Sociocultural concepts for the Chinese settlement resilience in Lasem

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Abstract. This paper presents the resilience phenomenon of Chinese Settlement that faces the political policies and economic activities in Lasem. The political and economic conditions that have lasted for centuries do not influenced the resilience of the culture and architecture of Lasem Chinese Settlement. The resilience of Lasem Chinese Settlement is reflected in several temples with their original and unique architectural design that has been around for hundreds of years. They become artefacts that remain resistant to change and have their own meaning for Lasem Chinese community. The purpose of this study is to determine the resilience phenomenon of Lasem Chinese Settlement. This research is expected to provide knowledge about the activities, functions, and values of space and form that play a role in maintaining human existence as its inhabitants. This study employed a qualitative approach that was based on the naturalistic paradigm with an inductive method. The end of the research conclusion was to build local knowledge from the field of study. The result of the research showed that the Chinese Settlement was able to adjust to the political and economic development. The resilience of space and form of Lasem Chinese Settlement can be viewed by the ability of settlement, public and religious spaces in maintaining human existence as its inhabitants. The resilience grows from the socio-cultural values and gives Lasem city sense of place and local identification that remains resistance.

Keywords: Chinese settlement, Lasem, resilience, socio-cultural values, local identification

1. Introduction

The different architectural works were present in China, India and Europe in the ISM-1M century [1,2]. Architecture in Indonesia is associated with high intensity with Chinese (and Indian) architecture until the 15th century [3]. Chinese architecture, which is a part of Indonesian history, is an interesting topic, because of all the Chinese architectures in Indonesia have different styles and uniqueness so we need to study more closely. Chinese architectures in different places in Indonesia carry their own distinctive characteristics of building materials, adapt to local conditions, and play important roles in Indonesian architectural styles. The uniqueness of Chinese architectures is their emphasis on detail and symbolization of temples and houses that have emotional significance. In regards to the emotional meaning, people react to the environment and then the environment has emotional significance for them because it can increase people attraction and arise certain feelings.

When Chinese ethnic came to Lasem, the natives were Hindu, while Chinese embraced Confucius, Buddhism and Taoism. Both of these ethnicities live side by side peacefully. In the fourteenth century, they built settlements in the lowlands east of the Lasem river, where a port was located as a trading center [4]. Lasem Chinese Settlement began to form and lay next to the house or Royal Palace of
Lasem which was under the rule of the Majapahit Kingdom. In the fifteenth century Islam began to spread on the island of Java and native settlement called Kauman located adjacent to Chinese Settlement. Chinese persist in their culture and embrace different religions. The Kauman and Chinese are very harmonious and they help each other. Tolerance between two ethnics and religions in Lasem has happened a long time ago, and continued until the present generation. The existence of several Islamic boarding schools in the middle of Chinese Settlement shows that tolerance. Tolerance value is a life order in the Lasem community [5]. The difficult period for Lasem Chinese emerged after the arrival of the Dutch people who made Chinese stuck on political problems. Indonesian political regulations and economic policies had not taken sides with Chinese society before reformation era. The political and economic dynamics that have been going on for centuries have not influenced the resilience of the culture and architecture of Lasem Chinese Settlement. As with several other cities in Indonesia, even Lasem Chinese Settlement has become a new destination for recreation and tourism for economic purposes. On the other hand, there is a phenomenon where the current economic growth potential causes a modernization of the physical condition of buildings due to economic activities, such as what happened in Babagan Village that stands out with its batik centers, Karangturi Village and a part of Sumber Girang Village that has cafés and homestays. The old settlements in Lasem are hundreds of years old and have original, unique, and very interesting city architecture as an artifact or a space and form that has been inhabited by humans and still survive until now. The resilience of these settlements certainly has its own meaning for its inhabitants. When we see some old buildings in Lasem Chinese Settlement, we will be carried away by dreams that revive that Lasem's golden story in the past where the legacy of harmonization between ethnic groups can be emulated throughout the country. At this time the city of Lasem continues to grow indicating the resilience factors.

The uniqueness of the spatial pattern of Chinese settlements in Lasem as a result of the space in which humans endure to occupy it indicates the meaning and attachment of the community to their place of residence. To explore this uniqueness, a significant focus of research is needed to be put forward as a guide in the activities of extracting data and information from the residents and community leaders of Lasem Chinese Settlement. The focus of this research is to discuss the phenomenon of the space and form resilience of the Lasem Chinese Settlement in terms of functions, activities and values.

2. Methods
The paradigm that is in accordance with this research is the Naturalistic Qualitative Paradigm. It refers to social reality in this naturalistic qualitative research approach as: "... multilayer reality, interactive, and a shared social experience interpreted by individuals" [6]. Thus in naturalistic qualitative research, when the social reality occurs or appears, the answer is not enough to be searched until what causes the reality emerges, but it is sought to reach the meaning behind the occurrence of visible social reality. Qualitative Naturalistic research with descriptive data was presented in the form of a description of the results of interviews with informants, pictures of map and photo archive documents of Lasem Chinese Settlement starting from the beginning of the Lasem city until the present in 2018, photos and videos of the empirical conditions of Lasem Chinese Settlement. It also did not rule out the possibility of documentary data as historical and administrative. Regarding the research strategy used in this study, the main consideration was the purpose of the study, which is to explain the phenomenon of the survival of Lasem Chinese Settlement. This research employed a phenomenology method to explain or express the meaning of the resilience concept or the phenomenon of experience based on awareness that occurred in some Chinese of Lasem. Thus, the Inductive Research strategy was an appropriate strategy for this research, because the data collected and analyzed were specific data from the field.

3. Discussion
Lasem sub-district has an area from the coast of the Java Sea to the south. On the east there is Mount Lasem. Its area is 4,504 ha. 505 ha were designated as settlements, 281 ha as farmland, 624 ha as State-owned forest. It is located by the Pantura line, making this city a strategic place in the field of trade and services. Lasem Subdistrict consists of 20 villages divided into 84 RukunWarga (RW) and
219 Rukun Tetangga (RT), with the subdistrict capital in Soditan village. The villages are: Babagan, Binangun, Bonang, Dasun, Dorokandang, Gedongmulyo, Gowak, Jolotundo, Kajar, Karangturi, Karasgede, Ngargomulyo, Ngemplak, Selopuro, Sendangsari, Sendangcoyo, Soditan, Srijombo, Sumbergirang, and Tasiksono. Evidence of the existence of Chinese culture in Lasem is the existence of three temples that are hundreds of years old, namely: Tjo Kiong, Poo Ann Bio, and Gie Yong Bio.

Historically people from Mainland China came to Java Island the first time in 1416 AD through Lasem. The main purpose of ethnic Chinese to travel to areas outside China including Indonesia was to trade. This event occurred in the Ming Dynasty government that took place in 1368-1643 AD. In addition to trading, the Ming Dynasty attempted to expand its protectorate to Southeast Asia, including Indonesia. Ceng Ho made 7 voyages to Indonesia and during that time he sailed 6 times to Java[7]. The ethnic Chinese who first landed in Lasem then settled in the village of Galangan precisely on the banks of the Babagan river [8]. The riverbank was an ideal place to develop civilization, because the river flows triggered public trade and transportation activities. Beginning in the 16th century, after the death of Prince Wiranegara, the kingdom of Lasem changed status to Kadipaten of Lasem. Kadipaten of Lasem was led by Adipati Tejokusumo in 1628, during VOC colonialism. In 1750 the capital of Kadipaten Lasem was moved to Rembang, followed by the relocation of the VOC fortress. Since 1751 Lasem has the status of a sub-district city until now.

