Managing the Threats to Vernacular Quality of ‘Losses’ in Java, Indonesia.

Titien Saraswati
Duta Wacana Christian University,
Yogyakarta, Indonesia.

Abstract
The tobacco plantations in the areas of Klaten Regency in Central Java and Jember Regency in East Java have many large barns named Los1 used for drying tobacco. They have existed there since 1850s, and dominate and define the vernacular landscape of the regions. The barns can be found in the villages in remote areas; such as in Bendo Gantungan village within the Gayamprit tobacco plantation in Klaten Regency; and in Ajong village within the Ajong Gayasan tobacco plantation in the Jember Regency.

This paper takes the position that the vernacular quality of Losses has been threatened by the circumstances they face today. For instance, the global changes of climate have resulted in strong winds in Indonesia which have damaged many Losses in the Jember Regency. Traditionally Losses have been constructed with bamboo; a lightweight material that cannot withstand strong winds. Moreover, some Losses have been accidentally burnt because of the vulnerability of the materials to fires. In addition, many of the Losses in the Klaten Regency have been modified from bamboo piles to reinforced concrete columns. With such ad-hoc changes, it is expected that the vernacular quality of Losses will be severely affected in the future.

Keeping up the vernacular quality of Losses is not simply an issue of valuing the vernacular. In fact, preserving the vernacular quality of Losses is necessary for the performance of a Los as a tobacco barn at its best. In other words, when the vernacular quality of a Los diminishes, the quality of dried tobacco also falls. Tobacco leaves kept in poor quality barns cannot be used for cigars.

This research employs multiple-methods; physical survey of the barns, photographic recording of the physical state of the buildings, and interviewing of barn-makers and keepers. The paper demonstrates the need to deal with the threats to the vernacular quality of Losses as an urgent one both to sustain the vernacular settlements of Indonesia as well as to retain the traditional qualities of tobacco. It concludes that the vernacular quality of Losses can be managed by substituting new materials and technologies for modern and contemporary circumstances, while retaining the quality needed for dried tobacco leaves for making cigars.

Keywords: Los, vernacular quality, Java, Indonesia.

1 The word “Los” came possibly from Dutch language which means “a large space without any barrier”. In Javanese language, “Los” means “spacious” and “roomy.” Traditional markets in Java also use the word “Los” for spacious space.
Introduction

According to Padmo (1994), there have been three areas of tobacco plantations and companies in Indonesia since the Dutch occupation in 1850s that continue to exist today. They are the Vereenigde Deli Maatschappij (VDM) in North Sumatra; National Vereenigde Klatensche Cultuurmaatschappij (NVKC) in Klaten Regency, Central Java; and Landbouw Maatschappij Oud-Djember\(^2\) (LMOD) in the Jember Regency, East Java. The private tobacco companies operated in these areas from the 1850s until their take over by the Indonesian government in 1957. Tobacco in the Klaten and Jember areas are of high quality and are used only for cigars. Till now, there are three places in Indonesia which cultivate high quality tobacco; Deli in North Sumatra, the Klaten area in central Java and the Jember area in East Java. Kartodirdjo and Suryo (1991) also point out that high quality tobacco has been planted in the above areas since 1850s.

Geographically, Indonesia is an archipelago with five main islands: Sumatra, Java, Kalimantan, Sulawesi, and West Papua and about 6,000 smaller inhabited islands and some 7,000 uninhabited islands and islets. In the Java island, administratively there are three provinces and two special regions, each headed by a governor. They are West Java, Central Java, and East Java Provinces, together with Greater Jakarta Capital Territory in which the city of Jakarta lies; and Yogyakarta Special Region which is ruled by the Sultan of Yogyakarta Royal Palace. Both special regions have province status. The Losses surveyed in this study were in the Klaten Regency in Central Java Province, and in the Jember Regency in East Java Province, all of which are under the management of PTPN3. They are Kebonarum/Gayamprit/Wedibirit plantation in Klaten (Central Java), and Ajong Gayasan/Kertosari plantation in Jember (East Java)\(^4\).

