DEVOTION
Journal of Research and Community Service

Volume 3, Number 9, July 2022
e-ISSN: 2797-6068 and p-ISSN: 2777-0915

IMPLEMENTATION OF GREEN ARCHITECTURAL RULES IN THE DESIGN OF THE GRIYA SAMADHI VINCENTIUS HALL IN PRIGEN VILLAGE, PASURUAN REGENCY, EAST JAVA PROVINCE

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KEYWORDS

Environmental Aspects, Green Architecture, Appropriate Site Development, Material Resources and Cycle, Building Environment Management

ARTICLE INFO

Accepted:
June 30th 2022
Revised:
July 12th 2022
Approved:
July 14th 2022

ABSTRACT

Griya Samadi Vincent is located in a cool highland, the temperature ranges from 20-24c. A beautiful and quiet area of approximately 6-7 hectares. There is a chapel room and a special indoor room that is usually used for meditation. The entire garden area can be used for outdoor meditation. In addition to the facilities for meditation, there are also several waste processing sites, organic plant nurseries, animal husbandry and the use of biogas as an energy source for the complex. So far, the Griya Samadi Vincentius complex has been managed by the Parish of the Church of the Nativity of the Blessed Virgin Mary, which is a partner of the contributors. So far, Parish, apart from being the manager of financing and maintenance, has also carried out complex developments in terms of the legality of licensing. Where one aspect of licensing is a Building Permit or IMB, in this case the environmental aspect is an important point in regional planning. Therefore, the contributors and the team will plan the building using the Green Architecture method in accordance with the Indonesian Green Building Council standards, namely: Appropriate Site Development, Indoor Air Health and Comfort, Water Conservation, Material Resources and Cycle and Buiding Environment Management.

INTRODUCTION

Griya Samadhi Vincentius (GSV) is located in Plembon Village, Prigen District, Pasuruan Regency, where the area is currently developing very rapidly to become a new mainstay tourist area. (Krisnamurti, Arida, & Bhaskara, 2022) The growth of crowded centers in the area of course affects the landscape that has been maintained, especially with the opening of the Cimory tourist center buildings which currently invite many visitors from outside the area which of course will have an impact, especially on the surrounding environment (Echenique, Hargreaves, Mitchell, & Namdeo, 2012) . Basically, the beautiful natural charm and excellent potential of local wisdom are positive values for people who want to visit Plembon Village (Vodouhê, Coulibaly, Adégbidi, & Sinsin, 2010). Residents around Griya Samadhi in Plembon Village highly uphold nature conservation and tolerance between religious communities, based on information from local residents, during celebrations for major holidays, local villagers will work together to repair buildings, roads, channels, and the environment where they live. each so that environmental problems do not arise that will harm them. (Hobbs, 2010)Public awareness is formed from generation to generation and the experience that has been obtained from media information, as well as their experience in planning and building a house or building, is not a comprehensive experience let alone getting to know the concepts of green buildings. Most of the residents of Plembon are farmers and traders, besides that the village of Plembon is also a fruit-producing area that

is marketed. On the other hand, Griya Samadhi is a building complex that is used for Catholic religious contemplation activities with the concept of blending with nature, therefore the construction of both new buildings and additions to existing buildings consistently uses nature as the main orientation. With the natural potential that is still good and maintained, and the people who are friendly with nature and the needs of Griya Samadhi who require natural panoramas to support their activities, the concepts of nature conservation around Griya Samadhi are absolutely necessary as an effort to create a Green Environment (Green Architecture) in the area (Pearson, 2001).

The general purpose of this activity is to utilize the natural panorama into a view that has spiritual value and to process the landscape into a single unit with the building so that it becomes a nature-oriented building design concept (Green Architecture) which has been the teaching material at Ciputra University Architecture Education (Andrews, 1999). Griya Samadhi, which requires the concept of green order in developing its buildings, is relevant to the concept of UC education that has been developed so far. The specific objectives of this activity, among others, are to assist foundation management in realizing green buildings by providing assistance in making green building-based building design models (Alshuwaikhat & Abubakar, 2008).