The following are research findings of the Chinese settlement resilient in Lasem:

3.1. The form resilience of Lasem Chinese Settlement
Resilience is becoming a buzzword in our society, regions and cities [9]. Resilience means: 1) the ability of a person or object to feel good again quickly after suffering discomfort such as shock, injury, etc.; and 2) the ability of something to return to its original form after getting stressed [10]. Resilience can be defined as “The ability to resist and respond to a shock (internal or external) and recover once it has occurred ...”[11]. Urban resilience can be understood in three aspects: ecological resilience, economic resilience, and social resilience [12]. Borsekova, Nijkamp and Guevara add it to be four aspects: economic resilience, social resilience, environmental resilience and institutional resilience[13]. The traditional form that was built resulted in the creation of social spaces, promoted adherence to the socio-cultural value system and absorbed the feeling of social cohesion. Urban development cannot autonomously lead to a more resilient city, as it is often on the opposite [14]. Such grassroots articulations of resilience involve the use of the term for designing community-driven approaches to environmental and social issues, utilising resilience as a vehicle for imagining and creating alternatives to mainstream society[15]. Resilient cities are networks of sustainable physical systems, constructed urban forms, and human communities. Traditional or vernacular building forms evolved to achieve higher human comfort by using locally available building and construction materials, and were more responsive to geographical conditions. In contrast to the development process in modern time, the construction of vernacular architecture is considered more responsive to climate. Traditional local buildings emit fewer greenhouse gases, consume less energy, and maintain a high level of internal thermal comfort. A robust urban system must also have community resilience [16].

Understanding places and spaces refers to two related aspects, namely: first, a collection of buildings and artifacts or a collection of building and artifacts; second, a place for social relations or a site for social relationship [17]. The concept of genius loci that develops a spirit of place, a sense of place and a power of place enables resilience and making citizens feel at home or bound to their space [18]. The uniqueness of a place (locus solus) is a significant differentiator with other places. Certain city areas have unique and specific characters that are the past memories (collective memory), which is a collection of mosaics of the history of human life[19].

Some forms resilience in the Lasem Chinese Settlement can be summarized as follows:
3.1.1. **Large residential Sites.** Different from the other Chinese Settlements, Lasem Chinese Settlement in one of the Chinese Settlements that has not adopted shop houses [20], but has a large residential site with unique architecture and it is resilient until now (See ‘Figures 1’). The Chinese of Lasem have survived for centuries to live in traditional houses, which are a form of traditional architecture. The model or shape of the Chinese Lasem house was initially similar to the temple site, which was divided into the following buildings: the gate, the main house, one or two side houses and the back house.

![Figure 1. Aerial photos of temples and houses living in a large area in Lasem Chinese Settlement](image)

3.1.2. **Chinese Settlement that is quite old.** The resilience of the Lasem Chinese Settlement, which is quite old with 150 to 200 years of age, is very interesting. The typical architecture of Lasem Chinese Settlement, which is a blend of South Chinese architecture (where most of the Chinese in Lasem are located), Javanese architecture (North Coastal), and the influence of Dutch Colonial architecture, has evolved over time. The existence of the Chinese Settlement area directly has economic activities in the form of: Lasem batik home industry as a dominant livelihood and trading activities and other services, including the rise of cafes and homestays in Lasem (See ‘Figure 2’).

![Figure 2. Photograph of a house as homestay in Lasem Chinese Settlement](image)

3.1.3. **The spatial pattern of a specific typical Chinese Settlement.** The Lasem city spatial pattern is still maintained, among others in the form of a corridor formed by high solid walls on both sides of the road, as can be seen in Figure 3. The solid wall built around the building is a representation of strength and has its own cosmology. The gate is a representation of Red Peacock. Houses in the left and right side are the representation of the White Tiger on the right side of the main house and Blue Dragon on the left side of the main house [5].

![Figure 3. Photograph of the corridor in Lasem Chinese Settlement](image)

3.1.4. **Chinese Settlements dominate the entire city and has low density level.** The uniqueness of Lasem Chinese Settlement, which is different from other Chinese Settlements, is that the presence of Chinese Settlement is not only in one small area of the city but almost dominates the entire Lasem city with a much lower density than native and Kauman settlements.

3.2. **The space resilience of Lasem Chinese Settlement**
The Space Resilience of Chinese Settlement can be seen from the ability of residential space, shared space and religious space in maintaining its resilience, as follows:
3.2.1. **Resilience of residential space.** Residential space is an indicator of citizen economic empowerment based on the values of neighboring and socio-cultural relations. The resilience of residential space is based on the ability to adjust productivity, togetherness values between residents as a settlement unity. The phenomenon of resilience can be seen from batik activities in which although there was a ban on Chinese people in the past to trade in small towns and had to move to big cities, it did not influence the tradition of batik among Chinese of Lasem.

