



Analysis of Environmentally Friendly Buildings at Tartilul Qur'an Al-Munawwaroh Gresik Boarding School to Support Eco-Pesantren

Muhammad Khoirul Fikri¹,

¹Building Engineering Education, State University of Surabaya

Abstract. This study aims to analyze the Tartilul Qur'an Al-Munawwaroh Gresik Islamic Boarding School building in order to support the eco-Islamic boarding school program. This type of research is a qualitative research that is descriptive and analytical in nature. The results showed that the Tartilul Qur'an Al-Munawwaroh Islamic Boarding School building met the criteria for an environmentally friendly building. This is shown by the data: Land Appropriateness, Efficiency and energy conservation, water conservation, air quality and comfort of space and management of the building environment. thus it can be concluded that the Tartilul Qur'an Al-munawwaroh Islamic Boarding School is an environmentally friendly building that can support the eco-Islamic boarding school program.

Keywords: *Environmentally Friendly Building, PPTQ Al-Munawwaroh, Eco-Pesantren*

INTRODUCTION

One of the goals of creating an eco-Islamic boarding school is to preserve nature, not only driven by the awareness that disaster will come if nature is not taken care of. But also as a form of obedience to a Muslim. Since God commands us to do good, doing good to nature is also a form of obedience. "Islam is a religion that commands its adherents to do good. Not only do good for the sake of Allah (hablum minallah) and do good to fellow human beings (hablum minannas), Islam also commands Muslims to do good to nature (hablum minal alam).(Martadi, 2018)

Tartilul Quran Islamic Boarding School (PPTQ) Al-Munawwaroh Gresik is known to the public not only as an educational institution that focuses on fostering the Koran, but also as a boarding school that cares about the environment. In the field of developing the knowledge of the Koran, the cottage is located at Jl. Jami' Kyai Gede Mosque, RT 16, RW 6 No.9 Bungah Gresik produced many outstanding students and won MTQ, both at the East Java and national levels. Apart from that, PPTQ Al Munawwaroh is also the only Islamic boarding school from Gresik which has passed the top 10 candidates for the East Java Province Eco-Pesantren award in 2021.(progresnews.id, 2021)

One of the efforts to realize eco-Islamic boarding schools is to apply the concept of environmentally friendly buildings. The concept of environmentally friendly buildings or the green building concept is the creation of building construction from the planning, implementation and

usage stages of buildings that are environmentally friendly, efficient in energy and resource use, and cost effective. low, and pay attention to the health and comfort of its inhabitants, all of whom adhere to sustainable principles. From the explanation of the relationship between eco-Islamic boarding schools and the concept of environmentally friendly buildings above, it is necessary to carry out research on the analysis of environmentally friendly buildings at the Tartilul Qur'an Al-Munawwaroh Gresik Islamic Boarding School to realize an eco-Islamic boarding school based on tasawwuf.

METHOD

In this study, researchers used qualitative methods that are descriptive and analytical. The qualitative research method is a research method that is based on philosophy, which is used to research in scientific conditions (experiments) where researchers as instruments, data collection techniques and in qualitative analysis put more emphasis on meaning.(Sugiyono, 2018) Qualitative research methods are carried out by providing an overview, collecting data, explaining a description of how to create an environmentally friendly building at the Al-Munawwaroh Islamic Boarding School in the eco-Islamic boarding school program. The implementation of this research method was carried out by field observations and interviews. The field observation method is a data collection technique that is carried out through an observation, accompanied by recordings of the condition or behavior of the target object.(Fatoni, 2011) The analysis was carried out by comparing the existing data in the field with a predetermined literature review, to find out whether the building has fulfilled the implementation of environmentally friendly buildings that are integrated with the eco-Islamic boarding school program. Aspects carried out in this study are air quality aspects, environmental management aspects of buildings, land use aspects, water conservation aspects, energy conservation aspects. Analysis of each aspect was carried out by taking data sources from the results of interviews from several informants and strengthened by field documentation.

