



Design of the Institute of Fine Arts and Design in Medan City With a Metaphor Architecture Approach

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Abstract. *The Institute of Fine Arts and Design is an art school that accommodates high levels of art study program enthusiasts in developing skills in the arts, producing creative and appreciative graduates. This study explores design aspects, such as function, site planning, design, and structure related to the art institute as a basis for design development analysis. The method used is a qualitative method through literature studies and field observations. Literature studies are used to analyze data related to the function of similar buildings and similar themes, namely metaphorical architecture. Field observations are conducted to observe and collect data related to the activities of the Fine Arts and Design Institute. The study concludes that in the design of fine arts and design institutes, creative design is needed through a metaphorical architecture approach. Metaphor architecture was raised as a theme because of the application of the principle of transferring information from one subject to another. The application of this concept is demonstrated by the form of the building mass series and the building facade with the play of secondary skin shapes.*

Keywords: *Institute of Art, Creative, Metaphor Architecture*

1. INTRODUCTION

Education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble character, and skills needed by themselves, society, nation, and state (UU No.12 Tahun 2012). This means that the national education system aims to develop the intelligence potential of the nation, and without education, this potential cannot be developed optimally. Art education contributes to individual development that helps mental, emotional, creative, aesthetic, social, and physical development (De Francesco, 1958). In his book "Education Through Art", according to Herbert Read, art is seen as a means to achieve overall educational goals. Art education aims to provide aesthetic experiences in the form of creative and appreciative activities to form an ideal human being, namely honing the sensitivity of aesthetic and artistic taste to form a creative attitude to cultural awareness.

According to data from the Lembaga Tes Masuk Perguruan Tinggi (LTMP) sidata page, of the 93 state universities in Indonesia, there are only 23 state universities that have study programs related to art and design. Of the 23 state universities, 13 are located on the island of Java and 3 are located on the island of Sumatra. When viewed from universities in Indonesia that have study programs related to art and design, the number of enthusiasts and capacity is very unbalanced. One of the study programs that has a very high demand is visual

communication design and fine arts. Both study programs have experienced an increase in the number of enthusiasts over the past three years. In the range of 2019-2021, the number of enthusiasts for the visual communication design study program reached 14,924 people with a capacity only ranging from 1,214 people, and in the same range of years, the demand for fine arts study programs was 3,222 people with a capacity of around 891 people.

From this background, Medan City as the third largest city in Indonesia, has the potential to design an Institute of Art and Design, given the large number of art enthusiasts and the lack of available capacity.

2. LITERATURE REVIEW

Institutes are universities that organize academic education and can also organize vocational education in several specific clumps of Science and/or Technology (UU No. 12 Tahun 2012). According to the Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 7 of 2020 concerning the establishment, change, dissolution of state universities, and the establishment, change, or revocation of licenses for private universities, the requirements for establishing universities are:

- The land for the campus of the Private Universities to be established has an area of at least: 8,000 (eight thousand) square meters for institutes
- Facilities and infrastructure are available consisting of:
 1. Lecture room at least 1 (one) square meter per student
 2. Permanent lecturer room at least 4 (four) square meters per person
 3. Administration and office space of at least 4 (four) square meters per person
 4. Library space of at least 200 (two hundred) square meters including a reading room must be developed by the increase in the number of students
 5. Laboratory space, computers, and practicum and/or research facilities according to the needs of each study program.
- Lecturers for 1 (one) Study Program are at least 5 (five) people in diploma programs or undergraduate programs for institutes.
- Education personnel are at least 2 (two) people to serve Study Programs in diploma programs or undergraduate programs, and 1 (one) person to serve the library.

- The curriculum is prepared based on the competencies of graduates by the National Higher Education Standards and the provisions of laws and regulations.

3. METHODS

The research method in this design begins with investigating issues related to the Institute of Art and Design in Indonesia until it is reduced to the Medan city area, then continues with a literature study on related topics. Furthermore, the researcher analyzed several precedents related to similar building functions and similar themes. The researcher then conducted a study of the design location and users to analyze the function of space and develop design concepts. The research results were then used as a reference in the design from designing space programs, zoning, and form transformation to the final design of the building.




4. RESULT AND DISCUSSION





Comparative Study with Buildings that Have Similar Functions

Precedent Study Analysis

Architectural precedents based on comparative studies conducted can be based on location, space programming, surrounding building functions, concepts, and materials which can be seen in **Table 1**.

