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Feasibility Study for the Construction of the Dekranasda Gallery Building in Pangkalpinang City

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ABSTRACT

The construction of the Dekranasda Gallery Building in Pangkalpinang City is planned as part of a strategy to strengthen the creative economy sector and increase the added value of local craft products. This study aims to identify the priority location for the construction of the Dekranasda Gallery Building by evaluating three alternative sites from technical, economic, social, and environmental perspectives. Each aspect is analyzed by considering the availability of basic infrastructure, land use suitability, investment value, and community perception and social support for the gallery's construction. The assessment is carried out comparatively to obtain the most optimal location recommendations. The analysis results show that Alternative Location 1 (Taman Mandara) has the highest overall score, relatively complete infrastructure support, good social suitability, and an estimated investment requirement of IDR 13,929,500,000. Alternative Location 2 (Tampuk Pinangpura) shows a reasonably good feasibility value but is not yet optimal from a technical perspective. Meanwhile, Alternative Location 3 (Tugu Kepiting) has limited infrastructure and a low social score, requiring a higher investment of IDR 14,229,500,000. Considering all aspects of feasibility, Alternative Location 1 is recommended as a priority location for constructing the Pangkalpinang City Dekranasda Gallery Building.

INTRODUCTION

The National Craft Council (DEKRANAS) is a non-profit organization established to bring together lovers, observers, and practitioners of craft arts to protect, develop, and preserve craft products in Indonesia. In addition, DEKRANAS also has a strategic role in encouraging the growth of craft businesses, especially those run by Micro, Small, and Medium Enterprises (MSMEs), so that they can compete in the national and international (Aditya & Andayani, 2023; Amiruddin & Fatma, 2021; Candraningrat et al., 2021; Ermalia & M'ruf, 2016; Kasmi et al., 2015; Malahayatie & Irmayani, 2022; Rusdiana, 2016).

Crafts manifest the combination of manual skills, aesthetic values, and local wisdom that have developed from generation to generation. Craft products are not only economic commodities but also an important part of the nation's culture that reflects the identity and character of the local community (Afriyani et al., 2023; Andriariza, 2016; Awaru et al., 2021; Lailatul Fitria & Nawangsih, 2023; Mahmudi, 2021; Putri Effendi & Edison, 2022; Rahma Dewi, 2020). However, the sustainability of the craft industry is greatly influenced by various factors, including social

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changes due to technological advances, public appreciation of local products, and the ability of artisans to maintain quality, creativity, and continuity of their production (Andriariza, 2016; Awaru et al., 2021; Hamsinar & H., 2018; Marsilia, 2023).

In the context of regional development, the craft industry has a significant role in encouraging economic equality, creating new jobs, and strengthening the preservation of local culture. Therefore, supporting infrastructure such as craft galleries is very important. Galleries function as product showrooms and as centers for education, promotion, and marketing of local artisans's works. Responding to the importance of strengthening the craft sector, the Pangkalpinang City Government took the initiative to build the Pangkalpinang City Dekranasda Gallery Building. The construction of this gallery is expected to become a center for local craft industry development activities and a means of empowering MSMEs fostered by Dekranasda. However, to ensure that the construction of the building is appropriate, on target, and sustainable, an initial feasibility study is needed (Susanti, 2024; Susanti & Maini, 2019). This study aims to identify the priority location for the construction of the Dekranasda Gallery Building by evaluating three alternative sites from technical, economic, social, and environmental perspectives.

RESEARCH METHODS

Secondary Data Collection

In order to support the Feasibility Study of the Development of the Dekranasda Gallery Building of Pangkalpinang City, secondary data was collected through a study of planning documents, including the Regional Spatial Plan (RTRW) of Pangkalpinang City 2011–2030 (Ilpandari et al., 2025; Maini et al., 2024; Susanti, 2024). Data sources come from relevant agencies and institutions, including PT Java Design Consultant, CV Panda Karya, and the Public Works and Spatial Planning Agency of Pangkalpinang City.