The benefits of this activity are expected to be felt directly by users or visitors of Griya Samadhi who need a natural atmosphere to support their contemplation as a manifestation of surrender to their God. (Akabzaa, Seyire, & Afriyie, 2007) For the surrounding community, the results of this activity can be used as a reference in making building designs based on the surrounding nature. (Arenas, Leiva, Vilches, & Cifuentes, 2013) For the building component industry, the results of this activity in the form of designs and implementation guidelines can be used as the basis for product absorption that is guaranteed by safety and environmental standards. For universities, through the results of this activity, they can further develop various equipment designs and green building design methods for the benefit of student study and learning. For the government, this activity can help encourage environmental hygiene and sustainability programs to support and accelerate the growth of community welfare through nature and environmental tourism in Indonesia (Herritage & Culture Tourism). For information, the partner of the contributor is the Catholic Church of the Nativity of the Blessed Virgin Mary. The Parish Church is one of the main administrators of the GSV. The total area of GSV is 14 hectares, the problem with GSV development is the demand for development that prioritizes sustainability aspects (Niedźwiecka-Filipiak, Gubański, Podolska, Rubaszek, & Witkiewicz, 2022).

As a place for contemplation or meditation activities that use nature as a medium in communication with the creator of life, a green building concept with an adequate rating is needed for the effectiveness of its function (Waters, Barsky, Ridd, & Allen, 2015). To realize the concept above, it is necessary to involve experts who master the concept of green architecture comprehensively and understand the standards of green architecture assessment (Kang, Lee, & Kim, 2016). The problem is that the management does not have adequate capabilities in terms of design and this concept is not only an idea but must also be applied in the field by involving various related parties including; administrators, the surrounding community, higher education, government, assessment agencies, and the building industry. With the potential for a very supportive natural panorama plus the available land and the spirit of the management who is quite challenging to realize their hopes in providing a comfortable and representative building, assistance to create a green building model in the

Griya Samadhi Vincensius complex, Jl. Ngemplak, Plembon Village, Prigen District, Pasuruan Regency, this is the time to be realized.

METHOD RESEARCH

First, for the first year, the emphasis is on planning issues where the GSV management does not have competent personnel in the field of building, especially green buildings, including coordinating any data and information from other parties related to green buildings. Second, is the year after the entire building design is considered complete with the issuance of a licensing certificate, it is followed by assistance in the implementation of building construction, which of course must also comply with environmental conservation principles. In this case, the emphasis is on how to build without destroying and compromising the surrounding environment, including the surrounding community, which should benefit significantly. Third, is assistance in the following years, namely how the management and the surrounding community can develop sustainably independently without relying on other parties who have been providing support in the form of material or other support.

As for the first year in detail the steps in implementing the solutions offered to overcome the problems, the following things were carried out.

1. Partners are part of the Foundation which is not engaged in engineering and construction, so far partners have been developing the area independently and assisted by consultants from third parties. The problem faced is

    a. Problems in providing design drawings that are in accordance with site/regional conditions.

    b. The need for a design that has.

    c. Problems in the field of marketing, and others.

2. The stages carried out are interviews with the owner or manager of the area, conducting a survey of the area, providing a draft proposal in the form of a design and understanding of green design.

3. Describe the approach method offered to resolve partner problems which have been mutually agreed upon is to use green design standards based on the Green Building Council Indonesia. The standards used are aspects of: Appropriate Site Development, Indoor Air Health and Comfort, Water Conservation, Material Resources and Cycle and Building Environment Management.

4. Partners' participation in program implementation is to provide information that will be adjusted to the GBCI standard and construction demands from an architectural point of view.

5. Evaluation of program implementation and program sustainability in the field after HIMAS activities are completed is by adjusting the design results to the GBCI standard and as part of the need for the proposed Building Permit (one of which is the demand for sustainable and environmentally friendly values).

RESULTS AND DISCUSSION

The design of the hall or multipurpose building in the Griya Samadhi Vincensius (GSV) area is basically to help and provide solutions to problems faced by the management. The first is related to the problem of the lack of personnel and knowledge in the field of green building areas so that management is needed, namely:

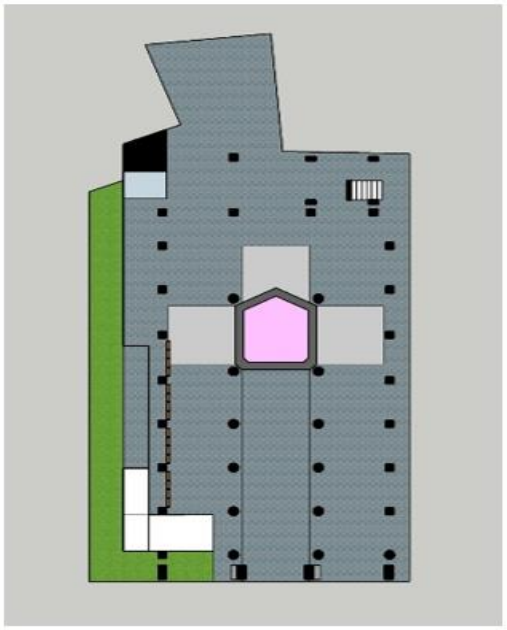
1. Utilizing personnel in higher education, namely lecturers and students, to become green architecture building experts who can spark building ideas and ideas that are needed by GSV users and the surrounding community on an ongoing basis.
2. Utilizing other resources outside of GSV that can support the realization of green building ideas, into a comprehensive building package that can be marketed for the sustainability of GSV.
3. Utilizing local natural resources that can still be used as components of green buildings into building works in accordance with the plans that have been prepared together.

