INTERNATIONAL JOINT-CONFERENCE

SENVAR-iNTA-AVAN 2015

PROCEEDINGS

24-26 November 2015

Faculty of Built Environment

Universiti Teknologi Malaysia

Johor, Malaysia

WISDOM OF THE TROPICS PAST, PRESENT & FUTURE

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PREFACE

Bismillahirrahmanirrahim

All praise to Allah s.w.t the Most Gracious and the Merciful for giving all His Rahmah and Barakah to complete the International Joint Conference proceedings of SENVAR-iNTA-AVAN (SiA2015) jointly organised by Institut Sultan Iskandar (ISI) - Centre For The Study of Built Environment in The Malay World (KALAM) of Universiti Teknologi Malaysia - Graduate School For International Development & Cooperation (IDEC) of Hiroshima University - Center for Advanced Studies in Architecture (CASA) of National University of Singapore, and supported by Universiti Teknologi Malaysia (UTM), Hiroshima University (HU) from November 24 to 26, 2015 in Universiti Teknologi Malaysia, Johor Bahru, Malaysia.

The theme for SiA2015 Conference is "Wisdom of the Tropics: Past, Present & Future". SiA2015 conference brings together an international community of experts to discuss the state-of-the-art, new research results, perspectives of future developments, and innovative applications relevant to sustainable building design, vernacular architecture, tropical architecture, urban planning, climate change, green technology, socio-economic and sustainable habitat.

More than 200 scholars and researchers from different background and countries were invited to submit their papers, and of these, about 100 people submitted their full papers. These reviewers represent 10 different countries, which provided a broad set of perspectives to the research arena. I would like to thank all these reviewers for their time and effort in reviewing the papers. Without this commitment it would not be possible for the proceedings to be published. The quality of the accepted papers are attributed to the authors and also to the reviewers who have guided the necessary improvement.

Enough thanks cannot be expressed to our distinguish key note speakers Architect Kengo Kuma, Architect Razin Mahmood making themselves available and all other participants, sponsors, supporters, volunteers and media for all their valuable contributions in the conference. Also, special thank you to the Vice Chancellor UTM Prof. Datuk Ir. Dr. Wahid Omar, Director of The Centre of Built Environment in the Malay World or Pusat Kajian Alam Bina Dunia Melayu (KALAM) Associate Professor Dr.Raja Nafida binti Shahminan, Research Fellow from Graduate School for Internatioanl Development and Cooperation (IDEC) Hiroshima University Associate Professor Dr. Tetsu Kubota, Director of CASA (Centre for Advanced Studies in Architecture) National University of Singapore Associate Assistant Professor Dr. Widodo Johannes, Deputy Director of Institut Sultan Iskandar Associate Professor Dr. Syed Ahmad Iskandar bin Syed Ariffin and all the organizing committee members that have worked so hard to ensure that this conference and the publication of the proceeding a great success. The SiA2015 conference and proceedings are a credit to contribution of a large group of people and thus we should be proud of the outcome.

Best Regards,

Chair,
Prof Dr Mohd Hamdan Ahmad
SiA2015 Conference
20 November 2015

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Historical Old "Kampung" Toward Sustainable Green and Clean Habitat

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The rapid develoment of modern city was not totally achieved by hundreds of old dwellings within it. Old settlements and residences, which are settled side-by-side, consisting of small-sized houses called "Kampung", keep making a better living environment and socio-economical condition, even accomplishing creative remarkable programs toward green and clean sustainable habitats. These programs come from the Aga Khan Award for Architecture called "Kampung Improvement Programme [KIP] on 1968-1993, C-KIP (1995-2003) and Surabaya's Government Green and Clean competition creativity agenda from 2005 to now. This paper explores the objective and the spectacular programs on old *kampung*s. Each *kampung* participated in achieving the highest award by introducing many programs such as planting greenaries and fruits, recycling dry and wet wastes, producing greenary gas and eco-friendly fertilizer, filtering and reusing grey water, and planting medical plants as well as conducting waste bank in order to increase the sosio-economic activity in the kampung by stimulating people to collect and separate daily wastes.

