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Adaptive Reuse and Interventions of Chinese Architectural Heritage in the City of Lasem, Indonesia

Timoticin Kwanda [1]

[1]*Department of Architecture, Petra Christian University, Indonesia*

Abstract

In Indonesia, Lasem identities as a China Town are constructed and developed over time, and Chinese architectural heritage is one of the main qualities and identity of the city. Recently, these unique Chinese architectural heritages have been transformed for tourism needs. This paper aims to document the transformation of functions or adaptive reuse, and its impact to forms and meanings of the Chinese architectural heritage of the city, and focuses on whether the interventions occurred was by the principles of architectural conservation. In April 2019, the study surveyed and documented five Chinese historic buildings in Karangturi area in Lasem to understand how the architectural heritage has transformed. The result shows that tourism has a direct influence on changes in the building functions in Lasem, such as the Oei House and Little China that have changed from residences to homestays to accommodate the needs of tourists lodgings. The other two buildings, namely House of Nyah Giok and Nyah Lasem museum have also changed their functions from residences to a batik home industry and a museum related to tourism attractions. Interventions on the four buildings with sensitive uses are following the principle of minimum intervention that preserved the original main buildings and changed only in the wings buildings, and new buildings for lodgings were infilled in vacant land of the site for the Oei House case. For one building, however, tourism has no direct influence on changes in the building functions, it has changed from a residence to an Islamic boarding school for the development of Islamic education that had nothing to do with preserving Chinese culture. Indirectly, the building remains a tourist destination because of its unique Chinese architectural features. Findings shows that for the four Chinese owners, the meaning or significance for the adaptation of the building is preserving historic values of the Chinese architecture, and economic values as well by developing commercial spaces and historic areas for tourist attractions.

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Keywords

Lasem; Adaptation; Interventions; Chinese Architectural Heritage

1. Introduction

Lasem is a small town located in Central Java, also known as Petit Chinois, has various objects as tourist destinations, especially architectural heritage with typical Chinese architecture in three Chinese areas, such as Little China village in Karangturi quarter, the batik industry center in Babagan area, the ancient Chu Anh Kiong temple, and the well-known Lawang Ombo or Opium House in Dasun area. The Opium House was even used as a setting for the 2002 romantic drama film Ca Bau Kan (The Courtesan), relates an Indonesian woman who returns to Indonesia from the Netherlands in search of her roots, her mother, a village woman known as 'Ca Bau Kan' or courtesan in colonial Indonesia. Based on this potential, in 2017, the Rembang Regency government in Central Java

has developed an urban design guidelines for three conservation areas (62 ha) in Lasem to create new tourism attractions, such as (1) the mosque, the city square, Karangturi Chinese area, Little China Heritage, and Po An Kiong temple (25 ha); (2) the Opium house, Tjoe An Kiong temple, Islamic boarding school (17.5 ha); and (3) Lasem batik area, and Gedongmulyo Chinese area (19.5 ha). Recently, however, in 2019 the rapid growth of the tourism sector in the city will pose a threat to the transformation of the shape and meaning of Chinese architectural heritage. For this reason, conservation efforts are needed, namely through preservation, protection, development and appropriate use to reduce the threat of physical interventions that are not following the principles of conservation (Kwanda, 2013 & 2015).

This study aims to document the building transformation of functions, and its impact on forms and meanings that occur in the heritage buildings in Lasem to support tourist needs, and to identify the physical intervention on the heritage buildings that under conservation principles. The study seeks to enrich and fill the existing knowledge gaps in building conservation disciplines, especially in the adaptation of Chinese architectural culture in the city of Lasem. Later on, it is hoped that the conservation guidelines especially for adaptive reuse will be proposed based on the conservation principles for cultural heritage buildings in the city.

Nomenclature

A	Conservation: managing change in which actions are taken or the process of looking after a place is to prevent decay and retain cultural significance or values.
B	Adaptive reuse: reusing an existing building for a purpose other than which it was originally built.
C	Architectural heritage in Indonesia: buildings or structure that meet the requirements namely 50 years or more; representing the architecture style shortest possible period of 50 years; has a special meaning for history, science, education, religion, and or culture; has cultural values for strengthening the nation's personality.

2. Adaptation and Interventions

The term conservation was firstly mentioned in the Venice Charter 1964, however, no description for the term. Afterward, the term is described in many Charters, such as in the Burra Charter 2013 an internationally known for its comprehensive and detailed contents. In this Charter article 1.4, conservation means ‘all the process of looking after a place to retain its cultural significance’. For Feilden (2003), conservation is defined as ‘the action taken to prevent decay and manage change dynamically’, and all of these acts are to ‘prolong the life of our cultural and natural heritage’. Lastly, to revise the outdated existing principles with the new notion of values advocated by the Burra Charter, English Heritage (2008) produced the Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment, and conservation is defined in principle 4.2 as ‘the process of managing change to a significant place in its setting in ways that will best sustain its heritage values, while recognising opportunities to reveal and reinforce those values for present and future generations’.

Substantially, the above definitions are all alike that have come to see conservation as the management of change, seeking to retain what people value about places extending the concept of conservation from mere preservation to embrace enhancement or positive change. Thus, conservation can be defined as managing change in which actions taken or process of looking after a place is to prevent decay and retain or sustain cultural significance or values. The action taken or intervention may include a combination one or more of the ascending degrees of intervention: (1) prevention of deterioration or maintenance, preferred as the best representing the minimum intervention principle, (2) preservation of the existing state, (3) consolidation of the fabric, (4) restoration, (5) rehabilitation, (6) reproduction, (7) reconstruction, (8) adaptation.

Response to the adaptation of Chinese architectural heritage in Lasem, the interventions of forms must be by the principles of architectural conservation. As a reference for the study, three conservation principles were taken according to Orbasli (2008), firstly, historic values in buildings or historic sites, namely architecture and history, if it is lost will reduce its value. Secondly, historical integrity whereas historic buildings are relics of the past that hold

details and information about the past; and thirdly authenticity that does not mean returning the building to its original form but all changes that occur honestly (authentic) must be disclosed.