The second is related to knowledge about green buildings which is used as a basis for design so that management and efforts are needed to improve the competence and ability of existing personnel in understanding and designing green buildings. There are three types of benefits of green buildings such as environmental, economic and social. An example of the environmental benefits of green buildings is the reduction of harmful gas emissions and waste. The economic benefits of green buildings such as energy and water reserves, increased property values, increased property values. The social benefits of green buildings such as improved health, and a healthy lifestyle (Hill & Bowen, 1997). The benefits are achieved through several approaches such as using solar panels, provision of public transport facilities, stormwater and greywater management. The Greenship Rating System is a tool for assessing buildings based on the green building concept. The rating system contains aspect items called ratings and the rating of each item has a point value or credit points. There are several types of such rating systems as rating systems for new buildings, existing buildings, interior spaces, homes, and concepts for environmentally sustainable. In this activity, the assessment tool used is for building planning (Zhang et al., 2019).

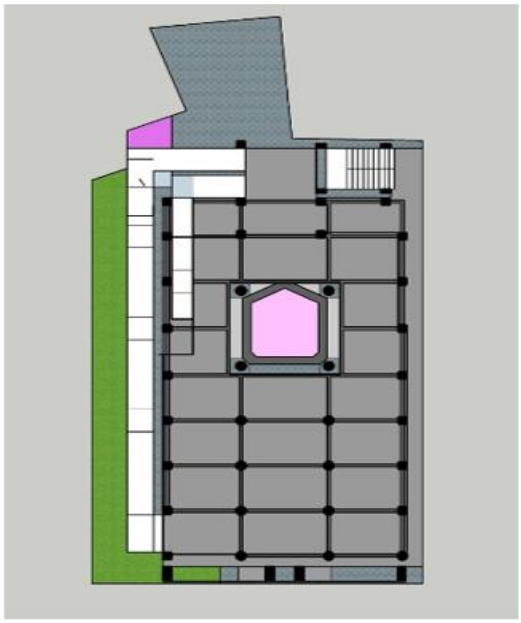
There are six rating categories on the greenship rating system for existing buildings, such as proper site development, energy efficiency and conservation, water conservation, resource and material cycles, indoor air health and comfort, building and environmental management. Each assessment category has several prerequisites and criteria associated with the assessment. Some categories only have maximum scores while others categories have maximum points and bonuses. Category Appropriate Site Development has two prerequisites and 8 criteria with a Maximum of 16 points. The Energy Efficiency and Conservation category has two prerequisites, five main criteria with a maximum of 36 points and two bonus criteria of 8 bonus points (Pérez-Lombard, Ortiz, Coronel, & Maestre, 2011). The water conservation (WAC) category has one prerequisite, seven main criteria with a maximum of 20 points and one bonus criterion with 2 bonus points. Material resources and category cycle (MRC) has three prerequisites, five main criteria with a maximum of 12 points (Nurcahyo, Sari, Habiburrahman, & Kristiningrum, 2018).