Table 1. Comparative Study Analysis of Similar Functions

No	Comparative Study	Glassell School of Art 	Manchester School of Art 	Reid Building Glasgow School of Art 
1.	Location	Located in the city of Houston ±5 km from downtown Houston.	Located in the city center of Manchester, only about ± 2 km away	Located in Glasgow city center, only a short distance away ±1.5 km.
2.	Neighboring Building Function	Close to public transportation services namely bus and train stops, there are banks and museums in the surrounding buildings	It is close to public transportation services, namely bus stops. The surrounding buildings are schools with different study programs within the Manchester School of Art.	Close to public transportation services, namely bus stops. The surrounding buildings are schools and inns.
2.	Concept	The building consists of an L-shaped mass that has a green roof and is walkable as a general approach to forming public areas. As a common approach to form a public area. It is designed with a void in the center as a source of natural light and a meeting point for the right	The building seeks to make the activities carried out in the building indirectly into an exhibition.	The building was designed with one of its main purposes is bring as much natural light as possible into the building. The placement of spaces is arranged by looking at the direction of sunlight. In addition, there are three shafts called “Driven Voids”

	and left sides of the building.		which function to incorporate light and become vertical air circulation in the building.
3. Space Organization	Linear	Axial.	Linear
4. Circulation	The circulation pattern is linear	The circulation pattern is linear	The circulation pattern is linear
5. Material	<p>Facade the building uses 178 different precast concrete panels and expansive insulated glass (IGU) material with translucent polyvinyl butyral (PVB) interlayer</p> 	<p>It uses concrete, steel, and glass materials. The concrete used consists of three different types, fine texture, coarse texture, and decorative concrete.</p>  <p>On the stairs and connecting corridor using oak wood cladding</p> 	<p>The building has a reinforced concrete structure and a transparent or translucent glass façade as well as some opaque glass according to its needs.</p> 


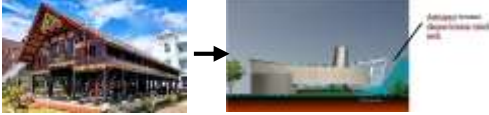

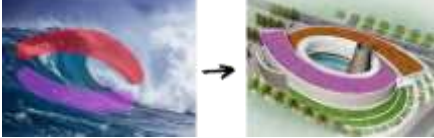


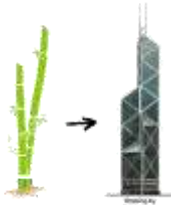

Source: Author's Analysis

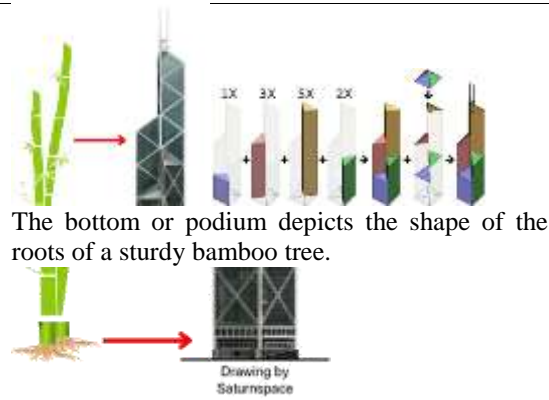
From the comparative study that has been done, it can be determined that the right location for the Institute of Art and Design has several criteria that need to be considered, namely:

- Location not too far from the city center
- Easily accessible by public transportation
- Pedestrian available
- There are supporting facilities such as lodging, banks, bus stops, restaurants, etc. around the building.

Comparative Study with Buildings that Have Similar Themes

Table 2. Comparative Study Analysis of Similar Themes

No	Comparative Study	Concept	Type
1.	<p data-bbox="328 315 592 342">Aceh Tsunami Museum</p> 	<p data-bbox="655 315 1198 405">The concept of the museum is Rumoh Aceh and escape hill with the main references being Islamic values, local culture, and tsunami abstraction.</p>  <p data-bbox="655 524 1198 584">The escape hill concept is illustrated with a hill-shaped park as an anticipated rescue location.</p>  <p data-bbox="655 736 1198 797">The building seems to use the metaphor of sea waves.</p>  <p data-bbox="655 938 1198 1028">The ornamental pattern of the facade is transformed from saman dance movements as a reflection of Hablumminannas.</p> 	<p data-bbox="1222 315 1370 376">Combination metaphor</p>
2.	<p data-bbox="341 1180 579 1207">Bank of China Tower</p> 	<p data-bbox="655 1180 1198 1301">The building concept applies the metaphorical form of bamboo, where the shape and height of the building mass represent the growth pattern of bamboo.</p>  <p data-bbox="655 1509 1198 1570">The sharp, pointed shape represents the pointed end of a bamboo blade.</p>  <p data-bbox="655 1733 1198 1823">The different heights of the building masses illustrate the straight growth pattern of bamboo with its different heights.</p>	<p data-bbox="1222 1180 1370 1240">Combination metaphor</p>



The bottom or podium depicts the shape of the roots of a sturdy bamboo tree.

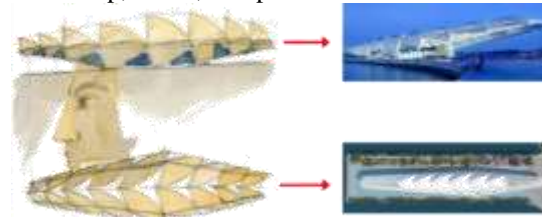
3.

Museum of Tomorrow



The concept of the building is inspired by carioca culture with the main idea being that the building feels ethereal, almost floating in the sea; it can be like a ship, a bird, or a plant.