For adaptation or new functions, the heritage buildings must be related to the environment and surrounding communities, namely meeting the needs of the community as a place to work, live and play (Rozov, 2013). In terms of meaning or reasons for adaptation, Agustiananda (2012) argues that motivation for the adaptation of buildings is economic potential by developing commercial spaces for tourist attractions, and sustainable and commercial building functions can make historic areas become lively tourist attractions (Yıldırım & Turan, 2012).

3. Methods

The first stage of the study is data collection through a field survey done in April 2019 in the city of Lasem. Five Chinese architectural heritages have been chosen in the Karangturi area as the largest Chinese settlement where tourism is growing rapidly, namely, the Oei House, Little China also well known as the Red House, Batik House of Nyah Kiok, Nyah Lasem Museum, and Kauman Islamic Boarding School. The buildings were chosen because they have changed the original function, such as from the original function as a residence to a homestay, to a museum, to a batik home industry, and a school. The buildings were documented through field surveys to identify the physical change through photographs, measuring, and interviewed with the owners or occupants. Based on the result of documentation, drawings were made to show changes in the existing physical condition of the buildings.

To examine the extent to which adaptation and transformation of form have occurred, a comparison is made between the drawings of the existing condition of the buildings and the basic typologies of similar architecture. The typology of the building used about the object of study selected is the typology of a traditional Chinese house with a courtyard (Fig. 1). Chinese architecture of shelter in Lasem in particular also demonstrates this Chinese architectural style, such as produce a basic plan of the si-he-yuan courtyard with the main axis of the symmetrical building, symbolizing the axis of the universe connecting the earth (axis Mundi) and the fixed point of the northern star. The orientation of facing north-south is also identified with the seat of the king who is considered the son of the sky facing south, supported by the north star which is considered the center of the universe and the seat of the ruler of the sky Tian or gods (Kustedja, Sudikno & Salura, 2012). This is then widely imitated by the community, although there is freedom to build in the other direction according to the feng-shui analysis by linking the time of birth of the building owner.

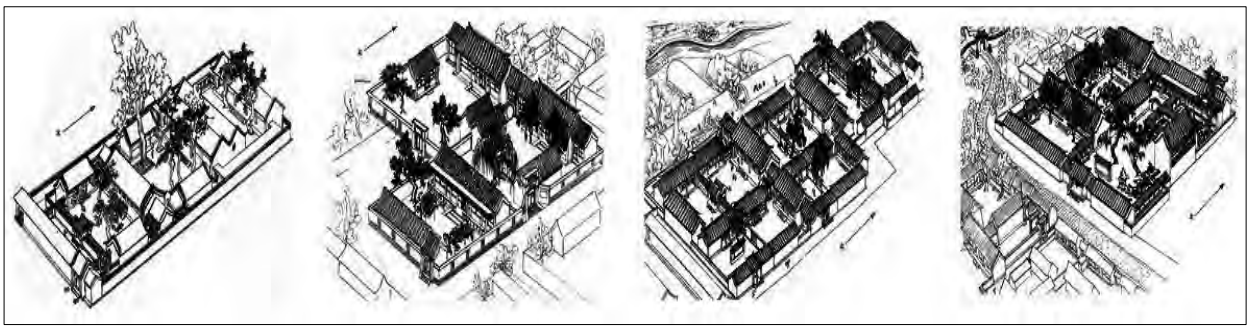

Figure 1. Typology of traditional Chinese house with courtyards. Source: Wang, 2012.

Besides, the shape of a rectangular floor plan found also in Lasem is a visualization of the division of space into 4 segments that follows the theory of cosmology coupled with the philosophy of yin-yang, the five phases and season, and four 4 mythological animals ruling the sky. Facing the four wind directions, south symbolizes warmth, growth, fire phases or summer and the red bird; east side towards the sun as the symbol of birth, wood phase or spring, and the green-blue dragon; west side as a symbol of the end of the day or life, metal phase or autumn and the white tiger; and the north side is the worst direction facing the cold wind, dark region direction, water phase or winter and the snake and black turtles; and the ground phase is human as the midpoint of a cosmological map (Knapp, 1992).

Similar to ancient Chinese architecture, wood is the main material and most of the buildings are in the wood frame structure of Chinese architecture in Lasem. Some typical features of Chinese architecture found in Lasem are gable walls retaining fire which are built to exceed the height of the roof that aims at preventing the spread of fire; an

exposed roof construction frame inside of the building where the entire frame beam is visible; a queen post is a short pole on the roof construction, this pole rests on the beam, to bear the purlin beam on it; and Dou Gong, a wood construction that combined of dou (a bearer beam for a short beam rests on it) with gong system of architectural style (a beam bearing an arc sitting on a column) of the Qing dynasty (Guo, 2002).

4. The Chinese Settlements in Lasem

Chinese immigrants to Southeast Asia have primarily come from only three of the southernmost provinces, which are Hainan, Guangdong, and Fujian. Chinese immigrants came to Indonesia in several waves. While some date the earliest immigration of Chinese to Indonesia as far back as the fourth century, however, some argue that the first Chinese immigrants which predominantly Hokkien traders from Fujian province in Indonesia in 800–900 AD (Lim & Mead, 2011). It was not until the second half of the 19th century and early 20th century, however, that large numbers of immigrants from the southern provinces began arriving, especially at the ports in Java. The motivating force behind immigration appears to have been adversity at home, political oppression under the Manchurian Qing Dynasty, and economic hardships following the Opium Wars (Jones, 2009).

