

Spatial Patterns Architecture on The Productive Society (Case Study: Public Space in Pujasera PIM, North Aceh)

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Abstract:

Rapid urban development increases the intensity of activities that require places to facilitate them, especially public spaces. This research examines the spatial pattern of public space architecture in Pujasera PIM, North Aceh, focusing on its role in productive communities functioning as a communal dining area. With the emergence of Society 5.0, Pujasera has transitioned from a culinary destination to a gathering place for productive activities. This research aims to understand the spatial transition and activity patterns in Pujasera PIM, taking into account the needs and orientation of its visitors, using a qualitative exploratory method, combining Erik H. Erikson's life cycle theory and Norberg Schulz's geometric properties of *boundaries, extent, enclosure, center, and figure-ground*. The physical space of the Pujasera PIM was analyzed, highlighting its spatial organization and activities. The results show the dynamic nature of the pujasera architecture that accommodates different age groups and activities. Geometric properties play an essential role in shaping spatial patterns, and visitor characteristics influence the design and functionality of the space. The study concludes that Pujasera PIM architecture is vital in creating a productive and inclusive society, maximizing human potential, and improving overall well-being.

Keywords: *Public space, productive society, spatial pattern, activity pattern, pujasera*

1. Introduction

Rapid urban development increases the frequency of activities that require facilities, especially open spaces, to support them (Gehl, 2012). Public spaces can create the character of a city and generally have the function of social interaction for the community, people's economic activities, and cultural appreciation interaction places (Carmona et al., 2003). An attractive public space will always be visited by a wide range of people with different levels of socio-economic-ethnic life, education levels, age differences, and different motivations or levels of interest (Andi Halim, 2016).

Space, as one of the critical elements in the field of architecture, has a very significant role in connecting the environment and human behavior because of its function as a place for human activities (Weisman, 1981). One public space in several big cities today is the pujasera. Sutedja (2006) mentions that Pujasera, which stands for Multipurpose Snack Center (English: food court, or in the Asia Pacific, also called food hall), is a communal eating area consisting of food outlets (counters) that offers a variety of varied menus (Iqbal et al., 2019). Judging from the aspect of the building, the food court consists of 3 types, namely: 1) Indoor food court; the entire area is inside a permanent building, 2) Semi-outdoor food court; which has a permanent building but also has an open area, 3) Outdoor food court; has a semi-permanent building and is in an open area (Wicaksono & Trisnawati, 2014). With the development of technology entering the era of Society 5.0, pujasera are not just culinary tourist attractions but are slowly shifting to become gathering places for productive communities in carrying out

socio-economic activities (Deni et al., 2021). Therefore, architectural knowledge is expected to pay attention to the space transition process (Brown, 1997).

Pujasera Pupuk Iskandar Muda or commonly referred to as Pujasera PIM, is one of the culinary areas of the community located in the Housing Complex of PT. Pupuk Iskandar Muda North Aceh. The location of the pujasera adjacent to public facilities such as mosques, schools, supermarkets, clinics, and housing makes this location considered potential as the epicenter of multiactivity in the local location. During the hustle and bustle of dense community activities, pujasera are one of the public spaces that can provide space to gather and interact with each other (Fakhriansyah et al., 2022). Of course, in the relationship between users in public spaces, each provides different responses and activities according to their needs (Hantono, 2019). Practically the pattern of activity and space utilization can be known by specific observations and declared successful in creating visitor attraction (Whyte, 1980). The orientation of visitors to spatial activities becomes a benchmark for the characteristics of a place as in the idea of Genius Loci referred to as the living world, namely the human world in the abstract, which refers to local relations consisting of parts of identity contained in phenomena (Maghfirah et al., 2022). Understanding how humans interact with places can be used to formulate design principles to produce an ideal space. Identity, in this case, is the soul created in a place that brings us to exist in understanding public space in a relevant way (Schulz & Christian, 1980)

The existence of public spaces such as pujasera that are responsive to changes in activities in the Society 5.0 era is an absolute existence factor to be achieved (Sushanti et al., 2021). The survival of pujasera in serving community activities through social activity space patterns answers research problems related to adaptation between Society 5.0 activities and the existence of public spaces (Wibowo et al., 2020). With the activities in answering this problem, research is needed on the activities and behavior of the visitor community to find space patterns that are useful for ideas and ideas of architectural knowledge as well as answers for pujasera that are responsive to changes in the activities of the Society 5.0 era.

2. Material and Methods

To answer the actualization of architectural spatial pattern knowledge related to Society 5.0, life cycle thinking by Erik H. Erikson in his book entitled 'The Life Cycle Completed' in 1994 will be used. The idea will be combined with the thoughts of Norberg Schulz with five of the eight property geometries, namely, *boundaries*, *degree of extent*, *degree of enclosure*, *center*, and *figure-ground* interpreted in his book entitled 'Towards A Phenomenology of Architecture'.

2.1 Geometric Properties of Activity Space Builder

According to Norberg Schulz, the problem of planning public spaces for the realities that will occur in the future is approached with the idea of activity space order (Jayasundara & Botheju, 2016). In the early 1980s, Norberg-Schulz defined everyday environments with eight geometric properties: *boundaries*, *degree of extent*, *degree of enclosure*, *center*, *figure-ground*, *rhythm*, *proximity*, and *scale* (Schulz & Christian, 1980). These properties are generally suitable for conducting this research. However, due to time constraints, five properties were selected. This selection was made based on certain specific considerations. These considerations selected *boundaries*, *degree of extent*, *degree of enclosure*, *center*, and *figure-ground*.

1) Boundaries

This concept refers to the elements that limit, separate, or define space in an architectural context. Norberg Schulz observed that boundaries can influence human experience and perception of space and play an important role in shaping the characteristics and atmosphere of a place (Schulz & Christian, 1974).

2) Degree of Extent

This term refers to a measure or magnitude of the extent to which something exists, occurs, or prevails. It is a term used to describe the level, degree, or extent of a particular attribute, condition, or phenomenon.

3) Degree of Enclosure

Degree of enclosure is divided into two components. Namely, 'degree of openness' and 'degree of closeness'.

4) Centre

A "center" is a specifically identified set or system, a distinct and visible part within a larger whole. This quality of clear distinction distinguishes the 'center' from the rest and thus makes it unified.

5) Figure-Ground

Figure-ground, this concept refers to the way in which architectural elements and the surrounding environment interact with each other and form a distinction between the main object (figure) and the background (ground) (Schulz & Christian, 1980).

2.2.1 The Character of Human Life Cycle Activities

Erik Erikson developed a psychosocial development theory involving eight stages of development that occur throughout a person's life cycle.

- 1) The first stage, Trust vs. Mistrust, occurs in infancy when the child begins to establish trust or mistrust of others and the world around them.
- 2) The second stage, Autonomy vs. Shame and Doubt, occurs in early childhood when children try to develop autonomy and independence or may experience shame and doubt in their abilities.
- 3) The third stage, Initiative vs. Guilt, occurs in preschool when children begin exploring the world and developing a sense of initiative or may feel guilty due to negative actions.
- 4) The fourth stage, Industry vs. Inferiority, occurs during the school years, when children explore and compare themselves to others, which may result in a sense of industry or inferiority.
- 5) The fifth stage, Identity vs. Role Confusion, occurs in adolescence when individuals try to find their identity and experience role confusion.
- 6) The sixth stage, Intimacy vs. Isolation, occurs in early adulthood when individuals try to build meaningful intimate relationships with others or can feel socially isolated.
- 7) The seventh stage, Generativity vs. Stagnation, occurs in middle adulthood, where individuals focus on contributing to future generations. If they feel they are not making a meaningful contribution, they may experience stagnation.
- 8) The final stage, Integrity vs. Despair, occurs in late adulthood when individuals evaluate their life as a whole and may feel integrity or despair (Erikson & Erikson, 1982).

2.3 Physical Space Pujasera PIM

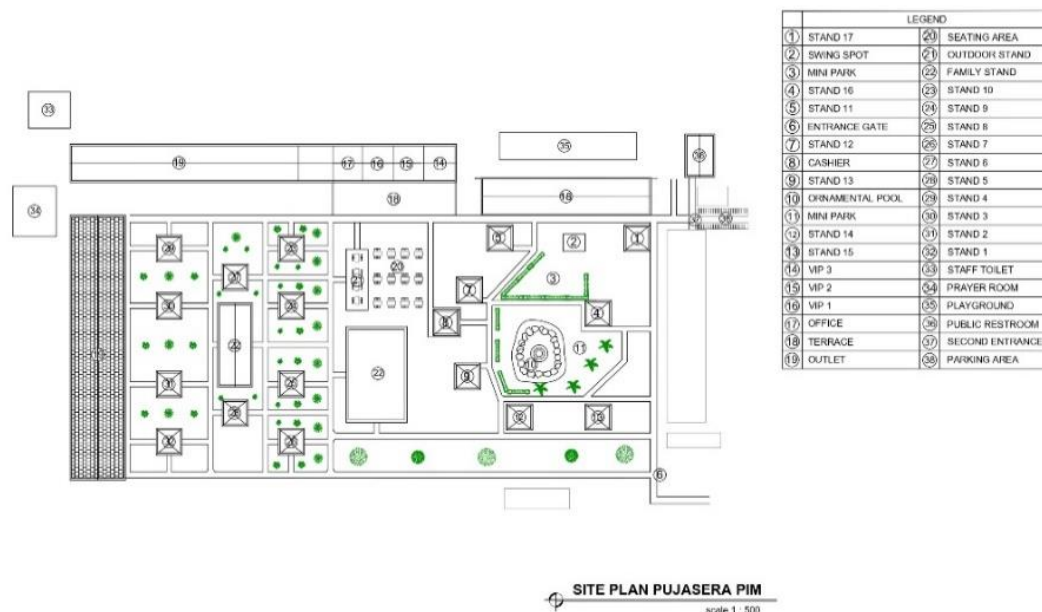


Figure 2.3.1. Site plan Pujasera PIM

Pujasera PIM is a culinary center in the PT Pupuk Iskandar Muda Housing Complex. Pujasera stands offering a wide variety of food and beverages comprising 25 booths with an area of 50 x 38 m². This pujasera offers several diverse spaces, including 17 stands, two family stands, two terraces, 3 VIP rooms, two outlet buildings, a seating area, an office, an outdoor stand, a cashier, a mini park, an ornamental pool, a swing spot, prayer room, staff toilet, public restroom, and playground.

These spaces provide various facilities for visitors who come to the pujasera. The food stands in it offer culinary delights with various choices, fulfilling the tastes and desires of visitors (Amalia et al., 2021). Visitors wanting a more exclusive dining experience can take advantage of the VIP rooms. In addition, there are also comfortable seating areas, office space, and facilities such as children's playgrounds and places of worship, providing comfort and practicality for visitors (Cooper et al., 2018). Other spaces such as cashiers, public restrooms, and parking areas are also available to support activities in the pujasera.

2.3 Research Methods

The research method used to reveal the dynamism of space production based on human needs and orientation in Society 5.0 is in an explorative qualitative way. The qualitative method can bring closer the research answers based on honesty and validity to the spatial needs based on the orientation of the research object (Yadav, 2022). The object of research will communicate its existence clearly through observation with a specific time and form of space that it can consume to fulfill its orientation and activity needs. Exploration is a way of research to display visuals of the arrangement of the research flow of thought. From this method, a mapping of the research object's activity situation will be displayed based on its orientation and needs based on specific collectives towards its proximity to the ideas of knowledge that have been previously determined (Singh, 2021).

3. Result and Discussion

3.1 Architectural Space Transition Activities

3.1.1 Existing Pujasera PIM

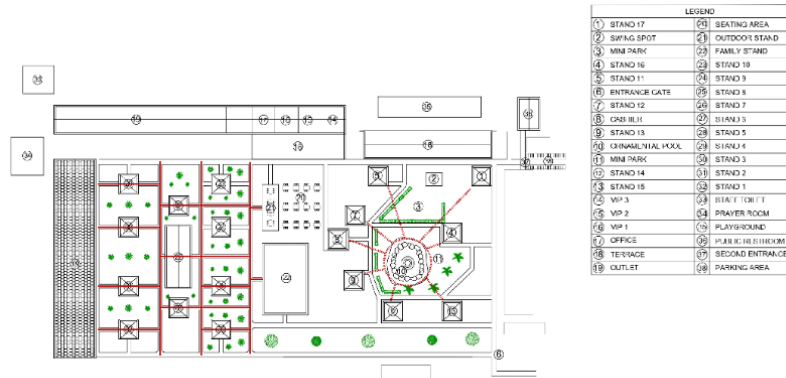


Figure 3.1.1.1. Space organization

The spatial pattern of the pujasera is designed with the needs and preferences of visitors in mind. Certain areas are strategically placed to facilitate accessibility and increase convenience (Ernawati et al., 2017). The spaces are placed based on axial and radial space organization. Axial space organization is formed based on certain axis lines that connect between spaces so as to create a pattern and ornamental pool is presented to be the center of the central space organization as shown in Figure 3.1.1. Visitors can enter the pujasera area through the main entrance and second entrance. The concept of activity space patterns in the pujasera is based on factual dominance which involves the placement and arrangement of areas based on the type of activity that occurs in it.

