International Journal of Architecture and Urbanism Vol. 07, No. 03 (2023) 494 – 504

International Journal of Architecture and Urbanism

Journal homepage: https://talenta.usu.ac.id/ijau

Batik Jambi Cultural Center with An Ecological Architecture Approach

Annisa Faadhilah Harahap*[1], Hilma Tamiami Fachrudin [1]

[1]*Department of Architecture, Faculty of Engineering, Universitas Sumatera Utara, Medan*

*Corresponding Author: annisafaadhilah@gmail.com

ARTICLE INFO

Article history:
Received 07-10-2023
Revised 13-11-2023
Accepted 27-11-2023
Available online 30-11-2023

E-ISSN: 2622-1640
P-ISSN: 2622-0008

How to cite:
Harahap A. F, Fachrudin H. T. Batik Jambi Cultural Center With An Ecological Architecture Approach. International Journal of Architecture and Urbanism. 2023. 7(3): 494-504.

ABSTRACT

Batik is one of the cultural heritage of Indonesia which has spread to almost all of Indonesia with different motifs and patterns. The territory of Indonesia which is the largest producer of batik is spread over of Java with a total of 87% and the rest is outside the island of Java. One of the largest is in Jambi province and is located across the Batanghari River. This area is the residence of the indigenous people of Jambi who generally work as batik craftsmen. Unfortunately, in the city of Jambi itself, there is no facilty or building that specifically introduces Jambi Batik so it also affects the interest of the Jambi community in the knowledge and attraction of batik. Therefore, it is necessary to design the Batik Jambi Cultural Center as an educational and recreational place for batik Jambi as a whole with various activities such as Batik Gallery exhibitions, Batik sales, training of batik making with a building design approach with the theme of Ecological Architecture.

Keywords: batik, cultural, ecological architecture, Jambi

1. Introduction

Batik is a cultural product whose development has penetrated almost all parts of Indonesia. The region in Indonesia which is the largest producer of batik is on the island of Java with a total of 87% and the rest outside Java, the second largest is located in the province of Jambi [1]. Batik Jambi is centered in Olak Kemang village, exactly across the Batanghari River where this area is a cultural heritage area that is still inhabited by native Jambi residents and on average work as batik craftsmen. Many citizens of Jambi often called this area as Jambi *seberang* [2]

Batik Jambi is not only used as formal clothing but also as masks, accessories, head coverings, and others. However, the people of Jambi city generally only use batik as clothing for the elderly and clothes for ceremonial events [3]. To respond to this problem, fashion shows with the theme of batik are often held in the city of Jambi. Unfortunately, this event is not permanent and depends on certain dates.

Jambi city itself is the smallest part of the city from the cities in Jambi province, but the level of tourist visits is higher than in other cities [4]. So that the city of Jambi was chosen as the design location and also the city of Jambi is opposite the area for batik craftsmen.

Jambi is one of the batik-producing areas, however, no special facilities were found regarding batik Jambi in detail. Batik Jambi only introduced a little information as one of the displays in museums in Jambi city. Therefore, the Batik Jambi Cultural Center can be a place for recreation and education to foster a sense of love for batik Jambi culture. This building must accommodate various activities that are the center of batik Jambi leardning. Recreational activities such as batik galleries that contain detailed information about batik and educational activities such as workshops or learning how to make batik from start to finish guided by batik craftsmen from Jambi *seberang*.

1.1 Cultural Center

References must be listed Cultural Center is a place to develop and foster culture, which includes its organization, building, or complex that introduces culture and art. Within the Cultural Center, there is an art community environment, organizations, and private and government-sponsored facilities [5]. Based on UU No. 5 of 2017 concerning Pemajuan Budaya cultural objects include oral tradition, manuscripts (books, fivers, chronicles & saga), customs, site, traditional knowledge (crafts, clothing, treatment methods, food and drink, & knowledge and behavioral habits regarding nature), traditional technology (architecture), arts (literature, visual arts, music and media), language and folk games. So the cultural center in this design is a place to develop culture about traditional knowledge of batik Jambi clothing and crafts [6].

This cultural center includes several building functions, such as education, recreation, information and administrative functions, facilities area provided in the form of a batik making, an open show area in the form of an Amphitheater, a Batik Retails, Food Court and a Management Building.