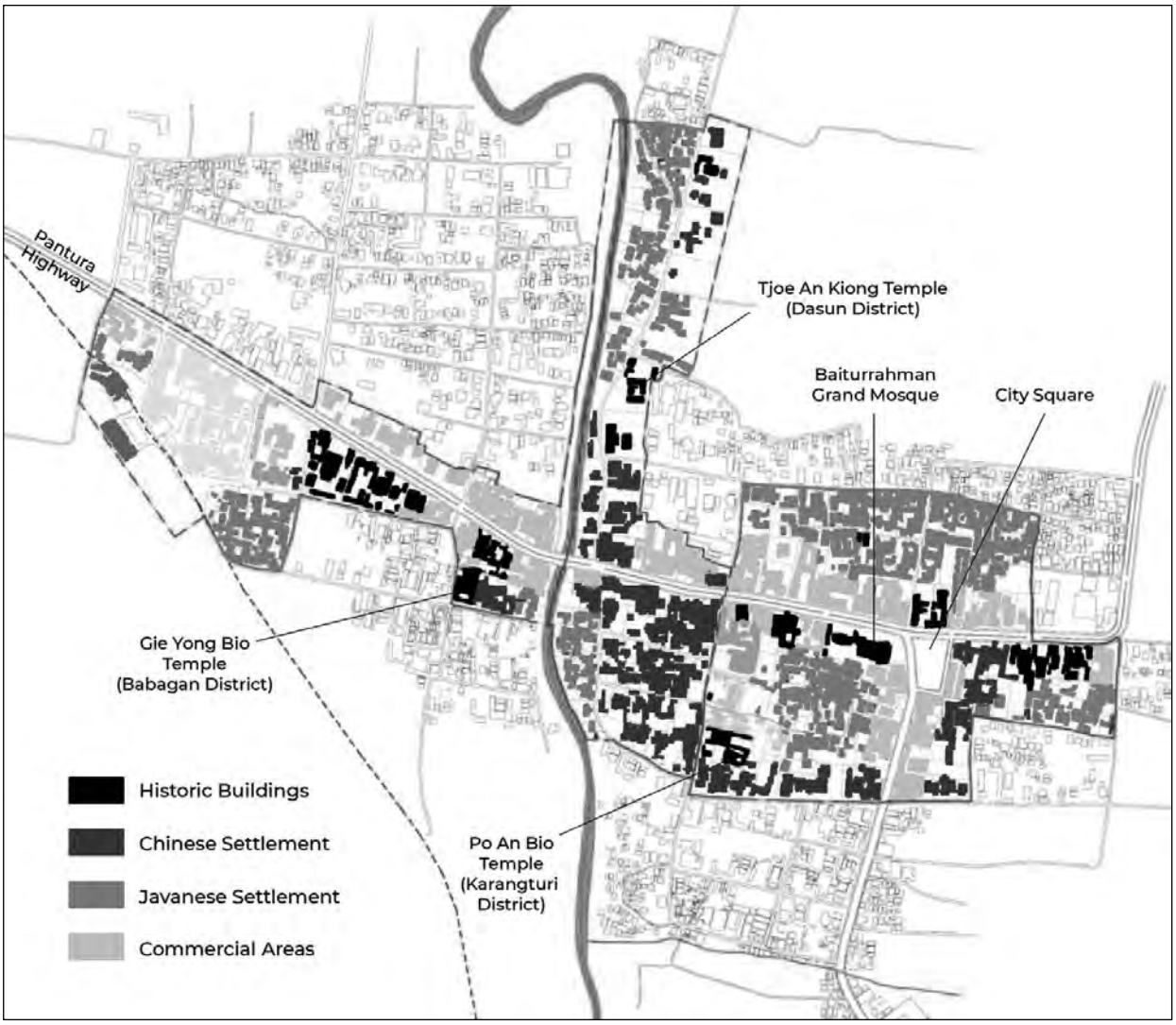

Figure 2. The Chinese settlements and architectural heritage in Lasem

The transformation of the city of Lasem has also influenced by several immigration waves in the city. Lasem City is a subdistrict city on the north coast of Java in the Regency of Rembang. Since the 16th century, many Chinese residents have settled in Lasem city, and they are acculturated with the indigenous people, this is evidenced by the existence of the Chinese residential areas that grew side by side with the local community. The first of the Chinese

settlement in Lasem was originally located only around the pier on the edge of Lasem river with the center of the settlement at the Tjoe An Kiong temple in Dasun district (Fig. 2).

After 1600, there was a great deal of Chinese immigration, especially from Fujian Province to Lasem, because it was felt that many relatives and friends had lived there. So Chinese settlements in Lasem develop towards the south of the highway (the Daendels road), on the edge of Lasem River. This new settlement is called Karangturi, and soon after, a new temple was founded called Poo An Bio temple in the area, and followed by another new Chinese settlement in Babagan area developed towards the west of Karangturi with another new temple called Gie Yong Bio (Figure 2). The Dutch (VOC) took control of Lasem in 1679. The center of power in the palace in front of the city square began under the control of Dutch power and established their fortress in the Tulis area.

In 1750, the Dutch fort was moved to Rembang, 13 km west from Lasem, and in the following year Lasem was downgraded from the regency town to the subdistrict town until now. The government center in front of the city square then turned into a trading center. Consequently, in the 19th century, the peak of Lasem city's glory was at the end. At the same time, a new residential area is called Gedongmulyo was developed towards the west of Lasem river and to the north of the highway. In this new area, temples were not established, and Gedungmulyo settlement is the last Chinese settlement in Lasem.

5. Adaptation and Interventions of the Chinese Architectural Heritage

In general, a survey was done by Aini, Antariksa and Turniningtyas (2016) shows that there are 239 historic buildings in five districts of Lasem, and more than half of the buildings are Chinese architecture that comprises of 121 Chinese architecture styles (51%), 87 buildings of the Dutch Indies styles (36%), 13 buildings of Chinese Indies styles (5.4%), and 15 Javanese raised timber floor houses styles or gladak style (6.3%), 2 buildings of Chinese Javanese styles (0.85 %), and 1 building of Javanese-Indies style (0.45%). Most of the physical condition of these buildings are in poor condition without maintenance (43%), and with maintenance that carried out only by repairing damaged ornaments, and some buildings have been damaged and left unoccupied. The five historic buildings in Karangturi Chinese area were surveyed and documented in April 2019 to understand the physical changes to the buildings as follows.