Primary Data Collection

Primary data collection in this activity was carried out through direct field surveys to obtain accurate information on the area's existing conditions or site plan for constructing the Regional National Craft Council (Dekranasda) Building Gallery in Pangkalpinang City. This survey activity is an important initial step to obtain a comprehensive picture of the physical characteristics, surrounding environment, and potential and technical constraints that may be faced in the development planning and implementation stages. In addition to the field observation, questionnaires were distributed to gather qualitative information from key stakeholders and community members. The respondents comprised 15 representatives from related government agencies or stakeholders in Pangkalpinang City and 15 individuals from the local community, including small and medium-scale industry (IKM) actors. Their inputs provided valuable perspectives on the proposed development's needs, expectations, and potential benefits.

Technical Feasibility Analysis

Technical aspect analysis is conducted to assess the suitability of the planned location for the construction of the Dekranasda Building Gallery by considering the existence and feasibility of supporting infrastructure available around the market area. This analysis aims to ensure that the location can support the building's operations optimally and sustainably. Some of the main criteria that are considered in this technical feasibility analysis include the availability and condition of road networks that support accessibility, the existence of adequate clean water networks for operational needs, availability of a stable electricity network, access to telecommunications and internet networks, availability of public street lighting around the location, distance, and travel time to the nearest fire department as part of the emergency response system and availability of waste management facilities to support environmental cleanliness and sanitation.

Environmental Analysis

Environmental feasibility analysis is one of the important stages that must be carried out in the development planning process, mainly to ensure that the location of the activity follows the spatial designation determined by the local government. Therefore, it is necessary to verify the

suitability of the planned land with the applicable spatial planning documents in Pangkalpinang City. This verification can be done through an overlay process between the location map of the planned activity and the Regional Spatial Planning (RTRW) or Detailed Spatial Planning (RDTR) documents if these documents are available. The results of this overlay analysis will provide an overview of whether the planned activity is in a functionally appropriate zone and support decision-making in the context of licensing and environmental impact management.

Economic Feasibility Analysis

Economic feasibility analysis is a study of the feasibility of a project from a financing or financial aspect. In the context of the construction of the Dekranasda Gallery Building, this study includes an assessment of land acquisition costs and construction costs. Construction costs reflect the total expenditure required to construct the building and its supporting facilities. This analysis does not consider financial feasibility indicators such as Internal Rate of Return (IRR), Net Present Value (NPV), and Break Even Point (BEP) because the construction of this building is not intended for commercial activities but rather to support the development of the regional creative economy.

The calculation of land acquisition costs and building construction costs is carried out based on Equations (1) and (2) concerning the Pangkalpinang City Work Unit Price Analysis (AHSP). Equation (1) is used to calculate construction costs, namely by multiplying the volume of work by the unit price of the work. Meanwhile, Equation (2) is used to calculate land acquisition costs, namely by multiplying the land area by the Taxable Object Sales Value (NJOP)

$$Construction\ Cost\ \ (IDR) = Volume\ x\ AHSP \quad (1)$$

$$Land\ Acquisition\ Costs\ (IDR) = Land\ Area\ x\ NJOP \quad (2)$$

The feasibility study of the construction of the Dekranasda Gallery Building needs to be carried out comprehensively by considering four main aspects: social, environmental, technical, and economic. The feasibility assessment of each aspect is carried out using the scoring method, a quantitative approach that combines each criterion's scores (values) with the weight of its importance. Each criterion is given a value based on its level of achievement, then multiplied by a weight that reflects the relative importance of each criterion. This process is formulated in Equation (3), which calculates the final total feasibility score. The results of this method provide an objective and measurable evaluation basis in determining whether or not the development plan is feasible to continue to the next stage.

$$Score = Value\ x\ Weight \quad (3)$$

RESULTS AND DISCUSSION

Technical Feasibility Study

The technical feasibility assessment of alternative locations is carried out using a criteria-based evaluation method, which includes seven main aspects, namely: accessibility of road networks, availability of clean water, electricity networks, telecommunication services, street lighting, presence of fire extinguishers, and waste management facilities. Each aspect is scored from 0 to 3 based on the conditions observed at each location. A higher score reflects a better level of technical feasibility. This assessment system refers to the Guidelines for Preparing Preliminary Studies for Public Infrastructure Projects issued by the Ministry of National Development Planning/Bappenas (Wibowo et al., 2020).