Keywords: historical old kampung; sustainable; green and clean; habitat.

Introduction

Surabaya has just celebrated its 722nd anniversary on May 31, 2015. Many programs were held by the government, from festivals (fashion, tradisional curinary, old city figure & urban culture) to flower parade and late night sales. All these programs were to encourage all citizens to participate in increasing social life, including people living in the old *kampung*s. According to Handinoto (1992), historically, Surabaya's development started in the year of 1275 by Kingdom of Singosari (Kertanegara), then by Kingdom of Mojopahit (Raden Wijaya) in 1293. In the book, written by Empu Prapanca, the Kingdom in Surabaya existed by the year of 1365, then followed by the Mataram Kingdom in year of 1577. The kingdom in Surabaya (Jayalengkara) had been destroyed by the Mataram Kingdom in 1625 at the West side of Kalimas river. During the period of kingdom Mataram, Raden Wijaya won the war against Chinese army, called Tartar, on 31 May 1293; that's why that date was chosen as Surabaya's anniversary (Arifin, 2014).

The Formation of Historical *Kampungs* in Surabaya

Surabaya, the second largest city in Indonesia, with population of nearly 3 millions, is situated at 7° 17-21' Southern Lattitude, and 112° 47' Eastern Longitude. Based on the investigation of Hadi (2011), the city now has been expanded to the sea sides by mostly buildings (Figure 1). Compared to the old city map (1905), most buildings and kampungs had been built alongside the river Kalimas because the river acts as the main trading area from overseas to the city (Figure 2). According to

Handinoto (2006), Surabaya's Kingdom (Keraton Surabaya) was located at the site of Indonesia National Bank now, and the Northern square of the kingdom was the Surabaya's Hero Monument (Figure 3). The Kingdom of the regents (*Patih* are advisers to the king) were settled at the western part of the Kingdom identified as "*Kampung* Mas Patih", and the regents served to citizens were settled in the Eastern side of the Kingdom called "*Kampung* Kepatihan"., "*Kampung* Bubutan", situated on the Southern side of the main square, was a settlement of the King's clerks (Figure 3).

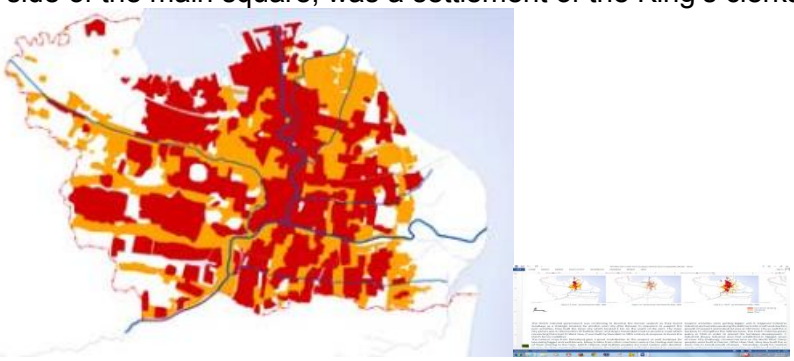

Figure 1: The Map of Surabaya 2006 (Image source: Hadi, 2011)

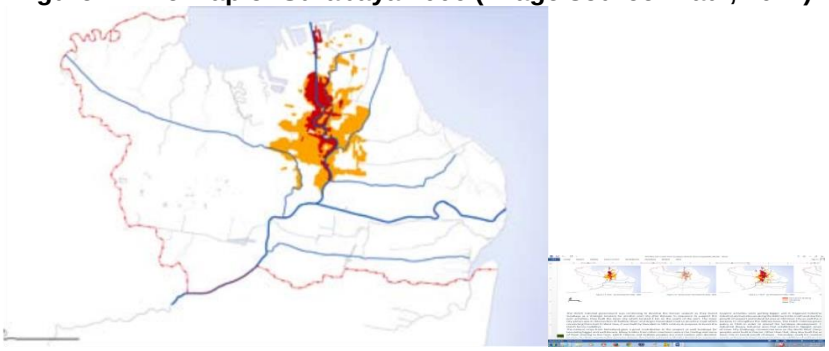

Figure 2: The Map of Surabaya 1905 (Image source: Hadi, 2011)