5.1. The Oei House (Roemah Oei)

In 1823, Oei Am migrated from Fujian to Lasem, and in 1818 he built as a residence. Later on, his son, Oei Thian Ho, used the building for tapioca and black sticky rice trading place. a batik production house. The third generation of the family used the building for a horse-drawn carriage. In 2016, according to Oei Ling Hiem, the seventh generation of the family, the main building was restored by the Oei family museum. The main building is a typical Chinese architecture with a rectangular floor plan and a strong symmetrical axis with the main gate in the middle of the wall (Fig. 3). Wood is the main material especially for the floor and wood frame structure for the roof, and an exposed roof construction frame inside of the building where the entire frame beam is visible, usually decorated beautifully (Fig. 4). In 2018, a two-story new building with Chinese architecture style was built at the backyard functioned as a homestay of 15 rooms named as Wisma Pamilie, and a café was opened using the terrace at the front section of the house (Fig. 5). Despite the changes in the function, the new buildings do not disturb the original main building that is still intact. It has a strong cultural tourist attraction with this unaltered form, which is one of the most popular tourism objects in Lasem.

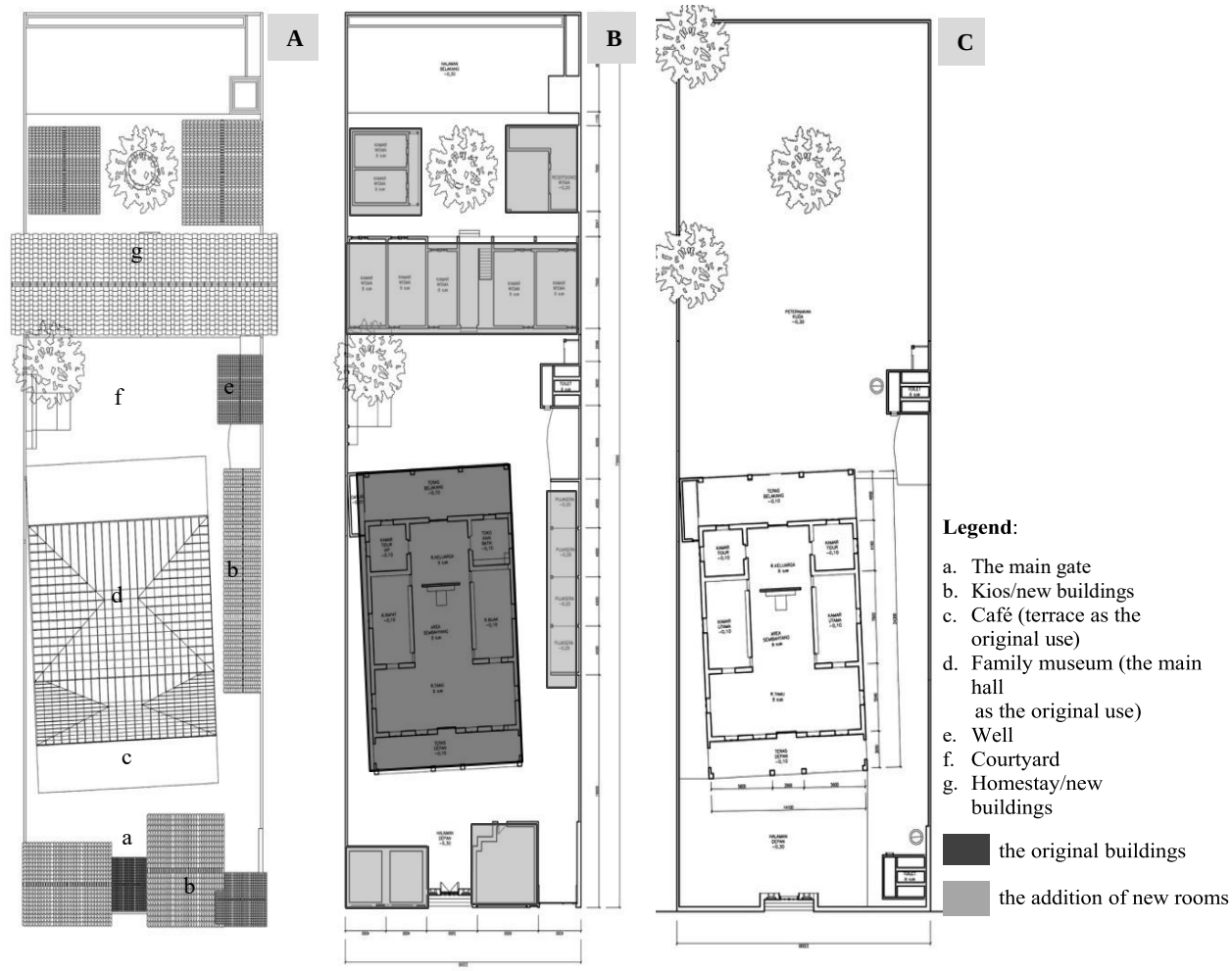

Figure 3. The transformation of the Oei House: (A) the site plan of the existing condition, (B) the floor plan of the existing condition, and (C) the floor plan of the original condition

Figure 4. The original main building of the Oei House: (a) the main gate, (b) the exposed roof construction frame, (c) the main hall in the main building, (d) the front terrace functions as a café, and (e) the Oei family museum

Figure 5. The new two-story building for homestay: (a) the gate to the homestay called Wisma Pamilie, (b) the front façade of the new two-story building for homestay, and (c) the backside of the new oen and two-story building for homestay

5.2. Little China (Tiongkok Kecil)

Little China is also well known as Red House as it is painted with red color. In the 1800s, it was used as an opium house, and later on it was used for a swallow's nest. In 2017, the building on the left side was restored and used for a homestay of only four rooms, a batik store on the middle building, a café, and parking area were added at a vacant land next to the batik store (Fig. 6). Currently, as a response to increasing demand on bedrooms requests, the owner plans to extend the complex to the land next to it. The building is a typical Chinese architecture with a rectangular floor plan and a strong symmetrical axis with the main gate in the center of the homestay building; wood is the main material especially for the floor and wood frame structure for the roof. It is a hybrid of Chinese and the Dutch Indies style with a neo-classic column at the front terrace (Fig. 7). Despite the changes in the function, the owner maintained the original form of the buildings. Little China has a strong cultural tourist attraction with this unaltered form, both of which are quite popular tourism objects in Lasem.

