

## Design of Culinary Tourism and Shopping Center in Tongging Village (Green Architecture)

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### ABSTRACT

*At present, eating and drinking is not only a basic necessity but also a tourist destination. Culinary tourism and shopping can be used as a new strategy in developing tourism in Indonesia. In the discourse of developing tourism in Lake Toba, North Sumatra, the Ministry of Tourism is targeting Tongging Village as a center for culinary tourism and shopping. Tongging Village is one of the tourist villages with views of Lake Toba and its grilled fish which has the potential to develop culinary and shopping tourism. However, these two potentials have not yet developed into the strength of Tongging's tourist attraction. It is hoped that the design of the Center for Culinary and Shopping Tourism in Tongging Village can attract data for local and foreign tourists. This design uses the concept of "Green Architecture", where the presence of this tourist spot can preserve the natural environment and energy efficiency, sustainable and holistic patterns. The design of the Center for Culinary Tourism and Shopping in Tongging Village uses qualitative methods by analyzing the data collected through field observations and in-depth interviews. The research results show that the design of the "Center for Culinary and Shopping Tourism in Tongging Village" can be a tourist destination that meets human needs for a vacation, enjoying food and drinks, relaxing and resting from all daily activities in the city.*

**Keywords:** *Tourism, Tongging, Culinary Tourism, Shopping, Green Architecture*

### INTRODUCTION

Apart from being basic human needs, eating and drinking have developed into a special tourist destination known as culinary tourism. Culinary tourism is a search for local food from a country that is associated with the country's culture and image and can represent culinary aspirations through its food offerings, tourists can also get a truly authentic cultural experience [1]. Indonesia has a wealth of traditional culinary delights which are one of the attractions for tourists [2].

The development of tourist attractions will affect the country's economic sector because tourism is one of the main economic drivers of the country whose development can also improve the quality of the population and tourists [3]. Tourism itself aims to increase economic growth, improve people's welfare, preserve nature, the environment and

resources, and much more [4]. In developing tourism to achieve tourism goals, tourist satisfaction is one of the important things. If tourists are satisfied, they will return [5].

The Ministry of Tourism has designated Lake Toba as one of the ten priority tourism destinations. [6]. In terms of tourism development in Lake Toba, the Ministry of Tourism is targeting Tongging Village as a center for culinary tourism and shopping in the Lake Toba area. Culinary tourism and shopping centers can provide substantial income for the country's economy. Besides, Tongging Village has a strategic location because to get a view of Lake Toba this village has the closest distance from Medan City and has great potential to be developed [7]. There are several main potentials of this tourist village including grilled fish, views of Lake Toba with the freshness of the air, and various tourist attractions on offer ranging from flower

gardens to lodging. However, this potential is not sufficient to become a tourist attraction.

Therefore, we need a building that can become an attraction for tourists. Not only culinary and lodging facilities, but shopping activities are also often carried out by tourists [8]. A shopping center is a group of retailers and other commercial entrepreneurs who plan, develop, establish, own, and manage a single property [9]. Apart from that, a shopping center is a certain area consisting of one or several buildings erected vertically or horizontally, which are sold or leased to businesses or managed independently to carry out trading activities in goods [10].

Culinary and Shopping tourism centers are designed as tourist attractions that provide dining, drinking, shopping, and other complementary service facilities. The form of a culinary tourism center that is implemented is a food court, which is a place to eat which contains food outlets with varied and informal food menus [11] and Ala Carte Restaurant. The form of a shopping center consisting of open and closed parts is applied to this design [12] with a mall circulation system where the main path or corridor connects the magnet or anchor to form the main circulation [13]. The motivation of visitors to eat, drink, shop, enjoy the natural scenery, lakes, hills, and have fun by filling leisure time requires the availability of basic facilities to relax, eat and drink indoors and outdoors. Refreshing facilities, shopping for souvenirs and vegetable and onion farming areas as well as landscape arrangement. This culinary and shopping center displays architecture that cares about natural preservation and a unique atmosphere that is different from the others.

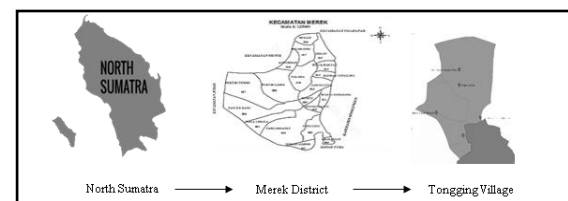
The design of the Center for Culinary and Shopping Tourism in Tongging Village with the theme "green architecture" was carried out as a response to the environment, nature, and available sustainability patterns. This culinary and shopping center is expected to be able to preserve nature and minimize energy use by utilizing all the potential provided by nature [14].

