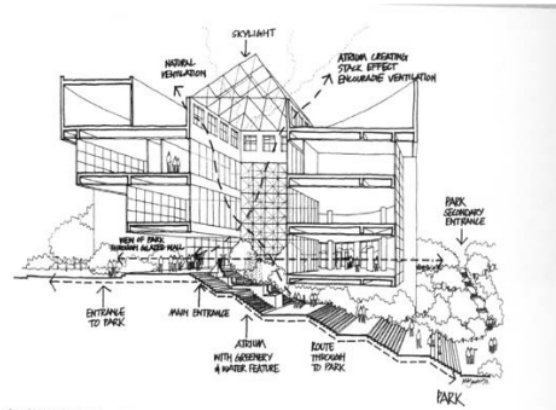


Figure 11: Planning Environmentally Friendly Building
 (Traditional Architecture has a lot of thought to the Maintenance Environment)



Figure 12: Planning of buildings and city planning that right should be able to control
 Damage of Environmental. (Bamboo as an example of Environmentally Friendly Building Materials)

4. Conclusion and Suggestion :

From the above analysis and discussion it can be taken several conclusions and suggestions as follows:

1. Architect turned out to have a significant stake in the process of environmental destruction.
 Environmental destruction occurred from the construction phase, the use of materials, to building operations. Architects as city planners, building planners have a moral obligation to participate in reducing/ controlling the environmental damage
2. In order to control damage to nature, job as an Architect :
 - a. Having a concept that, climate should not be a constraint in the design but must be the potential to be used in yielding an architectural masterpiece.

- b. Using environmentally friendly building materials
 - c. Having the concept of energy efficiency, for example by way of planning and natural lighting as much as possible natural cross-ventilation.
 - d. In harmony with nature, for example maintain the natural contours
 - e. Meet/ comply with building regulations, such as outbreaks, GSB, KDB, plan Porous Soil Layer
 - f. Fulfilling one of the requirements of building permits is the EIA documents that have not been applied to all projects.
 - g. And others how to plan the work of architecture that has the concept of "Green Architecture"
3. Architect do not work alone, there should be cooperation and active participation, consistency, commitment and responsibility of both government, private, and community in realizing sustainable development.
 4. The city is one of the masterpieces of architecture. Urban planning should be done wisely, and made with a comprehensive policy, bottom-up, internal and external -sector, and can accommodate the aspirations of the community (participatory).
 5. The city is one of the works of architecture, if the city has recognized the role or placed in a position as a developer of economic strength or all actors, and all actors have the ability to have a partiality to the interests of the environment and the public, the sustainable urban development will be realized, so that is not can directly control environmental damage.
 6. Establishment of good governance for economic growth and mental good of Human Resources will establish a system of good governance, one that is by implementing the right policies, thus supporting the achievement of sustainable development that could indirectly control the environmental damage.

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