Figure 3: Simulated Position of Surabaya's Kingdom and old *Kampung*s in the Past to the Present (Image source: Google Earth)

In 1617, Eropean immigrants (Dutch) came to Surabaya, and Jan Pieterzon Coen

built loge and dwellings around the Kalimas river for Netherlands's immigrants stayed (Purnawan, 2012). Nevertheless, long before the Dutch immigrants came to Surabaya, there were settlements of immigrants from China, Saudi Arabia, Melayu, as well as Surabaya's native residents (Salmon,1991; Handinoto, 1992; Widigdo, 2015). Chinese settlements were strictly located in Surabaya's small areas so they were positioned closely side by side. The *Kampung* of Saudi Arabia was not developed too much in the city. Surabayanative citizens could inhabit the city freely. Consequently, many new *kampungs* were founded within the city (Albrecht & Rusche, 1890). *Kampung*, as native Indonesian people call it, is a vernacular and self-organized settlement which forms a large segment of urban settlements in most Indonesian cities. *Kampungs* are not slump areas, despite consisting of and mostly low-income quarter housings, and having bad services and sewerage system, garbage assortments and other public services. (Dhakal, 2002).

The Concepts of *Kampung* Improvement Programs to Urban Development

The *Kampung* Improvement Program (KIP) initially established by the Dutch Government in 1924, with the intention of preventing the spread of certain diseases from the *kampungs* to the Dutch residents (Rita Ernawati, 2013). Afterwards, KIP kept being held in Jakarta in 1968-1974 (phase I), 1974-1976 (phase II), and 1976-1979 (phase III) by the Aga Khan Award for Architecture. The aim of the programs are:

1. To enhance the living atmosphere (physical conditions) and the life characteristics (socio-economic conditions) of the *kampung* residents.
2. To expand the production capacity (increasing incomes) of the *kampung* residents.
3. To reduce disruption in their social and economic lives.

KIP was applied to Surabaya's *kampungs* in 1968-1993, and had two types (Anzorena, 1993; Silas,1993):

1. The W.R. Supratman KIP was introduced in 1968, and lasted for 5 years. The Municipal Government of Surabaya improved the footpaths and drains in the *kampungs* by building concrete pavements and gutters. *Kampung* residents were encouraged to participate in the programs to form the committee of development, motivating them to build the pavements and gutters themselves.
2. The IBRD (International Bank for Reconstruction and Development) assisting KIP was then launched and ended in 1990. The Government still concentrated to improve the vehicular roads with minimum 3 meters wide, footpaths, drainages, public baths, toilets and clean water supply, as well as the education and public health facilities.

The following KIP program was to expand and help the poor living condition in the *kampungs* of Surabaya was Comprehensive KIP. It was implemented in 1995 - 2003 by the Municipal Government of Surabaya. The program encompassed housing, infrastructures and economy enhancement, with an endeavor to reduce poverty (Septanti, 2004), and build green and clean living environment (www.surabaya.go.id).

The final brilliant concept in making sustainable living for the people in *kampungs*of Surabaya were offered in a form of competition with the purpose of

making green and clean sustainable *kampung* habitats. The program was initiated in 2005 by the Mayor of Surabaya, Tri Rismaharini, and is still going up until now. There are several categories in the sustainable green and clean *kampung* competition:

1. Garbage managements
   a). sorting waste in 3 types: paper, plastic, wet garbage,
   b). recycling wet waste (organic fertilizer), and
   c). monitoring waste facilities.
2. Waste recyclibility (innovation, artistic and commercial values)
3. Sanitation (*kampung* streets and environment cleanliness, sewage and drainage condition).
4. Greenery (biodiversity, plantation, fertilizer usage).
5. Toilet/bathroom condition

Methodology

The objectives of this study are:

1. To evaluate the KIP and C-KIP Program as precedents to identify the sustainable habitat.
2. To examine several old *kampungs* that have developed the living habitat well, and *Kampung* Maspatih as the historical old *Kampung* in Surabaya, and in how the green and clean competition programs in *Kampung* have stimulated people to reach a sustainable habitat.