Green architecture is a building planning approach that seeks to minimize adverse effects on the environment, nature, and people and produce better and healthier places to live [15]. According to Jimmy Priatman (2002) green architecture is the architecture

that is oriented to the environment and is based on concern for the preservation of the global natural environment with an emphasis on energy efficiency (energy saving), sustainable patterns, and a holistic approach [16].

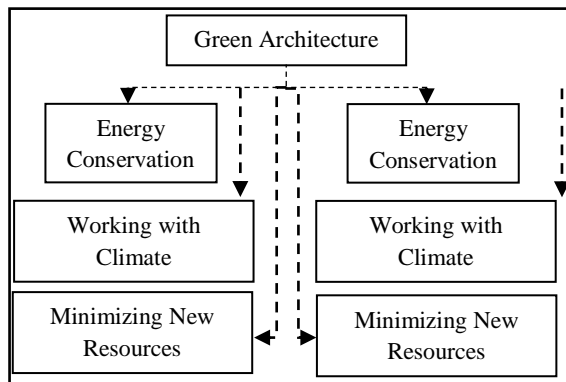
## METHOD

In "designing a culinary tourism center and shopping in the village of Tongging", research is needed to get the optimal design. This study aims to determine the relationship between eating and drinking as a tourist attraction, the potential of Tongging Village which can be developed with an approach to environmental, natural, and sustainable patterns of behavior, perceptions, motivation, and existing actions. (Figure 1)



**Figure 1.** Research Area

In this design, the research was carried out by two methods, namely (1) the method of selecting the location where the city structure review, the achievement or access, the environment, the functions around the existing area, the view, the city utility, and the size of the land need to be considered in selecting the design location. In this design, Tongging Village was chosen to be the design location because of its strategic location and existing potential that still needs to be developed. (2) Qualitative methods are used to make the results of the analysis precise [17]. Data collection was carried out by field observations and interviews. The stages used in this study are as follows; formulating the problem as the focus of research, collecting primary data related to the physical area and secondary data obtained from comparative studies; perform data analysis that observes all aspects of the activity with a green architectural approach, such as site analysis, function, activity, user, space, shape, structure, and utility; formulating the results of studies, compiling recommendations for decision making and the concept of implementing the green architecture.[18] (Figure 2)

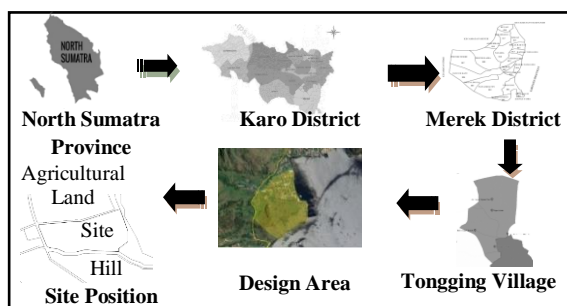


**Figure 2.** Diagram of Application of Green Architecture Theme Principles in Design

**RESULTS AND DISCUSSION**

**Project Description**

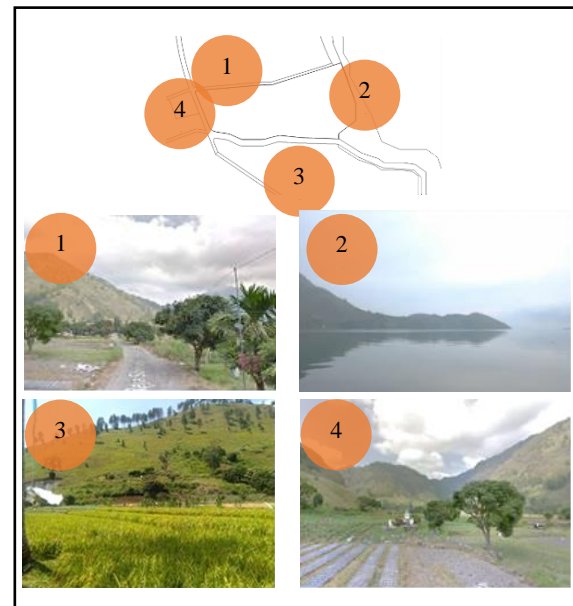
The design of the Center for Culinary Tourism and Shopping in Tongging Village (Green Architecture) is the name of this project. This project has a fictitious status with the design location in Tongging Village, Merek District, Karo Regency. (Figure 3).



