

Development of the Architectural Design of the South Aceh Regency Library in Tapaktuan

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South Aceh Regency is one of the regencies located in Aceh Province, with Tapaktuan serving as its capital city. A regency library is a regional library that functions as a guiding library, reference library, deposit library, research library, and preservation library at the regency or municipal level. Currently, South Aceh Regency already has a library building; however, it is combined within the same building as the Department of Library and Archives. This condition makes the library less accessible to the public due to its closed nature and bureaucratic atmosphere. In South Aceh Regency, particularly in Tapaktuan, there are several higher education institutions such as polytechnics, academies, and colleges. In addition, there are also many schools and Islamic boarding schools. Based on interviews conducted with various groups, including the community, university students, and school students, there is strong interest in the development of a more open and accessible public library. Approximately 90% of respondents agreed with the plan to build such a facility. The main objective is to make it easier for the community, students, and pupils to access books and other sources of knowledge. By applying a metaphorical architectural approach, the building is expected to become a prominent landmark that encourages people to visit the regency library.

Keywords: Library Design, Public Accessibility, Metaphorical Architecture, Community-Based Design, Regional Library Development

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1. Introduction

Architecture is both an art and a science in designing buildings and other structures. In a broader sense, architecture includes the design and construction of the entire built environment, from the macro level, such as urban planning, urban design, and landscape architecture, to the micro level, such as building design, furniture design, and product design. According to Francis [1], architecture forms a link that unites space, form, technique, and function. Architecture itself is the science and art of designing and planning buildings and structures. In essence, architecture aims to create spaces that meet human needs. The design and planning produced by an architect have certain characteristics, namely utility, strength, and beauty. Meanwhile, according to James C. Snyder and Anthony J. Cattanes in "Introduction of Architecture", metaphorical architecture identifies possible patterns that arise from relationships within a discussion. In other words, it explains one subject through another subject, namely by attempting to view one subject as something else.

South Aceh Regency is one of the 23 regencies/cities in Nanggroe Aceh Darussalam Province. South Aceh Regency is located between 02° 23' 24"–03° 44' 24" North Latitude and 96° 57' 36"–97° 56' 24" East Longitude, with an average elevation of 25 meters above sea level (masl). South Aceh Regency is one of the oldest regencies in Aceh Province and was established through Law Number 7 (Emergency Law) of 1956 concerning the Establishment of Autonomous Regency Areas within the Province of North Sumatra

(State Gazette of the Republic of Indonesia Year 1956 Number 58, Supplement to the State Gazette of the Republic of Indonesia Number 1092). As stated in the Spatial and Regional Plan (RTRW), South Aceh Regency has an area of 4,173.82 km² or 417,382.50 ha. South Aceh Regency has highly diverse development potential, both on land and in marine resources.

2. Literature Review And Problem Statement

Public library design is increasingly understood as the creation of inclusive civic infrastructure rather than the provision of a conventional book-storage facility. IFLA emphasizes that public libraries should provide open access to knowledge, support lifelong learning, and respond to the social and cultural needs of diverse communities [7]. Similarly, planning studies on public library buildings underline the importance of accessibility, adaptability, user comfort, and spatial flexibility as essential qualities in contemporary library facilities [8], [9], [10]. Within this theoretical framework, the South Aceh Regency Library cannot be assessed only from its physical appearance; it must also be evaluated through the relationship between spatial organization, user accessibility, public visibility, and its ability to stimulate community interest in literacy activities.

The metaphorical architectural approach provides a conceptual bridge between function and form by translating an abstract idea into spatial, visual, and material expression. In library design, metaphor should not operate merely as decorative symbolism; it should reinforce orientation, readability, and user experience. The book metaphor used in this study is therefore relevant because it connects the building identity with the core function of knowledge access. However, previous library-planning guidelines and dimensional references tend to emphasize technical requirements, flexibility, collection arrangement, accessibility, and comfort, while studies on architectural metaphor often focus on formal expression [8], [9], [11], [12], [13]. This indicates a research gap: the need to integrate library-service standards, public accessibility, and metaphorical form-making into a coherent design strategy for a regency-scale public library in Tapaktuan.