RESULTS AND DISCUSSION

1. Analysis of Environmentally Friendly Buildings PPTQ Al-Munawwaroh

Implementation of Terms and Standards for Environmentally Friendly Buildings, among others, Each building has its own concepts and principles of planning, development and management in accordance with the needs and uses of the building. Not all buildings apply the concepts and principles of environmentally friendly buildings that prioritize saving natural resources to a minimum, use land wisely, reduce the impact on the environment, maintain air quality, and prioritize the health of its occupants by prioritizing sustainable development. Buildings can be categorized as environmentally friendly buildings if they meet the requirements and standards for environmentally friendly buildings.(GBCI, 2013)

The requirements or standards for a building referred to as a green building or environmentally friendly building include the following:

- a. Appropriate site development

Indicators of appropriate land use buildings have 2 prerequisites:

1) Site Management Policy

From the data obtained from the interviews, the building of the Tartilul Qur'an Al-Munawwaroh Islamic Boarding School has a broad road access management policy so that the mobility of the santri community can be free when they want to move from one building to another.



Picture 1. Indoor and outdoor main road access

2) Has a Motorized Vehicle Reduction Policy

From the data obtained from the interview results, the Tartilul Qur'an Al-Munawwaroh Islamic Boarding School restricts its students from using motorized vehicles. Motorized vehicles are only intended for college students (students) and boarding school administrators with reasonable needs and permission from the boarding school caretaker.

b. Energy Efficiency and Conservation

Every electronic item can contribute carbon dioxide (CO₂) which can harm the body. The existence of restrictions and regulations on the use of electrical energy will greatly affect the energy efficiency of a building and can reduce the amount of carbon dioxide contained in the room.

The indicators of energy efficiency and conservation which include the concept of environmentally friendly buildings have two prerequisites:

1) Policy and Energy Management

PPTQ Al-Munawwaroh teaches and guides his students to always pay attention and care about the condition of the surrounding environment, one form of caring for the surrounding environment is turning off lights and fans when they are no longer used and using electronic items effectively.

2) *Minimum Building Energy Performance*

In terms of room lighting, PPTQ Al-Munawwaroh uses energy-saving lamps which on average from all rooms use an absorption capacity of 15-20 watts with an average room area of 15-20 m² so as to minimize expenses in terms of electricity. Even so, the condition of the room remains bright and comfortable for activities.



Picture 2. Room lighting conditions

c. Conservation/Water Treatment

To maintain the cleanliness and smooth use of water at PPTQ Al-Munawwaroh, pickets are carried out every day and all parts are cleaned, especially checking the bathtubs in all the students' bathrooms. . Then after cleaning, there will be an administrator who double-checks the cleaning results of the students who are on duty, if the tub is still dirty, the students on duty have not carried out their duties to the fullest. In addition to the cleanliness of the bathroom, other bathroom equipment is also checked, such as water faucets, dippers, clothes hooks, and slippers in the bathroom.

d. Indoor Air Quality, Health, and Comfort

One of the benchmarks for environmentally friendly buildings is also found in air quality and comfort both indoors and outdoors. This is very closely related to the health and comfort of the surrounding community so that this situation requires regulations and policies that can maintain air quality in the cottage environment. As for the indicators that affect air quality as prerequisite criteria, namely the existence of a smoking ban (no smoking).

PPTQ Al-Munawwaroh has regulations not allowing its students to smoke inside the cottage, especially indoors. If there are students who violate this, they will be subject to sanctions in the form of donating 2 sacks of cement for the construction of the hut and being shaved. If the student repeats it again, he will be penalized for donating 4 sacks of cement and so on according to the multiples.

In addition to the no-smoking regulations, there are things that need to be considered

again in order to regulate indoor air quality, namely providing sufficient air circulation. This can be achieved when there are windows in the room and ventilation as a way for air to enter and exit as a controller for the cleanliness of the air in the room. According to field observations, there are sufficient windows and ventilation for air circulation in PPTQ Al-munawwaroh so that the air quality in the room is maintained fresh and clean.

e. *Building and Environment Management*

Environmental management of the building is equally important in realizing an environmentally friendly building. This building environment management aims to regulate the building environment so that it remains beautiful and shady. In addition, environmental management can also help manage waste from building users. The building environmental management indicator as a prerequisite criterion is the existence of an operational and maintenance policy for the building (operation and maintenance policy).