Pujasera, as popular culinary centers, play a significant role in meeting the biological needs of individuals through a variety of food choices available. The presence of pujasera provides easy and practical access for people to get a varied daily meal, ranging from traditional dishes to international food. With a variety of menu options, these pujasera are able to fulfill biological needs by providing a complete and diverse source of nutrients, according to the needs of the human body.

3.1.2 Spatial Patterns Architecture on The Productive Society 5.0 in Pujasera PIM

The initial concept of the pujasera was designed with various elements that combine meeting, working, discussing, eating, and drinking, and also provide a playground for children. Pujasera is a place to find food and a dynamic social center. There are meeting rooms for business meetings, discussions, other activities, and comfortable work areas. In addition, there is also a safe children's play area. This concept creates a comprehensive and fun pujasera for everyone (Montgomery, 2013).

Therefore, architectural space patterns are essential in shaping a Productive Society 5.0, which maximizes efficiency and productivity in various aspects of life. One concept within this framework is the integration of pujasera that function as multifunctional spaces. The spatial design encourages collaboration and productivity by incorporating meeting areas, workstations, discussion zones, and dining areas. This holistic approach allows everyone to seamlessly transition from formal meetings to productive informal work sessions, engaging discussions, and even casual dining. Moreover, recognizing the importance of work-life

balance, the pujasera provides particular areas for children to play, ensuring a harmonious environment for all community members. By incorporating these spatial patterns, Productive Society 5.0 promotes a productive and inclusive society that maximizes human potential and improves overall well-being (Wener et al., 2003).

3.2 *Visitor Characters in Pujasera Architecture Space*

Based on Erik Erikson's theory of psychosocial development, each age group in the life cycle has unique developmental tasks and challenges. Erik Erikson's theory is applied to the life cycle stages concerning pujasera architecture.

- 1) **Infancy (0-1 years):** In the pujasera, babies can accompany their parents and experience a supportive and nurturing environment. There are particular areas for parents to care for their babies, and can contribute to trust and security.
- 2) **Childhood (1-3 years):** Early childhood can develop independence and self-control through seating and food choices that encourage them to feed themselves and explore different types of food, as well as playgrounds that support their exploration.
- 3) **Play age (3-6 years):** Children want to engage in pretend play, learn new skills, and take responsibility. Play areas designed to stimulate creativity, imagination, and physical activity can foster a sense of initiative in children while allowing parents to enjoy their meals.
- 4) **School age (6-12 years):** Children develop a sense of competence and accomplishment through school, hobbies, and social interaction. The pujasera provides a space for group learning or collaborative activities to support children's sense of industry and socializing with peers.
- 5) **Adolescence (12-18 years):** In a pujasera environment, offering diverse food options, trendy seating areas, and spaces for socializing can help teens express their individuality and build their identity in a larger social context.
- 6) **Young adults (18-35 years):** Young adults can seek relationships that fulfill and strengthen their personal and professional lives. Designing a pujasera that provides space for social gatherings, networking events, and comfortable seating can facilitate opportunities to connect.
- 7) **Adulthood (35-60 years):** Adults in this stage seek to contribute to society and future generations through work, childcare, and involvement in the community. Pujasera that promote sustainability, support local businesses, and provide space for community events can foster a sense of generativity and engagement.
- 8) **Maturity (60+ years):** Older adults reflect on their lives, finding meaning and acceptance of the past. Designing an age-friendly pujasera with accessibility features, comfortable seating, and a relaxed atmosphere can contribute to a sense of self-worth and well-being for older visitors.

The presence of visitors with diverse characteristics based on Erikson's theory of psychosocial development can change the architecture of pujasera from static to dynamic and from monospace to multi-space. The dynamic nature of the pujasera arises from the activities and interactions of different visitors of different age groups (Gehl, 2010). The monospace concept evolved into a multi-space because the pujasera caters to its visitors' diverse needs and preferences. This multi-space approach ensures that every visitor finds the right environment within the pujasera to do the activities they enjoy (Karsono et al., 2020).

The transformation from a static to a dynamic environment and from monospace to multi-space enhance the overall visitor experience at the pujasera. It promotes inclusivity, encourages

social interaction, and accommodates a wide range of activities, making the pujasera an attractive and versatile destination for individuals of all ages.