The selection of alternative locations is based on the availability of land owned by the Pangkalpinang City Government in several strategic areas. Three alternative locations are considered: Location I in the Taman Mandara area, Location II in Jalan Tampuk Pinangpura, and Location III in Jalan Selindung (see Figure 1). Each Location has characteristics and potential that support the construction plan of the Dekranasda Gallery Building. Further information regarding each alternative Location can be seen in Figure 1. Based on the results presented in Table

1, Location I achieved the highest total score of 16, followed by Location II with 14 and Location III with 11. It indicates that Location I possesses the most complete infrastructure and utilities, such as clean water availability, electricity, street lighting, and proximity to waste management facilities. In contrast, although Location III is situated on an arterial road, it lacks telecommunications coverage, street lighting, and distance from waste management facilities.

The technical priority ranking was established from these scores, placing Location I as the first priority, Location II as the second, and Location III as the third. This scoring method provides an objective and quantitative basis for rational and measurable decision-making in selecting the most suitable site.

The technical aspect analysis was explicitly conducted to evaluate the suitability of the locations for constructing the Pangkalpinang City Regional National Craft Council (Dekranasda) Gallery Building. This assessment focused on the availability and adequacy of basic infrastructure to support the project. The same seven infrastructure criteria were used to assign weighted scores to each alternative site.

The analysis confirmed that alternative Location I (Taman Mandara) is the most suitable site, with the highest total score of 16. This was followed by Location II (Jalan Tampuk Pinangpura) with a score of 14 and Location III (Jalan Selindung) with the lowest score of 11. Therefore, Taman Mandara is recommended as the preferred Location for the Dekranasda Gallery Building due to its superior supporting infrastructure compared to the other alternatives.