1.2 Batik Jambi

Batik is a work of art and utilizes the element of drawing ornaments on the cloth with a dipping process, namely crossing out wax containing ornamental motifs. Batik according to the manufacturing technique is divided into written batik, stamped batik, stamped and written batik and printed batik [7]. Batik Jambi has existed since ancient times, originating from ancestors passed down from generation to generation in the *Kampun Tengah* which is located across the river from the city of Jambi, where until now the village area is still inhabited by the native people of Jambi. The development of batik Jambi dates back to the Jambi Melayu era and was hampered due the war against the colonialist and the collapse of the kingdom area. Then it developed again in 1875 because batik experts were brought in from Java. After that, it was developed again in 1980 by the Jambi governor's wife at that tine until now and finally, it has been growing until now and is already using dyes from chemical substance [8]. Batik Jambi initially used natural materials from plants such as lambato wood, secang wood, jackfruit wood, ramelang wood, nilo wood, indigofora plants, jengkol boiled water, mango leaves, henna wood, guava leave decoction and others [9]. Batik Jambi motifs have the character of *ceplok*, which means that each motif is not strung and combined with other motifs. There are 19 motifs and 10 have been copyrighted, such as the *tampuk manggis, kapal sanggat, durian pecah, merak ngeram angso duo,* Batanghari river and others [10].

1.3 Activities and Room Needs for Batik Jambi Making

Activities and needs for making written and stamped batik, start with a motifs design room. In this room, what is need is tracing table to help craftsmen trace motifs that already have patterns. In addition, large tables are needed for craftsmen to draw motifs manually. This room is also for making written batik after the motifs are drawn, then candles are attached.

After the motifs are drawn, for stamp-type batik, a batik stamp room is needed. This room requires good air circulation and is slightly open because a stove is needed to stamp the batik and it produces hot air and smells of wax. The next room is a room for *menyolet* or the process of coloring batik. This room is closed and adjacent to the batik stamp room. In this room, the craftsmen coloring the batik which has written and stamped motifs.

After being colored, the batik is moved to the *nembok* room which is the area where the craftsmen cover the batik colors using a candle equipped with a stove. This area is an open area, has good air circulation to remove smoke and smells from the stove, and smells from the stovem and craftsmen usually sit on small chairs or the floor. The next room is the color dyeing room. This room is open and some tubs are directly connected to the wastewater disposal flow.

The last batik-making area is the *lorod* room, is the final process of making batik. This room must be located outside the building. In this area, the craftsmen boil batik cloth using a stove and a firebox. Cloth is boiled in large pans and tubs [11]

1.4 Ecology Architecture

Heinz Frick argues that ecological architecture does not bind standards, but includes harmony between humans and nature. Ecological architecture, solar architecture, bionic architecture, green architecture and development biology [12]. In the ecological design approach there are crucial principles, namely conserving energy, working with climate, minimizing new resources, respect for users, respect for sites and holism. In this planning refers to the principle of respect for site, which is a design approach by reducing land processing. Working with climate, is a design approach that makes the most of the climate in the design area. Minimizing new resources, where this design reduces the use of new materials as much as possible and revitalizes them compared to the dismantling existing materials [13].

2. Method

Methods of solving design problems in this design are carried out in various ways. The first is to conduct a field study to analyze the physical condition of the site, the site's surroundings, the site's potential and boundaries. Then analyze the buildings that will be designed to meet the need for educational and educational infrastructure facilities. Site and environment approach with direct site surveys, and the last is conducting a literature study related to an explanation of the center of batik culture and the theories that support the design.

Then there are data which area divided into primary and secondary data. Primary data consist of site data, local regulations, the original state of the site, the potential that exist at the site, design object data and data from the design theme that will be used. Secondary data is data that contains comparative studies of buildings that have similar functions and themes.

3. Result and Discussion

All The design location was chosen based on the consideration of the location close to the traditional batik Jambi production site. In addition, the location is located in a tourist area, trade services are located in the city service center area and are opposite the cultural heritage area which is the center of batik Jambi production so this location supports the function of the design as the cultural center of batik Jambi (Figure 1).

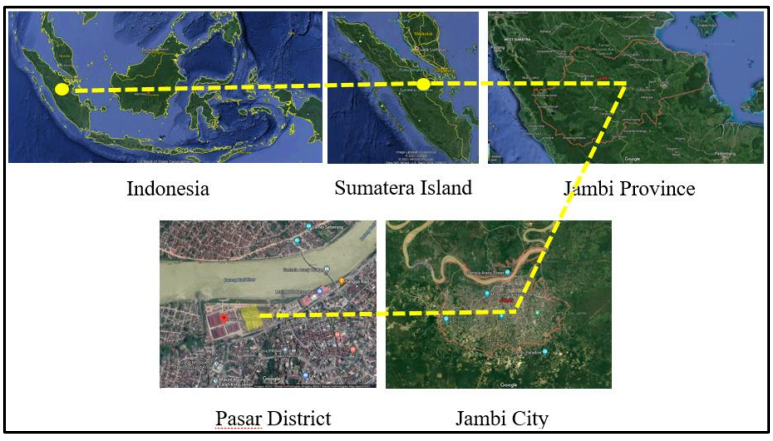

Figure 1 Project Location

3.1 The Application of Ecology Architecture

The shape of the building is in the form of a stage with a height of 1,5 m above the ground. Because the existing is an area overgrown by thick vegetation. The stage circulation uses a reinforced concrete structure and wooden floor coverings.

