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## Application Idealized Of Space Elements In Eco-Cultural Concepts In Building Design

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**ABSTRACT:-** Building design activities will never be separated from the negative impacts that will arise and have the potential to damage nature. The result of this negative impact is the pollution of the environment and the threat to a region's identity which is also a problem due to the phenomenon of globalization which can shift the artistic elements of a region. Therefore, there is a need for buildings that can maintain and enhance the natural potential and authenticity of the characteristics of a region by highlighting elements of the idealized concept of space from the Eco Cultural approach. The aim of this research is to provide a kind of design guideline for how the idealized concept of space is applied to a particular local context and in this case the local context is Labuan Bajo as a tourist area that must be developed as a culturally rich tourist destination. The research methods used are literature study and precedent review, namely using ten precedents to compare the idealized elements of space listed on buildings so that they can be analyzed and concluded. Implementation of the physical components of Idealized Concept of Space architecture in the context of Labuan Bajo includes the use of physical characteristics, among others: spatial layout, mass form, roof, structure, materials, and environmental conditioning system.

**Keywords:-** Eco Cultural, Idealized Concept of Space, Labuan Bajo

### I. INTRODUCTION

Progress can take the form of changes that cover the entire social framework, such as legislative issues, financial issues, framework, defense, teaching and innovation, education and culture (Alexander 1994). Portes (1976) clarified that improvement is financial, social and cultural change. Basically, progress is often interpreted as an effort to make changes in a better direction, so it can be said that progress can cause growth such as improvement or expansion or advancement of activities carried out by a society. [1] An editorial entitled "Constructive Rebellion: How Environment and Wellbeing Concerns Are Changing Development," compiled by Dafid Rodman and Nicolas Lesson (Worldwatch Paper 124, Washington, DC., Walk 1996) says that the development of the built environment has an influence on utilization of shared assets. The human-made environment absorbs 1/6 of the world's water resources, absorbs 1/4 of the world's timber output, and 2/5 of the world's raw materials and energy.[2]

The negative impacts of improving the built environment are very diverse, including increased pollution of public assets such as land, water and land. Apart from that, there is also deforestation without replanting and mining of natural assets which are all excavated, causing disruption of the environmental balance on the land. This miracle has encouraged various advances in the world of design, so that the concept of biological building improvement was born which pays attention to the adjustment of the normal environment and the artificial environment between the environment, humans and buildings. This is what makes it important to achieve progress that applies environmental concepts to minimize the negative impact of construction on the environment.[3]

Apart from harmony between buildings and the environment, local wisdom is also needed in monitoring and utilizing all the potential that exists in certain assets as well as overcoming problems that exist in the built environment.[4] Compositionally, traditional houses display efforts to adapt to their environment, so that their area, direction and shape are very harmonious while maintaining the rules and traditions of their

predecessors' social heritage (Sumintarja; 1978). Various local wisdom points of view are associated with buildings as an effort to reduce negative impacts in structuring the built environment and with this application, local technology will continue to be preserved and can become a gathering place for the culture and habits of environmental communities.[5]

### **Ecology in Architecture**

The environmental concept can be in the form of the concept of nature conservation by exploiting the potential of natural wealth and utilizing innovation in progress to form natural, social and financial carrying capacity in the implementation of development. Environmental design according to Metallinou (2006) is a building plan that emphasizes care in choosing a building plan concept that pays attention to the importance of environmental sustainability in nature. This concept is expected to be able to protect nature from damage due to repairs.[6]

Environmental design will be carried out if the arrangement and development prepares general concepts of employment as the basis for the plan. An engineering approach that combines nature and innovation, especially utilizing nature as a basis for planning and protecting natural assets as an effort to improve the environment, can be applied in all forms to create building frameworks.[7]

Environmental engineering is concerned with environmental characteristics and limited characteristic assets. In general, bioengineering can be defined as creating an environment that costs less and produces a greater richness of characteristics. Design cannot avoid activities that damage the environment, however biological engineering can be described as engineering that needs to damage the environment as little as possible. To achieve the plan, the plan was created taking into account the climate point of view, supply chain and lifespan of building materials. The main guideline of ecological architecture is to create agreement between humans and their normal environment.[8]

Biological planning creates green buildings which, according to Brenda and Robert Vale (1996), have the following standards:

1. Save energy

Running a building as little as possible uses energy sources that are scarce or require a long time to produce again.

2. Utilize natural conditions and energy sources

Through a sustainable architecture approach, buildings adjust and adapt to the climate, environment and surrounding conditions during planning, construction and operation.

3. Respond to the condition of the building site

Planning refers to the interaction between the building and the site. This means that the existence of the building, both in terms of construction, shape and operation of the building, does not damage the surrounding environment. So that if the building is no longer used, the original site will still be there and not changed much.

4. Pay attention to building users

When designing a building, all building users must take into account and meet the needs, health and comfort of building users.

5. Minimize new resources

A building should be designed to optimize existing materials and not be harmful to the ecosystem by minimizing the use of new materials, where at the end of the building's life it can be reused to form another architectural structure.

6. Holistic

A building must have an idea that states that the system of the universe, whether physical, chemical, biological, social, economic, mental-psychological and linguistic as well as all its accessories, must be viewed as a whole and not a unity of separate parts. [9]

In writings related to sustainable architecture, there is evidence that many projects related to sustainable themes in architecture experience obstacles due to the dominance of qualitative assessments in the plans carried out. As time goes by, Guy and Farmer said that rather than postulating universal issues, it would be more effective if sustainable architecture was directed at regional issues and local culture as important dimensions of sustainability. Various ideas stating that a building being offered is a building that uses a sustainable concept needs to be stronger and more fully connected to the concept of region and place. The regional dimensions that are important in the practice of sustainable architecture must be clearly emerged. At a more strategic level, procurement of locally available materials and regional development practices will be more profitable if it considers workforce skills to reduce the negative impact of the ecological footprint on construction projects.

There is evidence in writings about sustainable architecture that many projects related to sustainable issues in architecture encounter many obstacles due to the dominance of qualitative evaluation in the planning carried out.

As time goes by, Guy and Farmer believe that rather than sustainable architecture that addresses universal issues, it would be more effective to focus on local issues and local culture as an important aspect of sustainability. It is also believed that the buildings provided must be in line with the concept of sustainability to be increasingly connected to the concept of area and place.

There is also a need to clearly identify regional aspects that are important in sustainable development practices. At a more strategic level, procurement of locally available materials and community development practices will be more beneficial when workforce skills are also taken into account to reduce the negative impact of the environmental footprint on construction projects.[10]

**Eco Culture in Architecture**

The eco-cultural approach is one of the sustainable engineering angles that prioritizes ecologically friendly innovation standards and still includes the closest culture as the closest personality. The eco-cultural concept can be a combination of biological and social perspectives that can coordinate ecotourism as an economic framework for characteristic resource-based tourism (Cajee, 2014) [11]

The use of environmental intelligence in planned buildings will be an illustration of progress in society's social understanding and if seen from the form and work of conventional engineering it can be used as a concept that can emphasize the character of the surrounding environment. Within the scope of design there are also physical and social perspectives which are components in determining the characteristics and character of each building.[12] Therefore, development that includes local cultural and biological planning approaches is an effort to protect local culture in Indonesia from the dangers of globalization and provide education for those who do not pay attention to the social components of society. . This concept includes a view of building models that considers the adjustment between general situations and false situations that are interrelated between the environment, buildings and humans. The rule for realizing buildings that are adapted to the physical and social characteristics of the surrounding environment or it could be said that the Idealization Concept is one of five eco-culture standards that are in line with the social setting and natural climate so that buildings have distinctive characteristics. Relationship with the surrounding area.[13]

The Eco Cultural Approach is interpreted by Guy and Farmer (2010) from sustainable architecture with The Six Competing Logics of Sustainable Architecture. The following are eco-culture design elements that combine Guy and Farmer's design criteria and eco-culture ideas:

Image of space, defined as the impression of space in its formation, includes the building's layout, which includes cultural and regional context.

Source of environmental knowledge, studying natural and environmental phenomena to get to know local culture, which includes Phenomenology and Cultural ecology.

Buildings image, or building image with the identity and visual impression of the building, which includes Harmonious, Authentic and Typological.

Technology, is science related to creations, methods and materials related to society and the environment, which includes Local, Low-Tech and commonplace (ordinary, simplicity) and vernacular Idealized Concept of Place, sustainable relationship with the surrounding environment and culture, buildings that adapt to local regional physical and bio-cultural characteristics.[14]

Apart from the criteria above, there are also several understandings and design principles that use the Eco-Culture concept as described in table 1.

