ISSN 1883-647X

Journal of Habitat Engineering

Vol.1 No.1



December 2009
International Society of Habitat Engineering

Journal of

Habitat Engineering

The Journal of Habitat Engineering (JHE) is the official journal of the International Society of Habitat Engineering (ISHE). The Journal of Habitat Engineering is a peer-reviewed journal and open to research and discussion papers in habitat affairs and urban design and planning, architecture, sociology, economy, culture, psychology, and environmental issues of significance to the international community. It welcomes original contributions of a theoretical or empirical nature, and also manuscripts describing a case study through the performance, assessment, and contribution to habitational and environmental issues to form the basis of broader theories and concepts. The articles should engage the interests of non-specialist readers as well, who should be able to grasp the significance of these genres of research.

Chief Editor:

Atsushi DEGUCHI, D.Eng.

Professor, Department of Architecture and Urban Design Faculty of Human-Environment Studies

Kyushu University, Japan

Editors:

Kazutoshi FUJIMOTO, D.Eng.

Professor, Department of Architecture and Urban Design Faculty of Human-Environment Studies Kyushu University, Japan

Akihiko KAWANO, D.Eng.

Professor, Department of Architecture and Urban Design Faculty of Human-Environment Studies Kyushu University, Japan

Hiroshi KAWASE, D.Eng.

Professor, Research Division of Disaster Management for Safe and Secure Society, Disaster Prevention Research Institute Kyoto University, Japan

Sanjoy MAZUMDER, Ph.D.

Professor, Department of Planning, Policy, and Design, Department of Asian American Studies, and Program in Religious Studies University of California, Irvine, U.S.

Hirofumi MINAMI, Ph.D.

Professor, Department of Architecture and Urban Design Faculty of Human-Environment Studies Kyushu University, Japan

Yukio NISHIMURA, D.Eng.
Professor, Department of Urban Engineering, Faculty of Engineering University of Tokyo, Japan

Toshi NODA, M.Eng.
Director, Regional Office for Asia and the Pacific United Nations Human Settlement Programme UN-HABITAT Regional Office for Asia and the Pacific

Terukazu TAKESHITA, D.Eng.

Professor, Department of Architecture and Urban Design Faculty of Human-Environment Studies Kyushu University, Japan

Hongwei TAN, D.Eng.

Professor, HVAC Research Institute College of Mechanical Engineering Tongji University, China

Editorial Assistant: Takehiko BABA, Ph.D.

Disclaimer: The International Society of Habitat Engineering (ISHE), editors, and members of the editorial board cannot be held responsible for errors or any consequences arising from the use of information contained in this journal; the views and opinions expressed do not necessarily reflect those of the International Society of Habitat Engineering, editors, and members of editorial boards. The publication

of advertisements also does not constitute any endorsement by the International Society of Habitat Engineering, editors, and member of

Publisher: Journal of Habitat Engineering is published by the International Society of Habitat Engineering.
The JHE office: Department of Architecture and Urban Design, Kyushu

University, 6-10-1, