

Recycling in Islamic Perspective Case Study of Architectural Works Using Waste Building Materials

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Abstract

Waste is a serious environmental problem worldwide. Waste can refer to various types of materials or substances resulting from human, industrial, agricultural and other activities. The waste problem covers aspects such as management, environmental impact and human health. In this paper, an Islamic perspective on waste recycling in building architecture is discussed. Case studies involving architectural works with the use of building waste reflect the principle of recycling in practice. Waste buildings are materials or structures which have been retired for their original purpose but which still have the potential to be reused with little or no major alterations. Architectural works such as households, community facilities, or even commercial buildings can use used materials that are still usable to reduce demand for new resources. However, in implementing the recycling concept in architecture, it is necessary to pay attention to several aspects, such as structural safety, quality of used materials, and compatibility with the surrounding environment. Islam encourages the use of resources wisely and in moderation, as well as minimizing negative impacts on the environment. This is the responsibility of humans as caliphs on earth to preserve the environment and to maintain the balance of the ecosystem. as well as compatibility with the surrounding environment. Islam encourages the use of resources wisely and in moderation, as well as minimizing negative impacts on the environment. This is the responsibility of humans as caliphs on earth to preserve the environment and to maintain the balance of the ecosystem. as well as compatibility with the surrounding environment. Islam encourages the use of resources wisely and in moderation, as well as minimizing negative impacts on the environment. This is the responsibility of humans as caliphs on earth to preserve the environment and to maintain the balance of the ecosystem.

Keywords: Islamic Perspective; Architecture; Recycle; Building material; Environmental Conservation

I. INTRODUCTION

The universe with all its wealth is the creation of God Almighty. It is God who created man. Therefore, environmental ethics is a logical result of the Qur'an's understanding of nature and humans. The Qur'anic value system has the elements needed to develop and build an environmental ethic. The Qur'an's emphasis on the sacred and metaphysical dimensions of the universe must lead to a change in the overall image of Muslims about nature and itself. All of this has been exemplified by the life of the Prophet Muhammad, who looked at nature with compassion and tolerance. Currently, there are many incidents that deviate from the Qur'an and the guidance of the prophet. In the book *Environment and Christian Ethics* written by Michael Northcott, it is stated that "when surveying the various impacts caused by human activities in less than 1 century, it is clear that there is indeed an environmental crisis/degradation". The tyranny of this activity, whether intentional or not, requires Muslims to overcome it ^[1].

Environmental damage is a difficult problem to solve and is increasingly widespread in Indonesia. This occurs as a result of business activities by individual investors and business entities. Another cause of environmental damage is also caused by agriculture that is not environmentally friendly ^[2].

Environmental pollution is now very concerning. Various serious threats to the future of humanity are very likely to occur. Humans in utilizing nature often sacrifice natural resources and dispose of waste without responsibility. Damage to nature greatly impacts human life and has the potential for disaster. The Ministry of Environment and Forestry (KLHK) considers this problem to be troubling ^[3].

To reduce this problem, recycling is a wise solution. New products are made from used materials to provide other benefits to humanity and ensure a sustainable ecosystem. Garbage/waste if managed properly will provide benefits again. Therefore, humans have the opportunity to utilize this into products that can provide added value. Besides having great economic potential, recycling activities can provide benefits to society and the environment. Therefore these activities are in line with Islamic teachings ^[4]^[5].

As creatures of Allah SWT, humans have a responsibility towards life in the world. This is explained in QS. Al-Baqarah Verse 30 about humans as caliphs. The responsibility as a caliph is not only as a leader, but also as a human being. In the history of its creation, it was humans who declared themselves willing to take on the mandate of managing the earth. This is because Allah SWT gives the ability to humans in the form of reason, heart, and lust which makes humans different from other creatures created by Allah SWT.

Humans who use their minds, hearts and desires to do good, are described in QS. Al-A'raf Verse 56 that the mercy of Allah SWT is close to these people. Recycling waste is a good deed, because it is a form of moral responsibility for nature / responsibility to the environment and caring for nature / care for the environment. This is in accordance with the task of humans as caliphs on earth.