**Figure 3.** Project Location

The design area is located at Jln. Tugu Silalahi-Sabungan, Merek District, Karo Regency with an area of ± 3.1 ha. The basic building coefficient at this location is 50% with 30% green open space, and the land contour is relatively flat with views of Lake Toba and hills. Besides, the potential of this design location is in the form of smooth traffic, good air conditions, sufficient city utilities, and supporting functions of the existing surrounding area. The boundary of the site to the north is used as agricultural land, in the

east is Lake Toba, in the south is hilly and in the west is agricultural land. (Figure 4)



**Figure 4.** View

**Main Concept**

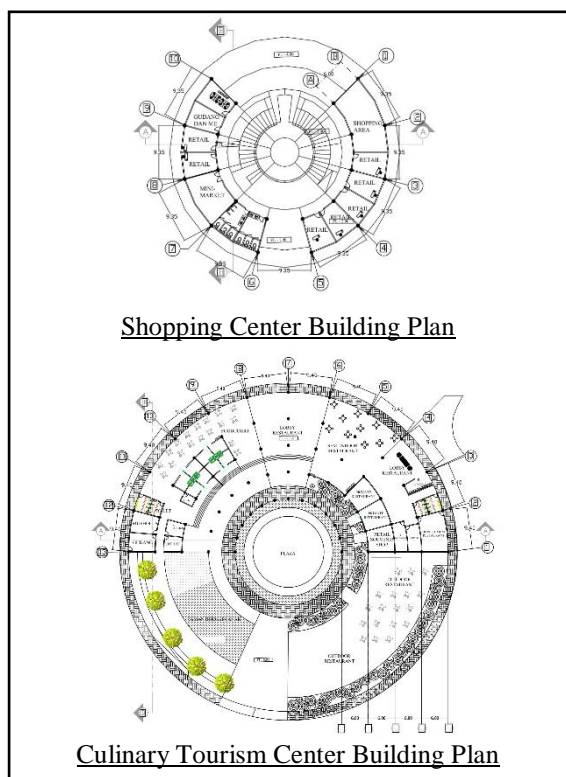
The basic concept in designing the Center for Culinary and Shopping Tourism in Tongging Village uses Green Architecture principles which are applied in the design of the building and its landscape. There are six principles of green architecture according to Brenda and Robert Vale in Paramita, and friends (2019): energy conservation, collaborating with climate, minimizing new resources, respecting users, valuing sites, and being holistic [18]. (Table 1)

**Table 1.** Green Architecture Principles

| Green Architecture     | Designing Instructions   |
|------------------------|--|
| Energy Conservation    | A building should be designed to minimize energy use in the form of protection of natural resources, water utilization   |
| Working with climate   | A building should be designed to working with climate and natural energy source, utilizing available energy like sun, wind and water, natural lighting and air |
| Minimize new resources | Buildings should be designed to minimize usage resources   |

|                     |   |
|---------------------|---|
|                     | and can be used in architecture and others, the use of recycled materials, the use of friendly materials environment    |
| Respect for users   | Consider user convenience   |
| Appreciate the site | Buildings are designed with as little as possible to damage nature, with appreciating the contours of the existing land |
| Holistic            | All of the principles above must be made as a whole approach in building an environment                                 |

The form of a culinary tourism center in the form of an all-in-one hawker center and A la Carte restaurant. Besides, the Center for Culinary Tourism and Shopping in Tongging Village will be built with multi-masses to avoid too massive masses, taking the form of an integrated shopping center system as a form of implementing green architecture in this design, resulting in energy use. (Figure 5)