This multi-mass design consists of 6 buildings, namely Batik Jambi Gallery, Food Court, Batik Retail, Workshop Area, Amphitheater and Management Building. Of the 6 buildings, 3 buildings in the form of a stage with a height above the ground floor, namely Batik Retail building, Workshop area and Food Court (Figure 2). The design of this stage-shaped building is an adjustment to the situation in the site area where there are still many house on stilts because it is a residential area where the Melayu Jambi natives live (Figure 3).

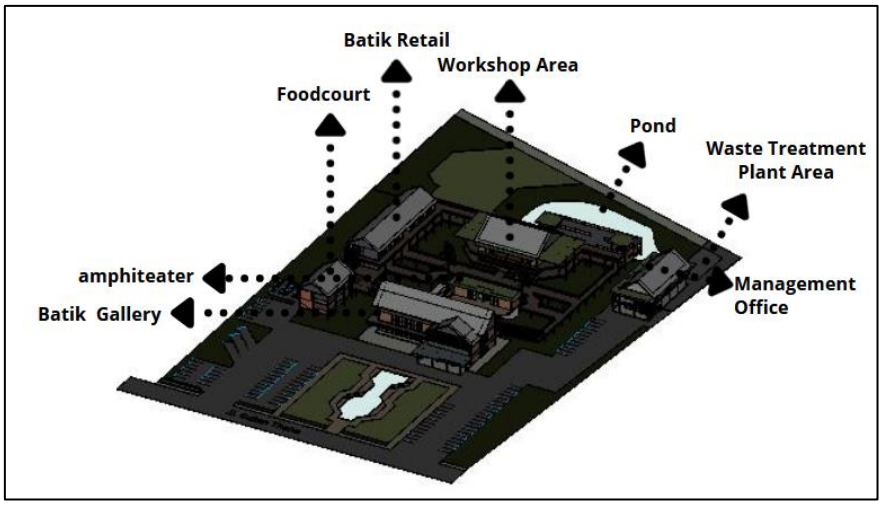

Figure 2 3D Siteplan

Figure 3 Workshop Area and Resident's House

To connect each building mass, the sage circulation is designed to adapt the shape of the Batanghari River batik which is geometricized into a half trapezoidal shape. Where the Batanghari itself it located in front of the design site (Figure 4).

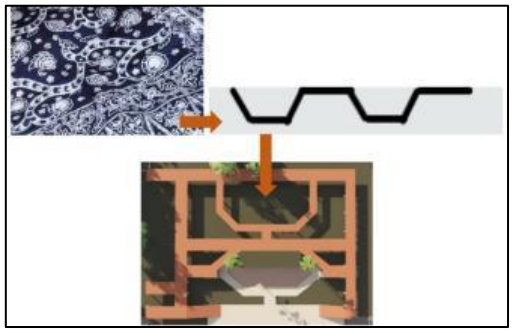

Figure 4 Stage Circulation

The rectangular site leads to the Batanghari River which located in the north Jambi city. So the west and east directions are the paths of the sun. From 5,1 hectares of land area, 2,8 hectares are used as a design site

on the left side, leaving 2,3 hectares of a green area which is quite large on the right side of the area. This helps to minimize the sun's heat. Then the building design also use a buffer that can dispel heat and glare from the sun in the form of wood shading and green walls in the building. Multipurpose Building roof coverings in the Amphitheater and Workshop area use green roofs because green roofs can reduce the temperature in the building (Figure 5).

Figure 5 Wood Shading and Green Roof

The existing site is an open area filled with vegetation so that wind movement is not dispelled, plus the shape of the building in the design is in the form of a stage. To respond to that, so that the wind enters the building, roster and stacked bricks are used on the walls of the building (Figure 6). The materials in this design area exposed to local materials such as brick roster and concrete, the material is a material that can be easily found in the design area and the price is relatively cheap.