**Table 1. description of design principles using the Eco-Culture concept.**

	<b>Guy Farmer</b>	<b>Frick, H., Suskiyatno, B., (1998)</b>	<b>Wijaksono et al (2017)</b>	<b>Qtaishat, Adeyeye, &amp; Emmitt (2020)</b>	<b>conclusion</b>
Image of Space	Regional cultural context	Adapt the design to local conditions	Reflecting and expressing indigenous culture	Site and Context,	Adapting the design to the cultural context and local conditions
source of environmental knowledge	Cultural Ecology Phenomenology		Preserving buildings with existing heritage value	Comfortable indoor environment,	Maintaining buildings with local culture and conditions
buildings image	Typology of Authentic	-	The form was built by connecting the	Social, Cultural and	The form is built by connecting

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	<b>Guy Farmer</b>	<b>Frick, H., Suskiyatno, B., (1998)</b>	<b>Wijaksono et al (2017)</b>	<b>Qtaishat, Adeyeye, &amp; Emmit (2020)</b>	<b>conclusion</b>
	Harmony		social and economic activities of the local community	Perceptual Relations, Flexibility and adaptability,	social, economic, cultural activities and adaptability
technology	low tech	Self-help concept			Low-tech and self-sufficient concept
Idealized Concept of Place	local & bioregional physical and cultural characteristics	Save natural energy sources, maintain and improve environmental systems	-	Energy and resource efficiency,	buildings that adapt to local physical and cultural characteristics and carry out energy efficiency by maximizing natural resources.

(source : Implementation of Local Wisdom on the Roofs of Commercial Hotel Buildings in Cirebon City, Jakarta, Agus Saladin,2018 )

Synthesis results based on architectural design guidelines with an eco-culture concept show that buildings with an eco-culture concept must adapt to regulations and the surrounding cultural context, energy and resource efficiency, selection of physical and non-physical building characters based on local culture and the environment and sustainable buildings. .

One of the important concepts of eco culture is the idealized concept of space. The Idealized Concept of Place element emphasizes buildings that are adapted to local regional physical and biocultural characteristics. The Idealized Concept of Place is in line with the cultural context and environmental climate so that it will carry out designs that have a connection with the surrounding area. The main idea is that sustainable buildings need to be more connected to locality and place. This approach focuses on the environment and revives cultural concepts of housing, there is continuity between tradition and the local environment. In this situation, the plan must maintain the personality of a range by considering the existing structure including design, people's way of life, and social issues. [15]

The problem that arises is that there is still a need to think about evidence of differentiating criteria for the Ideal Space Concept approach in building plans which can then be used as floor plan rules. The hope is that there is some kind of design guideline for how the idealized concept of space is applied to a particular local context and in this case the local context is Labuan Bajo as a tourist area that must be developed as a culturally rich tourist destination.

This investigation aims to reflect on the extent to which biological and social concepts from a physical point of view are connected in building plans, in the future improvements will not only prioritize aesthetics at the expense of craftsmanship, but will also be responsive to the surrounding environment. and maintain nearby engineering maintenance. Based on the basis that has been explained, the questions asked are:

1. What components are applied to buildings in accordance with the Idealized Of Space concept in Eco Culture principles?
2. What are the design principles for an idealized concept of space in general?
3. How can the idealized concept of space be applied to the Labuan Bajo context?

It is important to continue and develop local architectural culture. This is because tradition is the spirit of a culture and without tradition it is impossible for a culture to live and last (Artininggrum, 2012). The disappearance of local architecture can also be caused by the world of education which still applies knowledge about western architecture compared to the application of traditional architecture so that local architectural works are less popular and known to the public.

Culture does not have to repeat itself in the same way so that it can eliminate creativity. However, you can use the character of local wisdom as a concept in designing by applying new forms and methods and using more modern materials. [15]

Local wisdom is knowledge that comes from cultural values in utilizing natural resources wisely in various aspects of life. There are two categories, namely physical and non-physical wisdom. Non-physical local wisdom is an embodiment of cultural values and is related to natural resources. Physical local wisdom is related to the physical nature of traditional architecture, which includes the spatial and environmental layout, the shape

of the building mass, the structure and construction of the building, the materials used, and the ornaments applied. [16]

**Table 2. Principles of local wisdom in traditional architecture.**

Traditional Architecture	Implementation (Physical)	Spatial planning and environment, mass form, structure and construction, ornaments, building materials which are the implementation of local wisdom
	Local Wisdom (Non-Physical)	Cultural values, cosmology, mythology, understanding of natural resources will then become the physical embodiment of traditional architecture

(Source: Implementation of Local Wisdom on the Roofs of Commercial Hotel Buildings in Cirebon City, Jakarta, Agus Saladin,2018 )

After obtaining the physical implementation components of the building based on local wisdom principles of traditional architecture, the physical characteristics are combined with the results of the synthesis of eco culture principles so that it will produce physical components that have been adapted to the Eco Culture approach.

**Table 3. Identification of Physical Implementation Characters in the Idealized Concept of Space**

Physical Components	Indicators based on Eco Culture
Spatial	Spatial planning to accommodate community economic activities.
Mass Form	-Building form design based on regional design adaptation -Spatial planning and mass are based on the concept of community trust
Roof	The shape of the roof is an adaptation of the traditional roof of the local community
Material	Use of local, environmentally friendly materials according to context studies and literature review.
Environmental conditioning system	Maintenance and repair of environmental systems

(Source: author's conclusion)

After obtaining criteria from physical implementation that have been adjusted to the idealized concept of space, this component will become a reference when looking at precedents.

## II. METHODS OF RESEARCH

The research method used is precedent review, which uses ten precedents to compare idealized elements of space listed on buildings so that they can be analyzed and concluded. This method aims to provide an overview of the architectural aspects embedded in the building according to its physical characteristics such as spatial layout, mass form, roof, materials and environmental conditioning systems. In this research, researchers obtained information from literature reviews, such as collecting various reading journal references, combining them, and concluding several important points from the journals obtained so that they could be included in the research report.











Through literature studies and precedent reviews, the discussion of this research will then be represented through tables by organizing it, categorizing it into accurate data, combining it to look for patterns to find, understanding what is important to learn, and what can be informed to other people. From there, the synthesis can be formed according to the values that appear most frequently and can provide results that can be used as design guidelines for building development using an idealized concept of space element approach.



**III. RESULTS AND DISCUSSION**

To be able to analyze the criteria in the idealized concept of space, the first step is to describe the precedent and prepare an explanation of the criteria that the precedent has applied to the physical character components that have been analyzed previously. as shown in the following table:

**Tabel 4. Precedent review**

Precedent Review				
 <p>Fig 1. Jean-Marie Tjibaou Cultural Center (Image source : <a href="https://www.archdaily.com/600641/ad-classics-centre-culturel-jean-marie-tjibaou-renzo-piano">https://www.archdaily.com/600641/ad-classics-centre-culturel-jean-marie-tjibaou-renzo-piano</a>)</p>	 <p>Fig 2. Casablanca Residence (Image source : <a href="https://www.archdaily.com/874030/casablanca-residence-budi-pradono-architects?ad_source=search&amp;ad_medium=projects_tab">https://www.archdaily.com/874030/casablanca-residence-budi-pradono-architects?ad_source=search&amp;ad_medium=projects_tab</a>)</p>	 <p>Fig 3. House of Millipedes (Image source : <a href="https://iopscience.iop.org/article/10.1088/1755-1315/907/1/012018">https://iopscience.iop.org/article/10.1088/1755-1315/907/1/012018</a>)</p>	 <p>Fig 4. Pendar Base Tan Fish (PPI) Kalianda Lampung (Image source : <a href="https://journal.univpancasila.ac.id/index.php/hierarchi/article/view/3749/2197">https://journal.univpancasila.ac.id/index.php/hierarchi/article/view/3749/2197</a>)</p>	 <p>Fig 5. Eko Prawoto Modern House (Image source : <a href="https://iopscience.iop.org/article/10.1088/1755-1315/1169/1/012051/pdf">https://iopscience.iop.org/article/10.1088/1755-1315/1169/1/012051/pdf</a>)</p>
 <p>Fig 6. Alila Manggis Hotel, Bali (Image source : <a href="http://ejournal.universitasmahendradatta.ac.id/index.php/vastuwidya/article/view/403/332">http://ejournal.universitasmahendradatta.ac.id/index.php/vastuwidya/article/view/403/332</a>)</p>	 <p>Fig 7. Rumoh Aceh (Image source : <a href="https://media.neliti.com/media/publications/265311-kajian-kearifan-lokal-pada-arsitektur-tr-9a637c6d.pdf">https://media.neliti.com/media/publications/265311-kajian-kearifan-lokal-pada-arsitektur-tr-9a637c6d.pdf</a>)</p>	 <p>Fig 8. Post-Disaster Housing in Yogyakarta (Image source : <a href="https://www.journal.unwira.ac.id/index.php/ARTEK/article/view/46/28">https://www.journal.unwira.ac.id/index.php/ARTEK/article/view/46/28</a>)</p>	 <p>Fig 9. Kaliandra Sejati Nature and Cultural Education Center in Pasuruan, East Java (Image source : <a href="https://ojs.petra.ac.id/ojsnew/index.php/int/article/view/19364">https://ojs.petra.ac.id/ojsnew/index.php/int/article/view/19364</a>)</p>	 <p>Fig 10. Naga Village Traditional House, Lake Malaya (Image source : <a href="https://pro.unitri.ac.id/index.php/sentikuin/article/view/97">https://pro.unitri.ac.id/index.php/sentikuin/article/view/97</a>)</p>

(Source: author's conclusion)

After obtaining a precedent using an ecological and cultural approach, the next step is to identify idealized elements of space based on the implementation of the physical characteristics that have been implemented as shown in table 5.