**Figure 5. Plans**

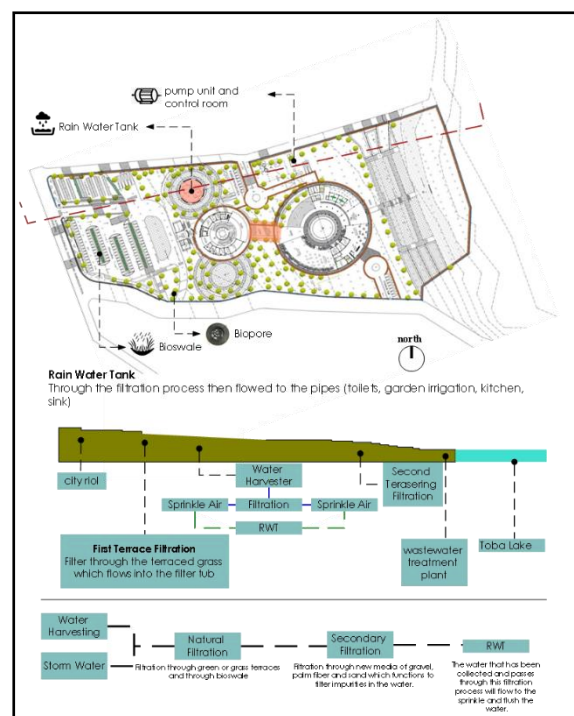
**The Concept of Energy Conservation**

The concept of energy conservation by minimizing the use of energy against natural resources. In this design, the concept of conservation selected as organic fertilizer becomes a source of electrical energy.

**The Concept of Working with Climate**

The concept of surface water flow (1) Grassblock is a hollow pavement that can be planted with grass. With this hole, the water can seep into the ground more so that it can prevent standing water when it rains heavily. [20] (2) Biopori infiltration holes are cylindrical holes that are made vertically into the ground. This hole will overcome the problem of standing water and as a container to collect organic waste that can maximize the activity of soil flora and fauna. [21]

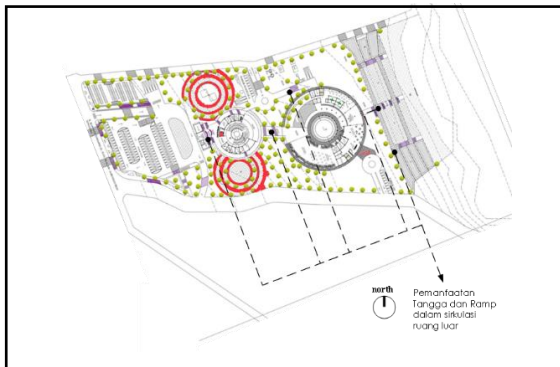
The water storage concept used in this design uses a water tower. Through this system, clean water will first be collected in the rainwater tank and then filtered throughout the building. (Figure 6).



**Figure 6. Laying rainwater tower and biopore holes on the design site**

**The Concept of Implementing Universal Design**

The ramp is applied to the design of the Culinary and Shopping Tourism Center in the village of Tongging to make it easy for all users, including persons with disabilities and elderly parents, to put on different contours. This ramp can also be used by all groups, so users can choose to go through the ramp or stairs (Figure 7).



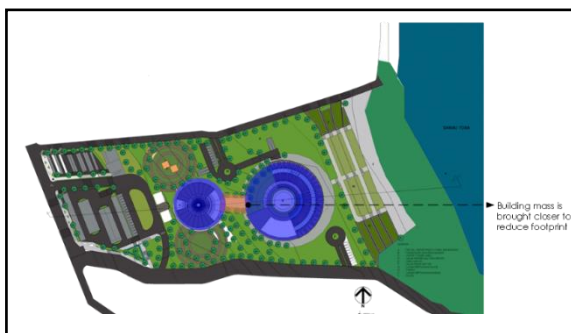
**Figure 7.** The Concept of Implementing Universal Design

**Concept of Appreciating Site**

Respect for contoured sites by minimizing the use of cut and fill systems on the site through the use of split levels, the use of ramps so as not to damage the contours, and to maintain the green areas of the existing site.

**The Concept of Appropriate Site Development**

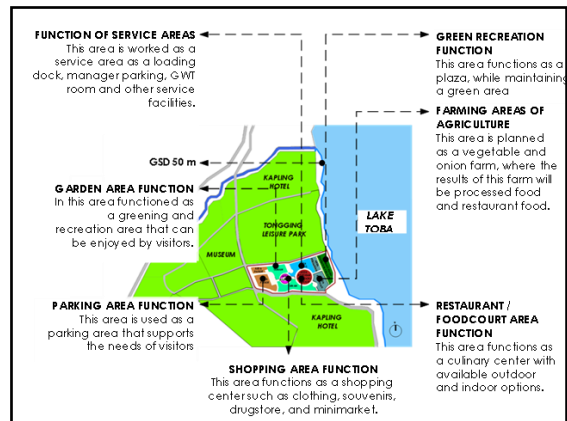
Reducing the footprint of the site, through buildings close to it and with clear circulation (Figure 8).