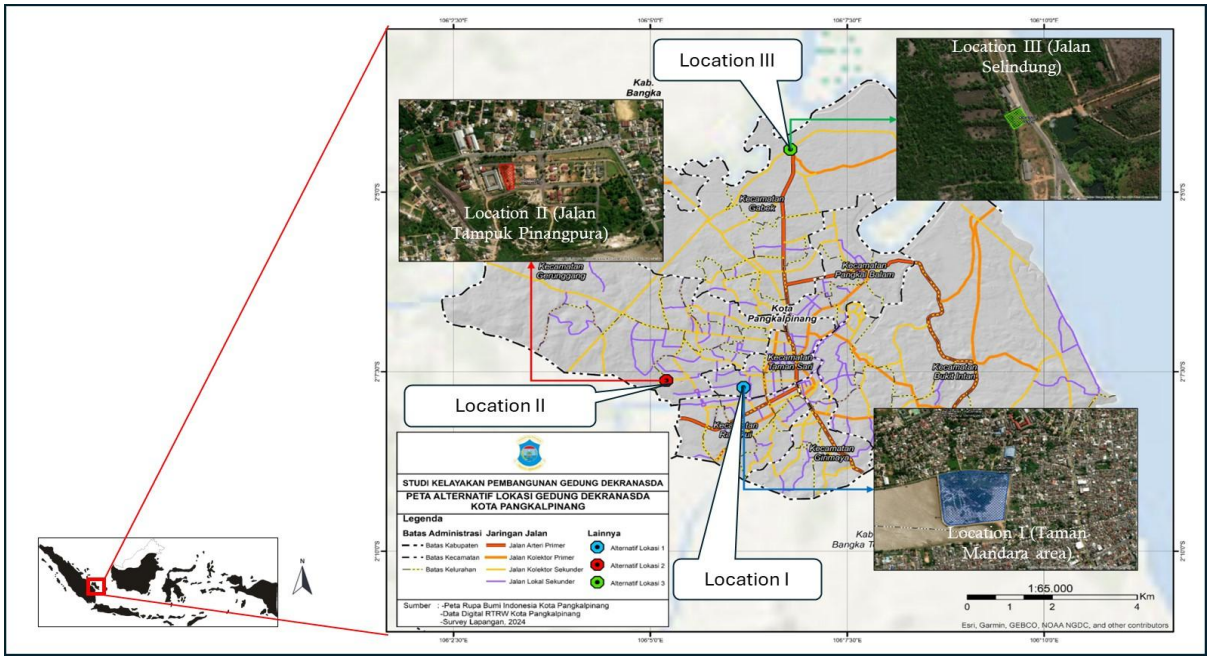

Figure 1. Map of the Location of the Dekranasda Building Gallery in Pangkalpinang City, Bangka Belitung Islands Province

Table 1. Technical Feasibility Analysis of Alternative Locations for the Construction of the Dekranasda Gallery Building

No	Criteria	Technical Feasibility Analysis					
		Location			Score		
		I	II	III	I	II	III
1	Road Network	Local	Collector	Arteries	1	2	3
2	Clean Water Network	Available	Not available	Available	3	0	3
3	Electrical Network	Available	Available	Available	3	3	3

No	Criteria	Technical Feasibility Analysis					
		Location			Score		
		I	II	III	I	II	III
4	Telecommunication Network	Jaringan Tetap	Jaringan Tetap	Not available	3	3	1
5	Street Lighting	Available	Available	Not available	3	3	0
6	Fire Fighting Unit	Not available	Not available	Not available	0	0	0
7	Waste Facilities	TPS (200m)	TPS (200m)	TPST (2.100m)	3	3	1
Total					**16**	**14**	**11**
Technical Priority					**1**	**2**	**3**

Environmental Feasibility Study

Analysis of location suitability to spatial planning is an important stage in a development feasibility study, mainly to ensure that the development plan is within the corridor of regional spatial planning policy. This study was conducted on the suitability of three alternative locations for the Dekranasda Gallery Building development plan to the Pangkalpinang City Regional Spatial Planning Plan (RTRW). This environmental feasibility analysis identifies the integration of site space functions with the spatial pattern plan regulated in the applicable spatial planning documents.