3.2.2. **Resilience of shared space.** Shared space is maintained by the existence of agreements, desires and needs of citizens to live together. The existence of the Kauman village, which is adjacent to the Chinese Settlement area, and even Islamic boarding schools in the middle of Chinese Settlement, do not undermine the community togetherness. This is based on the history of the struggle of Chinese Settlement community and natives against the Dutch who united them in a life of harmony with one another. The common room is a multipurpose building built for togetherness events and also the Chinese Settlement corridor or road which is sometimes also used for joint events.

3.2.3. **Resilience of religious space.** The religious space of the area in the form of temples, mosques, and tombs is maintained as a worship space and also a space for interaction between the villagers and other regional activities.

From the resilience of the three spaces, it can be concluded that the resilience of the Lasem Chinese Settlement is based on the values of togetherness and the cultural and religious values of the Chinese Settlement community. These spatial values are generated from the interaction of citizens with space, activity needs, and socio-cultural experiences.

3.3. **Community Activities in the Chinese Settlement Area**

The Chinese community in Lasem still maintains activities related to their homes that function as economic centers and their dwellings. Lasem Chinese Settlement has the characteristics of economic, social and cultural activities that still survive today.

3.3.1. **Batik Activity.** Lasem is famous as the City of Batik. Lasem's batik, which becomes the cultural icon of Lasem city, is the dominant livelihood that supports the economic potential of Lasem City. Some houses in Lasem are used for batik businesses, especially in Babagan Village which can be seen in ‘Figure 4’. The golden story of Lasem ‘batik began to decline in the 1960s, but until the 1970s Lasem batik production still survived and was among the top six in Indonesia besides Surakarta, Yogyakarta, Pekalongan, Banyumas and Cirebon [21]. Lasem's batik is one of the forms of the culture acculturation that is still seen today [22]. The socio-cultural potentials of the Lasem Chinese Settlement are the existence of Chinese settlement and the existence of the specific cultural arts of Chinese Lasem in the form of batik home industries, especially in Babagan Village [23].

**Figure 4.** The atmosphere of the Chinese Settlement house used for the batik business in Babagan Lasem Village (from top left to bottom right: batik house Sigit Wicaksono, home of Padie Boeloe batik, house of batik written by Kidang Mas, and Griya Batik Gajah.

3.3.2. **Chinese New Year and Cap Go Meh Celebration.** The Chinese of Lasem still maintains their religious activities, such as the celebration of Chinese New Year and Cap Go Meh, which is the most important celebration of Chinese society carried out in temples every year. The Chinese New Year and Cap Go Meh celebrations at Lasem are held alternately in three
temples in Lasem. They are often held at the Po Ann Bio Karangturi Temple because it has a large meeting room that can be used to accommodate many people.

3.3.3. Temple Anniversary Celebration. The socio-cultural activities held by the Chinese of Lasem, include commemorating the anniversary of the temple every year. As an indicator of harmony living between Chinese and native people, every Thian Siang Seng's birthday, which also falls as the anniversary of the Cu Ann Kiong temple, the celebration will perform a number of wayangkulit, klonengan and gamelan. As a small Chinese city, the celebration of Chinese holidays is celebrated very rousing of course. There is usually a cultural procession for MakcoThian Siang Bo's birthday celebration by parading Makco and the others circling Lasem Chinese Settlement and visiting the neighbouring temple.

