Design Concept Of A Tourist Information Center Building High Land Borobudur That Is Responsive To The Surrounding Environment

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Abstract: The Indonesian government faces a number of problems related to the development of tourist areas, both internal and external. The purpose of this study is as a supporting facility for the Borobudur Highland area of the Nglinggo-Sedayu Gate section. In the research stage using a combined method where in the stage there is a search for primary data such as measuring the location of the area with Total Station and GPS. There are also secondary regulations in the form of regulations that apply in accordance with government regulations and the surrounding environment. Where to encourage the implementation of the development of the Borobudur destination, the Ministry of Tourism established the Borobudur Tourism Area Management Authority Agency (Borobudur Authority Agency / BOB) based on Presidential Regulation No. 46 of 2017. From the results obtained after conducting field checks including measurements with Total Station and GPS, as well as the Soil Test in the Highland Borobudur area, especially the area of the Tourist Information Center site. This location has an elevation and extreme dryness of the contour in the valley position. after we saw in the field there are two things that make the location's appeal, namely the design that follows the contours and the natural surroundings as well as a very beautiful view, especially towards the exclusive resort.

Keywords: Tourist, Information, center, Borobudur, Highland, Extreme

1. Preliminary

Background

The Borobudur Authority Implementing Body, hereinafter referred to as BOB, was formed based on Presidential Regulation number 46 of 2017. BOB is a work unit under the Ministry of Tourism of the Republic of Indonesia in accordance with the Regulation of the Minister of Tourism Number 10 of 2017. BOB is given the authoritative task to manage an area of 309 hectares in Menoreh Hills, Purworejo Regency, Central Java. This area is expected to become a regional driving force, as well as a new tourism destination that complements the existence of Borobudur Temple as one of Indonesia's leading tourist destinations.

The Ecotourism Society (2000) defines tourism as follows: "Tourism is a form of travel to natural areas carried out with the aim of conserving the environment and preserving the life and welfare of the local population." To encourage the implementation of the development of Borobudur destinations, the Ministry of Tourism established the Regional Management Authority Agency. Borobudur Tourism (Borobudur Authority Body / BOB) based on Presidential Regulation No. 46 of 2017. The arrangement of buildings and supporting facilities for the Borobudur Highland area of the Nglinggo-Sedayu Gate section is to provide technical planning documents for the implementation of the construction of buildings and supporting facilities in the Borobudur Highland area, section of the Nglinggo-Sedayu Gate which will be used as a guideline for construction.

A contour line is an imaginary line on the ground that connects points of the same height or a contour line is a continuous line on the map that shows points on the map with the same height.

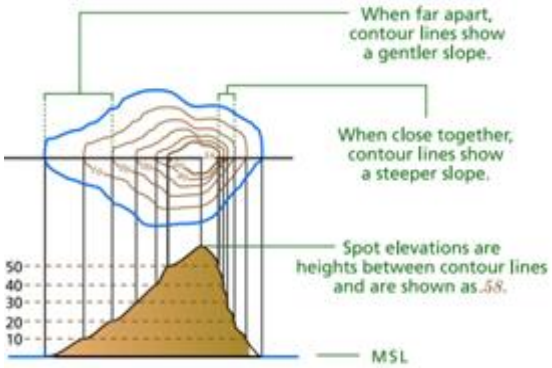

Figure 1 Examples of contours on the map

- A dwelling built on contoured ground will be very rich in space creations, if the arrangement is right.

- Utilization of land on contoured land creates space that can be hidden among other spaces. For example, a three-story house, it will appear only one floor from different sides.
- Housing on uneven ground is also unique in comparison to a one-story house (without an upper floor), which is located on non-contoured ground.
- Another uniqueness that doesn't get flat land is the view. On this land the front of the building will be formed into two sides. The resulting view is much more interesting.