Figure 6 Roster and Stacked Bricks

The raw materials for making batik that produces waste are wax and dyes. Batik wax is made from a mixture of synthetic and natural materials in the form of damar mata kucing, resina colophonium, lilin lebah, micro wax, paraffin and used wax. Batik dyes are made from artificial synthetic materials from hydrocarbons, aromatics, and naphthalene derived from coal [14]. The material for making batik often produces waste that can pollute the environment. To respond to this, a Waste Treatment Plan with a Geo-Bio-Filter system is used. This system is a wastewater treatment plant used in the case study in Pekalongan city. This waste treatment plant can accommodate around 100 cubic metes of liquid waste from the dyeing and boiling process of batik cloth. This installation combines the use of biotic and abiotic materials where the installation uses eceng gondok and aspergillus niger plants as biotic materias, and the abiotic materials using zeolite stone, activated charcoal and slate (Figure 7). This process does not use a mixture of chemicals and produces no more waste after the waste treatment process [15].

Then as means of recreation on the north side of the site, a pond containing plants was designed to clean up contaminants contained in water or soil. The plants used were aquatic plants such as eceng gondok, kayu apu, hydrilla verticillate, scirpus grossus (tumbuhan mesiang), iri pseudacorus (yellow iris), bunga tasbih and obor plant. This pond is a subsurface flow-wetland system which is the last line of treatment that has occurred in the Waste Treatment Plant. This pool is used for recreation and also as education about plants that can decompose batik waste contaminants, but it should be underlined that waste treatment is the most work in waste treatment plants. The waste treatment plant is located adjacent to the management building.

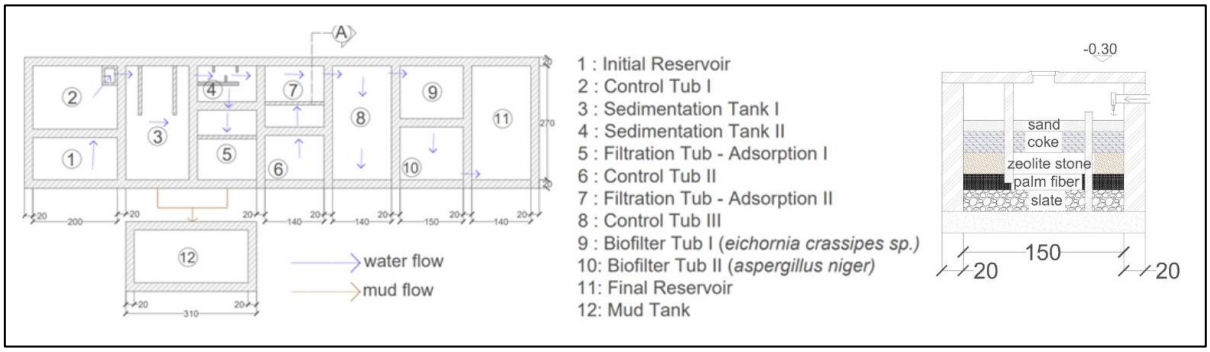

Figure 7 Waste Treatment Plant

3.2 Outdoor Concept

The site design takes the left side of the entire site to leave a natural green area of the existing site. The north and south sides are public areas because these areas are close to the circulation (Figure 8).

Figure 8 Zoning

The layout of the building is arranged according to their respective functions. Public areas include plazas, parks, and parking areas. The semi-public area is a tourism area for building managers and service area (Figure 9).

Figure 9 Building Layout Diagram

The dominant planning activity occurs in the stage area. For service and management activites not in a staged area. This is to facilitate servicing and processing of batik waste (Figure 10).