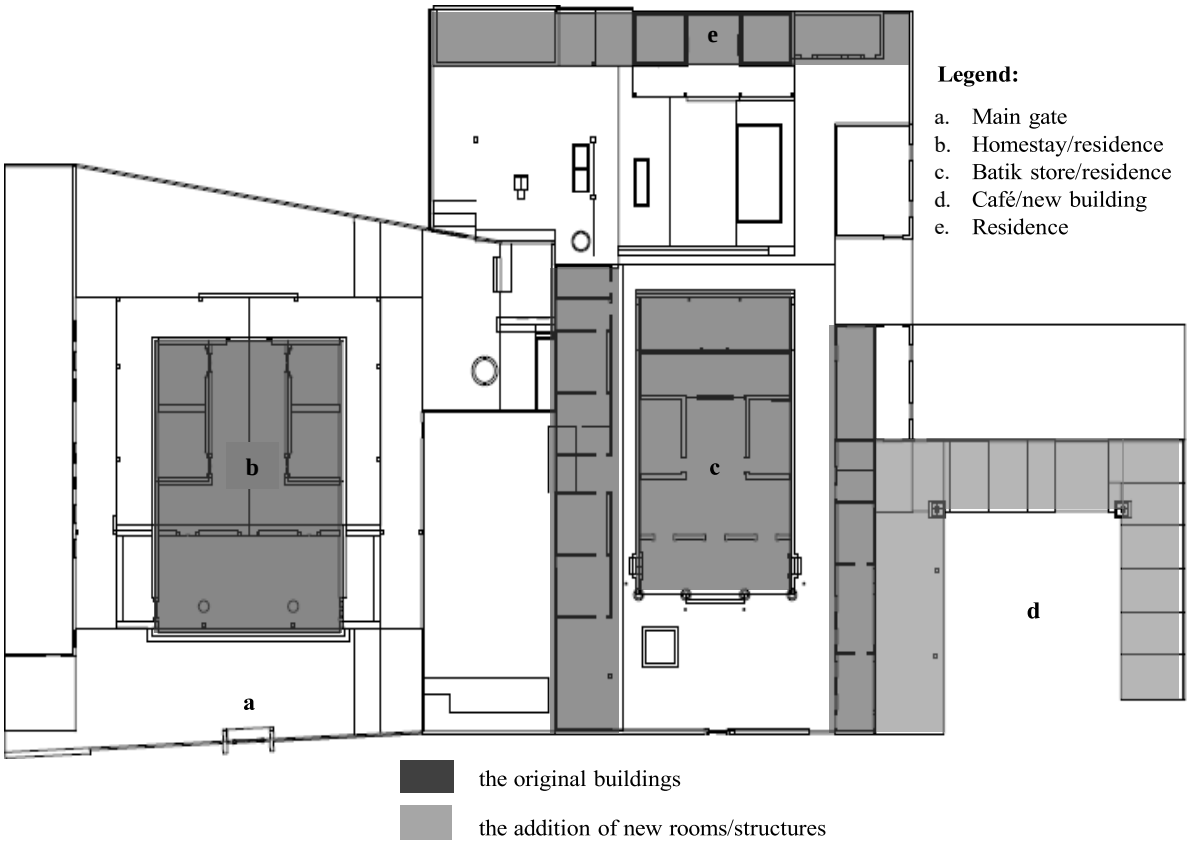

Figure 6. Little China is a large complex with three main buildings: (b) a homestay, (c) a batik store, (d) a new building for café and parking at a vacant land, and (e) the residence

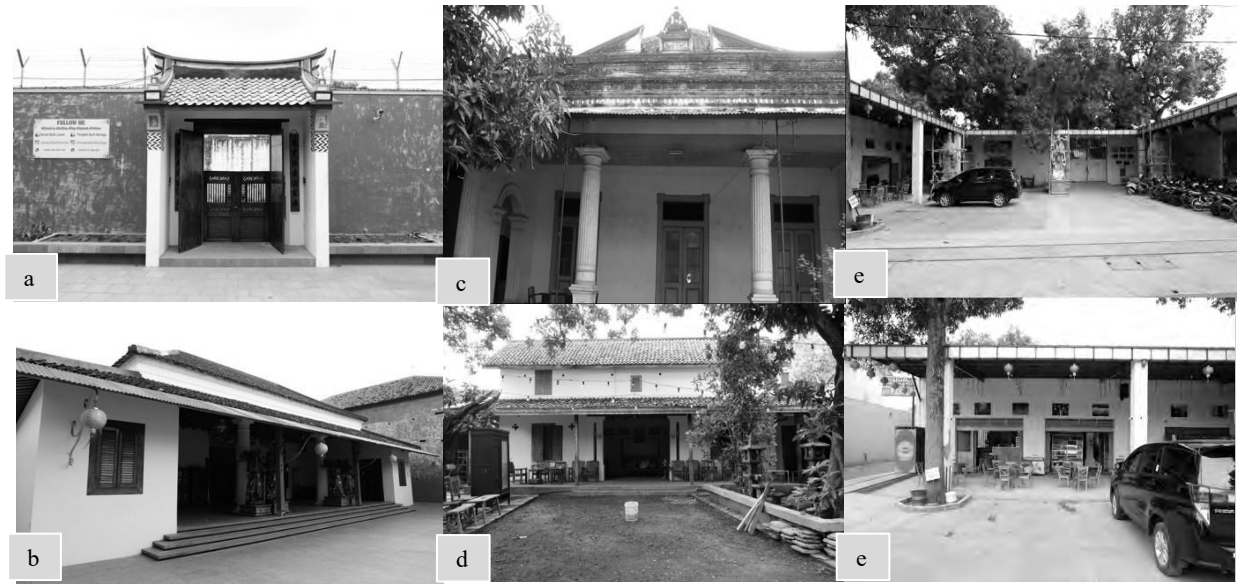

Figure 7. The three main buildings of Little China: (a) the main gate to the homestay building, (b) the entrance of the homestay, (c) the façade of the batik store, (d) the owner's residence at the backside of the batik store, and (e) the new building for café and parking area