**Table 5. Implementation of Precedent Physical Characteristics**

Building Typology	Idealized Architectural Components of Space					
	Spatial	Mass Form	Roof	Structure	Material	Environmental conditioning system



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Jean-Marie Tjibaou Cultural Center	the interconnection of building masses, which are arranged in a layout similar to the grand allée plan in traditional Kanak villages	The shell shape is taken to incorporate traditional construction. The mass is taken from one of the traditional house forms from the Caledonia region itself which is then modified with modern structures.	The curved roof structure acts as a double skin, where air circulation is free.	For mass formed from wooden structures. The facade of this building uses double skin. Meanwhile, the roof also uses a double roof.	Materials: wood, iron,	Passive ventilation eliminates the need for air conditioning, making the air supply clean and natural within the building
Casablanka Residence	Applying the Tri Mandala concept, this concept is a Balinese architectural concept that depicts three realms by forming them into three different masses or areas.	Applying regional design adaptations to traditional concepts so that each space and its placement has meaning and does not just have a function.  The mass composition pattern also relies on the Swastika pattern as a pattern taken from Balinese patterns.	The pure triangular roof shape of the main Casablanka residence building is made of bamboo and glass which functions as a source of natural lighting	The combination structure is made from local bamboo, concrete and steel materials as the main structural columns of the building	Wood, concrete, brick, glass and bamboo materials,  The floor covering materials used are cement tiles made by local people and key tiles which are tile crafts from Java that were used or famous in the 1930s.	dampen the hot weather with brick walls  The entire mass of the building must be built as open as possible so that the entire space is actually only limited by the floating floor so that natural breeze can enter freely.
House of Millipedes	fireplace elements on the left and right sides of the building. The presence of a fireplace does not immediately cause smoke to fill the interior of the building, so sleep with your feet near the fireplace to warm your feet.	The shape of the building is geometric with a rectangular, shaped shape stage, and consists of the head (roof), body (walls and floor), and feet (foundation).  Pattern Community settlements are spread across the mountain slopes and forests that surround the hills.	The roof is gable-shaped with a slope of 35 degrees and covered with alang alang	The construction of roofs, walls and column structures uses wood materials to harmonize with nature	Wood material, alang alang roof material, wood	utilize the climate for the ventilation system and lighting. The horizontal and vertical ventilation system in the Thousand Feet House produces thermal comfort in the spaces inside  Logging is permitted if they have planted wood in the forest as a replacement for felled wood. Goal of the process This logging is to protect the land from erosion or landslides

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<p>Pendara Base Tan Fish (PPI) Kalianda Lampung</p>	<p>-</p>	<p>The shape is taken from traditional house buildings local area, where the characteristics of the building are has a front pole as a support.</p>	<p>The roof of a building is equipped with a ridge tip which is centered on a central point at the top and normal Yes, it's made of wood</p>	<p>Light steel elements as a frame structure the roof is clearly visible on the Fish Market building</p>	<p>brick wall materials designed as half walls, metal tiles, bamboo</p>	<p>System Green (RTH) in the form of trees such as coconut, palm, and herbaceous plants as cooling in the PPI area. Apart from that, this effort can also be done produces good groundwater</p> <p>Efforts made through an ecological approach using dirty water waste filtered first with application Management Installation system only Waste Water</p>
<p>Eko Prawoto Modern House</p>	<p>-</p>	<p>The shape of the composition is rectangular with walls as a transition from outside to inside through building materials.</p>	<p>A tropical style roof that has material roof supports with a curved shape in accordance with Yogyakarta culture</p>	<p>The base floor is a heavy structure and made of concrete. The upper structure is a wooden structure supported by strong concrete material.</p>	<p>Concrete, stone, wood, brick</p>	<p>The large windows do not touch the ceiling but there is a gap for air to enter,</p> <p>The building follows the site so there are different heights</p>
<p>Alila Manggis Hotel, Bali</p>	<p>The central open space of the hotel, in the form of a garden and swimming pool, becomes the central space that ties together all the surrounding building masses. The spatial orientation with a tropical regionalism design also takes advantage of the potential of the site which has</p>	<p>The compositions tend to be elongated with gable roofs and shapes Windows are made wide to save energy use. The vertical height of the building should not exceed the height of the coconut tree</p>	<p>Most hotel building roofs have gable roofs, as a form of adaptation to the environment</p>	<p>The building was made by combining the concepts of "saka" and "canggahwang" from local wood materials which were then combined with concrete, so that it can support the roof over the Eid span, without using heavy steel</p>	<p>Wall materials made of red brick, wooden partitions,</p>	<p>conservation of natural vegetation, and the existence of large open spaces. Energy efficiency with roof ventilation and wide openings. Processing waste water independently as a form of water conservation and environmental sustainability.</p>

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	views of the open ocean on the southeast side					
Rumoh Aceh	Rumoh Aceh has an interior room and interior which is a unit that accommodates the needs of the owner. Indoor and outdoor spaces are connected through the flow/sequence of the daily activities of the Acehnese people.	The shape of the Aceh rumoh is a symmetrical rectangular stilt house with a gable roof. The height of the house is obtained from ½ times the height of the stage/column of the house.	Gable roof faces east and west. The top of the house is the room under the roof which is called para. These are used to store items. These are found in the east and west parts of the house. The shape protrudes forward through the body of the house.	In general, the structure of an Acehnese house is a stilt house structure. Where the construction method uses a knock down or disassembled construction method. This roof structure is a light roof structure because the material is light.	Wood, boards, bamboo, palm fiber rope, thatch leaves/coconut leaves, stones	This ornamentation is not only for beauty but also for ventilation (cross ventilation, because there are two opposite sides of the house) and to let in sunlight.  Openings in Acehnese houses are found on each side of the wall but in different numbers. The north south side has more openings compared to the east west side.
Post-Disaster Housing Yogyakarta	Using the existing village system that has formed naturally	Using local architectural forms with village roof types. Each family's space needs are accommodated in different designs but according to modules	The post-disaster relief shelter design proposed and then agreed upon by the Ngibikan village community is a design residence with a Kampung type roof or what is usually called 'Srotongan' by the local community. This form is the original form of residence	The house was designed using coconut wood frames which are often found in this area and wood remains from old houses which can still be used.	The use of local materials also encourages people to preserve material sources such as local trees that produce wood or bamboo	This residence in Ngibikan village was built on the ruins of an old house. Apart from making land ownership easier, it also aims to maintain green space
Kaliandra Sejati Nature and Cultural Education Center in Pasuruan, East Java	The site of the Nature and Culture Education Center from its space-building organization adopts the structure of a traditional Javanese village. The feel of a	traditional buildings with Javanese (and Indonesian) nuances. The forms of Joglo used in the Kaliandra area are varied, starting from Central Java, Kudus, East Java, Mataraman, and so on which are	Joglo roof type	The structure uses wood and brick	Even though it is dominated by wood, the type is chosen based on its availability in nature. The brick material is exposed and arranged in a way that is reminiscent of the architecture of	The building design is open, all existing building units use natural ventilation, so that users can enjoy breathing in the cool air without temperature control (AC). The bathroom also gets a touch

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	Javanese village can also be seen in the architectural style of each building unit which adopts Javanese culture with a mixture of Indonesian culture. In Kampoeng Hastinapura, the space-building organization is designed to follow the contour of the land on the slopes of Mount Arjuna	made with modern construction and context.			Majapahit temples.	of openness. Electricity still uses state services, with minimal use.
Naga Village Traditional House, Lake Malaya	The arrangement of traditional houses has a parallel / linear pattern by following the contour pattern of the land with swales so that one house and another house have different heights and are limited by sheet piles or stones arranged as retaining walls. The location of the houses is close to one another with a distance of approximately 2-4 meters.	The mass of this traditional house building forms a cube with a simple spatial layout, the entrance is located in front and next to the kitchen door. The building facade uses natural materials from woven bamboo	The shape of the roof of Suhunan is straight (Suhunan Jolopong). Jolopong means lying straight, which can be interpreted as a gable roof shape. The two roofs are separated by a thermal path. The roof covering uses elongated palm fibers called Suhunan Panjang	Structurally, this house is a house on stilts but it is not as tall as stilt houses in general, the height is approximately 1 meter	River stone, these walls use gedhek (Sundanese booths/woven bamboo), albasia or jaro wood, wooden floors, wooden frame roofs	Natural lighting and ventilation is formed by the layout/orientation of the house as well as the shape of the house on stilts and the materials used. b. Natural water management without using groundwater, water obtained from springs at the highest elevation, the drainage system is quite simple without using dangerous materials and techniques that are detrimental to the environment.

