

Eco-cultural approach integrating Islamic values with artha wantilan concept on the fish market design in Kedonganan Bali, Indonesia

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Abstract- Bali is an island that has many coastal areas, one of which is Kedonganan and there is a fish market that is quite famous among the surrounding population and the tourists. This study aims to re-design the Fish Market with an eco-cultural approach. This design approach considers the continuation of nature and also local traditional Balinese Architecture. However, there are several values in Hinduism that contradict the values of the Islamic religion. The values of the Islamic integration argument are used to examine aspects adapted to the *artha wantilan* concept based on the characteristics of *Bale Wantilan* so that its application in the design of the fish market still contains elements of Balinese architecture and remains integrated with Islamic values. The used method is descriptive qualitative, by collecting the literature review, examining several aspects related to the object of research, and applying the results of the study in object design. So that the results of this study can know the shape of the roof, building body and foot of the building, and ornaments that are applied and have been adapted to the needs of the fish market building and also integrated Islamic values.

Architecture values in every building construction, the Eco-Cultural design criteria are associated with the values of Balinese Architecture [3][4].

Traditional Balinese architecture is very closely related to the teachings and beliefs of Hinduism. Many of the values contained in traditional Balinese Architecture are based on values in Hinduism through the application of various form principles that include architectural identity and values [5][6][7]. The use of traditional architecture to modern buildings for an example is market. *However, there are some values in Hinduism that contradict the values in Islam. In this study the values in Traditional Balinese Architecture are integrated with Islamic values, which are based on the postulates of the Qur'an and As-Sunnah.*

To correlate between traditional Balinese architecture and the value of Islamic integration in its application to design objects, namely by avoiding ornamental formations that are based on living creatures and those related to Hindu worship/beliefs to avoid the polytheistic impression, and applying flora and geometric forms in the design object.

I. INTRODUCTION

Fish Market in Kedonganan is a traditional fish market that is well known among the surrounding community and tourists. The location of the Fish Market is a tourist area that makes the appearance/facade of the Fish Market one of the factors to attract more tourists to visit. So there needs to be a change from the appearance of the Fish Market, which currently seems ordinary and without identity. Based on Bali Province Regulation (*Perda Prov. Bali no.5 Tahun 2005*) concerning Building Architecture Requirements, that the architecture of non-traditional Balinese buildings must be able to display Balinese traditional architectural styles by establishing the principles of traditional Balinese architecture that are in harmony, balanced and integrated with the local environment [1][2][3].

The aim of this study is to design a Fish Market with an eco-cultural approach that considers the continuation of nature and also local culture. Because the location of the object is located on the island of Bali and with the Provincial Regulation of Bali, which requires the application of Balinese

TABLE I
Design Criteria of Eco-Cultural

Design Criteria of Eco-Cultural	Explanation of Design Criteria	Description of Application in Design (suitable with the Values of Balinese Architecture)	Integration of Islamic Value (Human as Khalifah on Earth)
Human Features	Human features in the building	a. uilding design pays attention to user comfort. (flexibility and ease of activity).	Habluminannas Comfort
Harmony	Harmonizing some aspects of the building.	a. resent the building design that is in harmony with local cultural values, especially local architectural values. b. uilding design pays attention to the regional climate. c. resent the building design that is in harmony with nature. d. utting inner court	Habluminannas Habluminal alam

		(natah) in the building design. (characteristic of Balinese House Architecture)	
Materials	The use of natural materials combined with modern materials.	a. armonize the use of local materials with modern materials. b. he use of local materials, besides being easy to obtain, also provides characteristic values. c. enewable materials.	Habluminal alam
Space	The division of inner and outer space functions and zoning based on human needs (users) inside.	a. Apply KDB(Koeisien Dasar Bangunan) to create an open space composition (void) b. Apply border lines according to the rules in force. c. Site zoning adjusts with sanga mandala concept.	Habluminal alam
Structure	The used building structure adjusts with local values.	a. The Balinese building structure is divided into three parts; there is head (upper structure), body (mid-structure) and feet (lower-structure).	Habluminannas
Shape	The building shape reflects the character of local architectural e.	a. Using processed building shapes that reflect the characteristics of traditional Balinese architectural forms.	Habluminannas
Climate	Sites and buildings that adjust and respond to local climate conditions. (sun, wind, and rainfall)	a. Using the shape of a pyramid or saddle roof that reflects the architecture of the tropics (25-50 degrees) b. Creating the open space (Karang tuang/telanjakan) around the site.	Habluminal alam
Style	The application of architectural styles that adjust with local values	The application of the Balinese architectural style, especially its facade that seems unfinished and uses local materials to produce colors that are in harmony with nature.	Habluminal alam Beauty
Colors	Using natural colors reflects closeness to nature.		