5.3. The Nyah Kiok Batik House

It was built in the 1900s as a residence for the Kiok family with a main building and two wings, and since 1973 it has been used for batik home industry. The building is a typical Chinese architecture with a rectangular floor plan and a strong symmetrical axis with the main gate in the center of the boundary wall, and gable wall (Fig. 8).

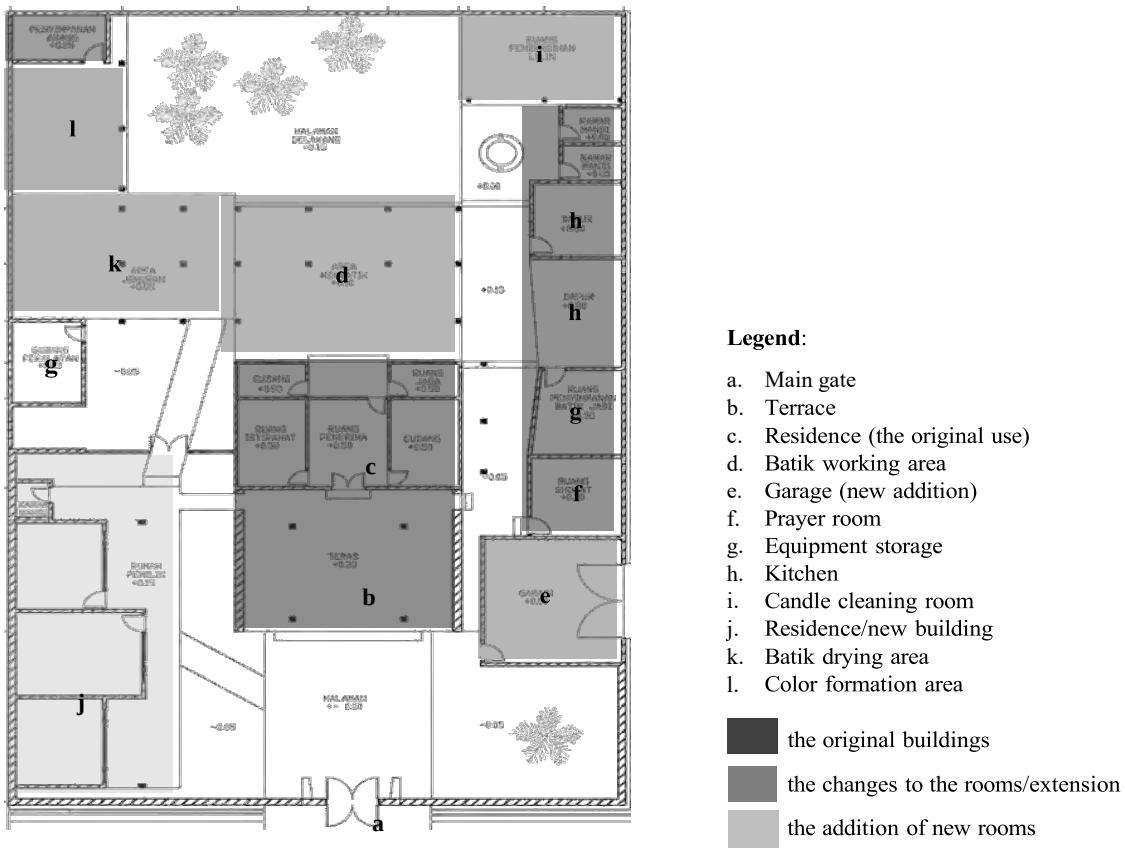

Figure 8. The floor plan showing changes of functions and forms at the Nyah Kiok House

Wood is the main material especially for the wall, floor, and ceiling. It has a wood frame structure for the roof with an exposed roof construction frame inside of the building where the entire frame beam is visible, a queen post to bear the purlin beam on it, and dou gong wood construction system of Chinese architectural style (Fig. 9). The

main building of the Nyah Kiok Batik House although functioned as a working place for Batik artisans has not been changed at all considering that it has the historical and cultural significance of batik in Lasem, therefore the Batik House has become one of the important tourist destinations. The wing buildings on the left and right have changed a lot, on the left side a new room for the residence was built.