One of the implementations of environmental management at PPTQ Al-Munawwaroh is to create a management system for the management of plastic waste and paper waste which in this case is managed and accommodated in a place called "Bank Bogel". In Bank Bogel, the waste that has been collected is divided into 2, namely waste that can be recycled and waste that is not recycled. This recyclable waste is managed into products that can be reused such as photo frames, pencil cases, and so on. Then for waste that cannot be recycled will be collected and sold to collectors who have collaborated with PPTQ Al-Munawwaroh. In addition to waste management, the management also manages and regulates plants within the scope of the cottage, such as:

2. PPTQ Al-Munawwaroh Eco-Pesantren Program

Realizing a good, clean and healthy Islamic boarding school area as well as making Islamic boarding schools a center of learning (central of excellence) that is environmentally sound for the Islamic boarding school community and the surrounding community is one of the goals of eco-Islamic boarding schools. To realize this goal PPTQ Al-Munawwaroh has real programs that have been realized and implemented by all components of the PPTQ Al-Munawwaroh community. These programs are summarized into 3 aspects, namely: 1. Cleanliness 2. Greening 3. Waste Management.

The realization of this cleaning program is carried out by making a routine picket schedule every day and making regulations and sanctions related to cleanliness, for example: it is

forbidden to litter, wash your feet before entering the hut, and arrange your sandals neatly.

Then the realization of the greening program at PPTQ Al-Munawwaroh is to provide education/training to students on how to plant and care for plants. This training was not only carried out at that time but was carried out every day by watering and caring for the plants. PPTQ Al-Munawwaroh has various types of plants, ranging from small plants such as: toga, chili, jasmine, and others to large plants such as: mango and jackfruit trees.



Figure 3. Learning about planting and caring for plants

The realization of the waste management program at PPTQ Al-Munawwaroh is to provide education/training on waste management and recycling waste into useful items. This waste is managed and accommodated in a place called Bank Bogel.

3. Application of Environmentally Friendly Buildings in the PPTQ Al-Munawwaroh Eco-Pesantren Program

Building environmental management is one of the requirements and standards contained in environmentally friendly buildings. This standard has a close relationship with the eco-Islamic boarding school program in terms of pesantren environmental management. The PPTQ Al-Munawwaroh environmental management is very influential in realizing the PPTQ Al-Munawwaroh eco-Islamic boarding school program because in this environmental management there is a management that regulates and controls several eco-Islamic boarding school programs that have been realized at PPTQ Al-Munawwaroh.

CONCLUSION

As the results of the PPTQ Al-Munawwaroh environmentally friendly building analysis. The PPTQ Al-Munawwarah building has met the requirements and standards for environmentally friendly buildings. These terms and standards are:

1. Appropriate site development
2. Energy Efficiency and Conservation
3. Indoor Air Health and Comfort
4. Building and Environment Management

The application of the concept of environmentally friendly buildings that can realize the eco-Islamic boarding school program is Building and Environment Management, in this case a form of building environmental management, one of which is the creation of management that can manage and control the PPTQ Al-Munawwaroh Islamic boarding school eco-program.

REFERENCES

- Fatoni, A. (2011). *Research Methodology and Thesis Compilation Techniques*. Jakarta: Rineka Cipta.
- GBCI. (2013, September 12). Greenship Rating Tool. From <http://www.gbcindonesia.org/2012-08-01-03-25-31/2012-08-02-03-43-34/rating-tools>
- Martadi, RB (2018, June). Islam and the Environment. From Walhi East Java: <https://walhijatim.or.id/2018/06/islam-dan-environmental-life/>
- progressnews.id. (2021, December 1). PPTQ Al Munawwaroh Bungah, Pilot Project Eco Islamic Boarding School in Gresik. From <https://progresnews.id/pptq-al-munawwaroh-bungah-pilot-project-eco-Pesantren-di-gresik/>
- Sugiyono. (2018). *Quantitative Research Methods*. Bandung: Alfabeta.