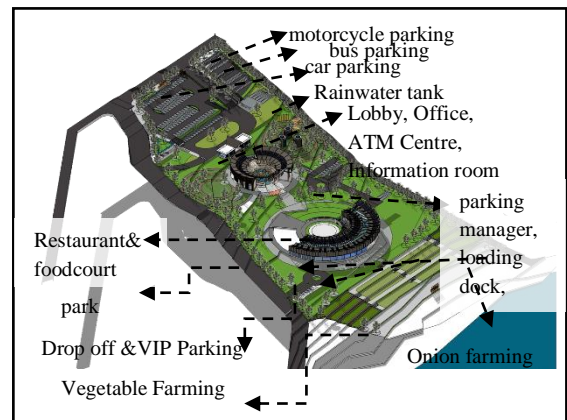
**Figure 8.** The Concept of Appropriate Site Development

**Land Allotment Concept**

Site zoning is based on the results of the site analysis conducted in Chapter V. The zone is divided into several functions, namely (Figure 9) (Figure 10).



**Figure 9.** Land Allotment Concept



**Figure 10.** Axonometry site

**Zoning Concepts of Outer Space**

The design location is located in the village of Tongging, Kec, Trademark, with a total area of ± 3.1 ha design site divided into 4 zones, namely public, semi-public, semi-private, and service zones (Figure 11).

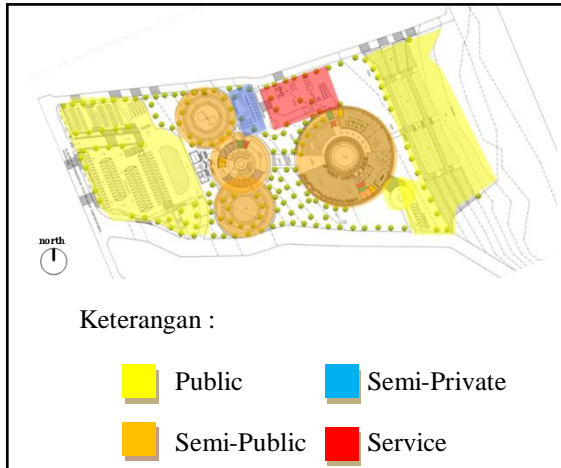


Figure 11. Zoning Concepts of Outer Space

### Circulation System Concept - Vehicle Entrance and Exit Scheme

Based on the results of circulation analysis on the site contained in Chapter V, the author examines the placement of the entrance and proposes a good entrance position. The proposal and concept of the entrance to the site scheme are as follows. (Figure 12)

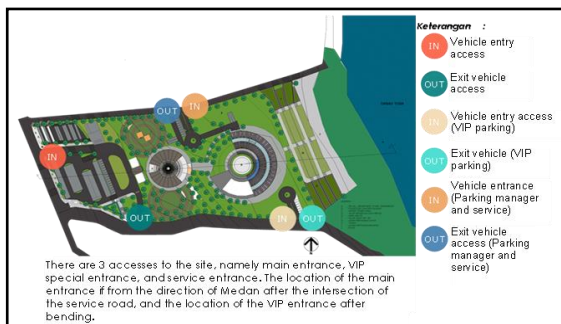


Figure 12. Vehicle Entrance and Exit Scheme

### Circulation Scheme on Site Vehicle

The drop off area is located at the front of the site and on the right side of the site. While the management area is through a small path, to the left of the design site. (Figure 13)

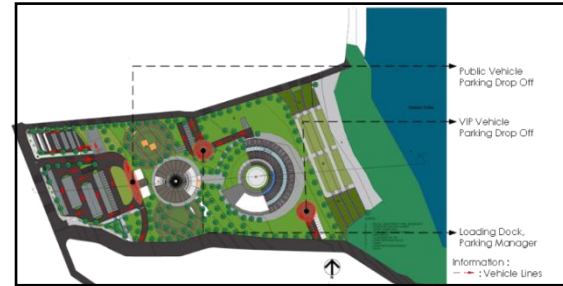


Figure 13. Circulation Scheme on Site (Vehicle)

### Pedestrian

The concept of pedestrian circulation at the design site is as follows. (Figure 14)