Islam is a religion that prohibits *tabdzir*, namely extravagant acts, wasting wealth, and wasting something that can be used ^[6]. From QS. Al-Israa' Verses 27-28 explained that Allah SWT does not like those who waste something like trash. Because if waste is managed properly, it can provide benefits for oneself, descendants, and the environment. And in QS. Al-Maa'idah Verse 2, Allah SWT commands humans to contribute in activities that can benefit, for example such as recycling waste.

This is also explained in an authentic hadith narrated from Jabir bin Abdilllah *radhiyallahu anhu*, that the Prophet *sallallaahu alaihi wa sallam* said, "If one of you falls out of food, he should pick it up and remove the dirt attached to it, then eat it and not be allowed to demon". Food that falls should be trash, but Rasulullah SAW managed it again by washing it, so that it can be used again and not wasted as garbage ^[4].

For this reason, as a religious human being, one must be aware of applying the concepts and teachings of the Islamic religion in addition to spirituality, social relations and humanity, but also must protect the environment as a source of life. Environmental damage due to human actions has a multidimensional negative impact that is felt not only by the perpetrators of the damage, but also by society in general ^[7].

II. LITERATURE REVIEW

The environment is everything that affects the growth of humans and animals. While the environment is everything that surrounds living things (organisms) that have a reciprocal influence on these living things. Arbitrary acts towards the environment by means of exploitation without regard to the consequences, are clearly contrary to Islamic teachings. Instability of natural conditions, disasters and calamities that occur in this nature, because they are caused by human activities. In Islam there is harmony which includes four things, namely: harmony with God, society, the natural environment, and oneself. This environmental preservation effort also exists in the hadith of the Prophet Muhammad SAW. Hadith about reviving dead land, planting trees (reforestation) and hadiths about prohibiting littering. The Prophet's spiritual messages made his people aware to always increase their concern for the environment ^[8].

The presence of waste is one of the problems faced by society. The existence of waste is undesirable when it is associated with factors of cleanliness, health, comfort and beauty (aesthetics). Piles of garbage that interfere with the health and beauty of the environment are a type of pollution that can be classified as social environmental degradation. One of the factors that affect pollution is the problem of waste disposal and management caused by a lack of human awareness of the environment ^[9].

According to the Decree of the Director General of Cipta Karya, number 07/KPTS/CK/1999: Technical Guidelines for Planning, Development and Management of Urban and Rural PLP Sector, waste is solid waste consisting of organic substances and inorganic substances which are considered no longer useful and must be managed so as not to harm the environment and protect development investments ^[10].

Waste recycling is a management process in which new products are made from materials that have already been used to provide benefits to humanity and ensure a sustainable ecosystem ^[11]. The theological assumption is that trash, no matter how bad it is, is still a part of nature that cannot be separated from God's creation ^[3].

In this modern era, technology continues to develop which affects various fields, such as education, transportation, health, architecture, and others. In the field of architecture, technology can assist architects in the process of creating a design up to the construction stage ^[12].

With the development of technology, innovations have emerged in the field of architecture, one of which is in the form of building materials ^[13]. These materials include:

- Paving, generally using stone and cement. The alternative is cement mixed with plastic. The advantages of paving from plastic waste are lighter weight, load resistance, and relatively cheaper prices ^[14].
- Cement/concrete mixed with water hyacinth fiber to make it more adhesive. In the concrete characteristics, water hyacinth fiber does not cause segregation (grains that separate from the concrete mixture) and bleeding (water rises to the surface of the mixture so that the mixture is not homogeneous) in fresh concrete mixtures ^[15].
- Clay tile mixed with water hyacinth fiber.
- Walls, combining light bricks with water hyacinth fiber.
- Ceramic clay is combined with plastic to bond and is water resistant. Ceramics can also be mixed with fine glass flakes.
- The horses use banana fronds which are put together and given hardener and preservatives.

III. METHOD

The method used in this research is descriptive and exploratory. The data used was taken through a literature study by taking several references from books, the internet, journals and previous research to obtain and view research results related to the spiritual values of an environmental policy.

IV. RESULT AND DISCUSSION

Currently, the resources on earth are running low, one of which is because humans continue to deplete natural resources excessively. This is not balanced with the limited carrying capacity of the environment. Reduced resources and increased waste in nature affect various fields, one of which is in the field of architecture. So that there are building innovations that use materials from waste.