Tangible metaphors



The reflecting pool surrounding the building is used to give the impression that the museum is floating.



Source: Author's Analysis

Elaboration of Theme and Design

The design of this institute of art and design is carried out using a metaphorical architectural approach. A metaphor is a way to understand something as if it were something else to gain a better understanding of one topic in a discussion (Antoniades Anthony C., 1992).

The design of this institute of art and design can accommodate enthusiasts of art study programs in Indonesia, especially in Medan City by paying attention to matters relating to architectural elements and other factors that can support the design. The design of this institute will include curricular, extracurricular, and supporting zones.

With the design of this institute of art and design, it is expected to be an educational institution that can meet the needs of its users through the provision of adequate facilities. Theme metaphorical architecture will be implemented through the building mass and other architectural elements, to produce a creative building design that has aesthetic value.

Location

The project is located at Jalan Kol Yos Sudarso, Tj. Mulia, Kec. Medan Barat, Medan City, North Sumatra, with land use in the trade zone (K-1), and the surrounding zone is a medium-density residential zone(R2). The existing function is in the form of vacant land with an area of about ± 1.6 Ha and has easy access to public transportation and private vehicles and there are functions of surrounding buildings that can support activities.



Image 1 Site Location

Source: *Google Earth*

Site Boundary :

- North : PT. Berlian Eka Sakti Tangguh
- East side : Jl. Kol. Yos Sudarso and shopping area
- South : Brayah market and shopping area
- West : Vacant land and Tjong A Fie cemetery

Table 3. Site Data





No.	Criteria	Site location on Jalan Kol. Yos Sudarso
1.	Road Level	Primary arterial road
2.	Accessibility	It is easy because the site is on the main road. In addition, there are also many public transportation accesses.
3.	Existing Function	Vacant land with the periphery of the site to the east and south is a shopping area.
4.	Overview of the city structure	Not too far from the city center, about ± 6.5 km away. Around the site, there are several buildings such as Martha Friska Hospital, several school buildings, and shopping areas. The site is in the K-1 (Trade) zone with a certain conditionally permitted status.
5.	Overview of the city structure	This location is not really in the city center but on the south side of the site market traders selling on the sidewalk area, so the noise level is medium-high
6.	Contours	Flat

Source: Author's Analysis

Design Analysis

Analysis of the design on the site in the form of accessibility analysis, solar and wind orientation analysis, noise analysis around the site, view analysis, and vegetation analysis on the site. The analysis can be seen in **Table 4**.

Table 4. Design Analysis

No.	Design Analysis	Image
1.	Accessibility	 <p>Keterangan:  Akses Utama ke lokasi proyek  Akses ke lokasi bus stop terdekat</p>
2.	Sun and Wind Orientation	
3.	Noise	 <p>Keterangan:  Tingkat Kebisingan Tinggi  Tingkat Kebisingan Sedang  Tingkat Kebisingan Rendah</p>
4.	View	
5.	Vegetation	

Source: Author's Analysis





Design Result




With a metaphorical architectural approach, the basic concept of designing this institute of art and design emphasizes the moving design of a visual object with a certain concept. Here are some basic concepts of the building:

- The mass of the building is taken from the shape of the color pallet which is realized in the form of a curve to give a dynamic impression.
- Create an open space that can be utilized as an exhibition area and green space.
- Utilize skylights or voids for natural lighting in the building.
- Using secondary skin with an interesting shape taken from paint spills and using LED panels to illustrate art study program.

After conducting a comparative study and the necessary analysis, the following are the design results of the Institute of Art and Design which can be seen in **Table 6**.

Table 5. Design Picture

No.	Design Picture	Description
1		The shape of the series of the four building masses comes from the metaphorical shape of the color pallet.
2.		The facade of the main building uses a second skin made of grc panels with a metaphorical shape of paint spills to reduce direct sunlight exposure and increase the aesthetic value of the building. While the facade of the auditorium building uses LED panels.
3.		Facade building supporting using second skin made of conwood wood plank with a dynamic arrangement.
4.		There is a creative space that has various functions in the form of an amphitheater that can be used as an art performance area, sitting area and can be used as circulation if needed.

5.		There is a bus stop as a supporting facility for public transportation.
6.		There is an open space that can be utilized as an exhibition area located in the central part so that all four buildings get a view of the area.
7.		The ramp divider uses mosaic as an art form implementation and adds aesthetic value.

Source: Author

5. CONCLUSION

The design of the Institute of Fine Arts and Design is carried out as a place that focuses on fine arts and design by providing adequate facilities for the development of students' artistic potential. The facilities are in the form of student activity rooms and several other creative spaces. This place is also expected to help meet the high demand for art and design study programs.

Facade design that emphasizes the play of colors and interesting shapes is adjusted to the theme of this building, namely Metaphor Architecture. Taking this theme is expected to be in harmony with the function of the building by providing a creative design so that the building has its aesthetic value and uniqueness.

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