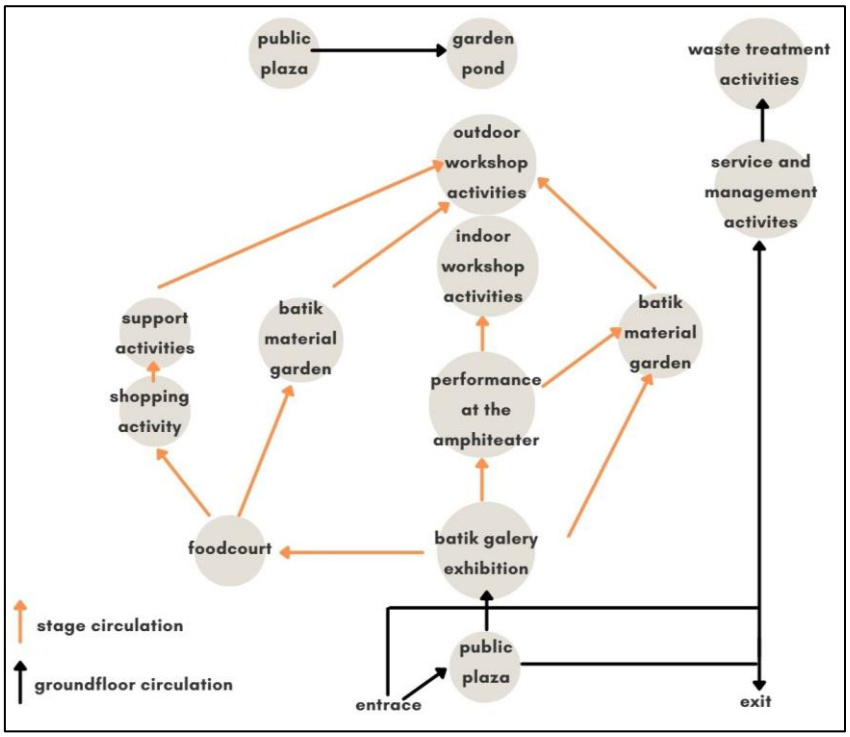

Figure 10 Activity Layout Diagram

3.3 Indoor Concept

Gallery consists of 2 floors. The 1st floor is a temporary gallery area for various art events besides the batik gallery. Then there area the management, storage and souvernir areas (Figure 11).

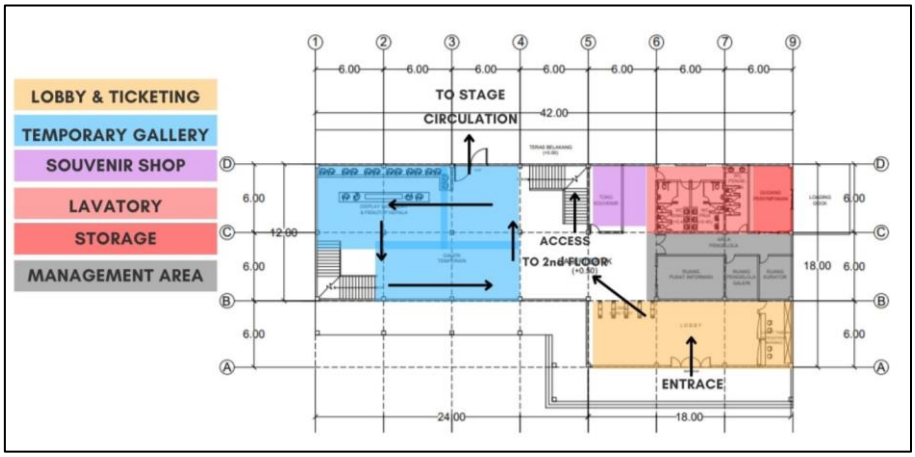

Figure 11 1st Floor Batik Gallery

On the 2nd floor specifically for the permanent batik gallery and learning activities in the seminar room. There are also storage areas and other supporting area (Figure 12).

Figure 12 2nd Floor Batik Gallery

Food Court is located in the stage are. To enter this building you have to pass through the batik gallery first. This Food Court sells food from the UMKM of Jambi city (Figure 13).

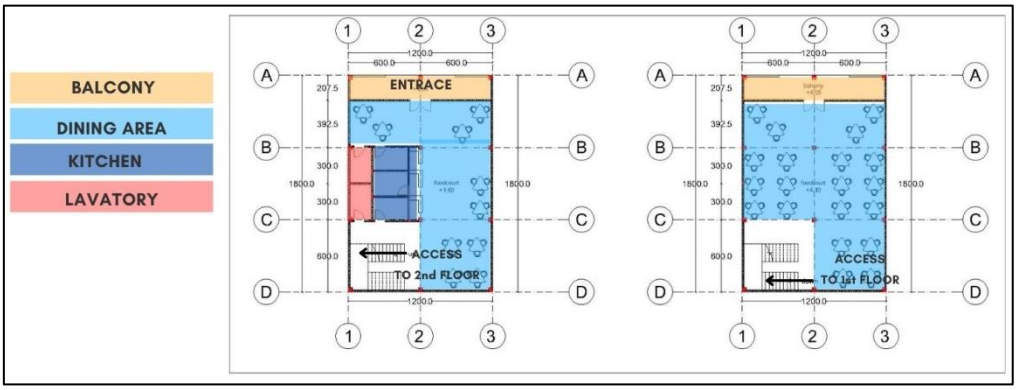

Figure 13 Food Court Floor Plan

After the Food Court, then there is the batik retail area from the business of the Jambi seberang community. In this area there are several places for supporting activites. This retail area is located on the west site of the area, facing the workshop area and at the end it is adjacent to the public plaza area to the north of the building (Figure 14).

