SUSTAINABLE DEVELOPMENT AND ARCHITECTURE: A CONCEPTUAL BASED ON RELIGIOUS PERSPECTIVES

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ABSTRACT
This paper discusses the values related to the concept of sustainable development that focuses on green architecture from an Islamic point of view. The Quranic verses will guide how green building in Islam is carried out. This review chose to identify values from thematic Quranic as the focus of observation and at the same time, become a novelty. By interpreting religious values can produce religious values as a lesson and as wisdom. In the end, it is hoped to be used as a fundamental principle of reference in realizing green building.

Keywords: sustainable development; green architecture; Islamic values


1. INTRODUCTION
Climate change and all the consequences that are seen today stimulate a transformation towards sustainable development by increasing economic efficiency, improving protection, restoring the ecological system and increasing human welfare (Sinha, Gupta, & Kutnar, 2013). Sustainable development goals (SDGs) cover the stability of economic development, human development, and environmental sustainability in the long run. Sustainable development is a pattern of development that prioritizes equity by focusing on the wise use of resources to meet human needs and minimize the impact on the environment (Mila Ardiani, 2015; Samudro et al., 2011; Mangkoedihardjo, 2010).

Sustainable development focused on sustainable architecture will see development as part of cooperation with nature, and pay attention to local characters and conditions, both environment and culture. This paper examines aspects of sustainable architecture with Islamic values, which will form the basis of further research in Indonesia.
2. SUSTAINABLE DEVELOPMENT AND GREEN BUILDING

Defining green buildings is a practice in shaping structures with an overall process that is environmentally and resource-efficient by weighing the building's life cycle, from siting to design, construction, operation, maintenance, and even renovation (Reeder, 2010). The Green Building concept contributes to the Sustainable Development goals achievement. One of which is how buildings are created by ensuring the health and well-being of its inhabitants, for example, natural lighting and room openings will create better indoor air quality that brings happiness, productivity and a healthy environment for the residents. Furthermore, green buildings seek to reduce excessive consumption of energy, water, and natural resources to reduce waste and environmental degradation, leading to greenhouse gas emissions. It is very clear how green buildings seek to integrate all phases in a sustainable manner from the design stage to the construction stage, which is in accordance with the general goal of design and construction of sustainable development encompassing the conservation of resources, cost efficiency and design for humans to be adaptable (Akadiri, Chinyio, & Olomolaiye, 2012). Some of these meanings summarize the green building design elements into five as shown in figure 1.

![Five major elements of green building design](image)

Figure 1: Elements of Green Building Design (Ragheb, El-Shimy, & Ragheb, 2016) (Yudelson, 2007)

Along with the time, the green building elements are then made in form of a rating system or rating tool, which is a tool containing items from the assessment aspect called rating, and each rating has a category that has a credit point. The rating tool concerning environmentally friendly buildings is a tool for assessing the ranking of buildings for the achievement of the buildings concept. It can be defined by a green level that is appropriate for each country. Rating Tools are prepared and compiled by the Green Building Council in several countries that have participated in Green Building Movements. The examples of Rating Tools in several countries are BREEM (Building Research Establishment's Environmental Assessment Method-UK), the BRE Office Tool kit (UK), Home Energy Rating (UK), European Eco-labeling (Europe), Ecocerto (Italy), Ecolab (Netherlands), BREDEM (UK), SIB (Switzerland), Bau Bio Data Bank (Germany), Waste/Environmental Data Sheet (Europe), Athens (Canada), BEPAC (Canada), BMES Index (Australia) (Woolley & Harrison, 2005), Green Star (Australia), BCA Green Mark (Singapore), CASBEE (Japanese Comprehensive Assessment System for Building Environmental Efficiency) and LEED (United States Leadership in Energy and Environmental Design).

Indonesia issued a rating system called the Green Building Council Indonesia (GBCI) with two stages of assessment consists of the design recognition stage (DR) with a maximum value of 77 points and the final assessment stage (FA) with a maximum value of 101 points. In the second stage, the project is assessed thoroughly both in terms of design and
construction, and it is the final stage that determines the overall performance of the building. Table 1 is a description of the category and the number of points included in the assessment criteria.