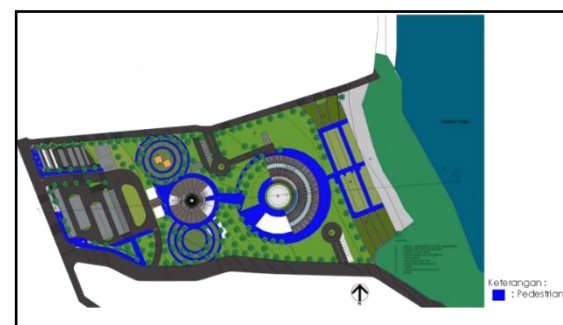


Figure 14. Circulation Scheme on Site (Pedestrian)

### Indoor Zoning

The management area is located on the north side of the building design site, while the public and recreation areas are more dominant on the south side of the building (Figure 15).

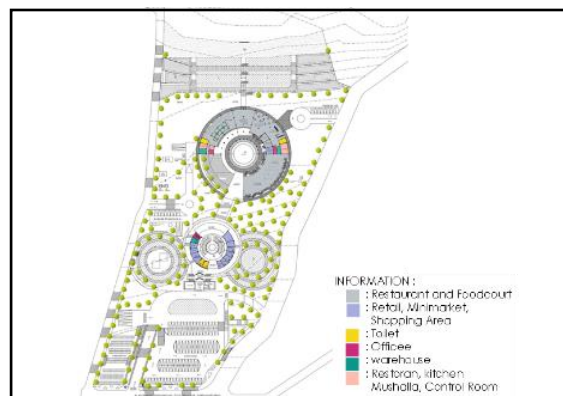



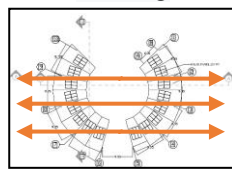
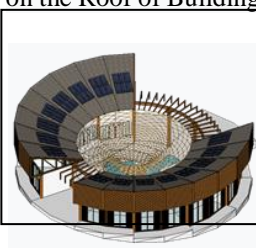
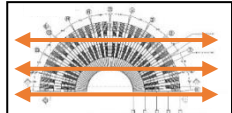
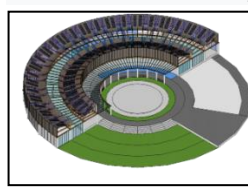
Figure 15. Circulation Scheme on Site (Pedestrian)

**Green Architecture Concept in Design of Building Design Culinary and Shopping Tourism Centers in the Village of Tongging**

**The Concept of Energy Conservation**

The application of the concept of energy conservation in the design of buildings in the Culinary Tourism and Shopping Center in the Village of Tongging lies in the application of solar panels (Table 2).

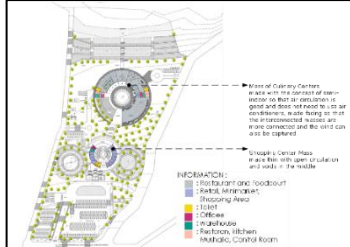

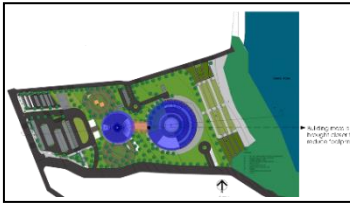
**Table 2.** The Concept of Energy Conservation

|  |   |
|--|---|
| <p>Study of Solar Panels<br/>The type of Solar Panel used is Solar Transparent Photovoltaic Glass Panel.</p>   | <p>Placement of the Solar Panel to the study of the direction of sunlight</p>   |
|   | <p>Shopping Center Building</p>                             |
| <p>Laying the position of the Solar Panel (1) The position of the solar cell must be rich in sunlight in a high place, the ecological environment is sufficiently adequate in capturing sunlight. (2) The slope of the solar cell is between 5 and 30 degrees. (3) The direction of the solar cell position is good.</p> | <p>Placement of Solar Panels on the Roof of Buildings</p>  |
|  | <p>Culinary Center Building</p>                            |
|  | <p>Placement of Solar Panels on the Roof of Buildings</p>  |

**The Concept of Working with Climate**

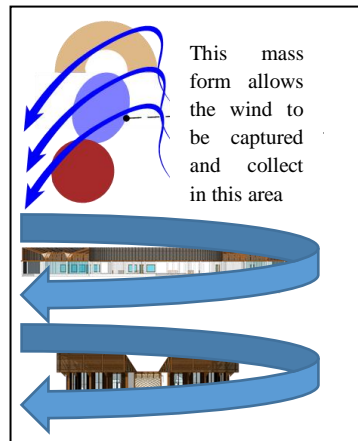
The application of the concept of working with the climate in building design at the Culinary Shopping and Tourism Center in the Village of Tongging lies in natural lighting, the use of materials that are responsive to the sun, the concept of buffer noise, and the concept of natural ventilation (Table 3).