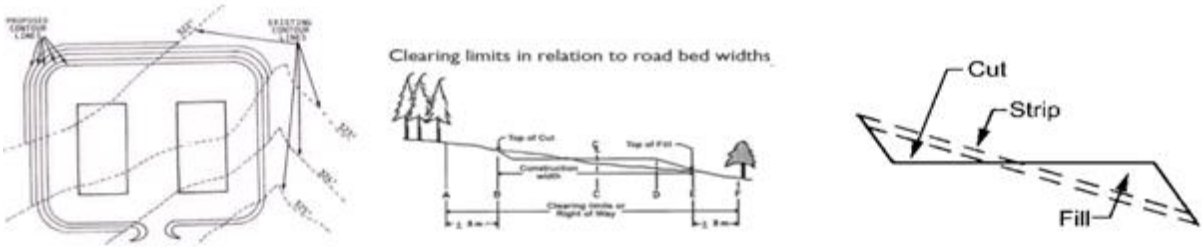

Figure 2 Contoured Land Engineering

Basic Grading Formulas:

- D = The difference in height between the land faces
- L = Length or distance
- G= Slope or slope of land surface

$$\frac{\text{Total Number of Digs}}{\text{Total Number of Orders}} \times 100\%$$

Figure 3 Basic Grading Formulas

The Borobudur Highland area is located in Menoreh Hills, which are administratively located in Benowo, Cacaban Kidul, Cacaban Lor, and Pekacangan Villages in Bener District and Sedayu Village in Loano District, Purworejo Regency. This area is directly adjacent to Kulon Progo Regency and Magelang Regency. The location of the land in the Menoreh Hills area is very extreme, around 15 ° -40 ° or 30-80%.

Research conducted by Inten Setio Gianina, Arik Prasetya Rizki, Yudhi Dewantara in a scientific journal of business administration entitled "Analysis of the Role of the Tourist Information Center (TIC) on Tourist Decision Making Visiting Objects and Tourist Areas (Study at TIC Malioboro, Yogyakarta)". Menunjakan Malioboro TIC has a major role as a conveyor of tourism information on Jogja in particular and Indonesia in general. When the delivery of information takes place, there are marketing activities carried out by staff.Marketing activities such as conducting publicity, promotions and sales of tour packages. Marketing activities by TIC Malioboro are non-commercial in nature. TIC Malioboro has the main objective of helping and making it easier for tourists to carry out their tour activities. Tourist information and convenience delivered by Malioboro TIC staff provide opportunities for tourists to extend the length of their stay in Jogja.

The research method used, namely comparative descriptive analysis. This analysis is to compare the state of the field with the theory. In the form of conducting field surveys by interviewing and collecting data, namely building concepts, working drawings, and photos. Then it is compared with theories related to residential housing, internal space arrangement and contoured land, so as to reach a conclusion that can be taken into consideration when building on steep contoured land.

The purpose of this research is as a supporting facility for the Borobudur Highland area at the Nglinggo-Sedayu Gate section. In the research stage using a combined method where in the stage there is a search for primary data such as measuring the location of the area with Total Station and GPS. government and the environment.

2. Problem Formulation

The existence of government programs to further develop the tourism and culture of Central Java Province from the Borobudur Authority Management Body. Increasing the tourism and cultural potential of Central Java Province in Purworejo district which should be empowered professionally in order to bring benefits. The need for planning a Tourist Information Center for Java Province Tengah in the Highland Area of Borobudur, Purworejo Regency to facilitate tourism information and develop tourism and cultural potentials in Central Java Province. The Tourist Information Center provides another option for people to spend time outside the home.

Purpose

The purpose of the Tourist Information Center is to provide knowledge on issues related to planning and designing a Tourist Information Center building as a means of tourism development.

3. Research methods

The research method used, namely comparative descriptive analysis. This analysis is to compare the state of the field with the theory. In the form of conducting field surveys by interviewing and collecting data, namely building concepts, working drawings, and photos. Then it is compared with theories related to residential houses, internal spatial arrangement and contoured land, so that it can reach a conclusion that can be taken into consideration when building on steep contoured land. Overview of the villages of Benowo, Cacaban Kidul, Cacaban Lor, and Pekacangan in Bener District and Sedayu Village in Loano District, Purworejo Regency as supporters of a Highland Borobudur Tourist Information Center Building. Literature review obtained theoretical basis, design standards, planning and design policies (field surveys, internet surfing, literature studies) Non-physical physical conditions, geography etc. In addition, a comparative study was also conducted on compilation of data from field studies and comparative studies with literature studies.