3.3.4. Pray to God. In Taoist Religion, there is a kind of ritual to initiate a very important activity, among others: Inauguration of a Tao Kwan, buil digna uauguration, pray for peace of the State etc. Usually this ritual starts with Praying to God Almighty (Tian Kung). For example: 1) Pray to God Almighty held by Mr. Tjoe Boen Hong on November 26th, 2018 at Lasem Hotel and attended by Chinese ethnic from various countries; 2) She Jiet Kwee Sing Ong prayers at the King SwaKarangturi Temple on Wednesday March 27th, 2019 (See ‘Figure 5’)

![Figure 5. Praying God in the house of Mr. Tjoe Boen Hong on November 26, 2018 utilizing the Karangturi Lasem Street Corridor.](image)

3.3.5. Ceng Beng Celebration. Another religious activity is the celebration of Ceng Beng, which is a grave prayer, which is generally held on April 5 every year. It can also be done a few days before the date. During the celebration of Ceng Beng, the Chinese came to the parents' graves or ancestors to clean, pray, and at the same time bring various types of food, bouquets of flowers and paper money. Usually, they bring favourite foods to parents or ancestors.

3.3.6. Lasem Carnival Festival. The community of Dasun Village also holds an annual Lasem festival carnival to lift their village tourism, because Dasun village is the forerunner of the first Chinese settlement on the banks of the river. The Lasem Carnival Festival was first held in 2013 and will be held annually. The second year was held on Sunday, October 12, 2014. The carnival route on Eyang Sambu streets - Front of Lasem Mosque. The event began at 2:30 p.m. and was participated by approximately 200 participants from several schools in Lasem. The Lasem Festival is usually performed with lion dance and grebeg dumbeg. Dumbeg was made by Dasun villagers assisted by other villages around such as Jolotundo, Tasiksono, Karaskono, and others. The Lasem Festival is enlivened also with walking down the Dasun River.

3.3.7. Family Meeting. There are social activities of the Chinese Lasem, namely the meeting of the Oei family with a lineage carried out by the Oei Family. The Oei clan reunion was held for the first time for two days on August 18th-19th, 2018. The first day was held at the Oei House Cafe and the second day was held at Khong Khauw Tjiak Cafe. The member of Oei Family are 500 people, and the participants that came at Oei reunion were around 300 people. The farthest reunion participants were American, Netherlander and Australian. In the reunion several awards were also given and enlivened with fireworks at night. The purposes of this reunion were to establish harmony between families of one lineage and also to make an activity that had meaning for the country, Indonesia.
3.4. The Concept of Socio-Culture As the Main Strength of the Space and Form Resilience in Lasem Chinese Settlement

Lasem Chinese Settlement is able to accommodate socio-cultural activities, which still remain. The resilience is formed by the historical and socio-cultural strength of Lasem residents. The resilience is important for the continuity of Lasem city identity and as a shelter of life or socio-cultural activities and economic activities of Lasem residents, considering that besides being a residential area, the Chinese Settlement is also an economic center for residents. Traditional settlements are a manifestation of the socio-cultural values of the people that are closely related to the socio-cultural values of the inhabitants, which in the formulation process use the basis of traditional norms. Several important aspects that influence the shape of buildings are socio-cultural aspects, including: religious beliefs, family and clan structures, social organizations, livelihoods, and social relations between individuals [24].

The socio-cultural forces that are the driving factors for the survival of the Lasem Chinese Settlement include:

3.4.1. The religious belief. The main factor of existence of traditional Chinese architectural identity is the religious belief [25]. This is implemented in the ancestral worship room in their house. The existence of place of worship is also related to Chinese belief that is mostly Tri Dharma (Taoism, Confucianism, Buddhism). In Chinese culture around 324 AD, the oldest text about fengshui is about how a dwelling fits into its environment. Actually the old name for fengshui is ti li, which is currently also used to interpret "geography" of Chinese society. The point is that to place a house in an area better protected behind by mountains or hills and in front of a lower open space (called ming tang or "bright hall") must be applied with water in the form of ponds, lakes, rivers or even sea [26]. In Chinese cosmology, the world is a square and divided into four parts with the son of heaven (the emperor) in the middle as an element of earth [4]. The main parts of the compass are displayed symbolically, namely: 1) In the north is a black turtle (element of water); 2) In the South is the red hong bird (element of fire); 3) In the East is the blue dragon (wood element); and 4) In the West are white tigers/lions (metal elements).

3.4.2. Family structure. In Chinese kinship structures family plays an important role compared to individual interests. Each clan usually lives in the same village. A house is a symbol of unity and social status for the big families who are both living and dead. This is implemented in the ancestral worship room which is widely found in the front room of Chinese houses.