3.3 Geometric properties of activity space

Activity space geometry properties are concepts used to design and optimize space layouts that are efficient and comfortable for individuals or groups in carrying out their activities. This concept includes various factors, such as the arrangement and placement of important elements within the space, movement and inter-space connectivity (Nzewi & Ifebi, 2017).

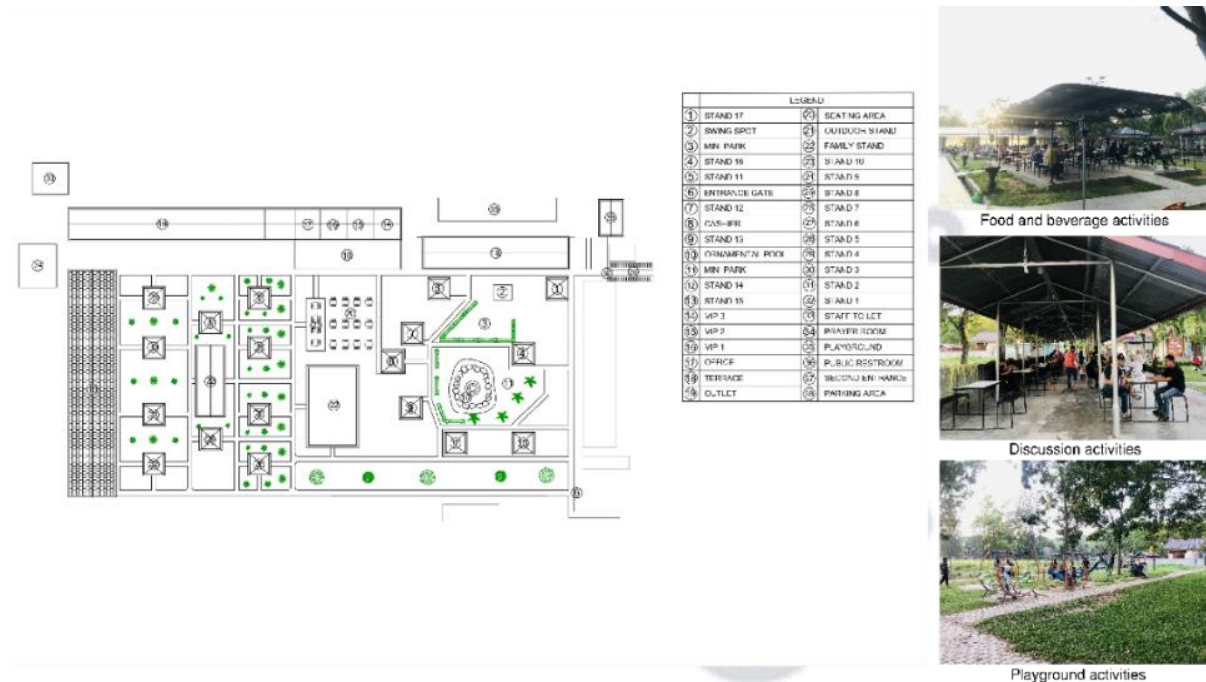


Figure 3.3.1. Personal documentation of Pujasera PIM activities

- 1) **Boundaries**
Norberg-Schulz stresses the importance of considering the relationship between inside and outside, private and audience (Schulz & Christian, 1980). This pujasera has public spaces such as stands, family stands, outdoor stands, seating areas, playgrounds, ornamental pools, mini parks, terraces, and public restrooms. Semipublic spaces such as VIP rooms and prayer rooms. While private rooms such as cashier, office, outlet, and toilet staff.
- 2) **Degree of Extent**
This area is 50 x 38 m², a public space area located in the housing complex of PT. PIM and open to the public. The level of crowds in the pujasera is considered crowded on specific days such as Saturdays, Sundays, and holidays as well as in the afternoon and evening.