Tabel-1 The tool used for measurements

No	Tool's name	Lots	Information
1	***Total Station* (TS)**	2	The main tool of measurement
2	***Theodolith (T0)***	3	The main tool of measurement
3	Prism TS	4	For both situation points and polygons
4	Pillar of Prism	4	Where to install TS prisms
5	Tripod	5	Place to put TS
6	Thumbtack	Sufficiently	As a sign of the point of the establishment of Total Station and Theodolith
7	Spray Paint / Pylox	15	Marker
8	hammer	5	Install nails
9	Marker	20	Stake name marker
10	Usual Meter	5	Measure the height of the main tool
11	camera	2	For taking field photo documentation
12	Stationery (Pen + Paper)	Sufficiently	Mark at the point where the measurement is
13	HT Radio	4	Long distance communication media
14	Laptop	2	For processing data

4. Discussion

The Borobudur Highland Tourism Area has high potential to be developed as a tourism hub for tourism activities in Menoreh Hills. In order to become a magnet for new tourism destinations in a wider area, Borobudur Highland still needs the development of other tourist attractions that can complement and synergize with existing tourist objects in contributing to the attractiveness of natural tourist destinations in offsetting other tourist destination magnets. in Central Java and Yogyakarta.

Land Conditions	▪ State pine forest whose management is carried out by a public company, an Indonesian state forest company. ▪ Forest status consists of production forest and limited production forest.
Topography	▪ Altitude 400 - 1000 m above sea level. ▪ Hills with steep slopes & some relatively flat ▪ The highest area in the east of the area ▪ The elevation of the West to the north & south is getting lower
Slope	▪ Slopes> 15º and> 40º ▪ The relatively safe area to be built is scattered ▪ An area of 189.67 hectares spread throughout the area, relatively safe to be developed with certain engineering / security technology.

Land Tenure & Management Status

The status of the land managed by BOB, which is ± 309 Ha will be in two tenure patterns.

Basic Mastery Pattern:

1. No.41/MOU/DIR/2018 Memorandum of Understanding between State Forestry Public Company & Borobudur Authority Agency.

2. No.002/UM.004/BPOB KEMPAR/XI/2018 Beneficiary of Natural Tourism Environmental Services in the Borobudur Tourism Area Authority Zone

Tabel-2 Land Management Mastery Status

	50 Ha of land	**259 Ha of Land (RPH Loano,BPKH Purworejo,KPH Kedu Selatan)**
Ruling Pattern	Management Rights (HPL) by BOB	Cooperation in the Utilization of Natural Tourism Environmental Services with the public company Indonesian State Forest Company
Mastery Pattern Output	• BOB assets • Can be cooperated directly with investors	• Cooperation agreement for 30 years • BOB provides compensation to Indonesian State Forest Company as land manager

The fundamental difference between the two land statuses is that over 50 Ha of HPL land, HGB can be issued, but on the cooperative area of 259 Ha, HGB or other certificates cannot be issued because the status is still state forest.

The design concept of the Tourist Information Center Building

The Tourist Information Center building is located in an area of 259 Ha, which is more precisely on the HPL 50 Ha area belonging to BOB. The Tourist Information Center, the main building in the Highland Borobudur area is an icon of Highland Borobudur. Because as an information center people find out more about the facilities provided in the Highland Borobudur area. In addition, the Highland Borobudur area has supporting buildings in areas such as the UMKM Center, Transfer HUB, and the Amphitheater. The Tourist Information Center itself has 4 floors of the building, where the split level concept is used as part of the surrounding natural contour. The floor is divided into several parts:

1. Upper Ground
2. First Floor
3. 2nd Floor
4. Mezzanine Floor

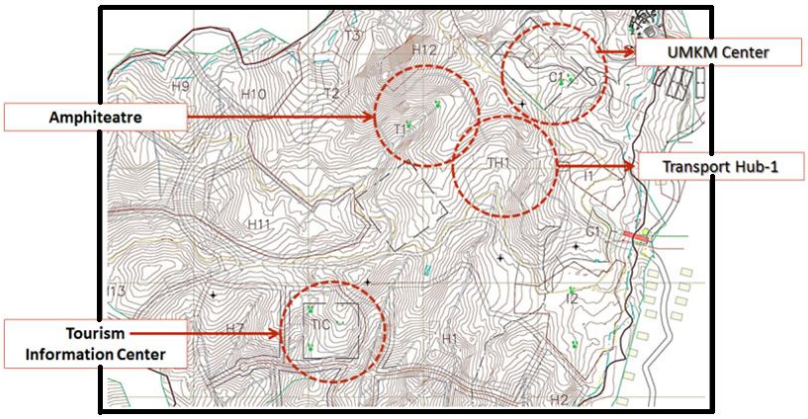

Figure.4 Existing Tourism Topographic Map in the Borobudur Highland Area and its surroundings