Gambar 1. Perspektif

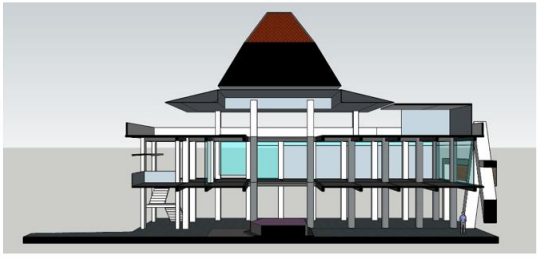
Gambar 2. Interior Hall



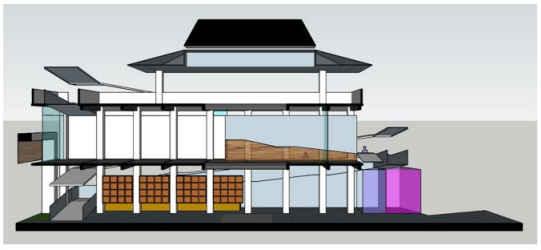
Lantai 1



Lantai 2



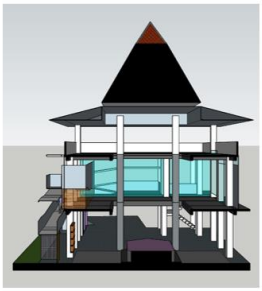
Potongan A-A



Potongan B-B

Potongan C-C

Potongan Perspektif 1



Potongan Perspektif 2

CONCLUSION

The proposed design and concept of Green Design in buildings for the GSV area is realized in the form of design solutions in the context of the surrounding landscape, the condition of the community, as well as the arrangement of existing buildings with improvements to align with the new building design. By understanding the design process where this process can be a lesson for partners to develop an integrated area that has design values and principles of sustainability and is environmentally friendly.

REFERENCES

Akabzaa, Thomas M., Seyire, J. S., & Afriyie, Kwadwo. (2007). *The glittering façade: Effects of mining activities on Obuasi and its surrounding communities*. Third World Network-Africa Accra.

Alshuwaikhat, Habib M., & Abubakar, Ismaila. (2008). An integrated approach to achieving campus sustainability: assessment of the current campus environmental management practices. *Journal of Cleaner Production*, *16*(16), 1777–1785.

Andrews, Malcolm. (1999). *Landscape and western art* (Vol. 10). Oxford University Press, USA.

Arenas, Celia, Leiva, Carlos, Vilches, Luis F., & Cifuentes, Héctor. (2013). Use of co-combustion bottom ash to design an acoustic absorbing material for highway noise barriers. *Waste Management*, *33*(11), 2316–2321.

Echenique, Marcial H., Hargreaves, Anthony J., Mitchell, Gordon, & Namdeo, Anil. (2012). Growing cities sustainably: does urban form really matter? *Journal of the American Planning Association*, *78*(2), 121–137.

Hill, Richard C., & Bowen, Paul A. (1997). Sustainable construction: principles and a framework for attainment. *Construction Management & Economics*, *15*(3), 223–239.

Hobbs, Renee. (2010). *Digital and Media Literacy: A Plan of Action. A White Paper on the Digital and Media Literacy Recommendations of the Knight Commission on the Information Needs of Communities in a Democracy*. ERIC.

Kang, Hyeyon, Lee, Yeunsook, & Kim, Sunkuk. (2016). Sustainable building assessment tool for project decision makers and its development process. *Environmental Impact Assessment Review*, *58*, 34–47.

Krisnamurti, Galih, Arida, I. Nyoman Sukma, & Bhaskara, Gde Indra. (2022). Strategy for Development of Tourism Facilities for Putuk Truno Waterfall, Prigen Village, Prigen District, Pasuruan Regency. *European Journal of Business and Management Research*, *7*(2), 216–222.

Niedźwiecka-Filipiak, Irena, Gubański, Janusz, Podolska, Anna, Rubaszek, Justyna, & Witkiewicz, Anna. (2022). Potential Elements of Green Infrastructure (PeGI) Inside the Core of the Village (CoV): A Case Study of Wrocław Functional Area (WFA) in Poland. *Sustainability*, *14*(3), 1611.

Nurcahyo, Rahmat, Sari, Nurmala, Habiburrahman, Muhammad, & Kristiningrum, Ellia. (2018). Green building standard assessment at a higher education institution. *SHS Web of Conferences*, *49*, 1001. EDP Sciences.

Pearson, David. (2001). *New organic architecture: the breaking wave*. University of California Press.

Pérez-Lombard, Luis, Ortiz, Jose, Coronel, Juan F., & Maestre, Ismael R. (2011). A review of HVAC systems requirements in building energy regulations. *Energy and Buildings*, *43*(2–3), 255–268.

Vodouhê, Fifanou G., Coulibaly, Ousmane, Adégbidi, Anselme, & Sinsin, Brice. (2010). Community perception of biodiversity conservation within protected areas in Benin. *Forest Policy and Economics*, *12*(7), 505–512.

Waters, Lea, Barsky, Adam, Ridd, Amanda, & Allen, Kelly. (2015). Contemplative education: A systematic, evidence-based review of the effect of meditation interventions in schools. *Educational Psychology Review*, *27*(1), 103–134.

Zhang, Yinqi, Wang, He, Gao, Weijun, Wang, Fan, Zhou, Nan, Kammen, Daniel M., & Ying, Xiaoyu. (2019). A survey of the status and challenges of green building development in various countries. *Sustainability*, *11*(19), 5385.