

Sustainable Architecture Responded by Islamic Architecture for Better Environment

Muhammad Ismail Hasan, Titin Woro Murtini, and Suzanna Ratih Sari

Abstract— Global warming, nature destruction, until the limit of green space force us as the present generation to make a sustainable program. The sustainability is not only by restoring, but also maintaining from getting worse. Architecture is one of the sciences concerning to the sustainability. In this case, it results in some isms such as ecological architecture, green architecture, eco-friendly architecture, and so on. The Koran as the guideline of Muslims has taught how to live in sustainable life, including in the world of architecture. Therefore, it comes the so-called “Islamic architecture”. Then it is necessary to find out how the Islamic architecture respond to the sustainability.

Index Terms—Sustainability, Islamic, architecture, environment.

I. INTRODUCTION

Sustainability becomes a central issue in the context of the development of this century (1). This concept is becoming a trend in the world of architecture in accord with the global warming issue. The architecture experts are promoting the sustainable architecture movement to reduce the global warming. The phenomenon of the population increase narrows green space which is used to meet the housing needs (2).

Regarding this negative phenomenon, a sustainability program must be implemented. The sustainability can be applied in all fields of science, one of them is architecture or sustainable architecture. The sustainable architecture even has some branches such as ecological architecture, the environmentally friendly architecture, efficient-energy architecture, bioclimatic architecture, and green architecture . (3)

The branches have main aim for better maintaining and restoring the nature preservation. The Koran, the Holy Book, as well as guidelines for Muslims has explicitly taught the sustainability. The teaching needs to extract to find out the values of sustainability as the purpose of this paper.

The aim of this study was to determine how the Islamic values respond to the sustainability. This study used qualitative descriptive method by exploring the theories of each variables

first. The architecture sustainability is the first variable that needs to apprehend. The next step was by conceiving Islamic architecture. After conceiving those two variables, the researcher made conclusions about the correlation between them.

II. THEORIES

A. Sustainability Architecture

In terms of sustainability, architecture as a science also has a contribution. The architecture’s contribution in sustainability can be implemented through the many theories such as, sustainable building, sustainable design, green architecture, energy-saving, compact city, earthbag, shared space, and so on. Starting from Sustainable Architecture as a part of sustainable development in terms of architecture, then it has developed until now known as Green Architecture. Moreover, the architecture has also become one of the important targets in the sustainability movement (3). As on the sustainable development, the sustainable architecture also has several definitions, such as green / sustainable design is a design that minimizes the negative impact of humans on the surrounding environment, materials, resources, and processes of nature (4). Another argument from McLennan in Yudelson about the sustainable design mentioned that it is a design concept that aims to maximize the environment quality, while minimizing or avoiding the negative impacts on the environment (5).

There are five areas that need to consider in the sustainable (4) (5), including :

- Sustainable site planning
- Maintaining water and its efficiency
- Energy efficiency and its renewal
- Materials and resources conservation
- The quality of indoor environments

B. Islamic Architecture

Literally, Islamic architecture means the architecture coming from Islamic culture. Since this architecture is based on the Islamic culture, while Islam is based on the Koran and the Hadith, then the Islamic architecture is guided by the Quran and Hadith. One of the experts’ arguments about the definition of Islamic architecture is that it is a part of the as the result of human activity in the concrete way as an effort to meet the physical and spiritual needs (6).

Moreover, Nurjayanti in her dissertation research explained Islamic architecture as the architecture viewed with Islamic values approach, not with object approach. If observed

Manuscript received April 18, 2016. This work was supported by Lembaga Pengelola Dana Pendidikan (LPDP) (Indonesia Endowment Fund for Education) Ministry of Finance Indonesia.

Muhammad Ismail Hasan is with the Master of Architecture, Diponegoro University, Semarang, 50275 Indonesia

Titin Woro Murtini is with the Architecture Engineering Department, Diponegoro University, Semarang, 50275 Indonesia

Suzanna Ratih Sari is with the Architecture Engineering Department, Diponegoro University, Semarang, 50275 Indonesia

subjectively with the Islamic values, the definition of Islamic architecture will be embodied as the implementation of the values of the Qur'an and Hadith. But if Islamic architecture is observed objectively, the architecture's embodiment will be mixed with the surrounding culture that is not always meaningfully Islamic (7). Nurjayanti's definition was strengthened by the opinions of Nangkula Utaberta who had stated that Islamic architecture has two approaches. The first approach is the object as a product of the Islamic community, while the second approach looks at the basic principles of Islam which refer to the Koran and Hadith (8).

For example, a building with a domed roof does not necessarily mean that the building has Islamic architecture. The Great Mosque Demak, for instance, has a piled up roofs like the shape of *pura* (Hindu temple) because of acculturation with the local culture when Islam first came. In addition, Immanuel church Semarang often called Blenduk church also has dome roof. This is because the dome is adopted from the Romans, not from Arabia.



Fig. 1. Immanuel Chruh (Blenduk Chruh) Semarang with dome roof (9)



Fig 2. Demak Great Mosque with layer roofs like pura (Hindu temple) (10)

C. The Characteristic of Islamic Architecture

The thoroughly analysis of Islamic architecture when subjectively applied to a building, it can be interpreted that the building can be used to support the Islamic way of life the inhabitants. In Islam, humans were created to worship Allah.

"And I did not create the jinn and mankind except to worship Me." (Adh Dzariyat: 56).