Traditionally constructed losses exist in all the three regions and are facing circumstances that have affected their vernacular quality. Ad-hoc changes have taken place and there exists a dire need to understand the ways in which the changes are taking place and the threats they face from the present day circumstances. This paper however is based on research conducted on the Losses in Java only. The author has not been able to survey the Losses in Deli (North Sumatera) due to the limitations of time as well as the distance of Deli on Sumatra island which would require heavier financial involvements and personal commitments. However, the issues there are similar.

\[\text{Fig. 1: Map of Indonesia}\]

Source: [http://www.indonesia-tourism.com/map/indonesia-map.html](http://www.indonesia-tourism.com/map/indonesia-map.html) accessed on 15\textsuperscript{th} May 2011

\(^2\) The word “Djember” was an out-of-date Indonesian spelling version. Accordingly, the right spelling is “Jember”.

\(^3\) From Klaten’s office information, the company (government enterprise) had already changed the name from PPN Tembakau (Tobacco) IV to PNP XIX, then to PTP IX, and finally till now to PTPN X.

\(^4\) From this point onwards, Klaten Regency and Jember Regency are now referred to as Klaten and Jember only.
Colonization and plantations:

Kartodirdjo and Suryo (1991) point out that in developing countries, the existence of plantations can be seen as the development of Western agricultural capitalism introduced by a colonial economic system. This is basically a European plantation system which is different from the garden system that existed in developing countries during the pre-colonial period. As a new system of agricultural economy, the European plantation system introduced various kinds of agricultural economics that in turn changed the life of the colonized communities or developing countries. That is why the development of plantations in developing countries is very much related to the process of modernization of the country.

Before introducing the system of Western plantation, the agricultural community in the developing countries has already known the garden system as a part of the traditional agricultural economic system. The garden system is categorized as secondary from their main agricultural system such as paddy fields for rice. The garden system generally is a small business, has small capital, and the land area used is limited. The labourers are not market-oriented, but are oriented to the families themselves, and much more oriented to the needs of subsistence. The main characteristic of this garden system can be seen as the characteristic of pre-capitalistic or pre-industrial agricultural community (Kartodirdjo and Suryo, 1991).

The history of tobacco plantation and the history of colonialism is very much related. The plantation system differs from the garden system, (Kartodirdjo and Suryo, 1991) and is a part of the commercial and capitalistic agricultural economic system which can be characterized as a complex and large scale agricultural plantation. Capital-intensive, plantations employ large land areas. Their wage labourers are organized with clear job descriptions, has specialized bureaucratic and administrative systems, cultivate commercial crops for export to the world's markets and use modern technologies. This system indeed acts as a part of the modern economic sector of the Western world. Their existence in developing countries therefore is very much related to the process of colonisation and modernization.

As in other developing countries, the plantation system in Indonesia was also introduced through Western colonialism, in this case by the Dutch. The garden system in Indonesia was also an agricultural system which was already known before the plantation system penetrated. From the traditional periods till the era of VOC (Vereenigde Oost Indische Compagnie) that was in the 17th-18th centuries garden system has been an important source for trade commodities. Moreover, the garden system in the VOC era was exploited to be the main source for trade commodities in the European market. This system continued till the beginning of the 19th century, even though the colonial regime had been taken over by the Dutch Indische government since the 1800s. The political change of the VOC to the Dutch Indische government in the era of 18th-19th centuries gave the background to the development of the plantation system in Indonesia in the 19th century (Kartodirdjo and Suryo, 1991).

‘Loses’ as vernacular buildings

It is well-known that the vernacular settlements are produced by craftsmen, use local materials and are built with local techniques and with the local environment its climate, its tradition, and its economy in mind. As Jackson (1984) points out, such a dwelling or building does not pretend to stylistic sophistication. It is loyal to local forms and rarely accepts innovations from outside the region. It is not subject to fashions and is little influenced by
history in its wider sense. Jackson even added that the word ‘timeless’ is often used in descriptions of vernacular buildings.

