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Culture-Based Landscape Concept of the Sea Tribe Old Kampong of Batam City

Nabila Tamaya CHANET

Department of Landscape Architecture
Faculty of Agriculture, IPB University, Indonesia
tamayachanet@apps.ipb.ac.id

Andi GUNAWAN

Department of Landscape Architecture
Faculty of Agriculture, IPB University, Indonesia
Corresponding Author: andi_gunawan@apps.ipb.ac.id

Aris MUNANDAR

Department of Landscape Architecture
Faculty of Agriculture, IPB University, Indonesia
aris_munandar@apps.ipb.ac.id

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Abstract:

Sea tribes is one of the native tribes still surviving in Batam city despite its rapid development. Their life patterns had changed from when they lived in the sea until now, living on the island's shores. In addition, these changes reflect how they currently use space for their daily lives. The current condition of the settlement arrangement still does not accommodate the principles of their way of life, who constantly sail the ocean. In light of this, research is needed to formulate a residential landscape that accommodates their cultural needs. This study aims to formulate the model of the sea tribe's landscape concept based on their culture. This study uses a descriptive method based on field observations and interviews with traditional leaders and experts in the field of the Sea Tribe. The spatial concept of the entire landscape is in the form of a circle with a radial pattern consisting of a reception area, residential space, public open space, and conservation space. This concept is based on the way of life of the local community. The local community carries out the interaction between areas in their daily life. The settlement pattern is linear along the island's coast by making the sea the front yard and outward oriented.

Keywords: coastal landscape; cultural landscape; design; traditional landscape; tourism; vernacular landscape.

JEL Classification: Q52; R11; Z13.

Introduction

Batam was once an island with many old Malay villages before it became a big city. The people who live in this village come from the Sea Tribes. Malays and Sea tribes share a common ancestor, but the Sea Tribe exists differently from the Malays. The Sea Tribe lives on the coast, with most of their livelihood being fishermen (sailing the sea). The Sea Tribe lives along the coast for almost their entire lives. They are known as a nomadic community, moving from one place to another, including the island of Batam (Kementrian Kelautan dan Perikanan, 2019). Unfortunately, Presidential Decree No. 45/1978, which established the Batam City Industrial Area on Batam Island, has caused many Indonesians to migrate. The high migration rate in the city of Batam has made many migrants unaware of the existence of the Sea Tribe in Batam City (Yulia 2016). The Sea Tribes are gradually being forgotten in the current era of government and modern society because the Sea is no longer a

primary access point for Batam City's community. The social life of the Sea Tribe has fallen far behind from its heyday due to the nomadic lifestyle by boat (Haryono 2016). Up to this point, no effort or research has produced the pattern and character of the landscape or at least the concept of the landscape. Therefore, it is necessary to conduct research that produces the concept of the traditional village landscape of the old village in Batam City. This study will significantly assist the development and preservation of the old kampong.

1. Literature Review

As the name implies, the Sea Tribe, commonly known as the Orang Suku Laut (Sea People) or OSLs, is a tribe that comes from Malay culture, but spends most of its time in the middle of the ocean. The Sea Tribe is scattered throughout the Riau-Lingga Archipelago and the southern coast of Peninsular Malaysia (Johor). For centuries the Orang Laut had a symbiotic relationship in economic and cultural aspects with the mainland Malays in the trading ports. The identity of the two developed simultaneously when the first cosmopolitan trading center was formed in Temasek (now Singapore) (Kementrian Kelautan dan Perikanan. 2019). As indigenous people living on the coast and small islands, the Sea tribe has local wisdom practices such as conservation, rituals, traditional fishing gear and maritime resource management systems. The Sea Tribe People (Orang Suku Laut) have local wisdom that can help accelerate sustainable development goals based on community knowledge. The vernacular architecture includes houses on stilts (Sapao) and rowing boats (Sampan Kajang). Sapao is stilt houses built on the shoreline, on the sea or on smalllands. Sea Tribe People stay in Sapao or Sampan Kajang because they have difficulties sleeping if they do not hear the sound of the waves and ocean wave swing. This stilt house is disaster-resistant, materials of this house made from wood and leaves that can penetrate the sun and keep the house's temperature low. The Sampan Kajang is a Sea Tribe People rowboat of various generations. Traditional boats are used without harming the environment. The Sea Tribe people believe that the Kajang Sampan is a legacy of their ancestors (Ariando and Limjirakan 2019; Rahmawati 2015).

Following a government decree in 1987, the sea tribes were required to move their land settlements from the water to the land, resulting in their resettlement. Following a government decree in 1987, the sea tribe was required to move their settlements from the water to the land. This Sea Tribe settlement will certainly become an identity of the traditional settlement for the Sea Tribe. Traditional settlements are assets for Orang Suku Laut, traditional settlements can also be the identity and origin of the community. The identity of the area is formed from environmental patterns, the structure of the built environment, characteristics of socio-cultural activities and typical community economic activities. Traditional settlements are represented as places that still hold traditional and cultural values related to beliefs or religious values that are special or unique to a particular society (Lavrenova 2019).

There are several approaches to analyzing landscape characteristics in a settlement, and this approach analyzes the elements that exist in a settlement so that the settlement's character can be identified. In the process of identifying the cultural characteristics of the Sea Tribe, the approach used in this research are the cultural Landscape character approach proposed by Gunawan *et al.* (2019) and Asrina *et al.* (2017). The eleven characteristics of the urban landscape approach (Artha, Nurhayati and Munandar 2013). The eight element of urban design (Shirvani 1982) and five element of city image (Chapman 1962) (Tabel 1). However, in this study, the approach that is considered to be included in the criteria for traditional settlement landscapes is the approach proposed by Gunawan *et al.* (2019).

Table 1. Approach to analysis of cultural landscape characteristics.