After analyzing the implementation of the physical characteristics of the precedents found, the next stage is to look for the most common criteria applied by the precedents. Most results are displayed using percentages as shown in the following table.

**Table 6. Conclusion on the application of idealized components of space**

***Application Idealized Of Space Elements In Eco-Cultural Concepts In Building Design***


No	Idealized Architectural Components of Space	Application of Idealized Architectural Components of Space to 10 precedents	Percentage Application to precedent
1	Spatial	Using the existing system of regional traditional houses that have formed naturally	60% of precedent applications
2	Mass Form	The mass was formed from the shape of a regional traditional house which was then modified with modern structures.	50% of precedent applications
3	Roof	Have a roof that suits local culture with sustainable materials	70% of precedent applications
4	Structure	The combination structure is made from local materials and concrete materials, and steel as the main structural columns of the building	50% of precedent applications
5	Material	Local materials such as wood, concrete, brick, glass and bamboo	100% of precedent application
6	Environmental conditioning system	Energy efficiency with natural ventilation and water treatment Waste independently	70% of precedent applications

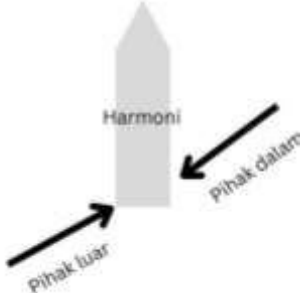

(Source: Author's Analysis)

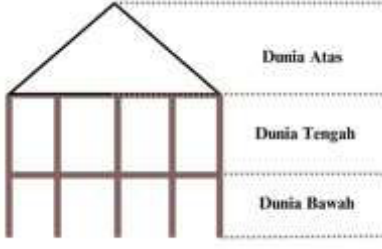

Implementation of the physical components of the Idealized Concept of space architecture in the table above concludes that there are 60% of precedents that apply spatial planning by taking elements of existing regional traditional houses, 50% that apply mass forms taken from traditional houses and then modify them with modern forms, 70% that using roofs that match traditional houses with sustainable materials, 50% using a combination structure made from local materials and other materials, 100% using natural materials such as wood or bamboo, and 70% implementing energy efficiency by using natural ventilation.



After knowing the physical components of the Idealized Concept of space architecture, in the Labuan Bajo context it must be connected to the local culture that applies in the area. There are many physical cultural values.

**Table 7. Implementation of the Idealized Concept of Space in Labuan Bajo**

No	Idealized Architectural Components of Space	Conclusion on the application of Idealized Architectural Components of Space	Application to Labuan Bajo
1	Spatial	Using the existing system of regional traditional houses that have formed naturally	

			<p>(source: redrawn from Studi Makna dan Ruang dalam Hunian Tradisional Manggarai, Flores Nusa Tenggara Timur, Yogyakarta)</p>  <p>(source: redrawn from Studi Makna dan Ruang dalam Hunian Tradisional Manggarai, Flores Nusa Tenggara Timur, Yogyakarta)</p> <p>The Kampung pattern was formed in Wae Rebo village where the position of the Compang (ancestral grave) itself is a harmonious value in the dualism that exists between vertical and horizontal, experiencing harmony in the middle value element in the form of Compang or in other words the existence of their ancestors.</p> <p>The belief in dualism is that there is a value of harmony located in the middle with a symbolic form in the form of a main pillar (Siri Hunchback) in the space pattern and a grave altar (Compang) in the village pattern. This then forms a picture of the expression between cosmology and residential patterns.</p>
2	Mass Form	The mass was formed from the shape of a regional traditional house which was then modified with modern structures.	 <p>(source: <a href="https://rumahcepatbangun.com/informasi/rumah-suku-bajo">https://rumahcepatbangun.com/informasi/rumah-suku-bajo</a> )</p>

			 <p>(source: redrawn from Wujud Kearifan Lokal Masyarakat Suku Bajo Terhadap Orientasi Bangunan Pemukiman dalam Merespons Iklim Tropis, Surabaya)</p> <p>Applying cultural philosophy to buildings with lower, middle and upper structures</p> <p>The world above the botting sky, life above human consciousness which is related to invisible beliefs (holiness, goodness, suggestion, sacred).</p> <p>The middle world of ale-kawa, contains the meaning of human conscious life which is related to daily activities. Ale-kawa or the body of the house is also divided into three parts, including the front part which is used to receive relatives/family as well as a place for traditional activities. The middle part is used as a bedroom for older people, including the head of the family, then the inner room is used as a children's bedroom.</p> <p>The underworld, awa bola/under the house, is related to the media used to seek fortune, including agricultural tools, weaving places, animal pens and play areas for children.</p>
3	Roof	Have a roof that suits local culture with sustainable materials	 <p>(source:<a href="https://berita.99.co/rumah-adat-ntt/">https://berita.99.co/rumah-adat-ntt/</a> )</p> <p><b>Mbaru Niang Traditional House</b> Reaching a height of around 15 meters, the Mbaru Niang traditional</p>

			house has a cone-shaped roof with a roof made of palm leaves covered with palm fiber.
4	Structure	The combination structure is made from local materials and concrete materials, and steel as the main structural columns of the building	 <p>(source:<a href="https://www.kompas.com/skola/read/2021/01/26/200000769/rumah-mbaru-niang-rumah-adat-di-kampung-wac-rebo-ntt?page=all">https://www.kompas.com/skola/read/2021/01/26/200000769/rumah-mbaru-niang-rumah-adat-di-kampung-wac-rebo-ntt?page=all</a>)</p> <p>The construction of building models can apply the cosmos structure system and apply a block foundation system according to the characteristics of NTT.</p> <p>The building structure is a local structure (traditional wooden trusses) which is made modular with screw connections</p>
5	Material	Local materials such as wood, concrete, brick, glass and bamboo	You can use sorghum material, namely wood as a filler, or concrete because it is durable. The use of frame structures in each building is dominated by the Knock Down system, stilt houses made from natural materials that are easily available around the design site, such as bamboo and coconut wood as the structural material and palm fiber or reeds as the roof covering.
6	Environmental conditioning system	Energy efficiency with natural ventilation and water treatment Waste independently	<p>Implementing water recycling which converts rainwater and dirty water into clean water for toilet use and watering plants.</p>  <p>(source:<a href="https://www.kompas.com/skola/read/2021/01/26/200000769/rumah-mbaru-niang-rumah-adat-di-kampung-wac-rebo-ntt?page=all">https://www.kompas.com/skola/read/2021/01/26/200000769/rumah-mbaru-niang-rumah-adat-di-kampung-wac-rebo-ntt?page=all</a>)</p> <p>Using natural ventilation from roof openings.</p>

(Source: Author's Analysis)



From the table above it can be summarized that the application of the idealized concept of space in Labuan Bajo can be in the form of using the mass layout of the Wae Rebo village pattern, the mass form applies cultural philosophy to buildings with a bottom, middle and top structure, the roof shape is inspired by the Mbaru Niang roof with a shape pure triangle, cosmos structure with screw connections, and implementation of water recycling and natural ventilation in the openings in the roof.

#### IV. CONCLUSION

The large amount of development that has occurred has caused serious negative impacts on the environment, so an approach is needed that prioritizes environmental potential and conservation. There is also the impact of globalization which causes various trends in architecture to emerge so that traditional architectural styles or forms that are characteristic of a region are forgotten. As time goes by, according to the ideal concept which is one aspect of eco-culture, rather than postulating universal issues, it would be more effective if sustainable architecture emphasized regional issues and local culture as important aspects of sustainability.

Various ideas state that a building that is designed to be a building that uses a sustainable concept needs to be more connected to the concept of region and place. The Idealized Concept of Space has physical characteristics including spatial layout, mass form, roof, structure, materials and environmental conditioning systems. Implementation of the physical components of the Idealized Concept of Space architecture in the context of Labuan Bajo is the use of the mass layout of the Wae Rebo village pattern, mass form applying cultural philosophy to the building with a lower, middle and upper structure, a roof shape inspired by the mbaru niang roof with a pure triangular shape, a cosmos structure with screw connections, and the application of water recycling and natural ventilation in the openings in the roof.