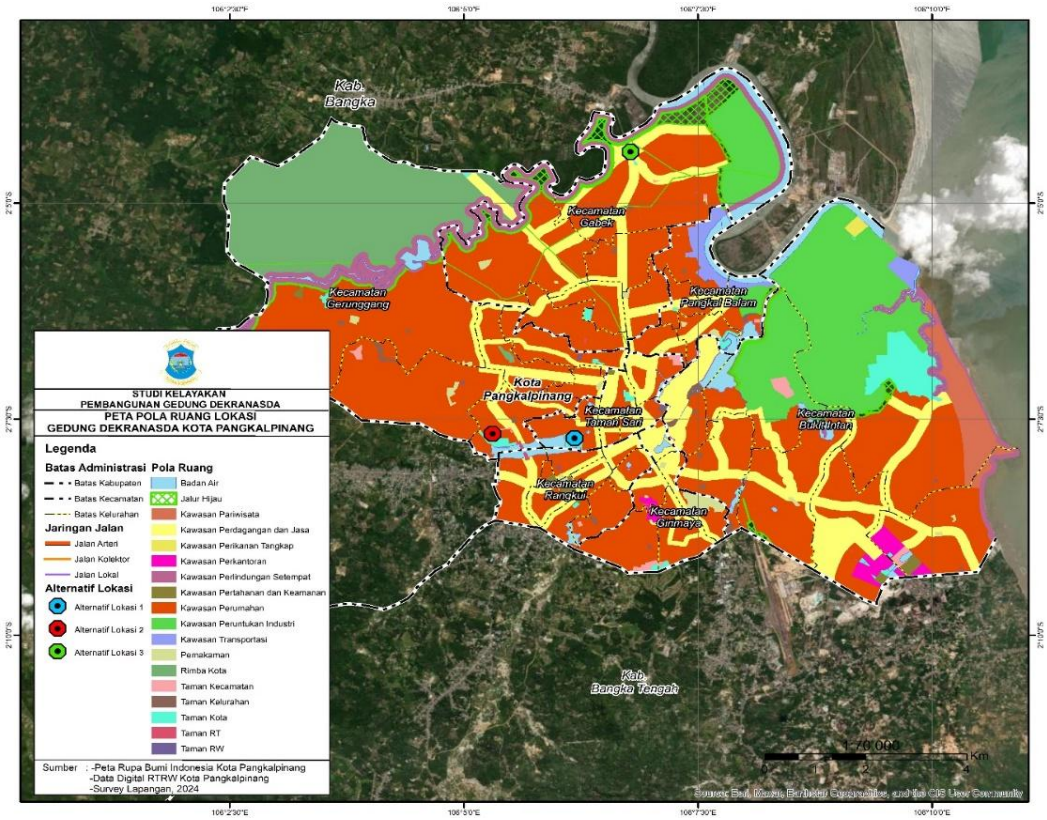

Figure 2. Alternative Land Suitability Map Location with Spatial Pattern

Three alternative locations were analyzed in this study: (1) the Mandara Park area, (2) the Tampuk Pinangpura Street area, and (3) the Selindung Street area. Based on the interpretation of the spatial plan map of Pangkalpinang City, all three locations fall within areas designated primarily for cultivation functions. More specifically, the first and second locations are within zones allocated for city parks, while the third is located in a zone designated for trade and services.

These three locations were selected based on two primary considerations: the availability of land owned by the Pangkalpinang City Government and their alignment with spatial planning

policies and regional development strategies. The site determination process was carried out with careful attention to ensure full compliance with existing planning regulations, particularly those stipulated in key planning documents such as the Pangkalpinang City Spatial Plan (RTRW) 2011–2030, the Regional Medium-Term Development Plan (RPJMD), and the Industrial Development Master Plan (RPIK) 2021–2041.

These findings indicate that the three alternative locations generally have functional suitability to the city spatial pattern plan, although with different characteristics of space utilization. Locations in the city park zone can be limited by considering the principle of green open space. In contrast, trade and service zone locations are more flexible in developing economic functions, including constructing a regional craft product gallery. A summary of the results of the suitability assessment is shown in Table 2, which contains the zoning classification and compatibility level of each location with the Pangkalpinang City RTRW.

Table 2. Suitability of Alternative Land Locations with Spatial Pattern Plans

Environmental Analysis (Land Use Suitability)							
No	**Criteria**	**Location**			**Score**		
		I	**II**	**III**	**I**	**II**	**III**
1	Regional Functions	Cultivation	Cultivation	Cultivation	3	3	3
2	Space Allocation	City Park	City Park	Trade and Services	3	3	3

Social Analysis

Social aspect analysis of the planned construction of the Dekranasda Gallery Building in Pangkalpinang City was conducted to determine the community's and stakeholders' perceptions. Based on the questionnaire results distributed to 15 stakeholders or related agencies, all respondents (100%) agreed with the construction of the building, indicating full support for this initiative. The three alternative locations studied in the construction of this gallery are Location 1 in Taman Mandara (Kacang Padang Village, Gerunggang District), Location 2 in Tampuk Pinangpura, and Location 3 in Tugu Remangok (Jl. Selindung). At Location 1, 67% of stakeholders agreed because this location is the center of community activities, is easily accessible, has a large parking area, and has the potential to be developed. However, 33% of respondents disagreed because they considered this location less strategic for promoting and marketing MSME products.