(Arifin 2011 in Artha <i>et al.</i> 2014)	(Shirvani 1985)	(Lynch 1981)	This Study *
Landuse and activity	Landuse	Path	Landscape features
Spatial organization pattern	Shape and building mass	Landmark	Landscape elements
Life style	Circulation & park	Edge	Space/Landuse pattern
Dynamic transformation	Public open spaces	Node	Territory boundaries
Circulation network	Path direction	District	Public open spaces
Vegetation, man-made/natural open spaces	Supporting activity		Architecture
Building, structure	Signage/mark		

Information: * Gunawan *et al.* (2019)

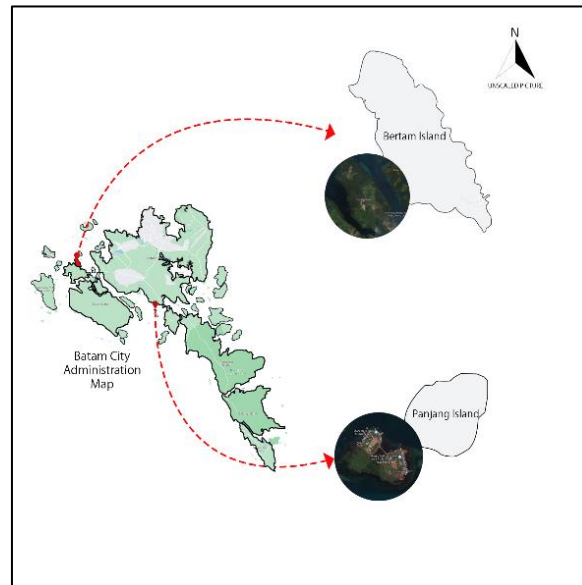
These eleven urban landscape characteristics are necessary for identifying the presence of elements that compose the landscape of a region. According to Lynch (1962), five elements of city image become a way to analyze a city or area not only from the physical aspect but also from its function, history, and even social

aspects. But these elements are indeed classified into more general views (Lynch 1962). However according to Sirvani (1982) In order to build a city, it is obligated to have eight design elements. With the intention that, in the future, the city will have a definite characteristic. However, in this study, the cultural landscape character approach proposed by Gunawan *et al.* (2019) and Istiqamah *et al.* (2020) is considered the most appropriate for the case study of this research.

2. Methodology

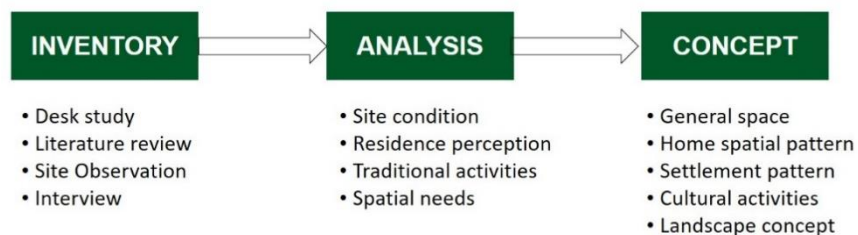
This research was conducted on two islands in the city of Batam, representing the old kampongs in Batam, namely Bertam Island and Panjang Island (Figure 1). The area of Bertam Island is about 1.54 km² and is inhabited by 53 families. Up to this point, The Sea tribe is the native residents of Bertam Island. The majority of the population is currently Muslim. This research was conducted from June to November 2021.

Figure 1. Research location (Google Earth modification)



The methods used in this study are descriptive methods through interviews, field surveys, and literature studies. Some of the data were retrieved by interviewing the resource persons with In-depth Interviews with several traditional leaders. In addition, there is an analysis of social aspects implemented with a combination of elements between the eleven characteristics of the urban landscape approach (Artha, Nurhayati and Munandar 2013), eight design element in a city (Shirvani 1982) and five element of city image (Lynch 1962). This research was conducted through 3 (three) stages as shown in Figure 2. The first stage is the inventory stage which collects data and information related to the research site and sea tribe people. This stage is also known as a field survey, previously preceded by a desk study or literature review (Gunawan *et al.* 2019; Asrina, Gunawan and Aris 2017; Istiqamah, Mugnisjah and Gunawan 2020; Nur, Gunawan and Pratiwi 2022; Pratiwi and Gunawan 2017) to understand the character of the landscape and the culture of the sea Tribe people. Interviews are conducted with local indigenous community leaders at the research site, as well as identification and measurement of elements forming the character of sea tribe settlements.

Figure 2. Research stages



The second stage is the analysis stage. Analysis was conducted on on-site conditions, community perceptions, traditional cultural activities, and cultural space requirements. The results of site observations (site

conditions) were analysed to determine the elements forming the old kampong landscape. The analysis was conducted on the components listed in Table 2. The potential and constraints of the site and the socio-culture of the community were analysed to determine community perceptions, traditional activities, and cultural space needs.

Table 2. Approach to analysis of cultural landscape characteristics

Analyzed Components	Explanation
Landscape features	Consists of man-made feature and natural feature
Landscape elements	Elements of a landscape in the form of softscape and hardscape
Space/Landuse pattern	Land use of an area or zoning of functions in an area
Territory boundaries	Function to provide boundaries to an area of the city in maintaining the privacy and identity of the area
Open public spaces	Open space that functions for the general public (not private)
Architecture	Building or architectural style of an area that is influential to become the identity of the area
Culture and activity	The daily activities of the people and the culture of the traditional community
Time series	The transformation that occurs from time to time in an area
Circulation network	Elements that support the mobility of an area in the form of streets/roads.

This analysis was conducted to determine the activities and relationships between the sea and the mainland of the Sea Tribe community. In this analysis, observations were also made on the adaptation of the Sea Tribe people's vernacular building. This concept is used to compare the physical city, precisely city elements and images. Moreover, old maps, images, photos and field observations have been incorporated to strengthen this analysis. The third stage of this research is to develop a concept of the Sea Tribel settlement landscape. This concept was developed based on the experience of the Sea Tribe People, from their nomadic lifestyle until being resettled. In addition to spatial concepts, descriptive concepts have also been compiled (Gunawan *et al.* 2019; Istiqamah, Mugnisjah and Gunawan 2020; Pranditha, Gunawan and Munandar 2021; Pratiwi, Gunawan and Munandar 2019) including public space, residential space patterns, settlement patterns, cultural activities, and landscape concepts in general.