The design concept of the Tourist Information Center Building refers to the following provisions, namely:

Function

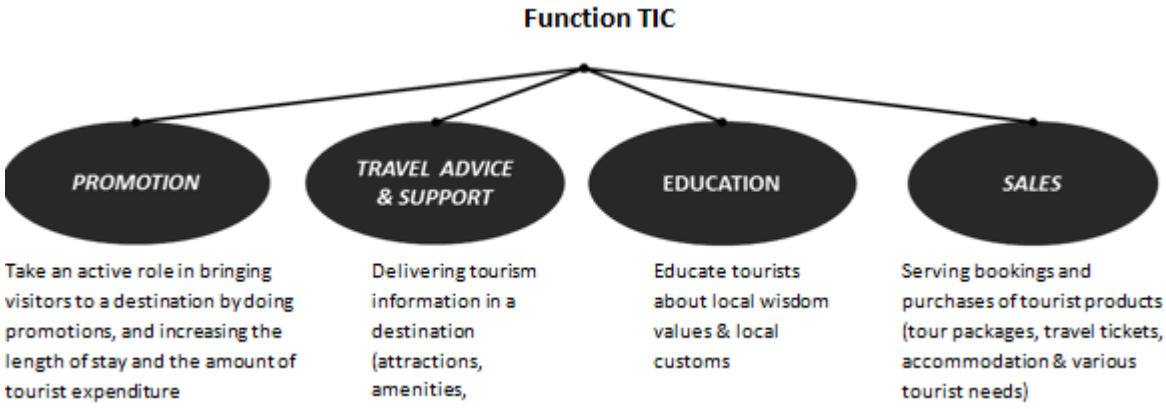

Figure.5 Tourist Information Center Function Chart

Physical Dimensions of Land & Buildings

In the master plan, it is stated that the BCR of the Tourist Information Center lots is 20%.

Tabel 0. Requirements for the dimensions of land & tourist information center buildings

Building Functions	Plot area (m^2)	% BCR	% Green	% Pavement	Large Floor Basic (m^2)	Floor Area Ratio (FAR)	Maximum Building Height (Floor)	Plot borders (m)
***Tourist Information Center* (TIC)**	**24300**	**25**	**67**	**8**	**6082**	**0,2**	**1**	**10**

Location

The Tourist Information Center is the only semi-public function located in the Exclusive Resort Zone, so that the design concept of the plots and buildings will be directed as follows:

a.Exclusive but blends with the natural surroundings, by using:

1)Glass material in building envelopes.

2)Contour preservation and cut & fill minimization

3)Arrangement of vegetation elements

b.Eye cathing / vocal point between the resort hotel and lodge buildings that are around it.

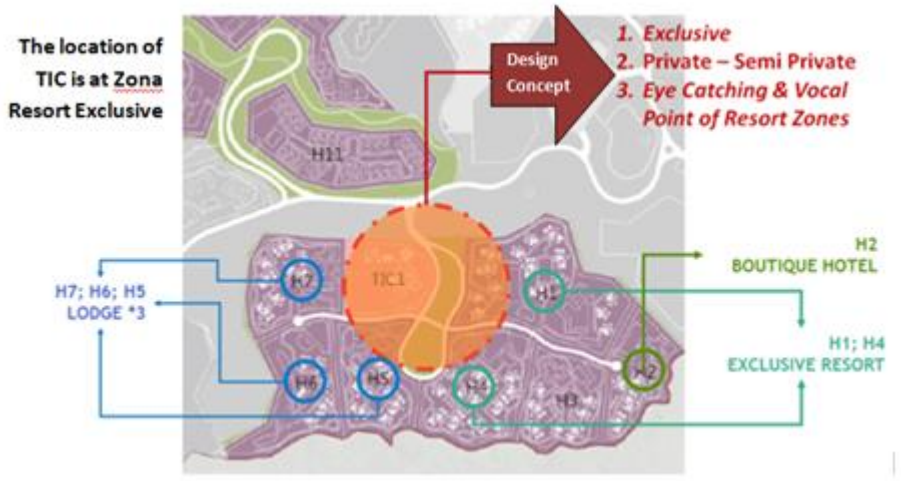

Figure.6 Tourist Information Center character in the Exclusive Resort Zone

Source: Own Analysis, 2019

Based on the location conditions in the Master Plan document & the results of the survey conditions in the field, the following are the locations of this TIC as illustrated in the following illustration:

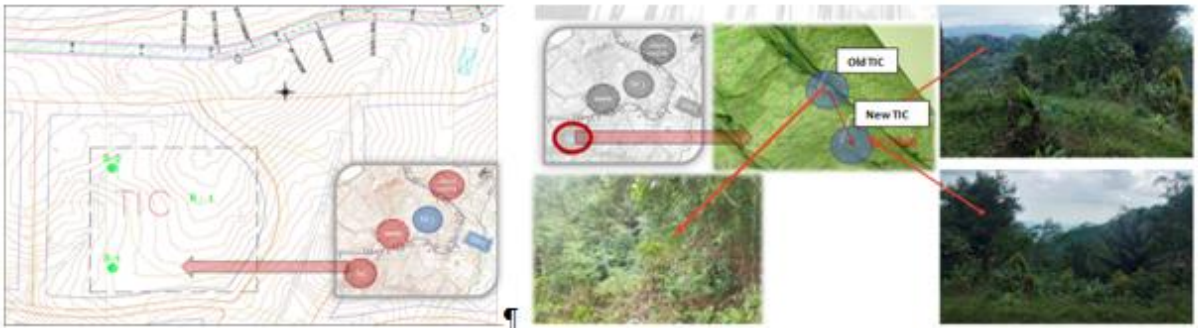

Figure.7 Location of the Plot Tourist Information Center&Character Tourist Information Center Location

Source: Own Analysis, 2019

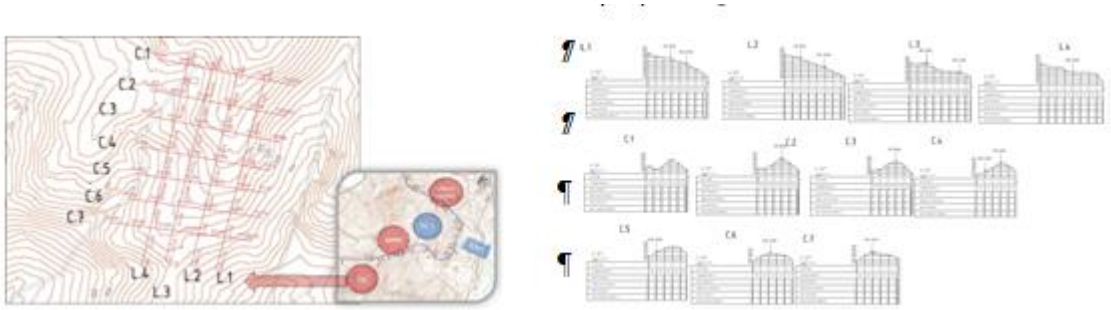

Figure.8 Plan Profile & Cross Section Plot Tourist Information Center&Cross Section Plot Tourist Information Center

Source: Own Analysis, 2019

Tourist Information Center Room Program

Based on this approach, a spatial program that will be accommodated in the TIC land survey is formulated into 4 categories, namely:

a. Parking area
b. The main function
c. Supporting Functions
d. Service & Utility Functions

Structuring the shape of the building mass is needed to avoid the existence of a building with a monolith or a single mass in one parcel which can cause a massive shape and obstruct the view of another building towards a particular object.