**Table 3.** The Concept of Working With Climate

| The Concept of Working With Climate   | Response / Proposal  |
|---|--|
| <p>Buildings are designed to work the same as climate and energy sources natural.</p> | <p><b>Natural Lighting</b><br/>In the design of this building, most of the rooms do not use air-conditioning with wide openings and 1 corridor circulation road. The mass of the building is also made thin surrounded by open space.</p>  |
|   | <p><b>The use of materials that are responsive to sunlight</b></p>  <p>Glass and wood materials that are used as jalousie as a buffer against air and light circulation.</p>  |
|   | <p><b>The Noise Buffer Concept</b><br/>The main noise on the main road can be overcome by the vegetation of green plants which are located adjacent to the main road area, pedestrian, and also around the building.</p>                  |

### The concept of natural ventilation

In the design of Culinary Tourism Centers and shopping, most do not use AC.



Making irrigation around buildings can be in the form of fish ponds to provide cool air around the building

### Minimizing The Use of New Resources

Buildings should be designed to minimize the use of resources and can be used in architecture and others, the use of recycled materials, the use of environmentally friendly materials.

### Respect for users

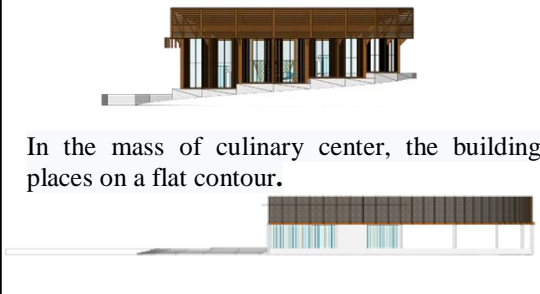
The application of the concept of respecting users in building design at the Culinary Shopping and Tourism Center in Tongging Village lies in the Concept of Applying Universal Design.

### Appreciate the site

The building is designed with as little as possible to damage nature, to the existing land contours (Figure 16).

### The concept of minimizing the cut and fill system

Can be seen in the picture below the shopping center building standing on the contour of the land that is quite dense, but the mass of the building is not made flat, the building follows the existing land contour.



**Figure 16.** The concept of Appreciate the site in Design of Building Design Culinary and Shopping Tourism Centers in the Village of Tongging

### Holistic

The green architecture principle approach applied in this design includes energy conservation in the form of utilizing solar panels, working with the climate in the form of natural lighting, the use of materials that are responsive to sunlight, the concept of buffer noise, and the concept of natural ventilation, minimizing the use of resources new in the form of utilizing recycled wood as decorative materials and furniture, and the use of environmentally friendly materials, respecting users in the form of universal design concepts, and valuing sites in the form of minimizing the use of cut and fill systems.

### Architecture Design

The design of Culinary Tourism and Shopping Center in Tongging Village attached in the form of photos includes exterior and interior (Figure 17, Figure 18, Figure 19, and Figure 20).