In order to reach the objectives, this study applied the qualitative approach by using both primary and secondary data. The study begins with three questions that showing the phases of study:

(a) Description: identifying the historical old *kampungs* in Surabaya which still exist until now, that show the effort to be a green and clean neighborhood.
(b) Analysis of the cause of KIP / *Kampung* Improvement Program: what are the impacts of KIP, do the historical old *kampungs* have a contribution in making Surabaya as a sustainable green and clean habitat?
(c) Development theory: what are the potential parameters in *kampung* that can be used to empower its people success in achieving the clean and green award?

Surabaya's Competition Green & Clean Programs: Case Study

After accomplishing the KIP programs (1968-1993) in Jakarta and Surabaya, several achievements can be picked out based on the report by Institute for Global Environmental Strategies (2012):

1. Physical infrastructure of the *kampung* became better, as the footpaths was covered with concrete slab and there was a drainage, making a clean environment (figure 4).
2. 1.2 million people's living condition at over 3,008 ha area had been improved
3. 220 km of footpaths and roads in *kampungs* were upgraded
4. The drainage and culverts were constructed for around 93 km
5. 56,000 meters of new clean water pipes were connected in the *kampungs*
6. 86 units of public bathing, washing, and toilets have been built.
7. Solid waste collection was improved.

(a) (b) (c) (d)

Figure 4: *Kampungs* in Jakarta [Before KIP (a & c); After KIP (b & d)]

However, several discouraging situations occurred in the KIP program:

1. *Kampung* communities are lack of creative participation (not competitive)
2. Entrepreneurs in the *kampungs* did not exist because of the fixed funds from KIP.
3. The creativity of the *kampung* leaders did not expand due to the fixed packages from KIP

By having strong commitments to create more independent socio-economic situation and a sustainable living habitat for thousands of residents in the old *kampungs*, Surabaya government enforced the C-KIP (Comprehensive KIP) with the aim to have more achievements (a good physical and social economy situation, and good-quality of life). It had embraced 27 *kampungs* and involved more than 500 communities of Shelf Help Action Groups. Table 1 shows the C-KIP program components and achievements.

Table 1: C-KIP Program Activities and Achievements

No	Program Component	Types	Volume
1.	Physical environment improvement	- Pathways improvement	7,473.8 meters
		- Drainage improvement	6,432.6 meters
		- Solid waste management	1,142 sq meters
		- Public toilet	7 units
		- Other facilities	6 units
2.	Community development	- Management training	98 person
		- Skill training	627 person
		- Soft loan	2,502 person
		- Information and publication	15 person
3.	Housing improvement	- Housing improvement	1,764 units
		- Kitchen improvement	247 units
		- Toilet	212 units
		- Water supply connection	243 units
4	Conducting land management	- Building permit	176 units
		- Land certification	660 units

(Source: Institute for Global Environmental Strategies, 2012)

From C-KIP Program to Green & Clean Competition: The Precedent

One of the pilot projects of C-KIP was *kampung* Kebalen. The footpath was covered with concrete slabs and the drainage was built on both sides of the footpath, making a clean environment, and no flood during the rainy season. *Kampung* residents could sell food, vegetables, and snacks in front of their houses, making a better social-economic condition. The living environment is not too green by only providing small plants in pots and yards, but most people feel comfortable with their living environment (figure 5).