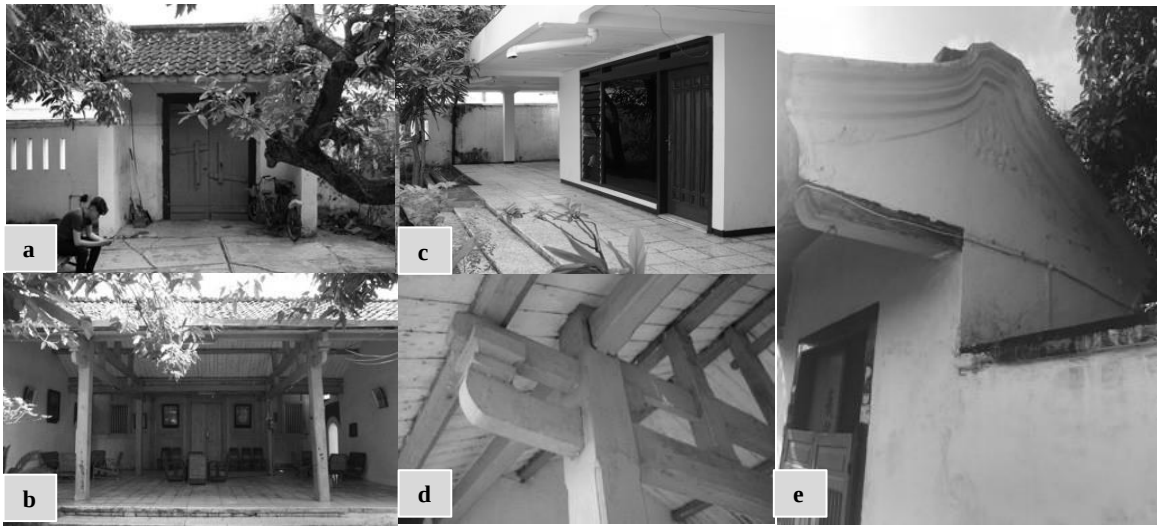

Figure 9. The Chinese architectural features: (a) the main gate with the gable wall, (b) the verandah with wood frame structure, (c) the addition of new building for residence, (d) *Dou gong* wood construction system at the verandah, and (e) the gable wall of the main gate

5.4. The Nyah Lasem Museum

It was built in the 1850s as a residence with a main building with a Chinese style and one wing on the left side built in the 1900s with the Dutch colonial style. Since the 1880s it has been used for batik production, and today it is used for a museum of private collections, and accommodation for backpackers at the left-wing building. The main building is a typical Chinese architecture with a rectangular floor plan and a strong symmetrical axis with the main gate in the center of the boundary wall, and gable wall (Fig. 10).

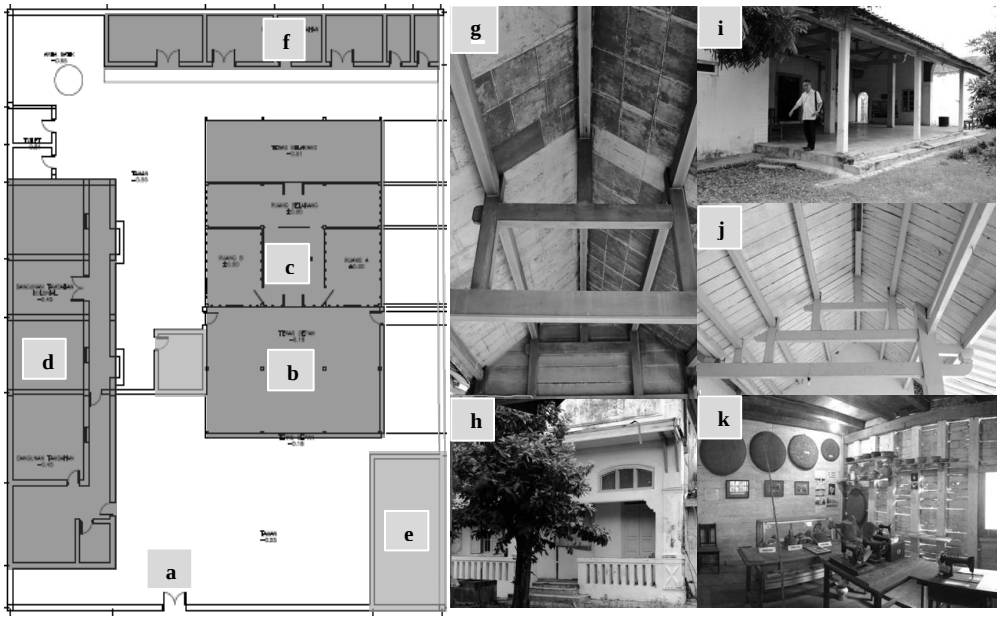

Figure 10. The floor plan showing the transformation of the main building and the left wing of the Museum, (g) the exposed roof construction frame, (h) the left wing with the Dutch colonial style, (i) the verandah with wood frame structure, (j) *Dou gong* wood construction system, and (k) the museum room with the collections

Wood is the main material especially for the wall, floor, and ceiling. It has a wood frame structure for the roof with an exposed roof construction frame inside of the building where the entire frame beam is visible, a queen post to bear the purlin beam on it, and dou gong Chinese wood construction system (Fig. 10). The deteriorated condition of the main building is more due to the owner having no management power, hence the original building of this museum tends to be vulnerable to damage.

5.5. Kauman Islamic Boarding School

It was built as a residence, and in 2001 it was bought by an Islamic cleric that changed it in 2005 for an Islamic boarding school. The original building has changed a lot, in 2007 a new two-story building was built at the front section that used to the main gate and boundary wall, and new structures at the left and right wings including the backside of the building (Fig. 11). As with the Kauman Islamic Boarding School, the allocation of functions to an Islamic boarding school made the owner changed many parts of his house. The interesting thing about the main building of this boarding school is the cultural acculturation trail that is seen from the style of the main boarding house which is a mixture of colonial and Chinese architecture styles. For this reason, tourists visited the boarding school to see its unique architectural style. Currently, some bedrooms of the building are also used to accommodate tourists, and a batik store is opened for tourists.

Figure 11. The first and second floor showing the transformation of the building for schools, (h) the entrance through the first floor of the new building, (i) the terrace of the main building, (j) a prayer room on the first floor of the new building, (k) the lobby of the main building seen from inside, and (l) the new structure for prayer room and classroom

6. Analysis and Discussion

Von Meiss (1990) states that identification of changes in function and form by looking at architectural elements can interpret the experience of space and architectural forms that generate memory and affect the ambiance of an architectural work. The results of architectural elements identification of the cases show that the changes in shape that occur due to the changes in function, from residences to lodgings as shown in the Oei House and Little China. Despite the changes in the function, the owner maintained the original form of their main buildings to keep the historic values of Chinese architecture (Fig. 3-10). Subsequently, the Oei House (Fig. 3-5) and Little China (Fig. 6-7) have a strong cultural tourist attraction with this unaltered form, both of which are popular objects in Lasem.