Meanwhile, at Location 2, 53% of stakeholders agreed because the location is strategic and has good accessibility. In comparison, 47% disagreed because this area is designed as an open space for sports and child-friendly activities. Location 3 received the lowest level of support, with only 27% of respondents agreeing and 73% disagreeing. This location is considered less strategic in terms of traffic and parking. However, a few respondents considered its location on the city border a potential promotional event for IKM.

In addition to stakeholders, an analysis was also conducted on small and medium industry (IKM) actors in Pangkalpinang City. All IKM actors (100%) expressed support for the construction of the Dekranasda Gallery Building and were willing to exhibit their products. However, regarding location, the preferences of IKM actors were divided. At Location 1 (Taman Mandara), 47% agreed, and 53% disagreed. Rejection was generally because the location was considered too far from the city center and lacked access to public transportation. At the same time, support was given because the area was densely populated and had good access. For Location 2 (Tampuk Pinangpura), 60% of IKM actors agreed because it was considered strategic, easy to reach, and crowded with visitors.

In contrast, 40% of respondents expressed disagreement regarding the proposed site due to concerns about its distance and limited accessibility for tourists. The results of the social feasibility analysis indicate that Location 1 and Location 2 each received a preference score of 5, reflecting

an equal level of community support. In comparison, Location 3 obtained the lowest preference score of 2, suggesting it is perceived as the least feasible option from a social perspective (results survey from r. These findings imply that Locations 1 and 2 hold relatively equal potential to be selected as the site for constructing the Dekranasda Gallery Building.

Table 3. Results of Social Analysis of Alternative Development of Dekranasda Gallery Building Location Pangkalpinang City

No	Criteria	Location			Score		
		I	II	III	I	II	III
1	Stakeholder Preferences	10	8	4	3	2	1
2	IKM preferences	7	9	3	2	3	1
Total					**5**	**5**	**2**
Social Priority					**1**	**1**	**3**

Economic Feasibility Study

The economic aspect is an important part of a project feasibility study, which focuses on analyzing financing or financial aspects needed to realize the development plan. In constructing the Dekranasda Gallery Building in Pangkalpinang City, the economic feasibility study includes estimating the costs required from land acquisition to building construction work and supporting facilities. The construction costs in this project reflect the total budget spent to build the building along with the completeness of its supporting infrastructure, which includes land clearing and acquisition work, construction of box culverts (bridges), building structure work, sanitation and clean water installations, electrical installations, fire extinguishing systems, parking areas, and the provision of green space or buffer zones. The construction cost estimate for building construction is based on calculating the volume of work multiplied by the unit price of wages and materials according to local conditions or calculated using Equation (1). The unit price analysis refers to the Indonesian National Standard (SNI) for Unit Price Analysis of Work issued by the Ministry of Public Works and Public Housing.

Table 4. Investment Costs for Construction of Dekranasda Gallery Building Alternative Location I

No	Job description	Unit	Volume	Unit Price (IDR)	Total Price (IDR)
I	Preparatory work				
	1 Land Clearing and Preparation	m^2	3.000	IDR 26.500	IDR 79.500.000
	2 Box Culvert (Bridge)	unit	3	IDR 300.000.000	IDR 900.000.000
	TOTAL I				**IDR 979.500.000**
II	**Construction of the Dekranasda Gallery Building**				
	1 Buildings	m^2	1.000	IDR 7.190.000	IDR 7.190.000.000
	2 Sanitation and Water Installation Works	unit	1	IDR 1.350.000.000	IDR 1.350.000.000
	3 Electrical Installation Work	unit	1	IDR 600.000.000	IDR 600.000.000
	4 Fire Fighting Installation Work	unit	1	IDR 1.000.000.000	IDR 1.000.000.000
	5 Parking	m^2	1.000	IDR 1.500.000	IDR 1.500.000.000
	6 Green Space/Buffer Zone	Ls	1	IDR 500.000.000	IDR 500.000.000
	TOTAL II				**IDR12.140.000.000**
	TOTAL (I+II)				**IDR13.119.500.000**