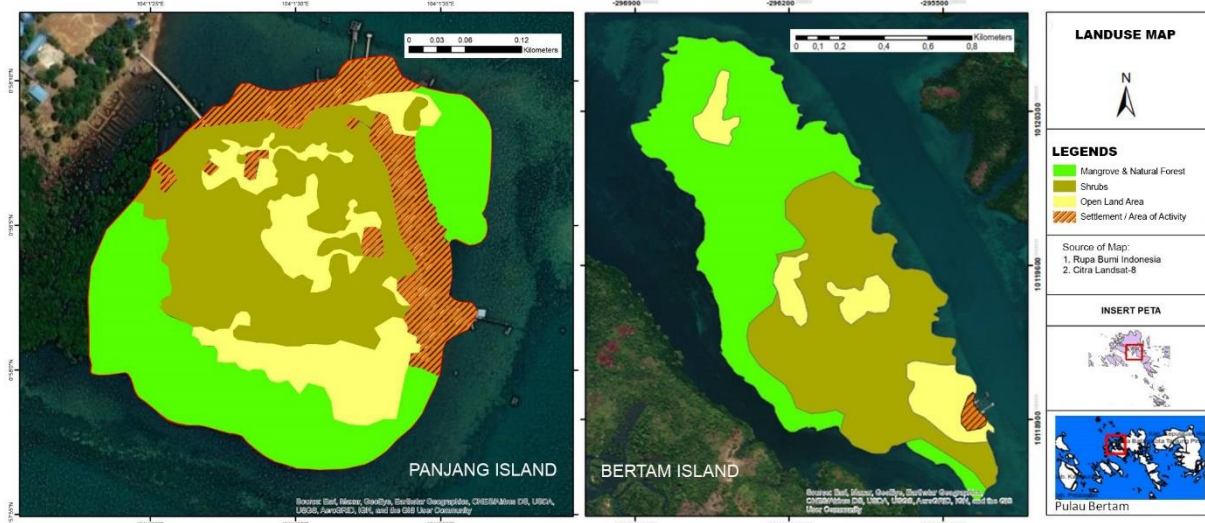
3. Research and Discussion

Panjang Island is a small island about 1.5 km from the island of Batam, with an area of about 0.104 km². Three hundred people or around 74 families inhabit this island. The climate on this island is similar to Batam Island. Fishing is the primary source of income. Residents who work as fishermen are familiar with the four monsoon seasons, which they refer to as the North, South, East, and West monsoons. Different seasons will affect the type of fish that the local fishermen catch. After industrial waste around the Bareleng area decreased the fish population on Long Island, residents began to take seaweed instead. The resulting seaweed is then sold to a seaweed collector company on Batam Island. Bertam Island is about 3.4 km from the island of Batam. The area of this island is about 1.69 km² but is only occupied by residents of about 0.08 m² or 0.05% of the island's area. This island is inhabited by 212 people Bertam Island has around 53 families. Bertam Island is not easily accessible to the public. Because there is no public port or harbor that can be used for people to go to Bertam island, Sea Tribe people still have to borrow a small section of the port from one of the private shipyard companies in Batam. The livelihoods of the majority of the residents are fishermen, but some residents choose other jobs when the fishing season is not good, such as teaching or fish farming (tambak ikan). All residents on Bertam island have embraced religious beliefs, namely Islam and Christianity. Therefore, public facilities such as mosques for residents to worship and gather (deliberations). Bertam Island has access to education from elementary to high school levels. This aim is to provide all Bertam Island children with a formal education.

Landuse on Panjang Island has settlements on the shoreline or the island's edge in direct contact with the sea. Public facilities such as health centers and soccer fields are built in the middle of the island and other activities such as schools, wells or clean water sources, and mosques are also located on land. Forests and mangroves dominate the land use pattern on Panjang Island. This phenomenon is common because Panjang Island and Bertam Island are small islands with small populations. The port or harbor on this island is also adjacent to the residents' houses. This port is only used for residents outside the island and residents of Panjang Island who do not have a private port in their backyard. The residential settlements grow following the coastline, and the main door of the residents' houses faces the mainland. The Landuse Pattern of Bertam Island is almost the same as

Panjang Island, in which Forest and Scrub dominate. The settlements on the island of Bertam are almost 100% in the bay and extend into the sea. The pattern of land use in the two islands can be seen in Figure 3.

Figure 3. Landuse pattern of Panjang and Bertam Islands



Landscape Features. Each landscape has a character that describes the uniqueness that differentiates it from other landscapes. The character of a landscape is supported by the features that compose it, specifically natural and man-made features (Strake and Simonds 2013). These features are shaped by their constituent elements such as landforms, vegetation, structures (buildings, pavements, site structures), and bodies of water (Booth 1983). The powerful man-made features of a landscape can show the character of the cultural landscape of the local community (Asrina, Gunawan and Aris 2017). The shape of the natural and man-made features on Panjang Island and Bertam Island can be seen in Table 3.

Tabel 3. Landscape features Panjang dan Bertam Islands

No	Features	Elements	Location		Role	
			Panjang Island	Bertam Island	Panjang Island	Bertam Island
1	Natural feature	Forest	Central and spread to the south	Central and spread to the south	Natural feature	Forest
		Shrubs	Central and spread to the south	Central and spread to the south		Shrubs
2	Man-made feature	Settlement	West side	Southeast side	Man-made feature	Settlement
		Public open spaces	Central	Central		Public open spaces
		Hardscape circulation	Front yard	Front yard and in between houses		Hardscape circulation
		Cemetery	Surrounding settlements (north)	Back of houses		Cemetery

In general, the features of the elements are relatively similar. There is only one man-made feature that is not present on Bertam Island, namely the plantation. The location of the elements of forest and shrubs on the two islands is the same. The elements in the artificial features on the two islands are relatively different from the location side but have the same function. These soft and hard elements dramatically affect the quality of the residential environment (Zakaria, Syazwani and Rashid 2016). Therefore, the two islands have relatively the same cultural landscape character.

Public Spaces. Public spaces on these two islands have objects such as health centers, places of worship (mosques), schools, sports fields, and ports. The difference is in the activities in it. Residents use public space on

Pulau Panjang as a place for drying seaweed. This is closely related to the livelihoods of residents as seaweed fishermen. Public spaces on these two islands have objects such as health centers, places of worship (mosques), schools, sports fields, and ports. The difference lies in the activities in it. Residents use public space on Pulau Panjang as a place for drying seaweed. This is closely related to the livelihoods of residents as seaweed fishermen. This is in accordance with previous research which made the space between bamboo stands (sympodial) without grass a public space (Nur, Gunawan and Pratiwi 2022). Up to this point, public space is widely available on the island's mainland with supporting surrounding facilities.

Settlement Development. Panjang Island is an island that has long been inhabited by Malays who live side by side with residents or sea tribes. Unlike the sea tribes, the residents of Long Island are water Malays who have long embraced Islamic beliefs. Even though they have the same livelihood as OSL, the residents of Pulau Panjang have a different activity pattern from the Sea tribe. The people who live on Panjang Island spend most of their lives on land, and they only spend time at sea while sailing. Since ancient times, daily activities such as giving birth, marriage, eating, and bathing were done on land. Initially, Panjang Island was only inhabited by about four families. Along with the development of the times and inter-regional marriages, the population of Panjang island also increased. The boat used by the people of Panjang Island does not use Kajang as the roof of the boat; there is no particular boat used in their daily lives. Since the beginning, the houses on Panjang Island were stilt houses jutting into the land; these stilt houses faced the mainland of Panjang Island so that people could access land and sea directly from their homes (Figure 4).