Based on this gap, the research problem can be formulated as follows: how can the South Aceh Regency Library in Tapaktuan be designed as an open, accessible, and iconic public facility through a metaphorical architectural approach while responding to user needs, spatial comfort, and community-based literacy functions? More specifically, this study examines the translation of library-service standards into spatial programming, the relationship between accessibility and user interest, and the extent to which book-based architectural metaphors can strengthen the building identity as a regional literacy landmark. Accordingly, the design inquiry is not limited to producing a building form, but also to developing a spatial strategy that integrates public accessibility, functional flexibility, environmental comfort, and symbolic expression within the context of South Aceh Regency.

3. Research Methods

Research Location

The design location of the South Aceh Regency Library is situated on Jl. Nasional Banda Aceh-Medan, between the BPS office and the Tapaktuan Tax Office, South Aceh. With a land area of 3,223.8 m² and its proximity to the city center, the site is considered suitable for the design object of the South Aceh Regency Library.



Figure 1. Research Location

Research Method

The stages of this study began by establishing a general understanding of the project through literature studies and reviews of previous research. A more specific understanding was then developed by combining the literature study with comparative studies of existing library buildings, namely the Deichman Oslo Public Library in Norway, Hennepin County Library in the United States, and the Universitas Indonesia (UI) Library in Depok. By integrating these three comparative studies, the characteristics of the object, users, and location can be identified, thereby enabling the formulation of the basic concept underlying the design process of the South Aceh Regency Library in Tapaktuan.

Research Variables

Research variables are all matters determined by a researcher with the aim of obtaining information and drawing conclusions. In general, variables consist of independent variables and dependent variables. An independent variable is a variable that influences, while a dependent variable is a variable that is influenced. The variables in this study are as follows:

a. Regency Library Design (Independent Variable)

Library design in this study refers to the effort to design a library building that is open, easily accessible, and able to attract public interest. The design is carried out by applying a metaphorical architectural approach so that the building has aesthetic value and a distinctive appeal. This orientation is consistent with public library planning principles that emphasize community access, adaptability, and inclusive services [7], [10].

b. User Interest and Accessibility (Dependent Variable)

User interest and accessibility in this study relate to the level of public interest and the ease with which people use library facilities. This includes ease of access, spatial comfort, and the intensity of visits by the community, university students, and school students. Accessibility is also aligned with universal design principles, which emphasize equitable, simple, and usable access for diverse users [13].

Data Collection Method

The data used in this study were obtained through field observation, which was conducted by directly observing the condition of the planning site and the existing library facilities in the study area. This observation included the collection of data on the physical condition of the site, such as topography, land area, land use, and the condition of surrounding buildings. In addition, accessibility aspects were also considered, including the road network, ease of reaching the location, and connectivity with other public facilities. The surrounding environment was also analyzed, including social conditions, community activities, and the potential development of the area in the future.

Furthermore, the observation also focused on user activities, both those related to the use of existing library facilities and the behavioral patterns of the community in accessing information sources and public spaces. The data obtained from these observations were then analyzed to identify various potentials and constraints found at the planning site. Thus, the results of the analysis can serve as a comprehensive basis for formulating the concept and design strategy for a regional library that is more open, accessible, and able to optimally meet community needs.

Stages of the Research Procedure

The stages of data analysis are steps carried out systematically and logically in accordance with the existing problems, so that they can be analyzed accurately to achieve the writing objectives [2].

The stages in writing this research report are as follows:

- Conducting field observations at the planning site in South Aceh Regency to determine the existing conditions, potential, and constraints.
- Collecting primary and secondary data.
- Conducting data analysis, including analysis of spatial needs, library functions, accessibility, and the application of the metaphorical architectural concept.
- Conducting comparative studies of existing libraries as references in determining an appropriate design concept.
- Drawing conclusions and recommendations from the results of the research and design that have been carried out.

Conceptual Foundation

The design of the Regency Library in Tapaktuan, South Aceh, is a building that functions as a literacy center and supports community educational activities, including reading, reference activities, learning, seminars, and other supporting activities. Based on the National Library Standard (SNP 003:2011), regency/municipal libraries have a minimum membership target of 10% of the population; therefore, library users consist of managers (library staff and technicians) as well as general users, including school students, university students, and the community.

Table 1. Library User Data

User Category	Number of Users
University students	553
School students	26,532
Staff	10
Security	2
Cleaning service	4
Technician	2
General community	10% of the population. Based on the population of Tapaktuan District (23,341 people), the estimated number of general community users is approximately 2,334.