Table 5. Investment Costs for Construction of Dekranasda Gallery Building Alternative Location II

No	Job description	Unit	Volume	Unit Price (IDR)	Total Price (IDR)
I	**Preparatory work**				
	1 Land Clearing and Preparation	m^2	3.000	IDR 26.500	IDR 79.500.000
	2 Box Culvert (Bridge)	unit	3	IDR 300.000.000	IDR 900.000.000
	TOTAL I				**IDR 979.500.000**
II	**Construction of the Dekranasda Gallery Building**				
	1 Buildings	m^2	1.000	IDR 7.190.000	IDR 7.190.000.000
	2 Sanitation and Water Installation Works	unit	1	IDR1.350.000.000	IDR 1.350.000.000
	3 Electrical Installation Work	unit	1	IDR 600.000.000	IDR 600.000.000
	4 Fire Fighting Installation Work	unit	1	IDR1.000.000.000	IDR 1.000.000.000
	5 Parking	m^2	1.000	IDR 1.500.000	IDR 1.500.000.000
	6 Green Space/Buffer Zone	Ls	1	IDR 500.000.000	IDR 500.000.000
	TOTAL II				**IDR12.140.000.000**
	TOTAL				**IDR13.119.500.000**

Table 6. Investment Costs for Construction of Dekranasda Gallery Building Alternative Location III

No	Job description	Unit	Volume	Unit Price (IDR)	Total Price (IDR)
I	**Preparatory work**				
	1 Land acquisition	m2	3.000	IDR 100.000	IDR 300.000.000
	2 Land Clearing and Preparation	m2	3.000	IDR 26.500	IDR 79.500.000
	3 Box Culvert (Bridge)	unit	3	IDR 300.000.000	IDR 900.000.000
	TOTAL I				**IDR 1.279.500.000**
II	**Construction of the Dekranasda Gallery Building**				
	1 Buildings	m^2	1.000	IDR 7.190.000	IDR 7.190.000.000
	2 Sanitation and Water Installation Works	unit	1	IDR1.350.000.000	IDR 1.350.000.000
	3 Electrical Installation Work	unit	1	IDR 600.000.000	IDR 600.000.000
	4 Fire Fighting Installation Work	unit	1	IDR1.000.000.000	IDR 1.000.000.000
	5 Parking	m^2	1.000	IDR 1.500.000	IDR 1.500.000.000
	6 Green Space/Buffer Zone	Ls	1	IDR 500.000.000	IDR 500.000.000
	TOTAL II				**IDR12.140.000.000**
	TOTAL				**IDR13.419.500.000**

Based on the estimation results (See Tables 4, 5, and 6), the investment cost of the construction of the Dekranasda Gallery Building at alternative location 1 in the Taman Mandara area is estimated at IDR13,119,500,000. This cost consists of preparatory work of IDR979,500,000, which includes land clearing and construction of box culverts, as well as building construction work of IDR12,140,000,000 to finance all structural elements and supporting infrastructure. The exact cost estimate is also applied to alternative location 2 on Jalan Tampuk Pinangpura, with a total investment of IDR13,119,500,000, consisting of preparatory work of IDR979,500,000 and building construction work of IDR12,140,000,000. Meanwhile, alternative location 3, located on Jalan Selindung, has a slightly higher estimated investment cost of

IDR13,419,500,000. This increase was due to additional needs for preparatory work, amounting to Rp1,279,500,000, due to the unnecessary land acquisition process at the two previous locations. Meanwhile, the building construction cost remained at the exact figure of Rp12,140,000,000.