Figure 4. Stilt houses in Panjang and Bertam Islands



Before settling down, Sea tribe people on Bertam Island spent their lives sailing on the seas of the Batam. The Sea Tribe has no permanent residence on the land. They will only stay on land if the catch is enough to be sold to the land people. People on the island of Bertam spend more time at sea than on land. Activities such as bathing, eating, urinating, and birth are also carried out at sea. However, the government decides to house the Sea tribe on Bertam Island. Bertam Island was chosen to settle them because it is considered an ideal island for their life and activity; it has decent water resources and fertile soil conditions. In addition, the people of the sea tribe have often built a temporary house, namely sapao; Sea tribe people will build a sapao when the weather is deteriorating. Sea Tribe people's persistence makes their habits also change, adapting to their new living environment (Arba and Rahman 2002).

Coastal Malays settlements on Panjang Island developed from settlements with four houses or families. Their traditional House materials are taken from the local source. The house was built facing the sea to provide easy accessibility for residents to go to the sea. Each house has access to its boat (Figure 5). The next stage is the construction stage; at this stage, the number of houses is increasing due to the high population and the number of heads of families. A development stage follows, which includes the construction of health centers, mosques, and sports fields. In addition, public open spaces are also built in the mainland area for the benefit of traditional community activities or other joint activities, and a pier is also built. The pier was built for fishing and collecting fish catches. The final stage is maintenance, which aims to maintain the settlement. At this stage, the original building materials, such as brick, concrete, and asphalt, were replaced with modern materials (imported from outside the island). The layout of settlement developments on Panjang Island can be seen in Figure 6. The layout is still consistently located on the shoreline (line of water bodies).

Figure 5. Settlements of Panjang Island

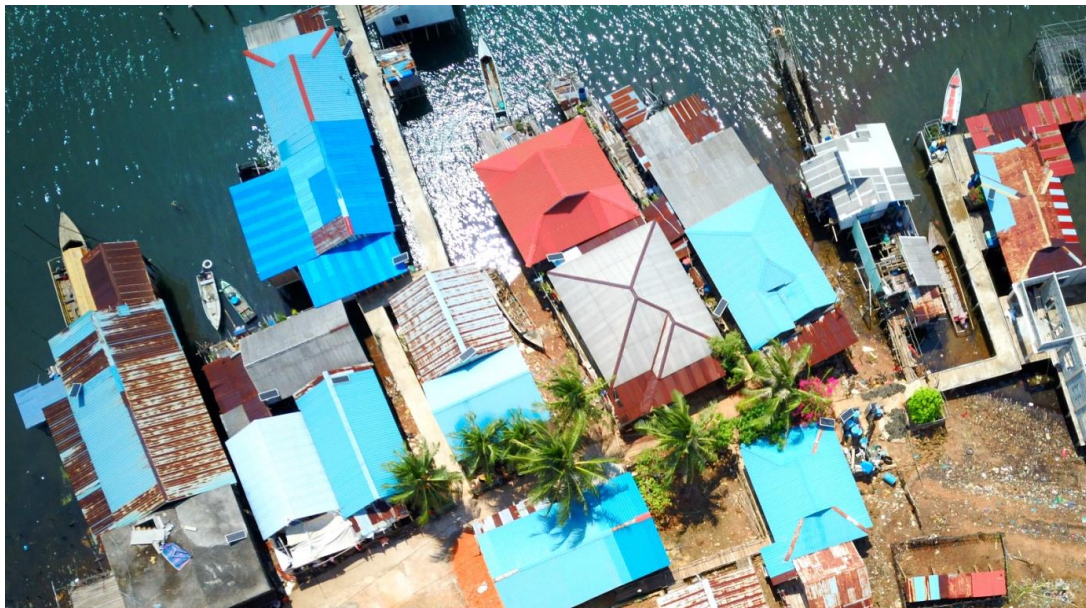
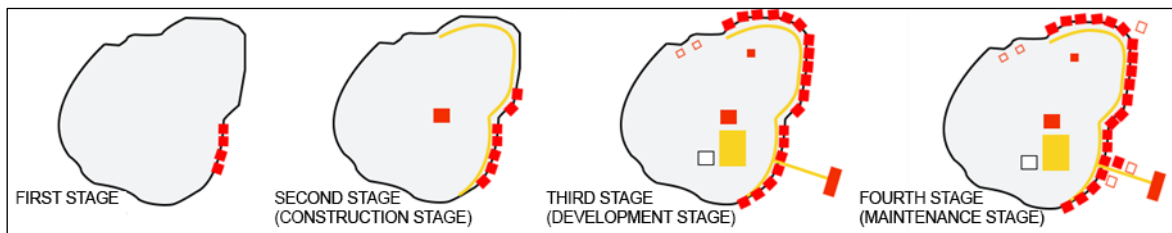


Figure 6. Stages of settlement development in Panjang Island



The development of settlements on Bertam Island differs from that on Panjang Island. The early stages of settlements are located along a jetty road that juts into the sea. The number of units is still as many as 14 housing units. People occupy the house randomly without a special hierarchy. The construction of these houses is a government program to resettle the sea tribes. In the next stage of development, the government provides public facilities in the form of Integrated Services center, schools, mosques, and guest houses for government employees. The government has also begun to provide several units of wells for clean water sources and toilets. Furthermore, in the third stage, as the population increases, the number of houses built also increases to 24 units. Parallel row houses are no longer used because residents build houses where they like and easily leave their old homes (Arba and Rahman 2002).

Figure 7. Stages of development of Bertam Island



In this fourth stage, fishermen who initially only relied on catches only from the sea are currently cultivating fish, such as making cages in the sea around the island. Plantations began to be abandoned, and Orang Suku Laut's livelihood began to diversify. From the last stage until now, there are at least 40 housing units with 53 families. The pattern of housing settlements has become more complicated and is no longer lined up (Figure 7).