The spatial design is arranged based on functional needs, spatial proximity relationships, and natural lighting and ventilation. The building zoning is divided into three floors, in which the ground floor is used for collection rooms, children's rooms, offices, and service areas, while the upper floors focus on collection rooms, exhibition rooms, practice rooms, and other supporting spaces. The building form concept applies a metaphorical architectural approach inspired by books as the main symbol of the library, resulting in an

arranged and structured form. The building mass follows the shape of the site, with the facade oriented toward the main road while maximizing natural lighting from the east [3]. This spatial strategy follows library-building guidelines that recommend flexible, accessible, comfortable, and efficient spaces supported by appropriate dimensional planning [8], [9], [11], [12].

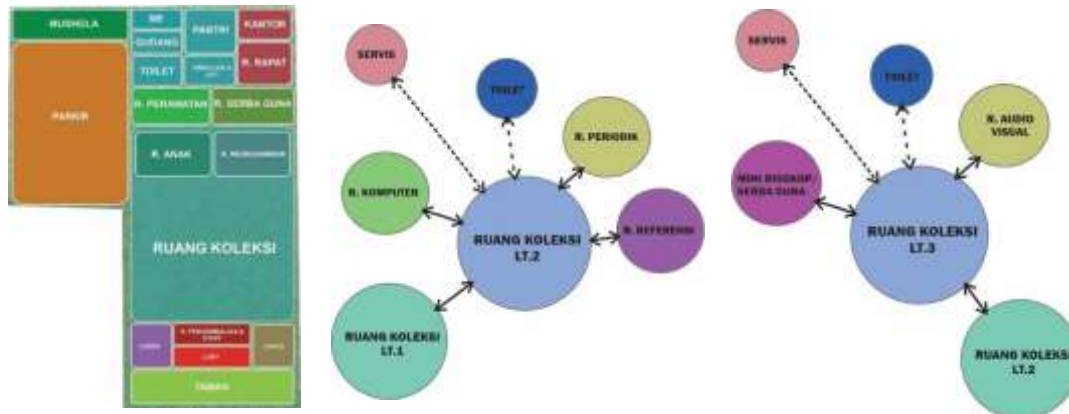


Figure 3. Library Building Zoning

In the context of the South Aceh Regency library design, various forms will be presented, including the building mass, furniture, and other elements, to create an enjoyable impression of the building. The building layout follows the shape of the site to ensure efficient land use, with the building extending lengthwise toward the rear and the main facade facing the Banda Aceh-Medan national road, or facing south. In addition, this orientation can be utilized so that the wider building plane faces the sunrise direction (east), allowing morning sunlight to enter the building optimally.

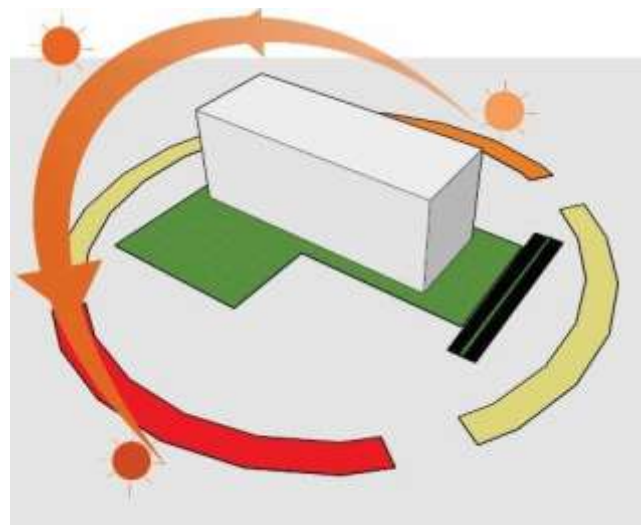


Figure 4. Library Circulation

The building concept/mass composition of the South Aceh Regency library is guided by the metaphorical architectural approach [4], as previously mentioned. The metaphorical architectural approach in the design of the South Aceh Regency library in Tapaktuan aims to create an attractive building that can become an icon for the surrounding environment, considering that the existing buildings around the site tend to be uniform. The design idea for the form of this regency library is derived from a book, by adopting the values contained in books, such as being arranged, rectangular, and so on. A book was selected as the design idea because a library is closely related to books; therefore, choosing a book as the form idea creates harmony with the building's function as a library