The main building of the Nyah Kiok Batik House although functioned as a place of work for batik artisans has not been changed at all considering that it has the historical and cultural significance of batik in Lasem, in such a manner the Batik House has become one of the important tourist destinations (Fig. 8-9). While the changes in the original form of the traditional Chinese houses in the Nyah Lasem Museum is more due to the owner having no funding to maintain, consequently the original timber building of this museum tends to be vulnerable to damage (Fig. 10). As with the Kauman Islamic boarding school, the changes in functions from a residence to an Islamic boarding school made the owner change many parts of the house (Fig. 11). The interesting thing about the main building of this boarding school is the cultural acculturation trail that is seen from the style of the main house that is a mixture of colonial and Chinese architectural styles.

Looking at the cases in Lasem, it can be concluded that adaptive reuse or the changes in the function of a building should be based on cultural association to keep the historic value of Chinese architecture. Otherwise, the adaptive reuse of the traditional Chinese house that has no cultural context to Chinese architecture such as the Islamic boarding school, the interventions made were quite enormous and the minimum intervention principle was ignored.

Meanwhile, the significance to retain the original form of the buildings are both the historical values by maintaining its original form of the building that has created a high cultural attraction, and the economic interest of the distinctive Chinese architectural heritage for tourism. The tug of war between the interests of conservation to conserve the shape and meaning of the Chinese architectural heritage in Lasem with the interests of the tourism industry that prioritizes functional and economic aspects becomes an issue of the city losing its character as a China Town. For this reason, it is necessary to develop guidelines for physical interventions on the site such as a proper infill design, and on these historic buildings (Kwanda, 2004).

7. Conclusion

It could be concluded that Chinese historic architecture in Lasem is a worthy heritage that has to be conserved for its historic Chinese architecture values. Despite the recent conservation interventions done by the building owners, the issue of buildings decaying is particularly vital since their condition in the last decades has deteriorated immensely and evidently. The community, activists and authorities alike should address this issue. This research is simply an effort to shed light on the value and historical importance of these Chinese architectures, and to highlight the function and physical changes of these buildings for tourism and other uses. In conservation, the changes of these Chinese heritage buildings are unavoidable which has to be managed. To manage change in conservation is critical to identify appropriate new uses, such as adaptive reuse from the original use of a residence to a homestay, to minimize the need for change to the existing fabric. While adapting to new uses, it requires sensitivity in handling change and making minimum intervention to preserve the original form of the historic fabric. Indeed, it is accepted that heritage buildings should continue to retain their cultural significance and be prominence with adaptive reuse.

Acknowledgements

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References

Agustiananda, P. A. (2012). Urban Heritage Conservation in Surakarta, Indonesia: Scenarios and Strategies for the Future. *International Journal of Civil & Environmental Engineering* IJCEE-IJENS 12(02), 28-34. http://ijens.org/ijcee.html.

Aini, S., Antariksa & Turningtyas (2016). Pelestarian lingkungan dan bangunan kuno di kawasan Pecinan kota Lasem. [Master's thesis, Universitas Brawijaya]. Universitas Brawijaya Repository. http://repository.ub.ac.id/157210/

Australia ICOMOS. (n.d.). *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance 2013*. Retrieved October 27, 2019, from http://www.australia. icomos.org.

English Heritage (2008). The Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment. Retrieved November 12, 2019, from http://www.historicengland.org.uk

Feilden, B. M. (2003). *Conservation of Historic Buildings*. Architectural Press.

Guo, Qing-hua (2002). *Visual dictionary of Chinese Architecture*. Images Publishing.

ICOMOS. (n.d.). *International Charter for the Conservation and Restoration of Monuments and Sites (The Venice Charter 1964)*. Retrieved April 17, 2019, from http://www. international.icomos.org/e_venice.htm.

Jones, R. (2009). Chinese loan-words in Malay and Indonesian: A background study. University of Malaysia.

Knapp, R. G. ed. (1992). *Chinese landscape: The village as place*. University of Hawaii Press.

Kustedja, S., Sudikno, A. & Salura, P. (2012). Feng-shui: Elemen budaya Tionghoa Tradisional. *Melintas-International Journal of Philoshophy and Religion* 28(1), 61-89. https://doi.org/10.26593/mel.v28i1.289.61-89.

Kwanda, T. (2004). Desain Bangunan Baru Pada Kawasan Pelestarian di Surabaya. *Dimensi Teknik Arsitektur* 32(2), 102-109. https://doi.org/10.9744/dimensi.32.2.

Kwanda, T. (2013). Mengelola Perubahan: Perencanaan Konservasi Gedung De Javasche Bank Surabaya. *Dimensi* (*Journal of Architecture and Built Environment*), 40(1), 39-52. https://doi.org/10.9744/dimensi.40.1.39-52.

Kwanda, T. (2015). Authenticity principle in Conservation of De Javasche Bank of Surabaya: Materials, substance and form. *Procedia Engineering* 125, 675 – 684. https://doi.org/10.1016/j.proeng.2015.11.104.

Lim, H. & Mead, D. (2011). *Chinese in Indonesia: A background study*. SIL International. https://www.sil.org/system/files/reapdata/42/18/93/421893726263485703802676542180179595 19/silesr2011_028.pdf.

Orbasli, A. (2008). Architectural conservation: Principle and Practice. Blackwell Science.

Rozov, D. (2013). *Carlile house: Finding ways to preserve run-down heritage buildings through their adaptive reuse* [Master's thesis, Unitec Institute of Technology]. Unitec Institute of Technology Reseach Bank Record. https://hdl.handle.net/10652/2467.

Von Meiss, P. (1990). *Elements of Architecture: From form to place*. Van Nostrand Reinhold.

Wang, Yuwei (2012). *Persistence of the collective urban model in Beijing*. http://projectivecities. aaschool.ac.uk/portfolio/yuwei-wang-beijing-collective/

Yıldırım, M. & Turan, G. (2012). Sustainable development in historic areas: adaptive reuse challenges in traditional houses in Sanliurfa, Turkey. *Habitat International* 36, 493-503. https://doi.org/10.1016/j.habitatint.2012.05.005.