Circulation Path. Panjang Island outlines the coastline and settlement patterns of residents. This circulation path is used for pedestrians and cyclists. This road is the main road for residents; the width of the main road is ± 1.5 m with concrete construction so that road access is quite comfortable. Bertam Island has a more complex circulation path. The path consists of two parts, the primary path, and the secondary path. The Primary

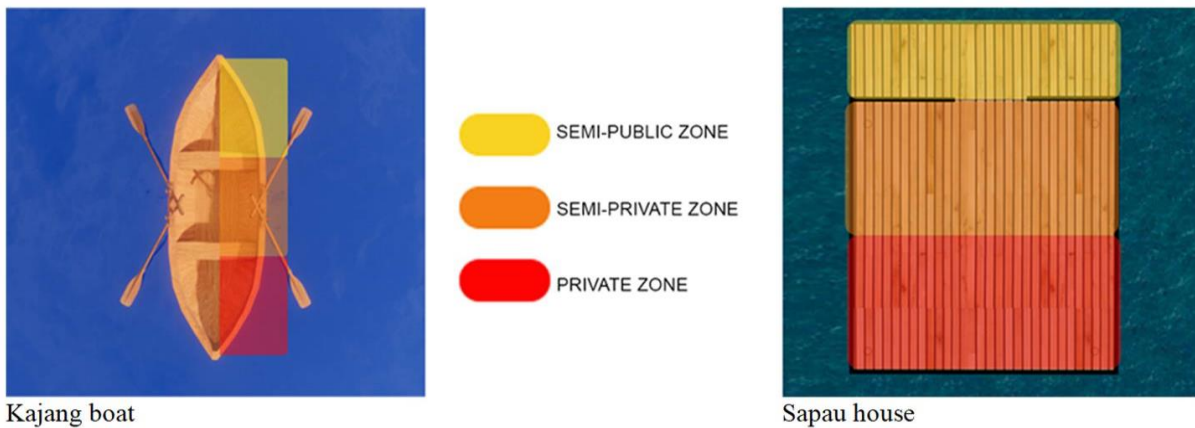
Line is the first main route built by the government, and this route connects the Port of Bertam Island with settlements and the mainland; the main road has a width of ± 1.5 m. Residents built the Secondary Line following the residential pattern. This secondary track was built using local wood and materials. This path is also a place for residents' boats to lean on.

Architecture and Space Pattern. The architecture of the traditional houses of the Sea tribe people on the two islands is in the form of houses on stilts (Figure 4). The traditional architecture of the traditional houses on Panjang Island looks very simple, rectangular in shape with an area of about 50 m², consisting of 2-3 rooms. The shape of the roof of the house is the form of a gable. The pattern of the house space is very simple, namely, the living room is in front, the bedroom is in the middle, and the kitchen is in the back showing a slight difference. The main material of the traditional house is wood taken from the island's forest. The architecture of the traditional sea-dwelling houses on the island of Bertam today is a transformation of the Kajang boat (Figure 8). Kajang boat is a boat used to catch fish at the beginning of the fishing period, and the boat also functions as a residence. The size of the boat or canoe is 5 m x 1 m for those who are married, while for those who are still not married, it is usually smaller, which is about 3 m x 1 m. The space in the canoe has a consistent pattern, namely the front room as a place to receive guests, the middle room to rest or sleep, and the back room for cooking, eating, and family gathering activities (Figure 9). They stay at sea for weeks or even months. They moored their boats to form a boat community similar to a small-scale settlement on land. *Rumah Sapau* is a transitional house before the sea tribes settled on the island. This house is a temporary shelter when the weather is bad. The location of the house is between the canoe house and the current residence. The size of the sapau house is not so big, only about 3 m x 4 m. *Rumah Sapau* does not have a bedroom and only consists of one large living room, but the pattern of utilization is the same as that of the canoe house (Figure 9). The orientation of the Sapau house is facing the sea and the front of this house is used as a storage place for the *kajang* canoe (Bintana *et al.* 2020). The concept of sea facing orientation of the traditional Sapau house is local knowledge which is currently known as the waterfront principle. For the indigenous people of the sea tribe, this concept has become part of their daily life.

Figure 8. Kajang boat

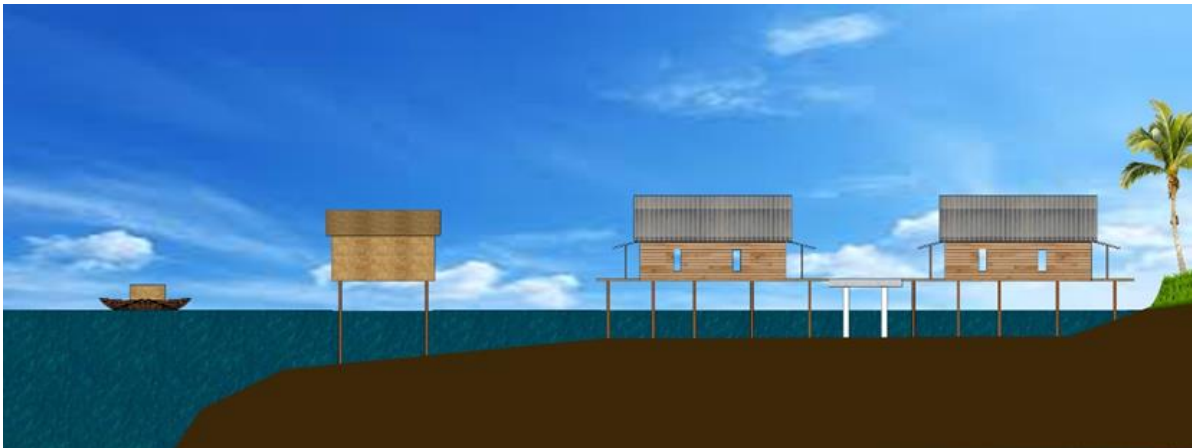


Figure 9. Zoning of the Kajang boat and Sapau house



The settlements of indigenous sea tribes are currently located on the island's shores (Figure 4). The house is the last form of transformation of the sea tribe house. The current architecture of the house still resembles the architecture of the previous house (Sapau's house) with some modifications. The form of the house on stilts is still maintained. The pattern of the house space is also maintained. However, there are already clear spaces, such as the front room, bedroom, family room, and kitchen. The transformation process, in general, can be seen in Figure 10. Generally, the spatial pattern of the traditional houses of both the Sea Tribe peoples on Panjang Island and Bertam Island is relatively similar. This is following previous research on Sundanese indigenous peoples who have public or reception spaces, family rooms, and private spaces (Agustine and Gunawan 2013).

Figure 10. Changes in the habitat of the sea tribe



Grave or Cemetery. In every indigenous community, there are dynamics of population change either through birth or death, as well as the movement of people from outside into the community. For the indigenous people of the sea tribe, birth and death are faced according to their customs and beliefs. If one dies, his body will be buried or buried in the ground. The burial area for sea tribes is located on the mainland of a nearby island. Even when they live at sea, if someone dies, the body is buried on the mainland of the nearest island. The funeral process they do follows their religion, in this case, Islam or Christianity.

Curculation. Their living space, as mentioned above, is connected by a clear circulation path. There are two types of circulation: circulation over the sea and on island land. Circulation over the sea is a wood and partly concrete deck. Circulation on the island's mainland is in the form of compacted soil, cement, or block. The circulation connects their homes, homes, and available facilities (public open spaces, burial areas, health, education, and worship), as well as homes and the sea. Another circulation is the canoe route to the sea. For those whose houses directly face the sea, there is no special circulation (directly to the sea). But for those whose houses are inside, like on the island of Bertam, there will be a canoe route to the sea.