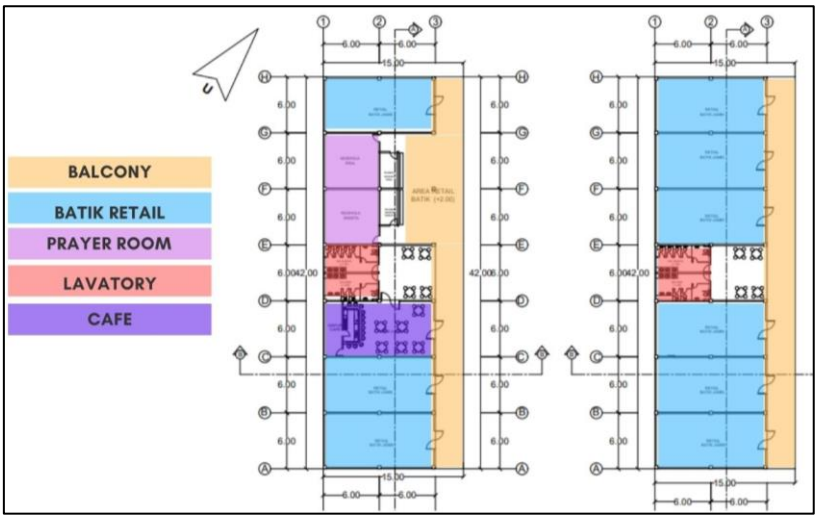

Figure 14 Batik Retail Floor Plan

The Amphitheater is located in the moddle of the design area. The sitting area descends from the ground floor and in the lowest area there is a multipurpose building to support all activities in the amphiteather area (Fugure 15).

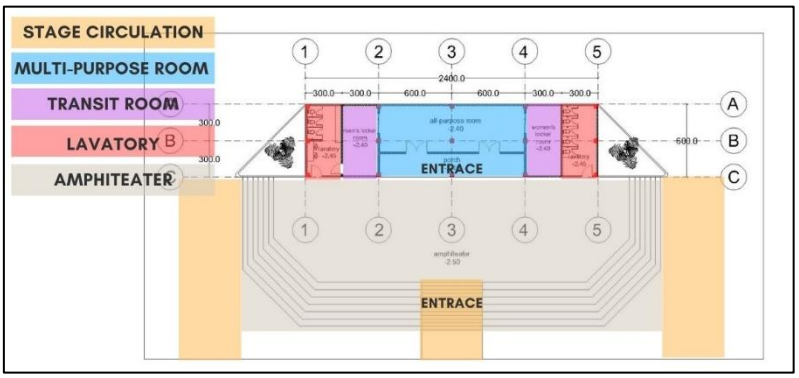

Figure 15 Amphitheater and Multipurpose Room Floor Plan

The workshop area is directly adjacent to the public area to the north of the site. Using stage circulation and view to an artificial pond. There are indoor and outdoor areas. The first floor is devoted to batik classes for the early stages. There is an area for boiling cloth for batik craftsmen (Figure 16). The second floor is used as a batik teaching and learning area which is open because there are batik activities that will emit aroma and air. There is also an indoor area for indoor batik activites such as drawing batik motifs and others (Figure 17).