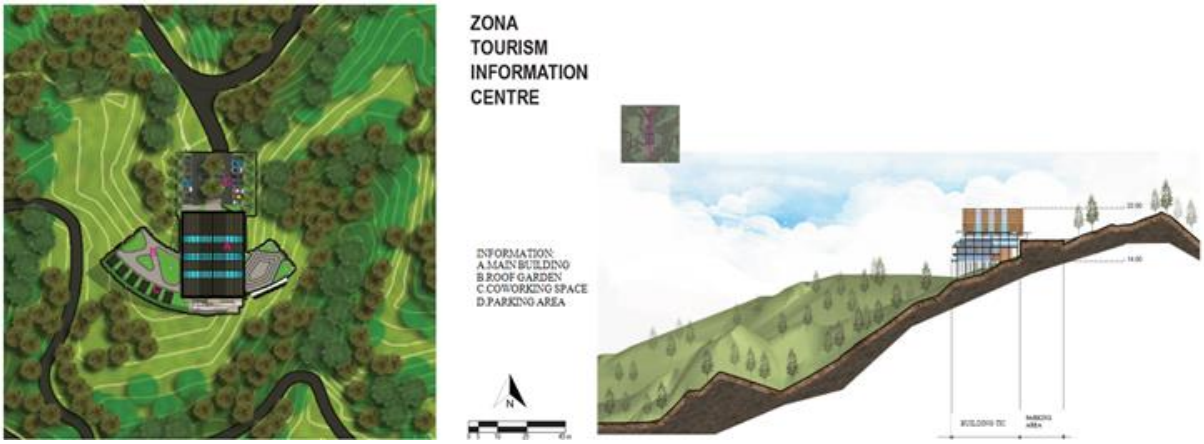

Figure.9 Blockplan *Tourist Information Center* &Section-1 Building Tourist Information Center

Utilization Of Hills Slopes

- Arrangement on hilly slopes is only permitted on hilly areas with a maximum slope of 25%.
- Hill slopes can only be used for buildings with "Light Structure and Light Load or Non-Massive Development".
- All arrangements on hilly slopes such as buildings, swimming pools and others must go through in-depth soil geotechnical studies and must be approved by the Design Committee.
- The use of a structural system should not alter the landscape of hilly areas.
- Every arrangement on hilly slopes must take into account and have a good structural and drainage system to protect the building from earthquakes, water and soil erosion.
- The maximum height of the building is 2 floors or 10 m from the ground floor surface to the top surface of the structural beam ring.
- The highest level of the roof and / or the roof of a building must not exceed the highest level of the hilly area where the building stands.
- Greening on hilly slopes must be done through a well-planned and well-planned landscape.

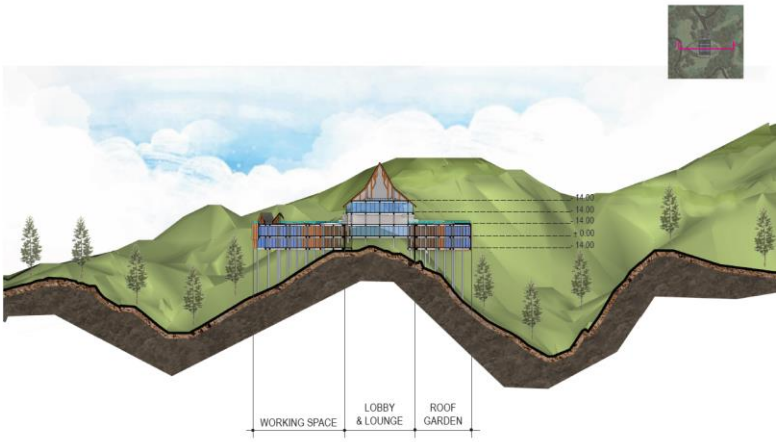

Figure.10 Section-2 Building Tourist Information Center

Application Of Local (Joglo) And Non-Local (Modern) Architecture Acculturation

Strengthening the identity and character of traditional Joglo architecture in the area through good design thinking by applying traditional architectural elements and modern architectural elements and incorporating Javanese cultural elements so that later it is expected to enrich the aesthetic values of identity and traditional architectural character Joglo.

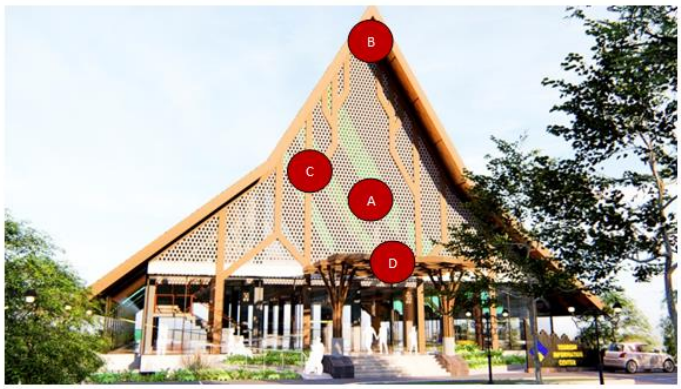

Figure.11 The façade of the Tourist Information Center building takes the local wisdom of Javanese buildings, (**A**) namely a vent similar to Borobudur openwork and a (**B**) joglo roof combined with (**C**) tree root pillars.(**D**) As well as the "***Sekar Jagad***" batik motif on the canopy of the main entrance.