Activity and Culture. Sea tribes who live in groups based on kinship are usually led by the Batin. Batin itself is a family member who is considered old and charismatic. Sea tribal groups are very obedient to the Batin figure. They sail in groups following their direction, usually disperse only when catching fish. Solidarity is often seen when they build their temporary houses (sapau houses). The status of Batin changed when they were

settled on the land, namely to become the Head of the Household (RT), and some activities that were contrary to religious beliefs were no longer carried out.

Table 4. Activities of the sea tribe before and after being sent home

Activities	Before		After		
	Sea	Land	Sea	lands	Space used
Eat	✓		✓	✓	House
Sleep / relax	✓		✓	✓	House
Bath / toilet	✓		✓	✓	House, toilet, boat /sampan
Wash	✓			✓	House
Marriage		✓		✓	House, building
Divorce				✓	Region office
Sexual activity	✓		✓	✓	Sampan, house
Giving birth	✓			✓	House, community health center
Passed away		✓		✓	Cemetery
Education	✓			✓	School
Healthcare	✓		✓	✓	Boat /sampan, community health center
Worship	✓		✓	✓	Boat /sampan, mosque and church

The activities of the indigenous people of the sea tribe are mostly carried out on the sea, especially when they still live in the sea. Even so, at this time, it also happens when they are at sea (catching fish), which takes a long time, but when they are not at sea, their activities are mostly on land or in their settlements above the sea. The general activities of the indigenous people of the sea tribe include eating, sleeping/relaxing, bathing/urinating/defecating, washing, getting married/divorced, sexual activity, giving birth, education, health, and worship. Almost all of these activities are carried out on the sea in their canoes when they go to sea or before they are housed on the island. The space used is the space formed on the canoe, both private and public. Several activities must be carried out on land even when they have not been sent home, namely weddings and burying dead bodies. After they were sent home, all activities were carried out on land, except for some activities carried out at sea while they were at sea, such as routine eating activities, cleaning themselves (bathing/defecation), and sexual activities. Before the sea tribes were laid off, they adhered to animistic beliefs, so many sea tribe activities related to magic. Activities related to magic include the way they look for fish, giving birth, thanksgiving for the catch, and bathing newborn children with seawater (Arba and Rahman 2002).

Landscape concept of the sea tribe settlement. The landscape features and cultural activities of the indigenous sea tribes above show the landscape character of the community, which carries a unique concept. The concept involves at least 5 (five) important things: simple and sincere life, institutions, main livelihood, spatial pattern, and orientation. The indigenous people of the sea tribe adhere to the principles of simple and sincere (and obedient) living. This principle produces a role model (batin) leader who has a high commitment to the life of his community, bringing them to a livelihood that is their main livelihood, fishing. The life of fishing in the sea makes them stay longer in the sea and occasionally come close to the nearest island to rest during the sea season, which is not favorable for fishing. When their catch decreases significantly, they settle on the shore to develop aquaculture of fish ponds and seaweed in cages. However, they still go to sea during a good season. These activities form a real spatial pattern with an orientation facing the sea. This is a unique concept of the settlement landscape of the sea tribe peoples. This consistent concept makes it a unique landscape character that emerges from the simplicity of the life of Orang Suku Laut (Figure 11).

The Virtual concept of the Sea tribe settlement landscape can be seen in Figures 12, 13, and 14. Figure 12 shows a settlement site plan in conceptual form. The houses are arranged parallel to the shoreline, and the circulation is in front of the house so that the house's orientation faces the sea (Figure 13). This is in accordance with their culture, which always faces the sea. This concept also follows the modern concept that elevates the waterfront principle for any development of areas bordering water bodies (Aydin 2022). Public facilities are located behind the houses, and this is to facilitate the implementation of public services such as health, education, worship, and government. The traditional chief's house (Batin) is located at the very front, jutting into the sea meaning he is the head of the local indigenous community.