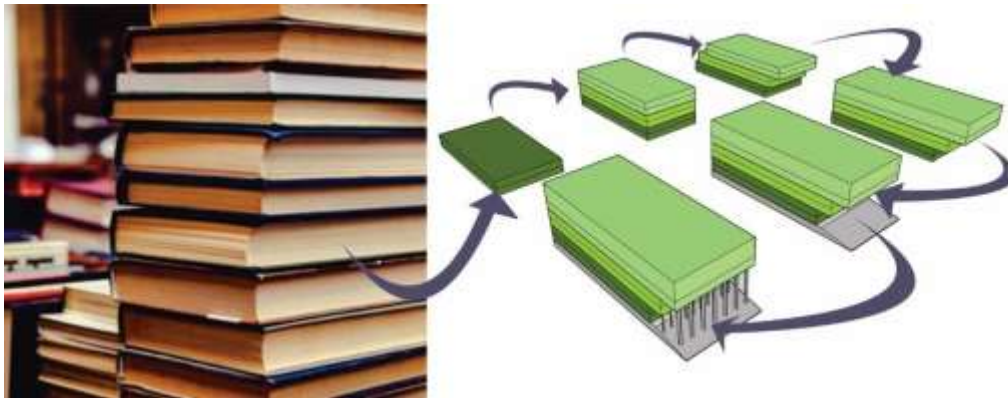


Figure 5. Form Idea in Library Design

4. Results And Discussion

The design concept described previously was then compiled and processed systematically before being realized in the form of detailed and measurable working drawings. These working drawings serve as the main reference in the construction process of the South Aceh Regency Library, so that every design element can be implemented in accordance with the planned concept. This stage includes the drawing of architectural, structural, and building utility aspects, thereby producing comprehensive technical documents that can be understood by all parties involved in the construction process.

The South Aceh Regency Library is designed with various types of spaces that support its main function as a literacy and information center, as well as an educational and recreational public space. The facilities provided include an interactive children's playroom designed to foster reading interest from an early age, a collection room as the main area for storing and accessing books, a maintenance room to keep the collections in good condition, as well as laboratory and computer rooms that support technology-based learning needs. In addition, there is a periodical room that provides access to magazines, journals, and newspapers; a cinema room as an audiovisual learning medium; and a multipurpose room that can be used for various activities such as seminars, discussions, and community events. This diversity of spatial functions aims to make the library an inclusive activity center that can reach various groups of society. Such multifunctional programming reflects contemporary views of public libraries as civic learning spaces, not merely repositories of books [7], [10].

In terms of the facade, the building is designed with an aesthetic approach that represents the identity of the library as a symbol of literacy. The main material used is Aluminium Composite Panel (ACP), arranged horizontally in a broken pattern to form a visual composition resembling sheets of paper. This concept is reinforced by the use of clear glass as the facade background, which not only creates a modern and lightweight impression but also allows natural light to enter the building and provides visual connectivity between the interior spaces and the outside environment. Thus, visitors inside the library can still enjoy the beautiful surrounding panorama, creating a more comfortable and pleasant reading atmosphere [5]. The emphasis on architectural expression and functional readability is also in line with the principles of good library space [8], [9].

In addition, at the entrance or main entry area, a facade element is designed in the form of a book arrangement displaying the names of fields of knowledge. This element functions as a visual marker (landmark) while strengthening the character of the building as a literacy facility. The design not only provides aesthetic appeal but also creates a symbolic spatial experience for visitors from the moment they first enter the library area. Overall, the application of this facade concept is expected to create an iconic,

educational, and representative building image that reflects the library's function as a center of knowledge in South Aceh Regency.



Figure 6. Library Architectural Elevation

The landscape design of the South Aceh Regency Library is planned by harmoniously combining softscape and hardscape elements to create an environment that is both functional and aesthetic. The softscape elements include the use of elephant grass as ground cover, which provides a green and cool impression, and Ketapang Kencana trees that function as natural shade while strengthening the visual character of the area. Meanwhile, the hardscape elements consist of paving blocks, asphalt pavement, and pedestrian paths designed with striped patterns resembling lines in a notebook as a representation of the literacy concept. In addition, supporting elements such as garden benches, reflection ponds, and decorative elements in the form of garden spheres placed abstractly also enrich the quality of the outdoor space, creating an atmosphere that is comfortable, interactive, and attractive for visitors from various groups.