3.4.3. Social organizations. Besides maintaining social activities in Lasem, Chinese of Lasem also have a community of Lasem residents. The Community of Lasem (Pawala) is in two major cities, Jakarta and Surabaya. Pawala of Jakarta and Pawala of Surabaya are the association of ethnic Chinese in Jakarta and Surabaya who come from Lasem. Pawala of Jakarta holds meeting every month routinely and also holds periodic visits to Lasem both to temples, to mosques, and to Islamic boarding schools. Whereas the Pawala of Surabaya only holds meetings or events once a year.

3.4.4. Livelihoods. Basically, Chinese citizens mostly fulfill their needs by trading. At first only the Chinese people were good at batik and they employed native people to make batik. Then they sold batik out of Lasem region to foreign countries. With the arrival of the Chinese, most of them helped many native people around to be able to understand how to make good and right batik. There are some batik owners who also studied before on Chinese citizens. After mastering the skills of making batik, there is a desire to produce their own and try to sell batik.

3.4.5. Social relations between individuals. The multiethnic community in Lasem is very harmonious and the residents help each other. The event of the yellow war in which the Chinese people united with the native population in the face of the VOC became a momentum that bound solidarity in the Lasem community. The reciprocal relationship between Chinese ethnic and Kauman ethnic in Karangturi is very good. Tolerance value is a life order in Lasem society. The leader of the Islamic boarding school also congratulated the
Chinese New Year to the Chinese people and visited for the gathering during the Chinese New Year [5].
The five socio-cultural concepts of Lasem Chinese Settlement community mentioned above are the drivers of the resilience of Lasem Chinese Settlement in addition to the strength of history as another driver.

4. Conclusion

The uniqueness of the space and form of the Lasem Chinese Settlement as a result of the built environment indicates the meaning and attachment that the community has towards its residence. This is proven by the resilience of socio-cultural activities, which still become the characteristics of the Lasem Chinese Settlement until now. Socio-cultural factors seem very influential and become the capitals of strength for the survival of the people who eventually recover in reformation government. In this case, these sustainability and sociocultural factors are the main strengths. The socio-cultural forces here include: religious beliefs, family structures, social organizations, livelihoods, and social relations between individuals. Lasem Chinese Settlement area needs to be preserved as a specific identity of Lasem City due to its uniqueness and resilience that are rarely found outside Lasem City. The Chinese Settlement area also becomes an asset of Lasem city (as a wealth of local culture). Therefore, the built environments as living monuments must be preserved to maintain their original space and form.

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6. References

[1] Ching F D K, Jarzombek M and Prakash V 2017 *A Global History of Architecture* (New Jersey: John Wiley & Sons)
[2] Sopandi S 2013 *Sejarah Arsitektur, Sebuah Pengantar* (Architectural History, An Introduction) (Jakarta: PT Gramedia Pustaka Utama)
[3] Rahardhian et. a. 2018 *Eksistensi Candi Sebagai Karya Agung Arsitektur Indonesia di Asia Tenggara* (Existence of the Temple as the Great Work of Indonesian Architecture in Southeast Asia) (Yogyakarta: PT Kanisius)
[4] Pratowo 2010 *Arsitektur Tradisional Tionghoa dan Perkembangan Kota* (Chinese Traditional Architecture and City Development) (Yogyakarta)
[5] Nurhajarini D R, Purwaningsih E and Fibiona I 2015 *Akulturasi Lintas Zaman Di Lasem: Perspektif Sejarah dan Budaya* (Cross-Period Acculturation in Lasem: Historical and Cultural Perspectives) (Yogyakarta: Balai Pelestarian Nilai Budaya (BPNB))
[6] Mcmillan J and Schumacher S 2014 *Research in Education Evidence-Based Inquiry* (Edinburgh: Pearson Education Limited)
[7] Suliyati T 2009 *Melacak Jejak Budaya Cina di Lasem* (Tracking the Chinese Cultural Heritage in Lasem) *Menyusur Sungai Meretas Sejarah Cina di Lasem* (Rembang: Masyarakat Sejarawan Indonesia Komisariat Kabupaten Rembang)
[8] Noor Rachman F, Rustyawati D, Musriyanto A, Mei Sawitri Y, Noerazhka, Anhar F, Wulandari N and Setyawan B 2013 *Lasem: Kota Sejarah yang Terpinggirkan Zaman* (Lasem, the Marginalized Historical City of the Age) (Lasem: Fokmas Lasem)
[9] Kiss T and Kiss V M 2018 Ecology-related resilience in urban planning – A complex approach for Pécs (Hungary) *Ecol. Econ.* 144 160–70
[10] Dictionary O 2015 *Oxford Advanced Learner’s Dictionary* (Oxford: Oxford University Press)
[11] Annarelli A and Nonino F 2016 Strategic and operational management of organizational resilience: Current state of research and future directions *Omega* 62 1–18
[12] Wang Z, Deng X, Wong C, Li Z and Chen J 2018 Learning urban resilience from a social-economic-ecological system perspective: A case study of Beijing from 1978 to 2015 *J. Clean.
Prod. 183 343–57