Similarly, according to Masner (1993), the meaning of vernacular when referring to buildings must be assumed to describe buildings which are indigenous (for which vernacular is a synonym) to a particular geographical area. The modern use of the word vernacular for buildings still implies a structure made of locally found or crafted materials. It can be said with reasonable certainty that true vernacular buildings are the result of building from locally-found, readily-available materials. The influences of style or use—cottage, stable or water mill—do not determine whether or not a building is vernacular. In other words, when a part or a component of a vernacular building is added or changed using a new material or new form, it means that it accepts innovations from outside the region; therefore it can be said that the quality of its vernacular is decreased, or diminished.

At the same time, Brunskill, (1993) points out that the works of vernacular architecture comprises cottages and farm houses, farm buildings and associated structures, watermills and smithies, wayside chapels and some of the smallest and least pretentious of the parish churches. These vernacular buildings, humble though they may be, are monuments to the persistence of traditional designs and traditional building practices. Accordingly, the Loses which are used for drying tobacco leaves can unquestionably be categorized as farm buildings; a category of vernacular.

**Javanese traditional architecture**

It is important to talk about Javanese traditional architecture in brief to look for the connections between traditional architecture and the form of Los. According to Dakung (1983) and Yudohusodo & Salam (1991), Javanese houses can generally be classified into four styles, namely the joglo style, the limasan style, the kampung (or pelana) style, and the panggang-pe style. The names of these styles of houses are actually derived from the styles of the roofs, which are the joglo, the limasan, the kampung (or pelana), and the panggang-pe roofs respectively. There is also the tajug roof, but it is not intended to be used for a house, but rather is reserved for religious buildings such as mosques. Each of these styles of roofs has many distinct variants and names.

In the past, the house of the joglo style was for the nobles or knights, the limasan style was for the middle-class, whereas the kampung (or pelana) style was for common people. The houses of kampung style can be found among Javanese houses in the village. The panggang-pe style was originally used in building for drying or airing tea leaves, cassava, etc.

It is interesting to know that the meaning of the word kampung in Javanese language means “homeland” or “rural”. According to the reliefs of Candi Borobudur and Candi Prambanan of 9th–11th centuries in Central Java, and other candi (temples) in East Java (Yudohusodo and Salam, 1991); the kampung style was older than the limasan style. As mentioned, kampung style that was usually used by common people for their houses can also be named as pelana style. Whereas the word pelana in the Indonesian language means “saddle”, referring to the appearance of the roof, it is this
kampung style of roof that is very much similar to the roof style of Loses. These Loses are loyal to local form, and are made by common people.

It was confirmed from previous research of Loses in Klaten (Saraswati, 2008) that the Loses have high vernacular value, not only from its organization of space, but also from its form, its local materials, and its local techniques. Although the Loses in Jember have hardly been studied for their vernacular quality, their organization of space, form, local materials, and local techniques are very much similar to those in the Klaten region.

Research methodology

This research employed a multiplicity of methods for collecting data. These included physical surveying of Loses, photographic recording of the structures and their details and interviewing barn makers, keepers and users. Loses in the Klaten area were surveyed in the month of August when all the Loses were filled with tobacco leaves for drying. The Loses in the Jember area were surveyed in March when the Loses were empty. 10 Loses in each area were surveyed in detail with a special focus on Loses which were different to the common types.

The study defined “threats” as any changes to the form, building materials, and techniques of Loses which were not historically and locally found, but had been recently initiated. It was derived from the fact that “vernacular quality” is characterized by local forms, local materials, and local techniques. The study analysed the data by examining the presence or the absence of the above “qualities” in the buildings generated through local forms, local materials and local techniques; and interpreted what was observed. It sought to ascertain how these qualities contributed or did not contribute to the performance of the building since the performance of the building is very much related to the quality required for drying tobacco leaves for cigars.

General observations

As buildings, Loses have a dominant appearance produced by their large, saddle roofs, which dominate the rural landscape. Tobacco planted in Klaten and Jember are high quality tobacco suitable for making cigars and therefore Loses are needed in these regions for drying tobacco. Tobacco cultivated in other areas such as Wonosobo (Central Java) and Selomartani (Yogyakarta Special Region) can be dried on woven bamboo containers placed on the ground, because they are not of high quality tobacco for cigars.