Figure 11. Process of conceptualizing the sea tribe settlement landscape

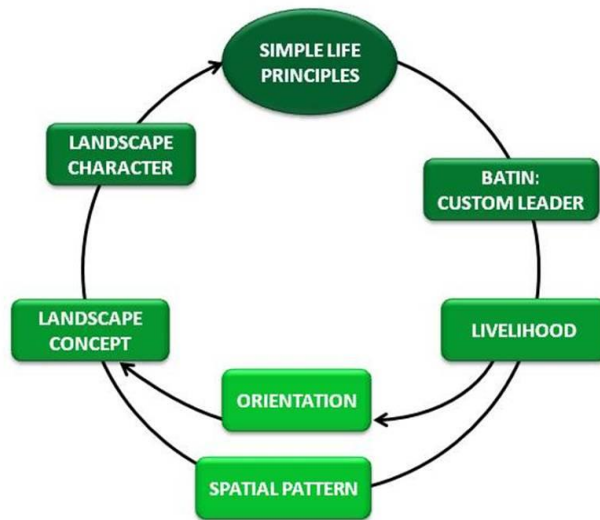


Figure 12. Site plan of the sea tribe's settlement

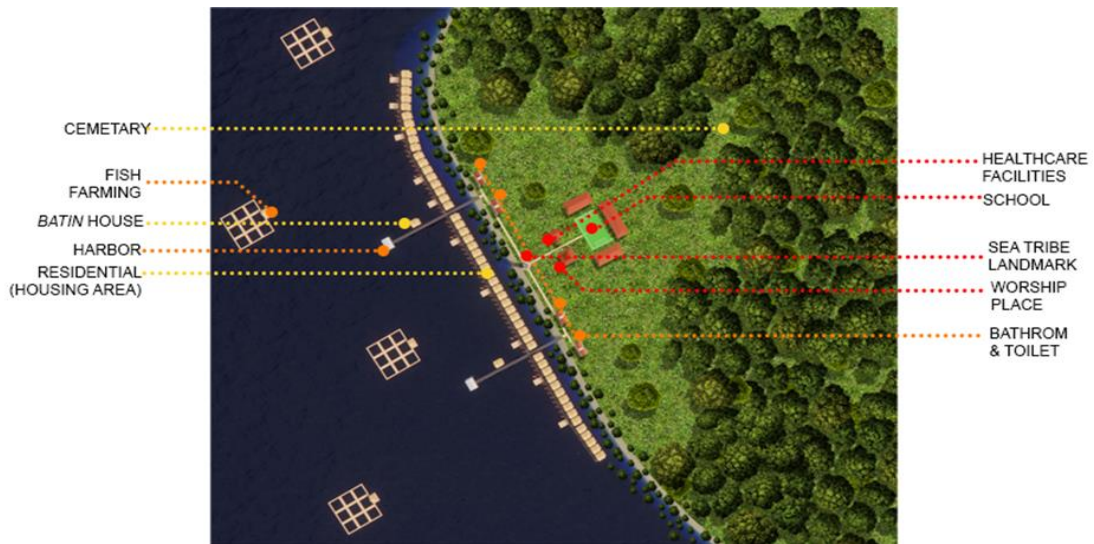
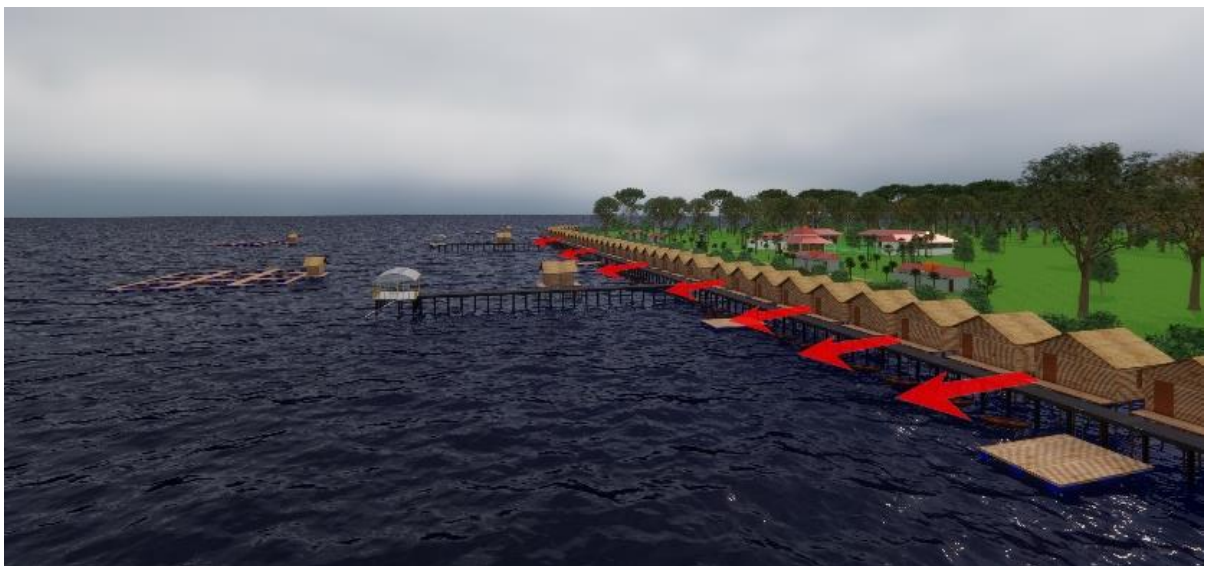


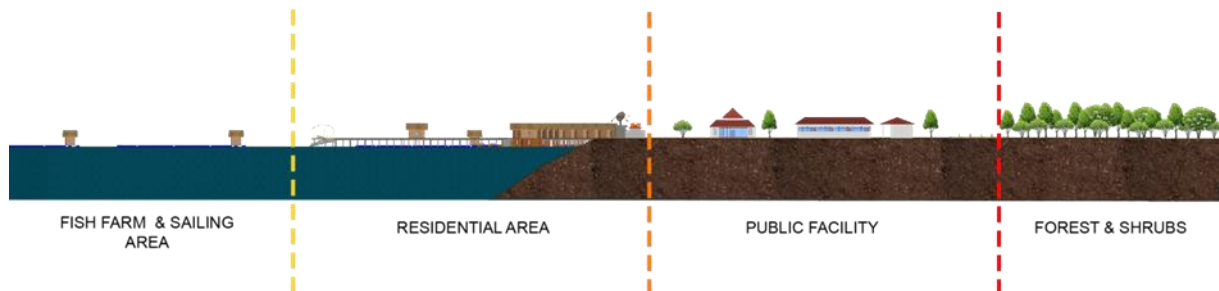
Figure 13. Waterfront orientation of the sea tribe house



Batin who direct their lives, especially in terms of livelihoods, fishing and cultivating seaweed and fish ponds, thus bringing the settlements closer to the mainland. The process of living in the sea tribe community, from the life of a canoe, and a sapao house to settling on an island led by Batin, has resulted in the concept of a community settlement landscape with a sea tribe in Batam

Figure 14 shows the concept of the space, which includes 4 (four) main zones that stretch from the sea to the mainland: the karamba fish cultivation zone, the settlement zone, the public space zone, and the forest zone. The cage zone is located in the sea some distance from the beach or outside of the overall landscape. This zone is where the indigenous people of the sea tribe work as a second source of livelihood, namely fish and seaweed cultivation. This zone is also a reception room, the main access to enter the Sea tribe settlements. Access through such water bodies is also found in indigenous peoples on Lakkang Island, Makassar (Nur, Gunawan and Pratiwi 2022). The second zone is a residential area with houses facing the sea and connected by a single circulation relatively parallel to the shoreline (Figures 12 and 13). The concept of a body of water or sea being used as a waterfront is an issue that is currently developing (Puspita, Fatimah and Gunawan 2017).

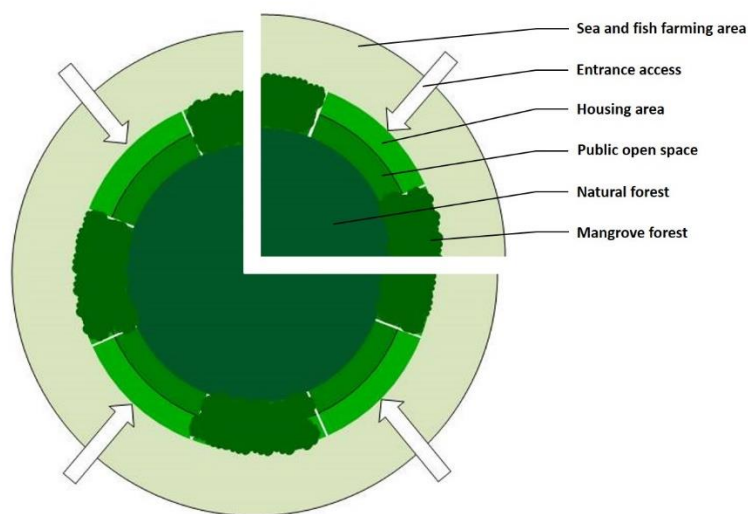
Figure 14. Spatial concept of the sea tribe settlement landscape



The architecture of the houses is adapted to the traditional house of the Sea tribe community, namely the sapau house. The material used is in accordance with the original architecture, but as it develops, material changes may occur, but the architecture must be maintained, especially since this area will be used as a cultural tourism area. The third zone is a public area that provides services for the community, such as health services (health centers, sports fields), worship services (mosques), educational services (schools), and community gatherings for various public and customary activities (open grass fields). Almost every indigenous community settlement in Indonesia has an open space (Gunawan *et al.* 2019; Istiqamah, Mugnisjah and Gunawan 2020; Pratiwi, Gunawan and Munandar 2019; Mansyur, Gunawan and Munandar 2017). The last zone is important for conserving the entire island area, namely forest areas. Currently, the utilization of this area is still very limited because the culture of the Sea tribes has not yet adapted to the forest. Forests will be very useful now and in the future when people are familiar with and use forests for their survival (Nur, Gunawan and Pratiwi 2022).