In terms of the interior, the spatial design of the South Aceh Regency Library is carried out using a varied and contextual approach in accordance with the function of each room. Each room is designed to provide a different experience in terms of atmosphere, color, and furniture layout. Several spaces, especially those intended for children, are designed with a cheerful and enjoyable atmosphere to foster reading interest from an early age. This approach is realized through the use of bright and varied colors, attractive decorative elements, and the provision of educational play facilities that support learning-through-play activities. Thus, the space functions not only as a place for reading but also as a medium for stimulating creativity and social interaction. The interior approach is also informed by behavioral space-planning concepts and contemporary library architecture that prioritize user experience, flexibility, and social interaction [14], [15].

The arrangement of the collection area is designed systematically and variably based on the types and categories of books, making it easier for users to access information effectively. This grouping of collections is also supported by a flexible and easily understandable spatial layout. The reading areas are not centralized in a single room but are divided into several zones distributed across different parts of the building. This aims to provide visitors with a choice of reading atmospheres, ranging from quiet and private areas to more open and communal areas. Meanwhile, the main reading area is designed to face the void space in the center of the building, creating a spacious and open impression while providing visual connectivity between floors. This concept also supports the entry of natural lighting and more optimal air circulation, thereby improving user comfort when carrying out activities inside the library.



Figure 7. Library Architectural Elevation

The collection area in this library is arranged variably and structurally according to the types, categories, and characteristics of the available books. The grouping of collections is intended to make it easier for users to find reading materials efficiently while creating a more organized and comfortable spatial atmosphere. In addition, the reading area is not concentrated only in one main room but is divided into several reading zones distributed at various points throughout the building. This aims to give visitors flexibility in choosing a reading atmosphere that suits their preferences, whether quiet, semi-private, or more open and interactive [6]. This zoning approach is also consistent with recommendations for flexible and user-oriented library spaces [8], [9].

The main reading area is designed to face the void area in the center of the building, creating a spacious and open spatial impression with visual connectivity between floors. This concept not only improves the quality of natural lighting and air circulation but also strengthens visual interaction among users inside the library building. Meanwhile, a supporting facility in the form of a café area is placed on the fourth floor with a semi-outdoor concept. This area is designed to provide a more relaxed and recreational spatial experience, with views toward the front facing the sea and toward the rear facing the mountainous area.

The presence of this café functions not only as a place to relax but also as a more flexible and open alternative reading space, thereby attracting visitors from various groups. Thus, the library serves not only as a place for storing and accessing information but also as a public space that supports social, recreational, and community interaction activities in South Aceh Regency.



Figure 8. Library Architectural Elevation

5. Conclusion

Based on the design results of the Regency Library in Tapaktuan, South Aceh, the following conclusions were obtained:

1. The library design refers to the National Library Standard (SNP 003:2011), thereby meeting the needs of a literacy center with target users that include library managers and the general public, including school students and university students.
2. The spatial arrangement is designed based on function, spatial proximity relationships, and the optimization of natural lighting and ventilation, resulting in effective and efficient building zoning across three main floors.
3. The building form concept applies a metaphorical architectural approach inspired by the form of a book, producing a structured building mass that is able to represent the identity of the library as a symbol of knowledge.
4. The building layout follows the shape of the site and its orientation toward the main road and the sun path, thereby maximizing land use and natural lighting, especially from the east.
5. The facade and architectural elements use modern materials such as Aluminium Composite Panel (ACP), which creates a visual impression of sheets of paper and book arrangements, thereby forming a building character that is iconic and contextual with the function of the library.
6. The interior and landscape design prioritize comfort and visual appeal through a combination of softscape and hardscape elements, as well as the use of varied colors and facilities, particularly to support activities for children and general users.
7. The provision of diverse facilities, such as collection rooms, reading rooms, children's playrooms, laboratories, multimedia rooms, and a semi-outdoor café, is able to support various educational, recreational, and social activities within one library area.
8. Overall, this design not only fulfills functional aspects but also presents aesthetic value and an enjoyable spatial experience, allowing the library to serve as a center for education, recreation, and a regional icon in South Aceh.

6. Suggestions

Based on the design results of the Regency Library in Tapaktuan, South Aceh, the author provides the following suggestions in this study:

1. Further studies are needed regarding the structural system, utilities, and building safety so that the library can function optimally and safely in the long term. In addition, comfort aspects such as natural lighting, ventilation, and room acoustics should also be examined in greater depth to create a comfortable learning environment that maximally supports user activities.
2. Library management should be supported by a digital technology-based system, such as an e-library, to improve access to information and services for the community. On the other hand, spatial design needs to consider flexibility and capacity so that it can adapt to the development of visitor numbers and various types of future activities.

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