In the Traditional Balinese Architecture there is an object that has function as a public building, namely Bale Wantilan. For Balinese people, in general, Bale Wantilan has three functions, there are spiritual function (dharma), cultural function (Khama), and socio-economic function (artha) [8][9][10]. Adjusting to the function of the Fish Market, which

is a public building, the Fish Market formation follows the primary form of the traditional Bale Wantilan building, which is a public building with open walls in all directions and generally serves to accommodate the activities of residents. And the artha function is socio-economic by the purpose of the fish market which is the place of the economy as well as social facilities between sellers and buyers.

This Bale wantilan has several characteristics; there are overlapping roofs (piled), open walls in all directions. So that the formation of the roof and openings wall in the fish market also follows the characteristics of Bale Wantilan, is with overlapping roofs that can reduce the heat so that the space in the fish market is not stuffy, especially with the pungent smell of fish.

TABLE II
Design Application Parameters of Kedonganan Fish Market

The Integration of Islamic Value (Human as Khalifah on earth)	Artha Wantilan	Design Application Parameter of Kedonganan Fish Market
Comfort Habluminannas Habluminal alam Habluminallah Beauty	1.Artha function (socio-economic) 2.Basic shape (square/rectangle) 3.Broad space needs 4.Located in the center of the site 5.Overlapping roof form 6.Without roof structure and ceiling 7.Opened to all directions 8.Ornamental variety 9.Column (sesaka) and footplate foundation	1. The division of zoning on the website and the market is divided according to function, which is social (communal) also economic areas. 2. The basic shape of the Fish Market building extends from west to east. 3. Interior of Fish Market impressed wide 4. The fish market building is located right in the middle of the site, so it is easy to access. 5. The form of overlapping roofs to reduce temperatures in the market. 6. The market roof structure and ceiling, then the roof tile and the structure is exposed. 7. Fish market buildings are semi-open in all directions, it is minimizing the use of massive walls 8. The application of ornamental variety in floral form also geometric form. 9. Column (sesaka) 10. Footplat foundation

In the ancient Balinese language, wantilan comes from the word wanti-wanti, which means continuous. It also has another meaning, which is open hall. Thus, wantilan can be interpreted as open buildings in all directions that have overlapping roofs. In general, wantilan functioned to accommodate various general activities of Balinese residents, which are classified ad Tri Warga, there are dharma, artha, and khama (spiritual, Socio-economic, and Cultural). The location o wantilan in a ground/village is in the center instead of to the edge with the surrounding space can be an extension of its openness on four sides [11][12].

The integration of Islamic values that has been explained is related to aspects/characteristics of Bale Wantilan that were

not contrary to the value of Islamic integration. Bale wantilan functions as tri warga that accommodates the needs of Balinese residents. Of the three tasks that are most in line with the features of the fish market, it also does not contradict the Islamic integration is the function of artha, as a forum in social and economic affairs. So the basic concept that will be raised for application in the design object is Artha Wantilan. Following is a table regarding the study of design parameters that will be applied to the Fish Market design object.

II. RESEARCH METHODS

The used method in this research uses the descriptive qualitative method. This method is used to apply the concept of artha wantilan from the result of the design application parameters in the Kedonganan Fish Market. The steps of the used method are:

- Collecting data**
Collecting data in the form of literature data on traditional Balinese architecture and its relation to Islamic values and fish market design objects.
- Analysis**
The design analysis method used is a linear method that is a gradual design method and continues from one step to another. So that a step begins after the previous step is completed.

III. RESULTS AND DISCUSSION

3.1 Artha Function (socio-economic)

Zoning in the Fish Market area follows the Wantilan function in the Artha function, which is social and economic, so zoning is based on the area function, that the commercial function as an area of buying and selling activities and the social function as the communal activity area of users.

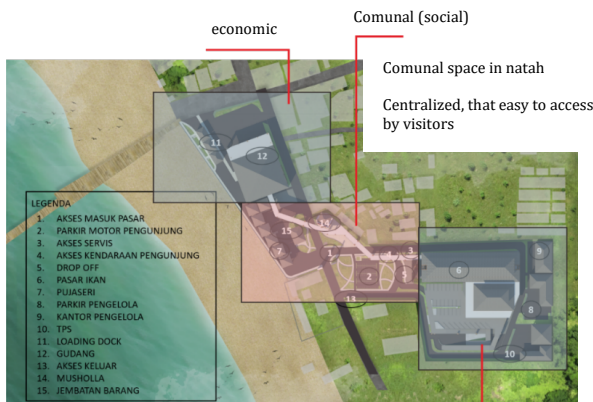


Figure 1. Fish Market Layout Plan

Zoning based on function is also applied in the Fish Market building, the main building for buying and selling fish.