In simple terms, the concept of a sea tribe settlement landscape, especially in the Batam city area, can be seen in Figure 15.

Figure 15. The concept of the landscape pattern of the sea tribe settlement



Sea tribes usually live on a small island jutting into the middle of the sea. A small island that is relatively uninhabited and dominated by forests with decent beaches to occupied. The island's condition is similar to the one currently occupied by Sea tribe community in Batam city. This study formulates the spatial concept of the Sea tribe settlement landscape. The previous discussion shows that there are 4 (four) main areas in the settlement, namely the reception area called the pond area, the primary entrance access, a residential space located above the sea on the coast of the island, and a public space that provides various services for the community. The community in that location and the forest space are located in the center of the island. One space needed to protect this island is the mangrove forest. This forest also serves to cultivate various marine commodities such as fish, shrimp, crabs, and its kind (Wojahn and Wojahn 2010). This function can be an additional livelihood for the local community. The concept, as shown in Figure 15, is the concept of the settlement landscape of the indigenous Sea tribe, which follows the community's way of life.

Conclusion

Natural and man-made features shape the character of the Sea tribe settlement landscape. The natural features identified include elements of the sea, forest, thickets, and mangroves. Identified man-made features include traditional houses, circulation decks, pavements, public open spaces, and tombs. The traditional house of the sea tribe has changed from a canoe used as a residence on the sea, a sapau house as a temporary residence, to a stilt house above the sea close to the beach. Other buildings in the form of health services, education, government administration, recreation, and worship are located on the island's mainland. All these elements constitute a living unit of the indigenous people of the sea tribes in the city of Batam.

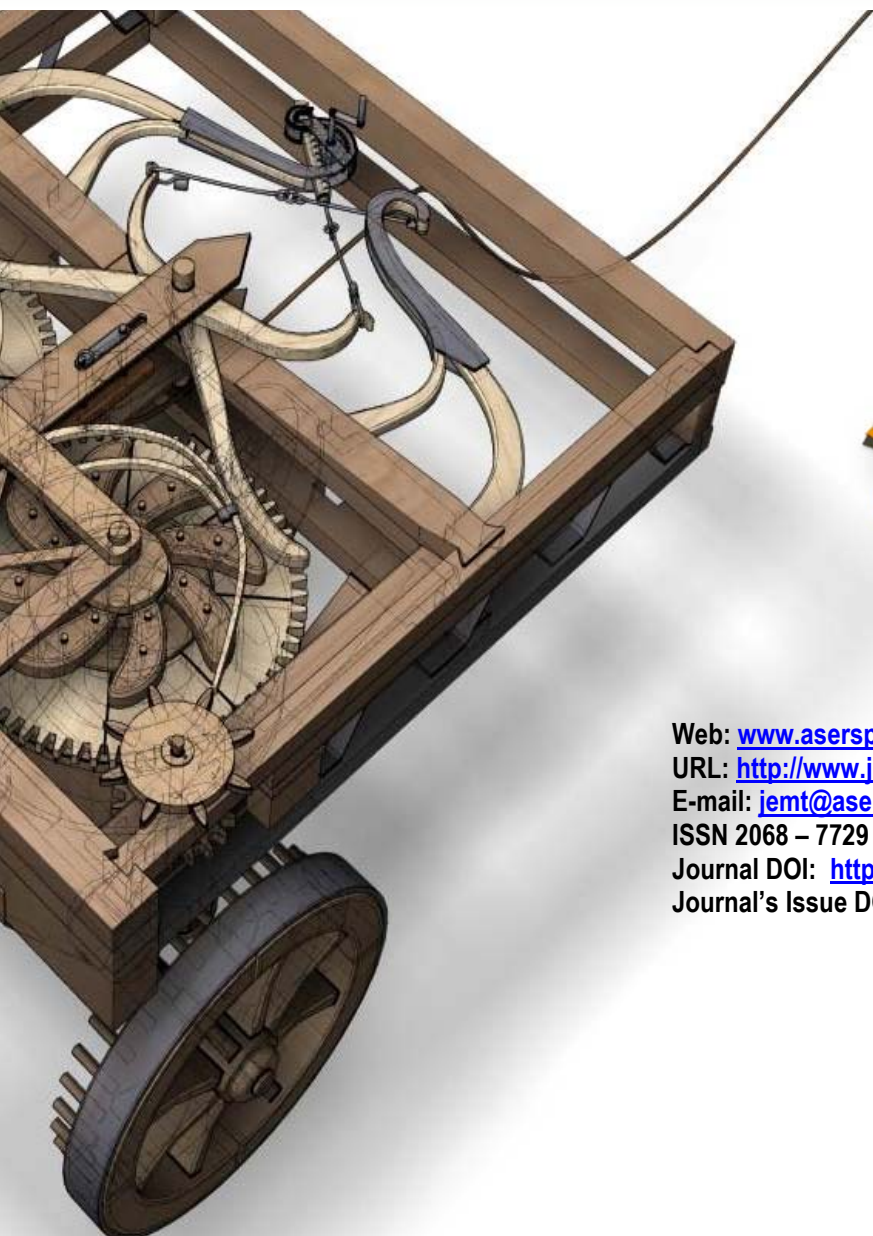
The landscape concept of Sea tribe settlement is composed of natural and man-made features that include these elements. The spatial concept of the entire landscape is in the form of a circle with a radial pattern consisting of a reception area (fishing farm space), residential space (traditional houses), public open space (public services), and conservation space (forest, bush, and mangroves). This concept is based on the way of life of the local community. The local community carries out the interaction between areas in their daily life. The settlement pattern is linear along the island's coast by making the sea the front yard (waterfront) and outward orientated.

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