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## Application Idealized Of Space Elements In Eco-Cultural Concepts In Building Design

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**ABSTRACT:-** Building design activities will never be separated from the negative impacts that will arise and have the potential to damage nature. The result of this negative impact is the pollution of the environment and the threat to a region's identity which is also a problem due to the phenomenon of globalization which can shift the artistic elements of a region. Therefore, there is a need for buildings that can maintain and enhance the natural potential and authenticity of the characteristics of a region by highlighting elements of the idealized concept of space from the Eco Cultural approach. The aim of this research is to provide a kind of design guideline for how the idealized concept of space is applied to a particular local context and in this case the local context is Labuan Bajo as a tourist area that must be developed as a culturally rich tourist destination. The research methods used are literature study and precedent review, namely using ten precedents to compare the idealized elements of space listed on buildings so that they can be analyzed and concluded. Implementation of the physical components of Idealized Concept of Space architecture in the context of Labuan Bajo includes the use of physical characteristics, among others: spatial layout, mass form, roof, structure, materials, and environmental conditioning system.

**Keywords:-** Eco Cultural, Idealized Concept of Space, Labuan Bajo

### I. INTRODUCTION

Progress can take the form of changes that cover the entire social framework, such as legislative issues, financial issues, framework, defense, teaching and innovation, education and culture (Alexander 1994). Portes (1976) clarified that improvement is financial, social and cultural change. Basically, progress is often interpreted as an effort to make changes in a better direction, so it can be said that progress can cause growth such as improvement or expansion or advancement of activities carried out by a society. [1] An editorial entitled "Constructive Rebellion: How Environment and Wellbeing Concerns Are Changing Development," compiled by Dafid Rodman and Nicolas Lesson (Worldwatch Paper 124, Washington, DC., Walk 1996) says that the development of the built environment has an influence on utilization of shared assets. The human-made environment absorbs 1/6 of the world's water resources, absorbs 1/4 of the world's timber output, and 2/5 of the world's raw materials and energy.[2]

The negative impacts of improving the built environment are very diverse, including increased pollution of public assets such as land, water and land. Apart from that, there is also deforestation without replanting and mining of natural assets which are all excavated, causing disruption of the environmental balance on the land. This miracle has encouraged various advances in the world of design, so that the concept of biological building improvement was born which pays attention to the adjustment of the normal environment and the artificial environment between the environment, humans and buildings. This is what makes it important to achieve progress that applies environmental concepts to minimize the negative impact of construction on the environment.[3]

Apart from harmony between buildings and the environment, local wisdom is also needed in monitoring and utilizing all the potential that exists in certain assets as well as overcoming problems that exist in the built environment.[4] Compositionally, traditional houses display efforts to adapt to their environment, so that their area, direction and shape are very harmonious while maintaining the rules and traditions of their



predecessors' social heritage (Sumintarja; 1978). Various local wisdom points of view are associated with buildings as an effort to reduce negative impacts in structuring the built environment and with this application, local technology will continue to be preserved and can become a gathering place for the culture and habits of environmental communities.[5]

### **Ecology in Architecture**

The environmental concept can be in the form of the concept of nature conservation by exploiting the potential of natural wealth and utilizing innovation in progress to form natural, social and financial carrying capacity in the implementation of development. Environmental design according to Metallinou (2006) is a building plan that emphasizes care in choosing a building plan concept that pays attention to the importance of environmental sustainability in nature. This concept is expected to be able to protect nature from damage due to repairs.[6]

Environmental design will be carried out if the arrangement and development prepares general concepts of employment as the basis for the plan. An engineering approach that combines nature and innovation, especially utilizing nature as a basis for planning and protecting natural assets as an effort to improve the environment, can be applied in all forms to create building frameworks.[7]

Environmental engineering is concerned with environmental characteristics and limited characteristic assets. In general, bioengineering can be defined as creating an environment that costs less and produces a greater richness of characteristics. Design cannot avoid activities that damage the environment, however biological engineering can be described as engineering that needs to damage the environment as little as possible. To achieve the plan, the plan was created taking into account the climate point of view, supply chain and lifespan of building materials. The main guideline of ecological architecture is to create agreement between humans and their normal environment.[8]

Biological planning creates green buildings which, according to Brenda and Robert Vale (1996), have the following standards:

1. Save energy

Running a building as little as possible uses energy sources that are scarce or require a long time to produce again.

2. Utilize natural conditions and energy sources

Through a sustainable architecture approach, buildings adjust and adapt to the climate, environment and surrounding conditions during planning, construction and operation.

3. Respond to the condition of the building site

Planning refers to the interaction between the building and the site. This means that the existence of the building, both in terms of construction, shape and operation of the building, does not damage the surrounding environment. So that if the building is no longer used, the original site will still be there and not changed much.

4. Pay attention to building users

When designing a building, all building users must take into account and meet the needs, health and comfort of building users.

5. Minimize new resources

A building should be designed to optimize existing materials and not be harmful to the ecosystem by minimizing the use of new materials, where at the end of the building's life it can be reused to form another architectural structure.

6. Holistic

A building must have an idea that states that the system of the universe, whether physical, chemical, biological, social, economic, mental-psychological and linguistic as well as all its accessories, must be viewed as a whole and not a unity of separate parts. [9]

In writings related to sustainable architecture, there is evidence that many projects related to sustainable themes in architecture experience obstacles due to the dominance of qualitative assessments in the plans carried out. As time goes by, Guy and Farmer said that rather than postulating universal issues, it would be more effective if sustainable architecture was directed at regional issues and local culture as important dimensions of sustainability. Various ideas stating that a building being offered is a building that uses a sustainable concept needs to be stronger and more fully connected to the concept of region and place. The regional dimensions that are important in the practice of sustainable architecture must be clearly emerged. At a more strategic level, procurement of locally available materials and regional development practices will be more profitable if it considers workforce skills to reduce the negative impact of the ecological footprint on construction projects.

There is evidence in writings about sustainable architecture that many projects related to sustainable issues in architecture encounter many obstacles due to the dominance of qualitative evaluation in the planning carried out.

## Application Idealized Of Space Elements In Eco-Cultural Concepts In Building Design

As time goes by, Guy and Farmer believe that rather than sustainable architecture that addresses universal issues, it would be more effective to focus on local issues and local culture as an important aspect of sustainability. It is also believed that the buildings provided must be in line with the concept of sustainability to be increasingly connected to the concept of area and place.

There is also a need to clearly identify regional aspects that are important in sustainable development practices. At a more strategic level, procurement of locally available materials and community development practices will be more beneficial when workforce skills are also taken into account to reduce the negative impact of the environmental footprint on construction projects.[10]

### **Eco Culture in Architecture**

The eco-cultural approach is one of the sustainable engineering angles that prioritizes ecologically friendly innovation standards and still includes the closest culture as the closest personality. The eco-cultural concept can be a combination of biological and social perspectives that can coordinate ecotourism as an economic framework for characteristic resource-based tourism (Cajee, 2014) [11]

The use of environmental intelligence in planned buildings will be an illustration of progress in society's social understanding and if seen from the form and work of conventional engineering it can be used as a concept that can emphasize the character of the surrounding environment. Within the scope of design there are also physical and social perspectives which are components in determining the characteristics and character of each building.[12] Therefore, development that includes local cultural and biological planning approaches is an effort to protect local culture in Indonesia from the dangers of globalization and provide education for those who do not pay attention to the social components of society. . This concept includes a view of building models that considers the adjustment between general situations and false situations that are interrelated between the environment, buildings and humans. The rule for realizing buildings that are adapted to the physical and social characteristics of the surrounding environment or it could be said that the Idealization Concept is one of five eco-culture standards that are in line with the social setting and natural climate so that buildings have distinctive characteristics. Relationship with the surrounding area.[13]

The Eco Cultural Approach is interpreted by Guy and Farmer (2010) from sustainable architecture with **The Six Competing Logics of Sustainable Architecture**. The following are eco-culture design elements that combine Guy and Farmer's design criteria and eco-culture ideas:

Image of space, defined as the impression of space in its formation, includes the building's layout, which includes cultural and regional context.

Source of environmental knowledge, studying natural and environmental phenomena to get to know local culture, which includes Phenomenology and Cultural ecology.

Buildings image, or building image with the identity and visual impression of the building, which includes Harmonious, Authentic and Typological.

Technology, is science related to creations, methods and materials related to society and the environment, which includes **Local, Low-Tech and commonplace** (ordinary, simplicity) and **vernacular** Idealized **Concept of Place**, sustainable relationship with the surrounding environment and culture, buildings that adapt to local regional physical and bio-cultural characteristics.[14]

Apart from the criteria above, there are also several understandings and design principles that use the Eco-Culture concept as described in table 1.