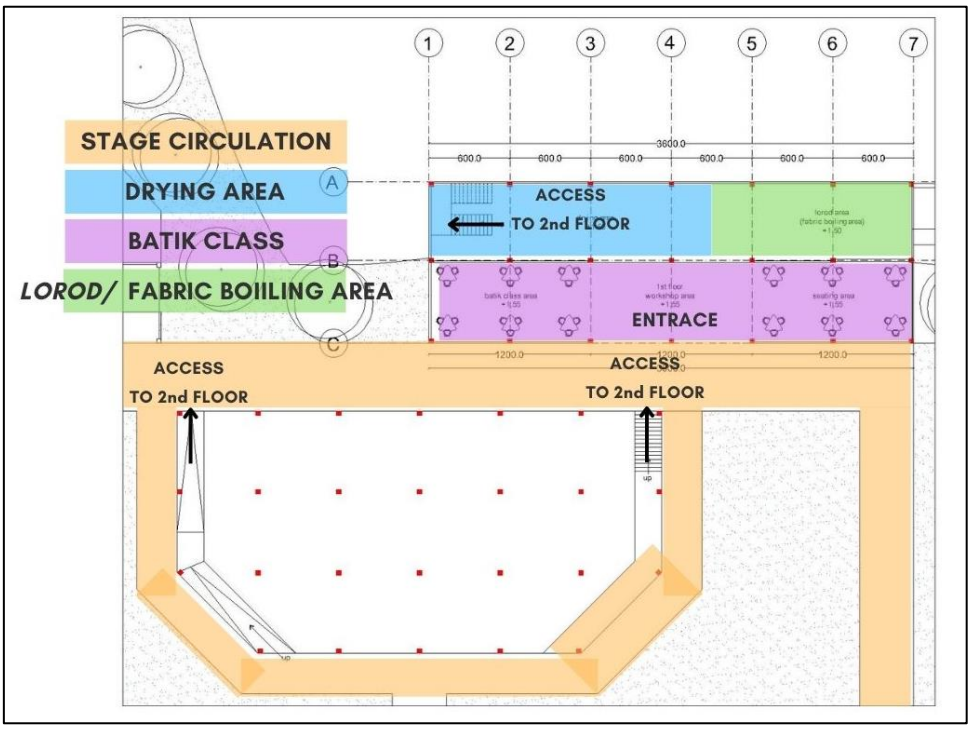

Figure 16 1st Floor Workshop Area

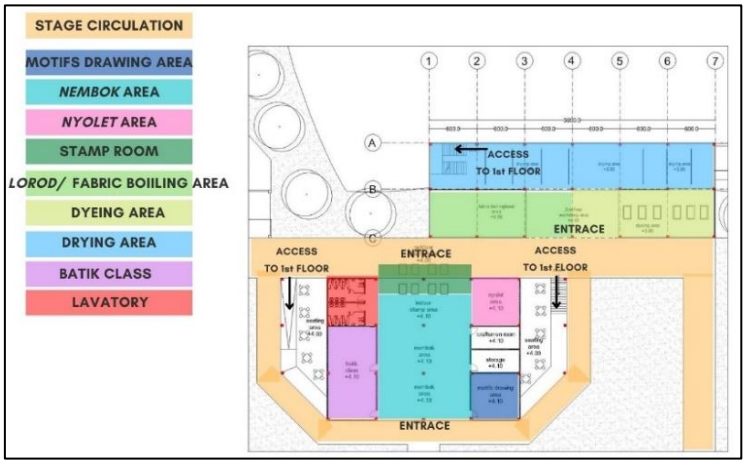

Figure 17 2nd Floor Workshop Area

The management building is a private area and located at the ground, this area accommodates all planning building management activities. The area is located on the east side and end of the site (Figure 18).

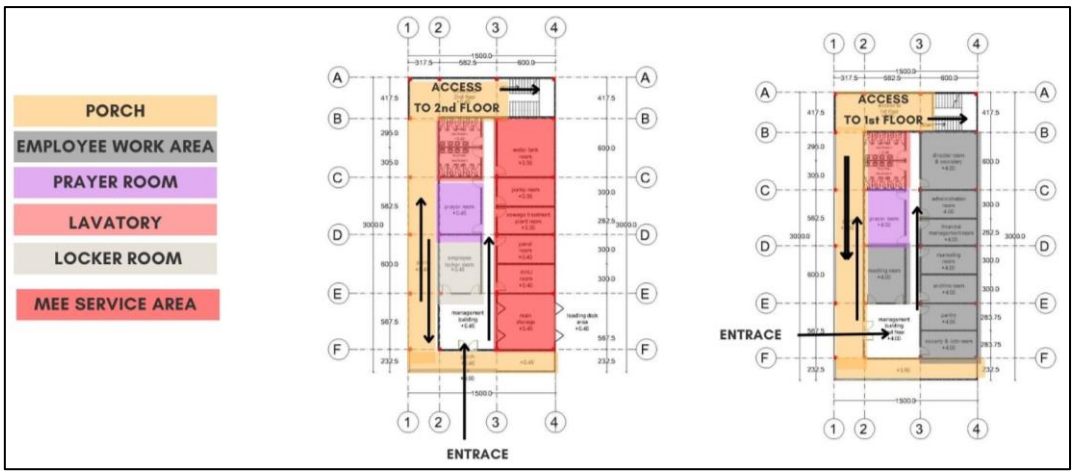

Figure 18 Management Building Floor Plan

4. Conclusion

The design location for this design is located in a tourist area and opposite the cultural heritage area in Jambi city, precisely at the ex-Angso Duo traditional market, Sultan Thaha street, Pasar Jambi district, Jambi city. Based on the background of Jambi which is one of the largest batik-producing areas outside Java and the lack of interest in batik by the community, the Batik Jambi Cultural Center aims to crete a sense of love batik Jambi as well as a new place for recreation and education. This design can also help the Jambi city government in increasing cultural-based tourism in the city so that batik Jambi can be widely known and not inferior to Javanese batik.