- Application of traditional Joglo architectural identity and modern architecture:
- Roofs, column posts, wall motifs, natural colors, ornaments.
- Building composition:
- Head, body, legs
- Material:
- Natural stone, glass, wood
- Traditional Joglo architectural characters:
- Simple, use of ornament, characteristic natural colors.
- Application to buildings in Borobudur Highland:
- Entrance gate, Tourism Information Center and several other types of commercial buildings.
- Modification of the traditional Joglo architecture:
- Limited as long as it does not change the basic form in a dominant way.
- Materials that do not predominantly change the basic character.
- Can enrich the aesthetic values of traditional Joglo architecture.

Figure.12(**A**) The roof system is used for natural lighting using sky light with stopsol glass material, (**B**) The roof covering uses single bitumen.(**C**) Roof garden system

This reflective coating has a long lasting endurance and quality,reflects light and heat, and delivers rich touch of style whileat the same time reduces air conditioned need. The coatingis applied on only one surface of the glass and it consists ofsupersilver and classic.

Tabel 5 Type and Specifications

PRODUCT NAME	TYPES		STANDARD THICKNESS (mm)			MANUFACTURING SIZE (mm) STANDARD SIZE				WEIGHT (kg/m²)
			5	6	8	3210 x 2134	3210 x 2250	3048 x 2134	5100 x 3210	
STOPSOL	Supersilver Dark Blue	SSDH	✓	✓	✓	5, 6, 8	5, 6, 8		6, 8	
	Supersilver Euro Grey	SSGE		✓	✓	6, 8	6, 8		6, 8	
Online	Supersilver Green	SSGN	✓	✓	✓	5, 6, 8	5, 6, 8		6, 8	
Reflective	Supersilver Blue Green	SSBN		✓	✓	6, 8	6, 8		6, 8	5mm = 12
Glass	Supersilver Clear	SSFL		✓	✓	6, 8	6, 8		6, 8	6mm = 15
	Supersilver Dark Grey	SSDG	✓					5		
	Classic Dark Blue	CDH	✓	✓	✓	5, 6, 8	5, 6, 8		6, 8	8mm = 20
	Classic Green	CGN	✓	✓	✓	5, 6, 8	5, 6, 8		6, 8	

Figure.13(**A**) The building facade system uses stained glass which reduces heat, (**B**) The vertical facade system uses aerobrise systems that regulate the opening for air.

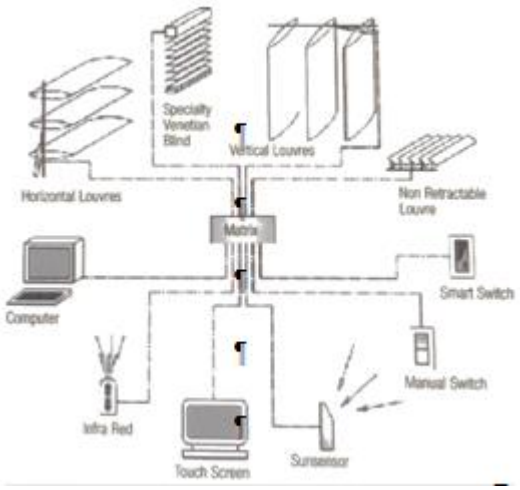

Figure.14 Aerobrise system on facade elements

5. Conclusion

Structuring the shape of the building mass is needed to avoid the existence of a building with a monolith or a single mass in one parcel which can cause a massive shape and obstruct the view of another building towards a particular object.

- Arrangement on hilly slopes is only permitted on hilly areas with a maximum slope of 25%.
- Hill slopes can only be used for buildings with "Light Structure and Light Load or Non-Massive Development".
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