Loses are used twice a year; from July to September, and from December to March. During the rest of the year, Loses are, sometimes, used for processing or making compost, whereas some Loses may remain unused. Although the Loses are generally well-built and sturdy, when it is time for the Loses to be used for tobacco drying, they are often repaired to ensure that they are suitable for the tasks.

---

5 There are 63 hectares of tobacco plantations in Gayamprit, Klaten; comprised of more than 350 Loses.

6 There are 950 hectares of tobacco plantations in Jember, comprised of more than 500 Loses.
The *Loses* in *Klaten* have been originally constructed in 1994, but have been repaired slightly every time people used them. Every three years the building materials of the *Loses* have been replaced, but with the same kind of building materials that had been originally used. For instance, bamboo, *rapak* or *blabat* (dried sugar-cane leaves) have often been used. Similar observations were made in the *Loses* in *Jember* as well. These *Loses* have thus remained as vernacular buildings. It is impossible for this kind of vernacular buildings to stand up for many years without any replacement of such vulnerable materials (bamboos, dried sugar-cane leaves). On the other hand, when a part or a component of the vernacular building has been changed or added by new, different building materials, or changed to new form, it can be observed that the quality of its ‘vernacularity’ has diminished.

**The form of the Los**

A *Los* in *Klaten* is rectangular, with a length of about 100 m, a width of about 18 m, and a height of about 12 m. The roof is a saddle roof (pelana/kampung), having a slope of about 45 degrees. Inside, tobacco leaves are hung in bundles and a bundle comprises of 50 tobacco leaves; named *dolok*. One *Los* can accommodate approximate 20,520 *dolok* hung-up inside. Tobacco leaves are dried by fumigation with smoke in the night for 11 days consecutively, and after that for every 2 days. The smoke can be produced from peeled skins of paddy seeds (*sekam*), packed of coals (*briket batu bara*), or timber (*kayu bakar*). *Loses* are always constructed with the North-South orientation along the length to prevent the harsh North-South wind entering.

A *Los* in *Jember* has a different size. The standard length is 60 meters, which is comprised of 30 “rooms” in which 1 “room” is 2m in length. The width of a *Los* can be 18 to 20m, and the side height is 5m and the central height is 12.5m. Generally the orientation of the *Los* here also follows North–South in the lengthwise direction, but there are also *Loses* which are oriented East-West. This is because of the limited land available for the sites of the *Loses*.

![Figure 2: Front view of a Los in Klaten](image)
Source: Saraswati, 2008.

![Figure 3: Side View of a Los in Klaten](image)
Source: Saraswati, 2008.

---

7 People in *Klaten* call the dried sugar-cane leaf, *rapak*, while those in *Jember* call them *blabat* because of the local language differences. Most people in *Klaten* are Javanese, whereas those in *Jember* are Madurese (people from the Madura Island).

8 A roof having two gables and one ridge, suggesting a saddle.
As can be seen, the roof is a saddle (kampung) roof, as same as the roofs of local people’s houses. Similarly, the plan of a Los is rectangular, as same as the plan of local people’s houses. It can thus be said that Loses have adopted the forms and the roofs of local people’s houses in the village, which means that the Los is loyal to the local form. Furthermore, as Jackson (1984) has said, the form of the Los is timeless, and has never changed.

**Organization of space**

A Los in Klaten is divided into spaces for office, equipment storage, storage for peeled skins of paddy seeds (sekam) and timber, and mostly for drying tobacco leaves. However, there are no dividers among those spaces, except for office and storage. In the middle of the Los there is a space 6m x 6m for “cooling” dried tobacco leaves before being dispatched to the Tobacco Company. The main entrance is on its long side while the circulation path is in the centre.
A Los in Jember has a similar space inside, but there is no space for equipment storage or cooling storage. Circulation paths are in the centre as well as in the two sides of the length of the Los. Main entrance is placed in the left or right of front elevation, completed with a space similar to a “foyer” to keep bicycles or motorbikes of the workers. The other entrance is placed in the centre of the front elevation of the Los.