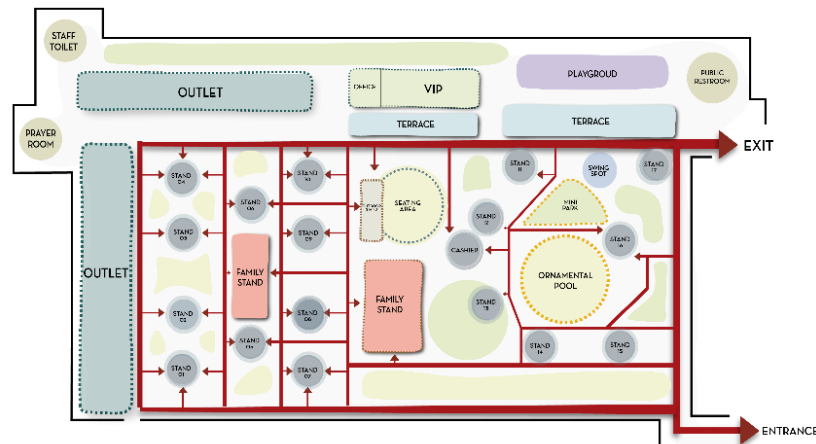


Figure 3.3.2. Flow activity

3) Degree of Enclosure

Degree of enclosure is divided into two components; 'degree of openness' and 'degree of closeness' (Jayasundara & Botheju, 2016). The degree of closeness in this pujasera can be seen physically, such as the distance between each adjacent stand, the distance between outlet 1 and outlet 2, and terrace 1 and terrace 2, which are placed side by side or in a concentrated area; it can be concluded that the degree of physical closeness between these spaces is higher. The degree of openness in pujasera refers to the level of accessibility and openness of space (Schulz & Christian, 1980) these pujasera include: :

- a. Physical access; PIM pujasera is located in a location that is easily accessible and has good accessibility, easy road access, safe pedestrian paths, and good parking areas, hence the degree of openness is physically higher.
- b. Architectural design; The pujasera area has an open design that is dominated outdoor so as to create an impression of openness and facilitate good air circulation and natural light and create a comfortable atmosphere.

4) Centre

Based on the organization of the radial space in the pujasera, an ornamental pool becomes the center between the stands.

5) Figure-Ground

Figure-ground in the pujasera refers to design principles that determine the difference between the element that is the main focus (*figure*) and the background (*ground*) in the pujasera space (Carmona et al., 2003). Some aspects related to *figure-ground* in pujasera :

- a. The separation between booth and background: PIM Pujasera have a clear visual separation between food outlets (*figures*) and the background of the space (*ground*). The stalls that are the main objects are more prominent and easy to identify, while the background is relatively neutral and does not interfere with visitors' focus.
- b. Strategic Placement: The placement of food outlets is well considered to create an adequate figure ground (Lynch, 1960). Outlets that want to stand out are placed in areas with few visual distractions (Lynch, 1960). Outlets that want to stand out are placed in areas with few visual distractions.
- c. Scale and Proportion: The main object stands are of the same size and are arranged in the organization of axial and radial space.

3.4 Spatial Pattern Approach of Productive Community Activities in Architecture

The spatial pattern approach of productive community activity in architecture involves concepts aimed at efficient use of space in conjunction with community activities focused on productivity (Rapoport, 2006). There is a difference between the existing and dynamic approaches to this pugasera. The existing approach tends to be rigid and tied to existing patterns, while the dynamic approach is more flexible and can adapt to changes in community activities over time. By adopting the approach of spatial patterns of productive community activities, architecture can play an essential role in building an environment that supports community productivity and well-being (Talen, 2012).

4. Conclusion

Based on this research, the existence of food colonized by pugasera has experienced a shift in importance. This happens because spatial patterns are directly influenced by the activities carried out by productive communities. This change resulted in food being colonized by pugasera, becoming less prioritized in fulfilling daily needs.

Visitors' character in the pugasera architectural space transforms it into a dynamic and diverse environment. By considering the needs and preferences of different age groups, the pugasera creates an inclusive experience for all visitors. The monospace concept is transformed into a multi-space by providing suitable space for various activities.

The survival of pugasera depends on the existence of space that can support activities and productivity. The continuity of the pugasera's existence is related to adequate space, not only being a place to carry out various activities related to the pugasera but also supporting overall productivity. In addition to physical factors, aspects of spatial arrangement also have an essential role in creating a comfortable and functional environment for pugasera. Several geometric properties affect spatial patterns in productive societies, based on five geometric properties: *boundaries, degree of extent, degree of enclosure, center, and figure-ground*.

With the development of technology entering the era of Society 5.0, pugasera are not only culinary tourist attractions. However, they are slowly shifting into gathering places for productive communities in carrying out socio-economic activities, which also have architectural space transition activities. By having adequate and functional space, pugasera can maintain the sustainability of its existence, improve service quality, and positively contribute to the communities served.

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