From the analysis, it can be concluded that although the three locations show similar financing structures, alternative location 3 has a larger total investment due to the need for land acquisition. Therefore, the economic aspect is an important basis for selecting the most efficient and financially feasible location for constructing the Pangkalpinang City Dekranasda Gallery Building. This analysis considers the funds needed for land efficiency factors and infrastructure readiness at each alternative location.

Feasibility Study Summary for the Construction of the Dekranasda Gallery Building

Based on the feasibility analysis of three alternative locations for the construction of the Dekranasda Gallery Building (based on Equation 3), the assessment was carried out by considering three main criteria, namely accessibility, land availability, and social and environmental support, each with a weight of 0.3, 0.3, and 0.4. The evaluation results showed that Alternative Location 1 obtained the highest score with a total score of 3.0, followed by Alternative Location 2 with a value of 2.7, and Alternative Location 3 with the lowest score of 1.4. The highest score achieved by Location 1 was mainly attributed to the high value in the social support aspect (0.9), which reflects the strong acceptance of the community towards the building construction plan at that location. Meanwhile, Location 2 has a relatively balanced value but is slightly lower than Location 1, while Location 3 obtained the lowest score on all criteria. Thus, based on this multi-criteria quantitative analysis approach, Location 1 is recommended as the leading choice for constructing the Dekranasda Gallery Building because it is considered the most feasible regarding technical, social, and environmental aspects.

Table 7. Feasibility Study Summary for the Construction of the Dekranasda Gallery Building

No	Feasibility Criteria	Weight	Value			Value x Weight		
			Alt. Location 1	Alt. Location 2	Alt. Location 3	Alt. Location 1	Alt. Location 2	Alt. Location 3
Qualitative Analysis								
1	Social Feasibility	0.2	3	3	1	0.6	0.6	0.2
2	Environmental Feasibility	0.2	3	3	3	0.6	0.6	0.6
Quantitative Analysis								
1	Technical Feasibility	0.3	3	2	1	0.9	0.6	0.3
2	Economic Feasibility	0.3	3	3	1	0.9	0.9	0.3
Total						**3**	**2.7**	**1.4**
Priority						**I**	**II**	**III**

CONCLUSION

The construction of the Pangkalpinang City Dekranasda Gallery Building is planned for three alternative locations spread across several strategic points in the city area. The feasibility study for the development was carried out comprehensively through technical, social, environmental, and economic feasibility analysis to determine the most appropriate and efficient location to support the development of the regional creative economy. The results of the analysis obtained the following conclusions:

1. Alternative Location 1 (Taman Mandara) ranks highest in the assessment. From a technical aspect, this location is on a local road with basic infrastructure such as clean water, electricity, telecommunications, and street lighting, although there is no fire extinguishing infrastructure. From an environmental aspect, the location is in an area designated as a city park, but it is still

considered socially appropriate, with the highest score of 5. Economically, this location has an investment value of IDR 13,929,500,000. Based on all indicators, this location is a priority choice for constructing the Dekranasda Gallery Building.

2. Alternative Location 2 (Tampuk Pinangpura) has pretty good technical characteristics with access from collector roads and the availability of most of the infrastructure but is not yet equipped with a clean water network and fire extinguishers. From a social perspective, this location also received a score of 5, and the investment value required is the same as Location 1, which is IDR 13,929,500,000. Although social and economic scores are equal, this location is still below Location 1 in technical aspects.
3. Alternative Location 3 (Tugu Kepiting) has access to arterial roads and is equipped with clean water and electricity networks. However, there are shortcomings in the availability of fixed telecommunications networks, street lighting, and a relatively long distance from the Integrated Waste Processing Site (TPST). From a social aspect, this location only received a score of 2 and requires a higher investment of IDR 14,229,500,000. Therefore, this location is considered the least optimal compared to the other two alternatives.

Considering all aspects of the analysis, Alternative Location 1 (Mandara Park) is recommended as a priority location for constructing the Pangkalpinang City Dekranasda Gallery Building because it meets technical, environmental, and economic criteria more superiorly than other locations.

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