![Fig. 7: Plan and front and side elevations of a Los in Jember](image)


The Building materials:

**Main structure**

The columns and the roof are all made from bamboo which the tobacco company has bought from the local people in Klaten as well as in Jember. The roof is constructed as the covering of the Los and not as a truss. It can be seen as a system of purlins; nailed or lashed carrying a roof-cover made of dried sugar-cane leaves.

---

9 There were Petung and Apus bamboos in Klaten, and Petung and Keles bamboos in Jember.
Foundation of a Los is made from local materials, particularly stones known as “umpak.” However, the joints between bamboo columns use cable wires and nails, which are strengthened by bamboo as well, in which the dolok is hung up. But an exception was observed: Los number 10 in Klaten had used concrete columns.

Roofing
The roof is covered by dried sugar-cane leaves because it is lightweight. Smoke for fumigation can penetrate through the chinks of rapak/blabat whereas the humidity of a Los is still kept intact. The wind hardly ever enters a Los because the rapak/blabat for the envelope of a Los is tied close together. The wind can damage the process of drying tobacco leaves, thus influencing the colour of dried tobacco leaves. If and when the rapak is damaged, it is very easy to be repaired. Sugar-cane leaves can be found in the area aplenty because there are also sugar-cane plantations there.

The envelope of the Los
As mentioned before, the bamboo roofs are constructed as the covering of large Loses as well. Within bamboo columns are placed “walls” made of combination of rapak, woven bamboo, and sometimes also sheets of gunny bags to prevent the hot air entering the Los. Then there are carefully placed openings or windows. During the rainy season the windows are kept fully closed, because the tobacco leaves inside a Los should be kept free from rain water to prevent them not to be exposed to fungus.
The floor

The ground inside a Los is still kept as the material for flooring. Neither floor tiles nor concrete cover the floor; instead, the local people just ram down the soil until it is hardened. When the floor is a bit damaged, it is easy to reconstruct. Sometimes the ground is sprayed with water to keep the air and the hung tobacco leaves not totally dried. In the middle of a Los in Klaten, there is a path for circulation which is bordered by small ditches in its two sides. The ditches are poured with water so that the circulation path is kept tidy from the dust. Sometimes the water is also spread out over the circulation path using water pipes. In a Los in Jember same could be observed, but the circulation path was a bit different. This Los has circulation paths in the centre as well as on the two sides along the length of the Los.

Figure 12: Circulation path inside Los; Klaten
Source: Saraswati, 2008.

Figure 13: Circulation path inside Los; Jember

Threats to ‘vernacularity’ and their resolutions

A. Some Loses in Jember (28 Loses10) have been damaged due to the lightweight materials the Loses have which could not be saved from the harm of harsh wind. In fact those are the Loses which had their orientation in the East-West direction in length. That’s why they could not be saved from the harsh wind (“puting beliung” wind or storm). Even though the available land is limited to be a site for a Los, a Los should be constructed in the North-South direction. It is what we may say local wisdom, that people already have the knowledge to place a Los right on the site. It seems that the tobacco company (PTPN X) ignored this knowledge and did not want to have a smaller Los in the right direction. They seem to have preferred to construct a larger Los in the wrong direction simply to yield profit. The outcome has been disastrous.

Moreover, when a Los is constructed in the East–West direction, the harsh wind will easily passes into it through the openings. As aforementioned, the direction of wind is North–South. When more wind passes through a Los, it affects the drying process of tobacco leaves. The result is that the colour of dried tobacco leaves does not meet the requirements needed by the company. So it is recommended that a Los should be constructed in North–South direction, as adopted in local techniques. The vernacular quality of a Los will still be kept, and the Los will be in its best performance.