[13] Borsekova K, Nijkamp P and Guevara P 2018 Urban resilience patterns after an external shock: An exploratory study *Int. J. Disaster Risk Reduct.* **31** 381–92

[14] Yan Z, Xin-lu X I E, Chen-zhen L I N, Mou W and Xiao-jia H E 2018 Development as adaptation: Framing and measuring urban resilience in Beijing *Adv. Clim. Chang. Res.* **9** 234–42

[15] Cretney R 2014 Resilience for whom? Emerging Critical Geographies of Socio-Ecological Resilience *Geogr. Compass* 627–40

[16] Shaw R and Ray B 2018 ScienceDirect ScienceDirect ScienceDirect Changing on urban urban resilience: resilience: loss loss Changing built built form form and and implications implications on of of climate climate responsive responsive and and socially socially interactive interactive spaces spaces *Procedia Eng.* **212** 117–24

[17] Madanipour A 1996 *Design of Urban Space: an inquiry into a socio-spatial process* (Chichester: John Wiley & Sons)

[18] Schulz C N 1984 *Genius Loci, Towards a Phenomenology of Architecture* (New York: Rizzoli)

[19] Rossi A 1984 *The Architecture of the City* ed P Eisenman and K Frampton (New York: The MIT Press)

[20] Pratiwo 1990 *The Historikal Reading of Lasem* (Leuven: Katholika Universiteit Leuven Belgium)

[21] Unjiya M A 2014 *Lasem, Negeri Dampoawang: sejarah yang terlupakan* (Lasem, the land of Dampoawang: a forgotten history) (Yogyakarta: Salma Idea)

[22] Gunawan Y, Rachim Y F and Fabiano C 2008 *Arsitektur Vernakular Seri 2. Pertemuan Arsitektur Pantai Utara Jawa: Cirebon, Tegal, Pekalongan, Semarang, Lasem, Tuban*. Bandung: Cipta sastra saluran. (Vernacular Architecture Series 2, North Java Coastal Architecture Meeting : Cirebon, Tegal, Pekalonga *Arsitektur Vernakular Seri 2* ed P Salura and Y Gunawan (Bandung: Cipta Sastra Salura)

[23] Kurniati R 2016 *Sejarah Perkembangan Struktur Ruang Kota Lasem* (History of the Development of Lasem City Space Structure) *Ruang* **2** 172–88

[24] Rapoport A 1977 *Human Aspects of Urban Form Towards a Man-Environment Approach to Urban Form and Design* (Oxford: Pergamon Press Ltd.)

[25] Khaliesh H 2014 *Arsitektur Tradisional Tionghoa: Tinjauan Terhadap Identitas, Karakter Budaya dan Eksistensinya* (Chinese Traditional Architecture: An Overview of Identity, Cultural Character and Its Existence) *Langkau Betang* 1

[26] Skinner S 2009 *Feng Shui Style: The Asian Art of Gracious Living* (Singapore: Tuttle Publishing)