

## Living Lab Farm Area Building Design

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**Abstract.** *A living lab is an open innovation ecosystem in a real-life environment that uses an iterative feedback process across innovation lifecycle approaches to create sustainable impact. Living lab is an area that is projected to become a field laboratory and workshop center that accommodates all study programs at UNPAB. This area is also planned to become Ecoedutourism. This analysis resulted in the design of supporting buildings in the Al Amin Science and Industrial Park (Living Lab) farm area. The results of this design are expected to be a direction for the development of supporting buildings in the Farm area of Al Amin Science and Industrial Park (Living Lab).*

**Keywords:** *Area, Design, Living lab, Farm*

### INTRODUCTION

A living lab is an open innovation ecosystem in a real-life environment that uses an iterative feedback process across innovation lifecycle approaches to create sustainable impact. Universitas Pembangunan Panca Budi will create an area that is projected to become a center for field laboratories and workshops that accommodate all study programs at UNPAB. The area which is also planned to become Ecoedutourism (Ecoedutourism) will be named Al Amin Science and Industrial Park (Living Lab).

Farm Area is an area specifically intended for themed activities or integrated as a component of farming (based on food crops, plantations, horticulture or fisheries) and integrated as a component of certain ecosystems (protected forest areas, nature reserves). The development of the theme area must pay attention to the optimization of local resources and regional development policy strategies. In this case, the local

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government maps the development of the theme into existing areas, so that when in the development of the theme. In an area found a type of production that plays an important role, then the Regional Government can specialize in only one type of commodity. However, regions can also choose types of commodities that are currently empty, have not shown production activities, but have great market potential in the future.

This study is important to carry out in order to be able to compile a plan for the development of supporting buildings in the Farm area of Al Amin Science and Industrial Park (Living Lab) with a systematic, efficient, and targeted planning and design scenario. The hypothesis in this study is the potential for the design site as the development of a typology of supporting buildings in the Al Amin Science and Industrial Park (Living Lab) Farm area.

## **LITERATURE REVIEW**

There is non-productive land owned by the Prof. Dr. H Kadirun Yahya Foundation in the Glugur Rimbun area of 20 ha, in order to change the land to be more productive, UNPAB is currently building a use plan for 10 ha and is expected to cultivate all 20 ha of the land. In this planning, UNPAB involves all study programs (study programs) in its nature. Basic Concepts The land development meets the needs of UNPAB's learning, practicum, research and innovation center which can become an income generator.

Al Amin Science and Industrial Park (Living Lab) has 4 main themes: 1. Tri Dharma of Higher Education UNPAB 2. Eco-Tech-Edu Tours 3. Fitrah (Islamic) based education 4. Economic mutualism symbiosis Therefore, Al Amin Science and Industrial Park (Living Lab) have rooms and activities that are mutually sustainable internally and externally. Tri Dharma of Higher Education UNPAB Tri Dharma PT has 3 points, namely Education and Teaching, Research and Development, and Community Service.

The existence of 20 ha of land owned by the Prof. DR H Kadirun Yahya Foundation, it is hoped that UNPAB can develop a Living lab ecosystem at least on 10 ha of land. Al Amin Science and Industrial Park (Living Lab) is expected not to be exclusive as tourist areas in general, with the concept of CED, Al Amin Science and Industrial Park (Living Lab) will not only help become an income generator & source of

educational land for the academic community, but also help the welfare of the village and the surrounding community. The idea of the Room Room at Al Amin Science and Industrial Park (Living Lab) is divided into several areas according to their activities and functions.

## **RESEARCH METHOD**

The material of this study is the location of the site in Sampe cita Village, Kutalimbaru District, Deli Serdang Regency, the needs of the academic community of Panca Budi Development University for research land and the potential for regional development as a tourist facility, in this case the Farm Area Supporting Building as a Living Lab of the Animal Husbandry Study Program, Panca Budi Development University. This study is a qualitative descriptive analysis. Data collection techniques are with a qualitative approach, so the data collection techniques used by the author in this study include: (1) interviews, (2) literature studies, (3) field observations, (4) documentation, (5) data validation, (6) data analysis.

## **FINDINGS AND DUSCUSSION**

The development of land that is the object of research is to meet the needs of learning, practicum, research and UNPAB innovation center which can become an income generator. Therefore, PSE-GR has rooms and activities that are mutually sustainable internally and externally. This is aligned with the understanding of UNPAB Living Lab which adheres to the concept of circular economy education based on Islamic and humanitarian values. PSE-GR Development Opportunities Areas with the Eco-Tech-Edu Tourism concept that has an understanding of circular economy education (CED) are still very minimal in SUMUT, PSE-GR can be a pioneer in spreading this CED understanding where there is an integration of economic and educational activities that at the same time help preserve nature.