**Table 1. description of design principles using the Eco-Culture concept.**

	Guy Farmer	Frick, H., Suskiyatno, B., (1998)	Wijaksono et al (2017)	Qtaishat, Adeyeye, & Emmit (2020)	conclusion
Image of Space	Regional cultural context	Adapt the design to local conditions	Reflecting and expressing indigenous culture	Site and Context,	Adapting the design to the cultural context and local conditions
source of environmental knowledge	Cultural Ecology Phenomenology		Preserving buildings with existing heritage value	Comfortable indoor environment,	Maintaining buildings with local culture and conditions
buildings image	Typology of Authentic	-	The form was built by connecting the	Social, Cultural and	The form is built by connecting



**Application Idealized Of Space Elements In Eco-Cultural Concepts In Building Design**

	Guy Farmer	Frick, H., Suskiyatno, B., (1998)	Wijaksono et al (2017)	Qtaishat, Adeyeye, & Emmit (2020)	conclusion
	Harmony		social and economic activities of the local community	Perceptual Relations, Flexibility and adaptability,	social, economic, cultural activities and adaptability
technology	low tech	Self-help concept			Low-tech and self-sufficient concept
Idealized Concept of Place	local & bioregional physical and cultural characteristics	Save natural energy sources, maintain and improve environmental systems	-	Energy and resource efficiency,	buildings that adapt to local physical and cultural characteristics and carry out energy efficiency by maximizing natural resources.

(source : Implementation of Local Wisdom on the Roofs of Commercial Hotel Buildings in Cirebon City, Jakarta, Agus Saladin,2018 )

Synthesis results based on architectural design guidelines with an eco-culture concept show that buildings with an eco-culture concept must adapt to regulations and the surrounding cultural context, energy and resource efficiency, selection of physical and non-physical building characters based on local culture and the environment and sustainable buildings. .

One of the important concepts of eco culture is the idealized concept of space. The Idealized Concept of Place element emphasizes buildings that are adapted to local regional physical and biocultural characteristics. The Idealized Concept of Place is in line with the cultural context and environmental climate so that it will carry out designs that have a connection with the surrounding area. The main idea is that sustainable buildings need to be more connected to locality and place. This approach focuses on the environment and revives cultural concepts of housing, there is continuity between tradition and the local environment. In this situation, the plan must maintain the personality of a range by considering the existing structure including design, people's way of life, and social issues. [15]

The problem that arises is that there is still a need to think about evidence of differentiating criteria for the Ideal Space Concept approach in building plans which can then be used as floor plan rules. The hope is that there is some kind of design guideline for how the idealized concept of space is applied to a particular local context and in this case the local context is Labuan Bajo as a tourist area that must be developed as a culturally rich tourist destination.

This investigation aims to reflect on the extent to which biological and social concepts from a physical point of view are connected in building plans, in the future improvements will not only prioritize aesthetics at the expense of craftsmanship, but will also be responsive to the surrounding environment. and maintain nearby engineering maintenance. Based on the basis that has been explained, the questions asked are:

1. What components are applied to buildings in accordance with the Idealized Of Space concept in Eco Culture principles?
2. What are the design principles for an idealized concept of space in general?
3. How can the idealized concept of space be applied to the Labuan Bajo context?

It is important to continue and develop local architectural culture. This is because tradition is the spirit of a culture and without tradition it is impossible for a culture to live and last (Artiningrum, 2012). The disappearance of local architecture can also be caused by the world of education which still applies knowledge about western architecture compared to the application of traditional architecture so that local architectural works are less popular and known to the public.

Culture does not have to repeat itself in the same way so that it can eliminate creativity. However, you can use the character of local wisdom as a concept in designing by applying new forms and methods and using more modern materials. [15]

Local wisdom is knowledge that comes from cultural values in utilizing natural resources wisely in various aspects of life. There are two categories, namely physical and non-physical wisdom. Non-physical local wisdom is an embodiment of cultural values and is related to natural resources. Physical local wisdom is related to the physical nature of traditional architecture, which includes the spatial and environmental layout, the shape

of the building mass, the structure and construction of the building, the materials used, and the ornaments applied. [16]

**Table 2. Principles of local wisdom in traditional architecture.**

Traditional Architecture	Implementation (Physical)	Spatial planning and environment, mass form, structure and construction, ornaments, building materials which are the implementation of local wisdom
	Local Wisdom (Non-Physical)	Cultural values, cosmology, mythology, understanding of natural resources will then become the physical embodiment of traditional architecture

(Source: Implementation of Local Wisdom on the Roofs of Commercial Hotel Buildings in Cirebon City, Jakarta, Agus Saladin, 2018)

After obtaining the physical implementation components of the building based on local wisdom principles of traditional architecture, the physical characteristics are combined with the results of the synthesis of eco culture principles so that it will produce physical components that have been adapted to the Eco Culture approach.

**Table 3. Identification of Physical Implementation Characters in the Idealized Concept of Space**

Physical Components	Indicators based on Eco Culture
Spatial	Spatial planning to accommodate community economic activities.
Mass Form	-Building form design based on regional design adaptation -Spatial planning and mass are based on the concept of community trust
Roof	The shape of the roof is an adaptation of the traditional roof of the local community
Material	Use of local, environmentally friendly materials according to context studies and literature review.
Environmental conditioning system	Maintenance and repair of environmental systems

(Source: author's conclusion)

After obtaining criteria from physical implementation that have been adjusted to the idealized concept of space, this component will become a reference when looking at precedents.

## II. METHODS OF RESEARCH

The research method used is precedent review, which uses ten precedents to compare idealized elements of space listed on buildings so that they can be analyzed and concluded. This method aims to provide an overview of the architectural aspects embedded in the building according to its physical characteristics such as spatial layout, mass form, roof, materials and environmental conditioning systems. In this research, researchers obtained information from literature reviews, such as collecting various reading journal references, combining them, and concluding several important points from the journals obtained so that they could be included in the research report.







Through literature studies and precedent reviews, the discussion of this research will then be represented through tables by organizing it, categorizing it into accurate data, combining it to look for patterns to find, understanding what is important to learn, and what can be informed to other people. From there, the synthesis can be formed according to the values that appear most frequently and can provide results that can be used as design guidelines for building development using an idealized concept of space element approach.



III. RESULTS AND DISCUSSION

To be able to analyze the criteria in the idealized concept of space, the first step is to describe the precedent and prepare an explanation of the criteria that the precedent has applied to the physical character components that have been analyzed previously, as shown in the following table:

Tabel 4. Precedent review

Precedent Review				
 <p>Fig 1. Jean-Marie Tjibao Cultural Center (Image source : <a href="https://www.archdaily.com/600641/ad-classic-centre-culturel-jean-marie-tjibao-renzo-piano">https://www.archdaily.com/600641/ad-classic-centre-culturel-jean-marie-tjibao-renzo-piano</a>)</p>	 <p>Fig 2. Casablanca Residence (Image source : <a href="https://www.archdaily.com/874030/casablanca-residence-budi-pradono-architects">https://www.archdaily.com/874030/casablanca-residence-budi-pradono-architects</a>)</p>	 <p>Fig 3. House of Millipedes (Image source : <a href="https://iopscience.iop.org/article/10.1088/1755-1315/9/07/1/012018">https://iopscience.iop.org/article/10.1088/1755-1315/9/07/1/012018</a>)</p>	 <p>Fig 4. Pendar Base Tan Fish (PPI) Kalianda Lampung (Image source : <a href="https://journal.univpancasila.ac.id/index.php/hierarchi/article/view/3749/2197">https://journal.univpancasila.ac.id/index.php/hierarchi/article/view/3749/2197</a>)</p>	 <p>Fig 5. Eko Prawoto Modern House (Image source : <a href="https://iopscience.iop.org/article/10.1088/1755-1315/1169/1/012051/pdf">https://iopscience.iop.org/article/10.1088/1755-1315/1169/1/012051/pdf</a>)</p>
 <p>Fig 6. Alila Manggis Hotel, Bali (Image source : <a href="http://ejournal.universitasmahendradatta.ac.id/index.php/vastuwklya/article/view/403/332">http://ejournal.universitasmahendradatta.ac.id/index.php/vastuwklya/article/view/403/332</a>)</p>	 <p>Fig 7. Rumoh Aceh (Image source : <a href="https://media.neliti.com/media/publications/265311-kajian-kearifan-lokal-pada-arsitektur-tr-9a637c6d.pdf">https://media.neliti.com/media/publications/265311-kajian-kearifan-lokal-pada-arsitektur-tr-9a637c6d.pdf</a>)</p>	 <p>Fig 8. Post-Disaster Housing in Yogyakarta (Image source : <a href="https://www.journal.unwira.ac.id/index.php/ARTEKS/article/view/46/28">https://www.journal.unwira.ac.id/index.php/ARTEKS/article/view/46/28</a>)</p>	 <p>Fig 9. Kaliandra Sejati Nature and Cultural Education Center in Pasuruan, East Java (Image source : <a href="https://ojs.petra.ac.id/ojsnew/index.php/int/article/view/19364">https://ojs.petra.ac.id/ojsnew/index.php/int/article/view/19364</a>)</p>	 <p>Fig 10. Naga Village Traditional House, Lake Malaya (Image source : <a href="https://pro.unitri.ac.id/index.php/sentikui/article/view/97">https://pro.unitri.ac.id/index.php/sentikui/article/view/97</a>)</p>

(Source: author's conclusion)

After obtaining a precedent using an ecological and cultural approach, the next step is to identify idealized elements of space based on the implementation of the physical characteristics that have been implemented as shown in table 5.