This design overshadows various Batik Jambi development activities. There is a Batik Gallery that provides information from history, motifs, and more detailed knowledge about batik Jambi, indoor and outdoor workshop areas as a place to make batik Jambi for visitors who are guided by batik Jambi craftsmen from batik studios in Jambi *seberang*. The Amphitheater area and Multipurpose Building accommodate outdoor activities such as performances, fashion shows and open seating areas. Food Court is a supporting facility that provides food and beverages typical of batik Jambi and the management building is a work area for management and service employees.

5. Acknowledgements

The author would like to thank profusely all the reviewers who have donated their time to evaluate and assess the manuscript submitted by the author for review and consideration in the publication process in

International Journals of Architecture and Urbanism and all parties involved and assisted in the process of making journal of this article.

6. Conflict of Interest

The authors whose names are listed below certify that the manuscript do not have conflict in interest.

Annisa A Harahap

This statement is signed by all the authors to indicate agreement that the above information is true and correct

Author's name	Author's signature	Date
Annisa		22 August 2023

References

[1] A. Pratiwa Siregar et al., "UPAYA PENGEMBANGAN INDUSTRI BATIK DI INDONESIA Batik Industry Development Efforts In Indonesia," vol. 37, no. 1, pp. 79–92, 2020, doi: 10.22322/dkb.V36i1.4149.

[2] "Rencana Tata Ruang Wilayah Kota Jambi 2013-2033," 2013, [Online]. Available: https://dokumen.tips/documents/rencana-tata-ruang-wilayah-kota-jambi-data-rencana-tata-ruang-wilayah-kota.html

[3] E. Effiyaldi, "BERMINATKAH MASYARAKAT PADA BATIK JAMBI..?," Jurnal Benefita, vol. 5, no. 2, p. 175, Jul. 2020, doi: 10.22216/jbe.v5i2.3444.

[4] BPS Provinsi Jambi, "Hotel dan Pariwisata," 2021. https://jambi.bps.go.id/subject/16/hotel-dan-pariwisata.html#subjekViewTab3

[5] A. D. C. Budianto, "PUSAT PENGEMBANGAN SENI WAYANG KULIT DI YOGYAKARTA," 2012. [Online]. Available: https://e-journal.uajy.ac.id/672/

[6] "UUD RI Nomor 5 Tahun 2017 Tentang Pemajuan Kebudayaan."

[7] R. A. F. Sa'adah, "Perancangan Sentra Batik di Pamekasan: Tema tangible metaphor," 2014, [Online]. Available: http://etheses.uin-malang.ac.id/1186/

[8] A. Sarah, "Batik Jambi: Identitas Budaya Daerah Kota Jambi 1980-2010," 2020, [Online]. Available: https://repository.unja.ac.id/16601/1/SKRIPSI%20AYU%20SARAH-dikonversi.pdf

[9] "Batik Jambi, Kekayaan Pewarnaan dengan Bahan-bahan Alami," https://1001indonesia.net/batik-jambi-kekayaan-pewarnaan-dengan-bahan-bahan-alami/, 2017.

[10] "STUDI TENTANG SEJARAH DAN ASAL-USUL BENTUK MOTIF BATIK JAMBI JURNAL SURYATI PROGRAM STUDI PENDIDIKAN SENI RUPA FAKULTAS BAHASA DAN SENI UNIVERSITAS NEGERI PADANG Wisuda Periode," 2013.

[11] "Interview with Rifdatul Khoiro, Owner Batik Berkah Jambi," Oct. 04, 2020.

[12] H. Frick and Tri Hesti Mulyani, Arsitektur Ekologis : konsep arsitektur ekologis pada iklim tropis, penghijauan dan kota ekologis, serta energi terbarukan . Yogyakarta : Penerbit Kansius, 2006.

[13] D. Made and S. Widiyani, "EKO-ARSITEKTUR PADA PERMUKIMAN TRADISIONAL DI DESA ADAT BUGBUG, KARANGASEM," 2013.

[14] N. Apriyani, "Industri Batik: Kandungan Limbah Cair dan Metode Pengolahannya," 2018.

[15] N. Alifian Mubarok, A. Mediani, I. Yusuf, and N. Hafidz, "Perancangan Sistem (GETER) GeoBioFilter Sebagai Pengolah Limbah Batik Pekalongan Berbasis Teknologi Filter Ramah Lingkungan," 2019.