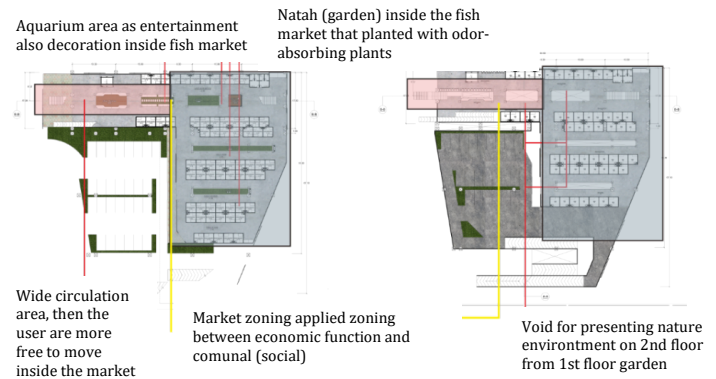


Figure 2. Fish Market Floor Plan

3.2 Basic shape (square/rectangle)

The main form of the fish market in Kedonganan uses a rectangular shape, in addition to following the formation of the bale wantilan, also to maximize the use of space in the market.

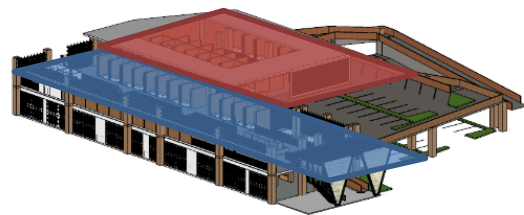


Figure 3. Fish Market Shape

3.3 Broad space needs

Space requirements in the fish market require a large area for the user's circulation and luggage circulation in the market. The arrangement of the stalls arranged and the circulation path that wide enough affects the comfort of visitors and other users in the market.



Figure 4. Fish Market Interior

3.4 Located in the center of the site

The fish market building is located right in the middle of the site so it is easy to access and achieve

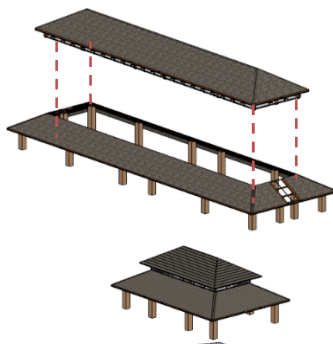


Natah as green open space in the site that planted with plants that are characterized by locality (Bali)

Figure 5. Fish Market Region

3.5 Overlapping roof form

The roof form of the market building follows the form of an overlapping roof, its two overlaps. Due to the high roof so that it can reduce the heat in the market building and the area of wind circulation into the market through the gap between the two roofs.



Gambar 6. Overlapping Roof Form

3.6 Without roof structure and ceiling

The exposed roof structure adds to the impression of traditional Balinese architecture and adds a broad impression of space within the market.

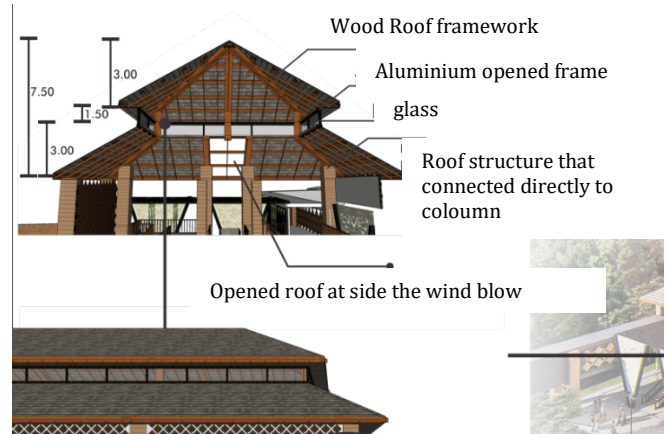


Figure 7. Roof Detail

3.7 Opened to all directions

The fish market building is semi-open in all directions. It minimizes the use of massive walls and increases the use of roster and secondary skin. Because fish and seafood products are vulnerable to heat and wind if the market building is too open especially in all directions.

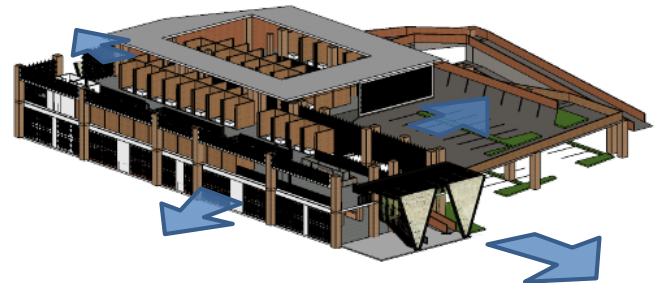


Figure 8. Fish Market Orientation

3.8 Ornamental variety

The application of decorative type in floral form also geometric form on the roster dan secondary skin.

3.9 Column (sesaka) and footplate foundation

The fish market building does not apply columns (sesaka guru) by the building wantilan, because the market building requires a large area and not many columns in the room.

IV. CONCLUSION

The conclusion from the result of the explanation that “Artha Wantilan” concept was based on Bale Wantilan building is an open public building that always been a place to accommodate community activities in Bali. The formation of each building mass on the design object applies the values of traditional Balinese architecture, especially in the form of the roof and also the ornament. The used materials, most of them use materials with natural colors, such as wood, padas stone, and bamboo. The applied decoration in the design object only uses

flora formations that do not conflict with Islamic values; that is, may not be formed / ornament of living creatures (animate).

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