Table 5. Implementation of Precedent Physical Characteristics

Building Typology	Idealized Architectural Components of Space					
	Spatial	Mass Form	Roof	Structure	Material	Environmental conditioning system

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<p>Jean-Marie Tjibaou Cultural Center</p>	<p>the interconnection of building masses, which are arranged in a layout similar to the grand allée plan in traditional Kanak villages</p>	<p>The shell shape is taken to incorporate traditional construction. The mass is taken from one of the traditional house forms from the Caledonia region itself which is then modified with modern structures.</p>	<p>The curved roof structure acts as a double skin, where air circulation is free.</p>	<p>For mass formed from wooden structures. The facade of this building uses double skin. Meanwhile, the roof also uses a double roof.</p>	<p>Materials: wood, iron,</p>	<p>Passive ventilation eliminates the need for air conditioning, making the air supply clean and natural within the building</p>
<p>Casablanca Residence</p>	<p>Applying the Tri Mandala concept, this concept is a Balinese architectural concept that depicts three realms by forming them into three different masses or areas.</p>	<p>Applying regional design adaptations to traditional concepts so that each space and its placement has meaning and does not just have a function.  The mass composition pattern also relies on the Swastika pattern as a pattern taken from Balinese patterns.</p>	<p>The pure triangular roof shape of the main Casablanca residence building is made of bamboo and glass which functions as a source of natural lighting</p>	<p>The combination structure is made from local bamboo, concrete and steel materials as the main structural columns of the building</p>	<p>Wood, concrete, brick, glass and bamboo materials,  The floor covering materials used are cement tiles made by local people and key tiles which are tile crafts from Java that were used or famous in the 1930s.</p>	<p>dampen the hot weather with brick walls  The entire mass of the building must be built as open as possible so that the entire space is actually only limited by the floating floor so that natural breeze can enter freely.</p>
<p>House of Millipedes</p>	<p>fireplace elements on the left and right sides of the building. The presence of a fireplace does not immediately cause smoke to fill the interior of the building, so sleep with your feet near the fireplace to warm your feet.</p>	<p>The shape of the building is geometric with a rectangular, shaped shape stage, and consists of the head (roof), body (walls and floor), and feet (foundation). Pattern Community settlements are spread across the mountain slopes and forests that surround the hills.</p>	<p>The roof is gable-shaped with a slope of 35 degrees and covered with along along</p>	<p>The construction of roofs, walls and column structures uses wood materials to harmonize with nature</p>	<p>Wood material, along along roof material, wood</p>	<p>utilize the climate for the ventilation system and lighting. The horizontal and vertical ventilation system in the Thousand Feet House produces thermal comfort in the spaces inside  Logging is permitted if they have planted wood in the forest as a replacement for felled wood. Goal of the process This logging is to protect the land from erosion or landslides</p>

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<p>Pendara Base Tan Fish (PPI) Kalianda Lampung</p>	<p>-</p>	<p>The shape is taken from traditional house buildings local area, where the characteristics of the building are has a front pole as a support.</p>	<p>The roof of a building is equipped with a ridge tip which is centered on a central point at the top and normal Yes, it's made of wood</p>	<p>Light steel elements as a frame structure the roof is clearly visible on the Fish Market building</p>	<p>brick wall materials designed as half walls, metal tiles, bamboo</p>	<p>System Green (RTH) in the form of trees such as coconut, palm, and herbaceous plants as cooling in the PPI area. Apart from that, this effort can also be done produces good groundwater</p> <p>Efforts made through an ecological approach using dirty water waste filtered first with application Management Installation system only Waste Water</p>
<p>Eko Prawoto Modem House</p>	<p>-</p>	<p>The shape of the composition is rectangular with walls as a transition from outside to inside through building materials.</p>	<p>A tropical style roof that has material roof supports with a curved shape in accordance with Yogyakarta culture</p>	<p>The base floor is a heavy structure and made of concrete. The upper structure is a wooden structure supported by strong concrete material.</p>	<p>Concrete, stone, wood, brick</p>	<p>The large windows do not touch the ceiling but there is a gap for air to enter,</p> <p>The building follows the site so there are different heights</p>
<p>Alila Manggis Hotel, Bali</p>	<p>The central open space of the hotel, in the form of a garden and swimming pool, becomes the central space that ties together all the surrounding building masses. The spatial orientation with a tropical regionalism design also takes advantage of the potential of the site which has</p>	<p>The compositions tend to be elongated with gable roofs and shapes Windows are made wide to save energy use. The vertical height of the building should not exceed the height of the coconut tree</p>	<p>Most hotel building roofs have gable roofs, as a form of adaptation to the environment</p>	<p>The building was made by combining the concepts of "saka" and "cangahwang" from local wood materials which were then combined with concrete, so that it can support the roof over the Eid span, without using heavy steel</p>	<p>Wall materials made of red brick, wooden partitions,</p>	<p>conservation of natural vegetation, and the existence of large open spaces. Energy efficiency with roof ventilation and wide openings. Processing waste water independently as a form of water conservation and environmental sustainability.</p>

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	views of the open ocean on the southeast side					
Rumoh Aceh	Rumoh Aceh has an interior room and interior which is a unit that accommodates the needs of the owner. Indoor and outdoor spaces are connected through the flow/sequence of the daily activities of the Acehnese people.	The shape of the Aceh rumoh is a symmetrical rectangular stilt house with a gable roof. The height of the house is obtained from ½ times the height of the stage/column of the house.	Gable roof faces east and west. The top of the house is the room under the roof which is called para. These are used to store items. These are found in the east and west parts of the house. The shape protrudes forward through the body of the house.	In general, the structure of an Acehnese house is a stilt house structure. Where the construction method uses a knock down or disassembled construction method. This roof structure is a light roof structure because the material is light.	Wood, boards, bamboo, palm fiber rope, thatch leaves/coconut leaves, stones	This ornamentation is not only for beauty but also for ventilation (cross ventilation, because there are two opposite sides of the house) and to let in sunlight.  Openings in Acehnese houses are found on each side of the wall but in different numbers. The north south side has more openings compared to the east west side.
Post-Disaster Housing Yogyakarta	Using the existing village system that has formed naturally	Using local architectural forms with village roof types. Each family's space needs are accommodated in different designs but according to modules	The post-disaster relief shelter design proposed and then agreed upon by the Ngibikan village community is a design residence with a Kampung type roof or what is usually called 'Srotongan' by the local community. This form is the original form of residence	The house was designed using coconut wood frames which are often found in this area and wood remains from old houses which can still be used.	The use of local materials also encourages people to preserve material sources such as local trees that produce wood or bamboo	This residence in Ngibikan village was built on the ruins of an old house. Apart from making land ownership easier, it also aims to maintain green space
Kaliandra Sejati Nature and Cultural Education Center in Pasuruan, East Java	The site of the Nature and Culture Education Center from its space-building organization adopts the structure of a traditional Javanese village. The feel of a	traditional buildings with Javanese (and Indonesian) nuances. The forms of Joglo used in the Kaliandra area are varied, starting from Central Java, Kudus, East Java, Mataraman, and so on which are	Joglo roof type	The structure uses wood and brick	Even though it is dominated by wood, the type is chosen based on its availability in nature. The brick material is exposed and arranged in a way that is reminiscent of the architecture of	The building design is open, all existing building units use natural ventilation, so that users can enjoy breathing in the cool air without temperature control (AC). The bathroom also gets a touch



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	Javanese village can also be seen in the architectural style of each building unit which adopts Javanese culture with a mixture of Indonesian culture. In Kampong Hastinapura, the space-building organization is designed to follow the contour of the land on the slopes of Mount Arjuna	made with modern construction and context.			Majapahit temples.	of openness. Electricity still uses state services, with minimal use.
Naga Village Traditional House, Lake Malaya	The arrangement of traditional houses has a parallel pattern / linear pattern by following the contour pattern of the land with swales so that one house and another house have different heights and are limited by sheet piles or stones arranged as retaining walls. The location of the houses is close to one another with a distance of approximately 2-4 meters.	The mass of this traditional house building forms a cube with a simple spatial layout, the entrance is located in front and next to the kitchen door. The building facade uses natural materials from woven bamboo	The shape of the roof of Suhunan is straight (Suhunan Jolopong). Jolopong means lying straight, which can be interpreted as a gable roof shape. The two roofs are separated by a thermal path. The roof covering uses elongated palm fibers called Suhunan Panjang	Structurally, this house is a house on stilts but it is not as tall as stilt houses in general, the height is approximately 1 meter	River stone, these walls use gedhek (Sundanese booths/woven bamboo), albasia or jaro wood, wooden floors, wooden frame roofs	Natural lighting and ventilation is formed by the layout/orientation of the house as well as the shape of the house on stilts and the materials used. b. Natural water management without using groundwater, water obtained from springs at the highest elevation, the drainage system is quite simple without using dangerous materials and techniques that are detrimental to the environment.