B. There is an experiment to protect a Los from harsh wind in the West Ajong Gayasan plantation in Jember. In one Los (is still under experimentation), the bamboo columns have been replaced with iron columns in every 5 rooms (equal to 10 meters). The incorporated bamboo bars are also replaced with iron bars up to the roof of the Los including the bars for hanging dolok. The bamboos along the length of the Los are also replaced with iron bars. It is interesting that the iron bars are of the same size as the bamboos, so from a distance these differences of materials can hardly be recognized. The foundations are from concrete for those iron columns. This experimentation so far has been one year long, and the result to protect this Los from harsh wind has been successful. When the harsh wind blows, this Los still stands up on the ground while other Loses without iron columns will be damaged and collapse.
It is a very good experimentation, and should be continued as long as the iron columns and bars are not dominating the materials of this Los visually and structurally. In fact, this approach should be taken specifically for a Los located in a site within a large paddy field or a large open space where there are no trees or buildings to weaken the blow of the harsh wind. In this case the vernacular quality of the Los may be somewhat affected, but the performance of this Los will be maintained. At the same time, the appearance of the Los is the same as with the Loses without iron columns and bars.

C. According to Janssen (1995), the danger of wind can be minimized by; (1) stabilizing braces in the plan of the roof; (2) a ridge ventilator to control both high temperature under the roof and wind suction; (3) in case there are large openings towards the wind that will result in the most dangerous situation during a storm. This can be countered by creating an opening in an area away from the windward wall. Firstly, the Jember Los (and the Klaten Los as well) is constructed without trusses, the bamboo roof covers the building. Possibly the bamboo braces can be placed within or under the purlins. Accordingly, bamboo columns up to the bamboo roofs can be strengthened by constructing double-bamboos for one “umpak” foundation. Other way to prevent the danger of wind is by changing bamboo roofs to trusses. But it needs more financial inputs. Secondly, it is impossible for a Los because when more wind passes through a Los, it will make the colour of dried tobacco leaves inappropriate for cigars. Thirdly, the best way is to always construct a Los in the North-South orientation in length. When there is no way to avoid a Los to be constructed in the East-West direction, this Los should have openings in one side only away from the windward wall during a storm. If this is done carefully during a storm, it is highly likely that the changing wind direction will save the Los.
In this case, adding bamboo materials for the construction of a Los is acceptable, because the materials are locally found. The quality of its vernacular will still be maintained, and the performance of the Los remains good. The quality of its vernacularity may be somewhat affected when the Los is constructed in the East–West direction, even though the performance of the Los will still be good. 

D. The native materials of a Los (bamboos, dried-sugar cane leaves, gunny bag sheets) also should be kept even though these are vulnerable to fire. According to Masner (1993), the true vernacular building is the result of building from locally-found, readily-available materials. There is a Los which has been burnt by lightning in Jember, and there is also a Los that has been accidentally burnt out. To protect a Los from being burnt through lightning, it is possible to erect lightning conductors; metal rods fixed on top of a Los and connected with the earth to prevent damage. Perhaps there are no other ways to protect a Los from lightning because a Los is the highest within a given landscape, even when compared to the heights of the trees in these areas. In this case, the lightning conductor is a “strange” material to the Los, and the vernacular quality may be affected.

Furthermore, as explained before, the bamboo roof is constructed as the covering of a large Los. In this case the lifetime can be severely affected, because the bamboo cover is exposed to all weather conditions. According to Janssen (1995), the bamboo cover even if preserved, will last on average only two years. This statement matches up with what the workers do to a Los; that is every three years the building materials of a Los are replaced with newer, yet the same kind of materials. The Los is rejuvenated and retains its vernacular character. The form and appearance of this Los does not change (timeless), and the materials of the building are still local materials. One cannot expect that vernacular buildings with such materials will last long without any renewal of the building materials.

E. There has been another experimentation in a Los in Jember that blabat roof-covering has been replaced with “terpal” (lightweight waterproof material used in rain coats) to prevent the wind damaging the roof-covering (blabat). The result is unsatisfactory for the process of drying tobacco leaves. Even though the colour of dried tobacco leaves is better, the aroma of it differs from the aroma generated when it is dried under blabat roof-covering. In fact, dried tobacco leaves for cigars are considered “the best” when the aroma and the taste meet the requirement provided by the company. Actually there are workers from the company whose their tasks are to smell and bite dried tobacco leaves to ensure the aroma of tobacco leaves meets the requirement needed. This suggests that it is still better to use blabat for roof-covering with some nails or lash to strengthen the blabat. In this way, the vernacular quality can be kept (local material), and the performance of the Los is satisfactory.