<table>
<thead>
<tr>
<th>Category</th>
<th>Points</th>
<th>%</th>
</tr>
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<tbody>
<tr>
<td>1. Appropriate Site Development (ASD)</td>
<td>17</td>
<td>16.8%</td>
</tr>
<tr>
<td>2. Energy Efficiency and Conservation (EEC)</td>
<td>26</td>
<td>25.7%</td>
</tr>
<tr>
<td>3. Water Conservation (WAC)</td>
<td>21</td>
<td>20.8%</td>
</tr>
<tr>
<td>4. Material Resources and Cycle (MRC)</td>
<td>14</td>
<td>13.9%</td>
</tr>
<tr>
<td>5. Indoor Health and Comfort (IHC)</td>
<td>10</td>
<td>9.9%</td>
</tr>
<tr>
<td>6. Building Environment Management (BEM)</td>
<td>13</td>
<td>12.9%</td>
</tr>
<tr>
<td></td>
<td>101</td>
<td>100%</td>
</tr>
</tbody>
</table>

Design elements in green buildings illustrate that the green building movement puts the importance of environmental sustainability on a priority scale for now and for the future. The most significant category is Energy Efficiency and Conservation (EEC), which is 25.7%, followed by the Water Conservation (WAC) criterion that is 20.8%, and the next category is Appropriate Site Development (ASD). For the fourth, fifth and sixth order are the Material Resources and Cycle (MRC) that is 13.9%, 12.9% for Building Environment Management (BEM) and 9.9% for Indoor Health and Comfort (IHC).

3. SUSTAINABLE DEVELOPMENT AND ISLAMIC VALUES

From an Islamic perspective, sustainable development takes the principle written in the Quran that is how humans should plan the future by caring for and maintaining the balance of nature as well as preventing damage to the earth (*sadd al-dhari’ah*) (Ansari, Jamal, & A. Oseni, 2012). It can be interpreted as a process to safeguard the beauty and everything created by God on earth. Sustainability is defined as a developmental process that will bring life to a better direction by fulfilling basic human needs with equality (Adam et al., 2018) (Gürlesin, 2009) that is not profit-oriented for individual and group (*ukhuwwah and maslahah mursalah*) (Ansari et al., 2012). The principle of sustainability in Islam cannot be separated from human duty as the Caliph who holds the mandate and performs the duties with the principle of unity and balance (*al-Tawazun*) (Manou, Arslan, Azzeddine, & Düzgüneş, 2016) (Adam et al., 2018). This concept illustrates the existence of a theocentric personal obligation to the environment, and this is contrary to the anthropocentric concept which separates humans from their environment because it places humans as the center of everything. Moreover, humans occupy a higher level than all other creatures so that they feel and have the rights to dominate nature and exploit nature for its purposes, including power over its environment (Mohamed, 2012).

The underlying values in sustainable behavior always cover human moral relations and the environment (Cochrane, 2006), so that the primary goal of community sustainable development is the development of a value system and a normative attitude of society determining the harmonious relationship between humans and nature. This relationship is reinforced by ethics containing rules to behave according to values (Al-Damkh, 2008). Ethics in the environment teaches about the moral relations of humans and nature based on the perception of nature as partners, equity and equality of rights of all humans as the solutions to environmental problems (Nasibulina, 2015). At the practical level, environmental ethics change various negative attitudes such as hedonism and consumerism to a friendly attitude towards nature, mutual relations, nature safeguarding and protection (Sarkar, 2012).

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Based on the explanation above, then Islam has given teachings on how to behave towards the environment. This teaching promotes the value of caring and preventing the environment as part of a sustainable process (figure 2). Here the process is very dependent on human behavior towards the environment. Bad attitude of humans towards the environment will result in the deterioration of the environment; consequently, this behavior needs to be corrected. The belief held by a person can create awareness of behavior towards the environment; (Aung, 2016) it means revealing a significant relationship between religion and people's perceptions toward their environment.

![Figure 2: A Conceptual of Islamic Sustainable Development](image)

Religion is a form of belief held by humans since the beginning of their life and is one of the essential aspects of seeing environmental problems. The religious aspect becomes very important here because religion is inseparable from the values that direct human life. Religious sources must be used to warn humans to behave because basically the beliefs and values they embrace will shape and direct human behavior (Omran, 2014). Addressing each incident with a religious perspective makes people get the right answers. Religious values as a form of belief are believed to be able to form ways of thinking, behaving and relating to the natural world in facing the environmental crises. Therefore, environmental crises are indeed a part of religious or moral issues, and returning to religious traditions is the primary solution (Abedi-Sarvestani & Shahvali, 2008). The efforts to explore and utilize the potential of religious values to shape the way people think and behave based on the Islamic perspective will be a necessary tool to find ways to live in harmony with the environment and of course this is very consistent with the concept of sustainable development (Laxman et al., 2014).

4. CONCLUSION

The development of sustainable concepts for green buildings in Islamic context is taken as a step to form a theoretical framework that becomes the basis of practical behavior and application. Hopefully, the community can accept the values provided by the theoretical...
framework more eagerly since this is related to the community’s beliefs and views, which ultimately can shape attitudes and commitment to their environment.

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