### **1. Eco-Tech-Edu Tourism**

Eco-Tech-Edu Tourism The combination and integration of learning across programs that are applicative is expected to be part of PSE-GR educational tours for general visitors. Apart from being a place of entertainment, visitors will be shown and

can interact with learning objects so as to understand that technological, educational, and economic developments can take place without leaving religious, spiritual, cultural, and natural sustainability values. agriculture, to the creation of a reflection of an independent ecosystem.

## 2. Education based on Fitrah (Islam)

Education based on Fitrah (Islam) UNPAB with its pearls of wisdom which aims as a place for human spiritual training will include religious values in all its activities. The concept of halal and tayyib in education, agriculture and animal husbandry.

## 3. Economic Symbiosis Mutualism

Economic Symbiosis Mutualism Economic Symbiosis Mutualism in this case is the participation of the role of the surrounding community in UNPAB Tri Dharma activities through cooperation with villages and surrounding communities.

The existence of 20 ha of land owned by the Prof. DR H Kadirun Yahya Foundation, it is hoped that UNPAB can develop a Living lab ecosystem on the land. PSE-GR is expected not to be exclusive like tourist areas in general, with the concept of CED, PSE-GR will not only help become an income generator & source of educational land for the academic community, but also help the welfare of the village and surrounding communities.

## 4. The Activities Plan

To accommodate the planning of activities in the development of AL-AMIN SCIENCE & Industrial Park (living lab), the space needs that must be accommodated are divided into several areas according to their function activities, as shown in the following table:

**Table 1. The Activities Plan and Its Functions**

Area	Space requirements	
Welcome area	Information centre	Parking
	Gate	Landscaping garden
Rest area	Cafe & restaurant	Marketplace, Product gallery
	Office	Mosque
	Toilet	Garden
Service area, Office &	Generator	Reservoir air

Administrative Area	Garbage bank & hygiene	Control room & security
	Boarding house	Amenities
Educational area research, Workshop & production area	Hall	Museum
	Workshop	Laboratory
	Production & packaging room	
Public recreational area	Camping ground & Picnic area	River tourism
	Outbond & outdoor playground	
Agro-wisata	Agriculture	Animal husbandry
	Processing of production products	Packaging of production
	Waste	

Source: Al Amin Science and Industrial Park (Living Lab)

### 5. The Zoning Concept

The space needs are allocated to development zones as seen in the illustration of the zoning concept planning area below:



**Figure 1. The Zoning Concept of Al-amin Science And Industrial Park Area**

where:

- |   |                                       |
|---|---------------------------------------|
| A. Reception zone, sports centre, and<br>rusunawa | E. Farm Zone                          |
| B. Product Processing Zone and<br>Marketplace     | F. Nature Zone and Outdoor Recreation |
| C. Main Plaza Zone and Area<br>Management Office  | G. Service Zone                       |
| D. Agricultural and plantation zones              | H. Al-Amin Mosque zone                |

## 6. The Al Amin Living Lab and Industrial Park

Based on the general plan of the Al Amin Living Lab and Industrial Park Area, the location for the development of the Farm area was obtained, namely in zone E.



**Figure 2. The farm zone**

The direction for the development of the Al Amin Living Lab Farm Area and Industrial Park meets the following criteria:

1. Have minimum facilities and infrastructure Management Building and Laboratory, Warehouse and Animal Feed Processing, Slaughterhouse, Goat Shed, Cowshed, Chicken and Rabbit Coop, Biodigester, Grazing Area, and Animal Feed Planting Land.
2. The design of the 1-2 storey building with a tropical concept is in accordance with the climate at the design site.
3. The design of animal cages is adjusted to applicable standards, both in terms of design models and material selection.
4. Have grazing area and planting area of adequate animal feed land.
5. Circulation in the area is in accordance with applicable standards, so it is safe for Farm and area managers.

## CONCLUSION AND RECOMMENDATION

The Al Amin Living Lab Farm area will be able to be used by the academic community of Universitas Pembangunan Panca Budi as a means of research and teaching, besides that it can be a model for other farmers, especially those around the location. Therefore, the construction of buildings and Farm areas is expected to follow well the design results of this study, namely in accordance with applicable Farm

building standards. Detail landscape design of the Al Amin Living Lab and Industrial Park Farm area to be continued and developed on further research.

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