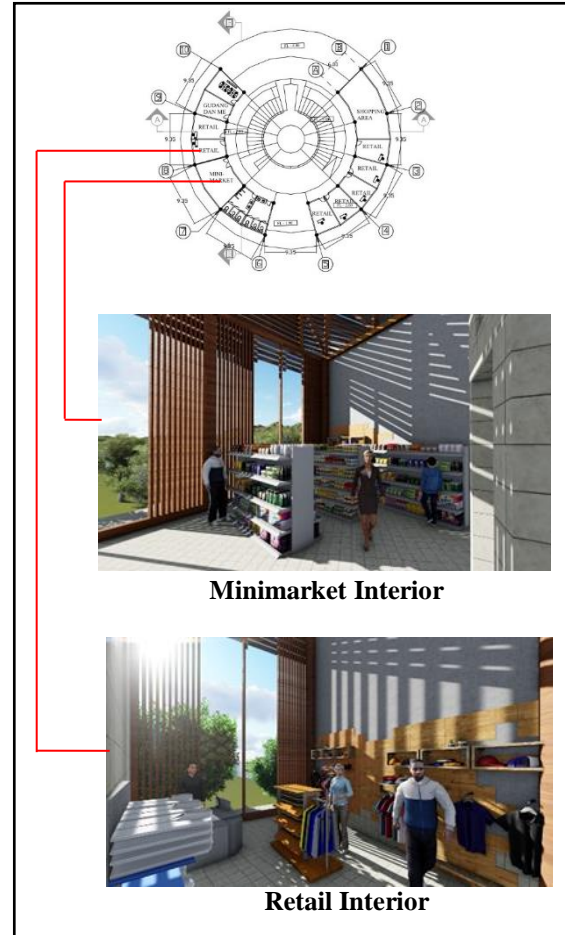




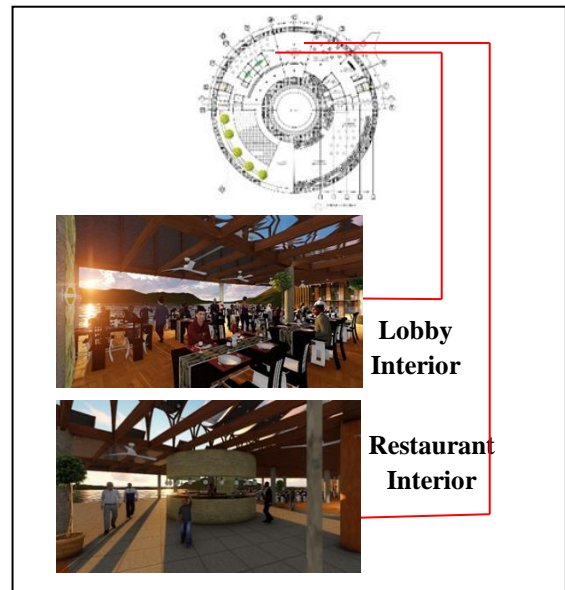
**Figure 17.** Culinary Tourism and Shopping Center in Tongging Village Exterior



**Figure 18.** Perspective Scene



**Figure 19.** Shopping Center Interior



**Figure 20.** Culinary Tourism Interior

## **CONCLUSION**

The activity of eating and drinking is now a tourist attraction that has an impact on the tourism sector and the economy, especially in tourist destination areas. The design of the Center for Culinary and Shopping Tourism in Tongging Village (green architecture) can become a tourist attraction that can meet the needs of local and foreign tourists for vacation, enjoying food and drinks, shopping, and refreshing. Besides, this design can also support the Ministry of Tourism's discourse in promoting Tongging Village as a center for culinary tourism and shopping for the Lake Toba area.

Tongging Village has several potentials ranging from natural scenery, air conditions, accommodation to its special food, namely grilled fish. However, this potential is not enough to become an attraction. Tongging Village needs a tourist facility that is different from the others, unique, while still paying attention to the balance of nature, environment, and people.

The design of a culinary and shopping center in Tongging Village can become a landmark and a new tourist destination for visitors, where visitors can enjoy food and drinks, shop, and get education such as planting vegetables while enjoying views of the hills and Lake Toba. This building can meet the needs of visitors to take the lotus flower, or as a stopover which gives a different impression and experience that is inherent in the minds of tourists.

The design of the culinary tourism and shopping center in the Tongging village applies the principles of green architecture to preserve nature, the environment, and sustainable patterns. The application of green architectural concepts in this design such as energy-saving through the use of solar panels, reducing the use of new material sources by utilizing recycled wood as decorative interiors and furniture, precision site development through reduced footprints, respect for users, and sites by adopting universal designs such as the use of ramps, respecting contours with the use of split levels, and working with climates by utilizing air and natural lighting through the formation of wind-trapping masses.

Therefore, the establishment of this culinary tourism and shopping center building

does not damage nature, environment, and sustainable patterns. Thus the aims and objectives of designing a culinary tourism and shopping center can be achieved.

## **ACKNOWLEDGMENT**

This research is a study of culinary tourism and shopping centers which are expected to be a recommendation to local governments as a solution for culinary and shopping tourism objects. Besides, this journal is made as a requirement to get a Bachelor of Engineering degree from the Department of Architecture Engineering, Faculty of Engineering, Universitas Sumatera Utara, Indonesia.

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