For example, Figure 1 is a house designed by Ridwan Kamil. This house was made with mostly unused objects, namely glass bottles used for energy drinks as many as 30 thousand bottles. He got inspired when he saw workers building his house frequently consuming energy drinks. The bottles pile up and become trash. He collected used bottles from scavengers for 6 months in the amount of IDR 50 per bottle. Quoted from detikJabar 05 July 2022, Ridwan Kamil said that maintaining the bottle house was simpler than using other building materials. It is enough to wipe the inside of the bottle inside the house, while outside it is sprayed with ordinary water every few months.



Figure 1. Ridwan Kamil's bottle house, Lampung

Source:<https://fumizing.com/article/rumah-botol-di-bandung-karya-ridwan-kamil>

Recycled materials in buildings are also used by SHAU architects (Suryawinata Haizelman Architecture Urbanism) Indonesia in its design are the Bima Microlibrary in Bandung shown in Figure 2.



Figure 2. Bima Microlibrary, Bandung

Source:[https://www.archdaily.com/790591/bima-micro library-shau-bandung?ad_medium=office_landing&ad_name=article](https://www.archdaily.com/790591/bima-micro-library-shau-bandung?ad_medium=office_landing&ad_name=article)

Bima Microlibrary was built using a steel structure and concrete slabs for floors and roofs. Since the building is located in a tropical climate, SHAU aims to create a pleasant space without the use of air conditioning. Therefore, materials in the surrounding environment are used which are cost effective, can shade the interior, natural lighting and cross ventilation in the form of 2000 used plastic ice cream buckets as shown in Figure 3.

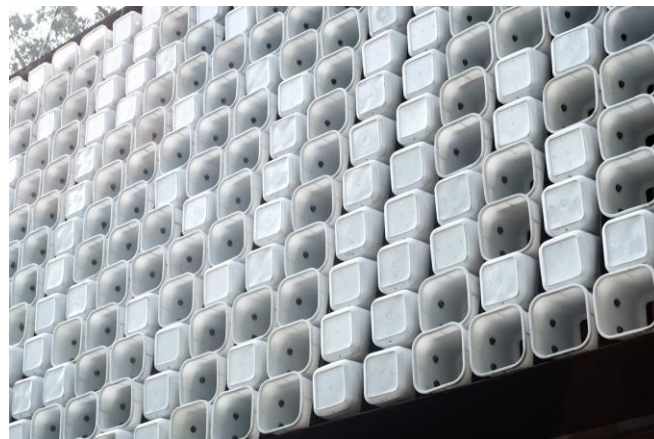


Figure 3. Facade of the Bima Microlibrary in the form of a used ice cream bucket

Source:[https://www.archdaily.com/790591/bima-micro library-shau-bandung?ad_medium=office_landing&ad_name=article](https://www.archdaily.com/790591/bima-micro-library-shau-bandung?ad_medium=office_landing&ad_name=article)

V. CONCLUSION

Based on the discussion above, it can be concluded that Islam has a view that is very concerned about the environment and preserving natural resources as part of the responsibility of the caliph on earth. Concepts in Islam teach environmental care, waste management, and the wise use of natural resources.

By treating waste, there are several benefits, such as:

- Reducing the need for raw materials, so that the use of natural resources will be controlled and not excessive.
- Save on expenses, because humans have to pay to buy new materials. Meanwhile, humans who understand how to treat waste properly can save costs.
- Reducing environmental pollution / pollution because pollution causes global warming.
- Maintain ecosystem. If the environment is polluted, all living things are affected so that it can damage the ecosystem.
- The environment is cleaner and healthier because of reduced media for disease development.
- Prevent the risk of natural disasters such as floods.

In Islam, humans are responsible for handling waste, maintaining cleanliness, and preserving the environment. Islam also teaches that humans do good to other living things in order to maintain the balance of the ecosystem. Therefore, humans can contribute to environmental preservation and wise use of natural resources. Initiatives to recycle for reuse, and environmentally friendly activities in accordance with Islamic teachings can help keep the earth as a good place to live for all beings.

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