Figure 5: Kampung Kebalen in Surabaya After C-KIP

Afterwards, the challenging "Surabaya Competition Green and Clean Program", hosted by the Government of Surabaya (the Mayor of Surabaya) was launched, starting from 2005 until now. Pepole living in *kampungs* are enthusiastic to take part in the competition and win the prizes. Not only they can get the award if they win, but the *kampung* will also be famous. *Kampung* Gundhi won the best *kampung* in Surabaya green and clean environment in 2013. This resulted in many delegations from abroad -Bangladesh, Philiphines, Singapore, and others (Asia Pacific countries) visited *kampung* Gundhi to closely watch and understand how the *kampung* could become a sustainable green enviroment, supported by its own residents. *Kampung* Gundhi's residents attractively arranged their living environment by planting rows of fruit trees and vegetables to recycle the water waste (water recycling). They also recycle plastic-waste to other goods (figure 6). *Kampung* Jambangan is another successful winner in establishing a sustainable green and clean environment among Surabaya's *kampungs*. The inhabitants plant many trees and flowers, as well as nurturing birds to preserve the natural ecology in the human-made environment. Residents arranged solid garbage-plastic botols, iron or aluminum cans, and papers. Setting up grey water treatment is essential to maintain sustainable clean water requirement. Each house sets up a grey water treatment to help producing clean water and saving cost (figure 7).

Figure 6: *Kampung* Gundhi in Surabaya Green & Clean Competition

Figure 7: *Kampung* Jambangan in Surabaya Green & Clean Competition

Towards Green & Clean Environment Domain

The study examined a historical old *kampung* containing heroic values, which is *Kampung* Maspatih. *Kampung* Maspatih has 6-alleys of dwellings; each alley has its *kampung* leader to manage the built habitat through a community communication. The uniqueness of *Kampung* Maspatih towards sustainable environment are: 1) selling herbal trees and fruits in many of its houses, 2) recycling usable waste into sell-able

hand-crafts, 3) educating residents through a small library, 4) generating garbage bank for people who need extra or urgent funds, 5) encouraging its residents to collect and separate garbage, 6) motivating its residents to have extra skills to earn extra money for living other than opening shop in front of the house (figure 8 & 9).

(a) (b) (c)(d)

Figure 8:The entrance of *Kampung* Maspatih with Natural Planting Shelter (a), Making Lamp Caps with Plastic Botols (b), Solid Waste in Separate Cans (c), Clothing from waste recycling (d)

(a) (b) (c)

Figure 9: Renting Old Dwelling (a), Conducting Library and Garbage Bank (b), Selling herbal plant (c)

Table 2: Representative Each Kampung Maspatih Businesses & Human Skill Data

Kampung Alley	Creativity Home Industry Fasilities (women-power)	Home Business	Extra Skill (men-power)
1	Wuluh blimbing fruit processing into syrup	Herbal shops	Computer repairmen
4	Funiture	Food stands	Tailor
5	Making handy-craft souvenirs	Grocery stores	Chef tradisional food
6	none	Grocery stores	Tailor, Watch repairmen

(Source: Widigdo et al., 2015)

Many *Kampung* Maspatih residents have extra skill (man-power) in addition to running home business (women-power) in the *kampung* from morning until evening. They also do creative home industry for a supporting a long term planning and earning extra income. They can be a medium business group in the future. (table 2).

(a) (b) (c)

Figure 10: Launching Green & Clean Competition (a), Road showing in Surabaya (b), Participating of Kampung Communities (c)

Conclusions

After analyzing KIP programs (1968-1993), Comprehensive-KIP (1995-2003), and Surabaya's Green & Clean competition agenda (2005-now, ongoing), there are positive factors of Surabaya's Green & Clean competition:

1. Green & clean programs are good in igniting *kampung* communities' enthusiasm in competing to make their *kampung* green and healthy environments in terms of sustainable social life (figure 10).
2. Green & clean competition's purposes are to educate people, construct in-*kampung* school facilities (library & English classes), as well as to persuade *kampung* communities to be more creative in creating kampung brand-marking.
3. Surabaya Green & Clean program is extraordinary in encouraging *kampung* communities to design their own sustainable *kampung* habitat, even better than modern dwelling neighborhood/complex built by housing developers.

Acknowledgement

We wish to express our appreciation to the Institute of Higher Education of Indonesia's Government for providing funds to do the research on historical old *kampungs* as the heritage of "*Jagat Cilik*" (the habitat of the low-income level) in Surabaya.

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