So basically the life of Muslims is essentially to worship. Based on her study, Islamic architecture is the art and science of designing buildings or landscape with three main indicators,

which are functional (*Hasan*), good (*Thoyib*) and aesthetic (*Jamil*) (11). Those three indicators contain important values for us as the architecture users.

Functional (*Hasan*) means that it agrees to the purpose of human creation that is to be caliph in the earth. The caliph's role will run properly when uphold monotheism rejecting shirk and implement good moral. To implement monotheism, the building design should facilitate humans for worshipping Allah. Then project management must be free from usury which is forbidden in Islam.

The meaning of *Thoyib* is that Islamic architecture should be *rahmatan lil Alamin* or a mercy to the worlds. As in Surah Al Anbiya 107:

" And We have not sent you, [O Muhammad], except as a mercy to the worlds."

Therefore, according to the study conducted by (11), Islamic architecture should be universal, rational, caring, and shaping civilization.

The meaning of "aesthetic" (*Jamil*) is explained that the architecture works should be able to explore architectural design elements to produce beautiful work. Yet the aesthetic elements must require Islamic values and be in accordance with its principles. Aesthetic elements must not support the activities of shirk, harming other people, animals and nature, as well as excessiveness which can bring someone to the vanity.

III. DISCUSSION

Of these three indicators, good (*Thoyib*) is the most correlated point to sustainable architecture because it contains values of sustainability. The explanation is:

- a) Universal: the design must be able to provide information and facilitate all users, both for normal and disabled users, the rich or poor, and the indigenous or migrants.
- b) Rational: Rational means that the design must be able to be applied appropriately and in accordance with the logic of the building's convenience and reliability.
- c) Care: Islamic architecture should also pay attention to the environment and to encourage users to empathize with the surrounding environment and become the implementation of mercy to the all worlds in a sustainable manner.

Shaping civilization: meaning that the design of Islamic architecture will always shape civilization. The local cultures agreeing to Islamic values are important for develop. As the result, the values of Islamic architecture will remain and get closer to the community.

IV. CONCLUSION

The Islamic values embodied in Islamic architecture are able to respond to the issue of sustainable architecture. In this case, it contains element of environmental concern. The values will be meaningful to encourage the users to empathize and live in harmony with nature, as it is written in the Koran Sura Al-Araf 56:

"And do not do mischief on earth after (God) to fix it, and pray to him fear (not accepted) and expectations (be granted). Verily Allah's mercy is very close to those who do good."

REFERENCES

Al Quran

- [1] *Pencapaian Perumahan Berkelanjutan 'Pemilihan Indikator Dalam Penyusunan Kerangka Kerja Berkelanjutan'*. **Sudawanto, Budi, Pandelaki, Edward E and Soetomo, Soegiono**. 2, 2014, MODUL, Vol. 14.
- [2] *Konsep Arsitektur Berkelanjutan Pada Tata Ruang Kota (Studi Kasus : peralihan Fungsi Lahan hijau Menjadi Perumahan)*. **Darmawan, Eddy and Haryanto**. 2, 2013, Modul, Vol. 13, p. 49.
- [3] *Menengok Arsitektur Permukiman Masyarakat Badui Arsitektur Berkelanjutan dari Halaman Sendiri*. **Sarjono, Agung Budi and Nugroho, Satrio**. 2, 2014, Modul, Vol. 14, p. 87.
- [4] **ASHRAE**. *Ashrae Greenguide : The Design, Construction, and Operation of Sustainable Buildings*. 2. Ann Arbor : Ashrae, 2006.
- [5] **Yudelson, Jerry**. *Green Building A to Z. Gabriola Island* : New Society, 2007.
- [6] **Rochym, Abdul**. *Sejarah Arsitektur Islam*. Bandung : Angkasa, 1983.
- [7] **Nurjayanti, Widyastuti**. *Nilai-Nilai Keislaman Dalam Rumah Tinggal (Studi Kasus : Kampung Kauman Kudus, Kampung Kauman Solo, dan Perumahan Muslim Darussalam 3 Sleman-DIY) (Disertasi)*. Yogyakarta : Universitas Gajah Mada, 2014.
- [8] **Utaberta, Nangkula**. *Arsitektur Islam Pemikiran, Diskusi dan Pencarian Bentuk*. Yogyakarta : Gadjah Mada University Press, 2008.
- [9] *Mengenal Gereja Blenduk Sebagai Salah Satu Land Mark Kota Semarang*. **Moedjiono and Indriastjario**. 2, 2011, MODUL, Vol. 11, p. 55.
- [10] *Pengaruh Pertukangan Cina pada Bangunan Mesjid Kuno di Jawa Abad 15-16*. **Hadinoto and Hartono, Samuel**. 1, 2007, Dimensi Teknik Arsitektur, Vol. 35, p. 23.
- [11] **Indrawati**. *Lanskap Budaya Permukiman Islam-Jawa di Majasto*. Semarang : Program Doktor Arsitektur dan Perkotaan Program Pasca Sarjana Universitas Diponegoro, 2015.



Muhammad Ismail Hasan Semarang, 16 September 1990. Graduate student of Master of Architecture in architectural advance, Diponegoro University, Semarang, Indonesia, batch 2014.

He worked as lecturer assistant for 2 years since November 2013 – Desember 2015. Had join-studio with Seoul National University for research about historical settlement in Seochon, Seoul.