F. The Los number 10 in the Klaten region has begun to use concrete columns at its side parts¹¹, ordered by the company (Interview with the workers). The company just wanted to change bamboo columns to concrete columns because in their opinion, this will be categorized “sophisticated” in using “modern” building material for a Los without any understanding of what

¹¹ Unfortunately images of Los number 10 could not be obtained due to difficulties of travel and the limited time allowed by the company to conduct field surveys. This Los is far away in is located in a remote area.
it is. In turn, the number of bamboo bars for hanging tobacco leaves could not be constructed as many as needed because the workers did not have enough knowledge on how to connect a large number of bamboo bars to concrete columns. Here, the vernacular quality of the Los is diminished, and the performance of the Los is also affected because this Los cannot accommodate the number of dolok as needed. This suggests that the columns should be always constructed on bamboo piles.

Concluding remarks

This paper presented the unique vernacular barn buildings that have existed and continue to exist in Indonesia in the regions of Klaten and Jember, used for processing tobacco leaves for making cigars and popularly known as Los. It offered a number of case studies of well documented such barns to gain an understanding of how their materials, construction technologies and built forms have produced a vernacular quality. This quality embeds local knowledge derived from years of construction and development, generated from the sites, their wind patterns and techniques of drying tobacco all of which have been well incorporated in creating the built form. The research pointed out how the recent changes have been affected by the management of the plantations aimed at increasing profit and production at the expense of the vernacular techniques and even the quality of the leaves themselves. Of course some of the changes are trying to respond to the problems of small sites, structural weaknesses and changing climatic conditions. The research however showed that such changes, unless measured against how they affect the quality of produced tobacco can be unhelpful. The paper argued that such changes may be accepted as long as they do not visually impinge upon the appearance of the buildings and simultaneously help maintain the quality of the tobacco being produced. For example, even though there are new material added to the Loses (lightning conductor), or changing local materials to the new ones (iron columns, iron bars); this cannot be avoided as long as the Loses will be kept in its best performance. It also can be said that the changes have to be managed in such a way that the vernacular quality of Loses is not lost, but regaining the historical vernacular quality may not be always possible. The paper suggests that new materials may be added, or Loses may be constructed on the East–West direction, as long as the performance of Loses is maintained. Production of the dried tobacco leaves of the proper quality to meets the requirements needed for cigars is perhaps the underlying criteria for adopting such change.

ACKNOWLEDGEMENTS

I am grateful to those who helped conduct field surveys, specially the managers, the staff, and the workers of PTPN X in Klaten as well as in Jember areas. They are Bapak H. Guntaryo Tri Indarto, Bapak Bambang Eko Pranoto who work in Kebonarum/Gayamprit/Wedi-Birit plantations, and also Bapak Harto (Kepedak\textsuperscript{12}) plantations. Moreover, also to Bapak Misbahul Ulum (Mandor Kepala Penataran\textsuperscript{13}), and Bapak Purdi Yulianto (chief workers) in East Ajong Gayasan plantation; Bapak Suradjji (Mandor Kepala Penataran) in West Ajong Gayasan plantation; the workers in Kertosari plantation; and all the people who worked all over the plantations. Without them, it would have been impossible for me to have conducted this research.

\textsuperscript{12} Kepedak in Javanese language, means a person who has a responsibility for the works involved in drying tobacco leaves inside the Loses.

\textsuperscript{13} Mandor Kepala Penataran is the Indonesian term for a person who is the head of the workers in the field, and is responsible to manage that the field works in the plantation are running well.
I am also grateful and wish to thank my architecture students who helped in conducting the surveys, i.e. Obet Yulia Widya Pratama, Anugerah Sandi Maharani, and my assistant David T. Tabelak who provided me with the sketches of Loses and performed the other computer tasks.

REFERENCES


Titien Saraswati has a PhD from the University of Melbourne, Australia and is currently a Professor of Architecture at the Duta Wacana Christian University, Yogyakarta, Indonesia. She is also a member of the Indonesian National Accreditation Board for Schools of Architecture. She can be contacted at titiens@ukdw.ac.id and titiens@indosat.net.id