After analyzing the implementation of the physical characteristics of the precedents found, the next stage is to look for the most common criteria applied by the precedents. Most results are displayed using percentages as shown in the following table.

**Table 6. Conclusion on the application of idealized components of space**

*Application Idealized Of Space Elements In Eco-Cultural Concepts In Building Design*


No	Idealized Architectural Components of Space	Application of Idealized Architectural Components of Space to 10 precedents	Percentage Application to precedent
1	Spatial	Using the existing system of regional traditional houses that have formed naturally	60% of precedent applications
2	Mass Form	The mass was formed from the shape of a regional traditional house which was then modified with modern structures.	50% of precedent applications
3	Roof	Have a roof that suits local culture with sustainable materials	70% of precedent applications
4	Structure	The combination structure is made from local materials and concrete materials, and steel as the main structural columns of the building	50% of precedent applications
5	Material	Local materials such as wood, concrete, brick, glass and bamboo	100% of precedent application
6	Environmental conditioning system	Energy efficiency with natural ventilation and water treatment Waste independently	70% of precedent applications

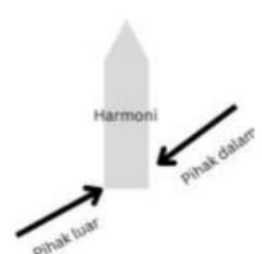

(Source: Author's Analysis)

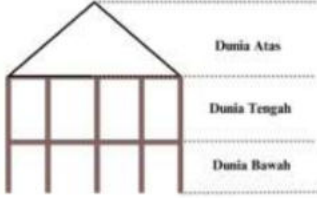

Implementation of the physical components of the Idealized Concept of space architecture in the table above concludes that there are 60% of precedents that apply spatial planning by taking elements of existing regional traditional houses, 50% that apply mass forms taken from traditional houses and then modify them with modern forms, 70% that using roofs that match traditional houses with sustainable materials, 50% using a combination structure made from local materials and other materials, 100% using natural materials such as wood or bamboo, and 70% implementing energy efficiency by using natural ventilation.

After knowing the physical components of the Idealized Concept of space architecture, in the Labuan Bajo context it must be connected to the local culture that applies in the area. There are many physical cultural values.

**Table 7. Implementation of the Idealized Concept of Space in Labuan Bajo**

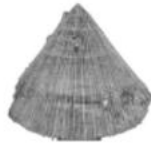

No	Idealized Architectural Components of Space	Conclusion on the application of Idealized Architectural Components of Space	Application to Labuan Bajo
1	Spatial	Using the existing system of regional traditional houses that have formed naturally	

			<p>(source: redrawn from Studi Makna dan Ruang dalam Hunian Tradisional Manggarai, Flores Nusa Tenggara Timur, Yogyakarta)</p>  <p>(source: redrawn from Studi Makna dan Ruang dalam Hunian Tradisional Manggarai, Flores Nusa Tenggara Timur, Yogyakarta)</p> <p>The Kampung pattern was formed in Wae Rebo village where the position of the Compang (ancestral grave) itself is a harmonious value in the dualism that exists between vertical and horizontal, experiencing harmony in the middle value element in the form of Compang or in other words the existence of their ancestors.</p> <p>The belief in dualism is that there is a value of harmony located in the middle with a symbolic form in the form of a main pillar (Siri Hunchback) in the space pattern and a grave altar (Compang) in the village pattern. This then forms a picture of the expression between cosmology and residential patterns.</p>
2	Mass Form	The mass was formed from the shape of a regional traditional house which was then modified with modern structures.	 <p>(source: <a href="https://rumahcepatbangun.com/informasi/rumah-suku-bajo">https://rumahcepatbangun.com/informasi/rumah-suku-bajo</a>)</p>

			 <p>(source: redrawn from Wujud Kearifan Lokal Masyarakat Suku Bajo Terhadap Orientasi Bangunan Pemukiman dalam Merespons Iklim Tropis, Surabaya)</p> <p>Applying cultural philosophy to buildings with lower, middle and upper structures</p> <p>The world above the botting sky, life above human consciousness which is related to invisible beliefs (holiness, goodness, suggestion, sacred).</p> <p>The middle world of ale-kawa, contains the meaning of human conscious life which is related to daily activities. Ale-kawa or the body of the house is also divided into three parts, including the front part which is used to receive relatives/family as well as a place for traditional activities. The middle part is used as a bedroom for older people, including the head of the family, then the inner room is used as a children's bedroom.</p> <p>The underworld, awa bola/under the house, is related to the media used to seek fortune, including agricultural tools, weaving places, animal pens and play areas for children.</p>
3	Roof	Have a roof that suits local culture with sustainable materials	 <p>(source: <a href="https://berita.99.co/rumah-adat-ntt/">https://berita.99.co/rumah-adat-ntt/</a> )</p> <p><b>Mbaru Niang Traditional House</b> Reaching a height of around 15 meters, the Mbaru Niang traditional</p>



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			house has a cone-shaped roof with a roof made of palm leaves covered with palm fiber.
4	Structure	The combination structure is made from local materials and concrete materials, and steel as the main structural columns of the building	 <p>(source: <a href="https://www.kompas.com/skola/read/2021/01/26/200000769/rumah-mbaruniang-rumah-adat-di-kampung-wae-rebo-ntt?page=all">https://www.kompas.com/skola/read/2021/01/26/200000769/rumah-mbaruniang-rumah-adat-di-kampung-wae-rebo-ntt?page=all</a>)</p> <p>The construction of building models can apply the cosmos structure system and apply a block foundation system according to the characteristics of NTT.</p> <p>The building structure is a local structure (traditional wooden trusses) which is made modular with screw connections</p>
5	Material	Local materials such as wood, concrete, brick, glass and bamboo	<p>You can use sorghum material, namely wood as a filler, or concrete because it is durable. The use of frame structures in each building is dominated by the Knock Down system, stilt houses made from natural materials that are easily available around the design site, such as bamboo and coconut wood as the structural material and palm fiber or reeds as the roof covering.</p>
6	Environmental conditioning system	Energy efficiency with natural ventilation and water treatment Waste independently	<p>Implementing water recycling which converts rainwater and dirty water into clean water for toilet use and watering plants.</p>  <p>(source: <a href="https://www.kompas.com/skola/read/2021/01/26/200000769/rumah-mbaruniang-rumah-adat-di-kampung-wae-rebo-ntt?page=all">https://www.kompas.com/skola/read/2021/01/26/200000769/rumah-mbaruniang-rumah-adat-di-kampung-wae-rebo-ntt?page=all</a>)</p> <p>Using natural ventilation from roof openings.</p>

(Source: Author's Analysis)

From the table above it can be summarized that the application of the idealized concept of space in Labuan Bajo can be in the form of using the mass layout of the Wae Rebo village pattern, the mass form applies cultural philosophy to buildings with a bottom, middle and top structure, the roof shape is inspired by the Mbaru Niang roof with a shape pure triangle, cosmos structure with screw connections, and implementation of water recycling and natural ventilation in the openings in the roof.

#### IV. CONCLUSION

The large amount of development that has occurred has caused serious negative impacts on the environment, so an approach is needed that prioritizes environmental potential and conservation. There is also the impact of globalization which causes various trends in architecture to emerge so that traditional architectural styles or forms that are characteristic of a region are forgotten. As time goes by, according to the ideal concept which is one aspect of eco-culture, rather than postulating universal issues, it would be more effective if sustainable architecture emphasized regional issues and local culture as important aspects of sustainability. Various ideas state that a building that is designed to be a building that uses a sustainable concept needs to be more connected to the concept of region and place. The Idealized Concept of Space has physical characteristics including spatial layout, mass form, roof, structure, materials and environmental conditioning systems. Implementation of the physical components of the Idealized Concept of Space architecture in the context of Labuan Bajo is the use of the mass layout of the Wae Rebo village pattern, mass form applying cultural philosophy to the building with a lower, middle and upper structure, a roof shape inspired by the mbaru niang roof with a pure triangular shape, a cosmos structure with screw connections, and the application of water recycling and natural ventilation in the openings in the roof.

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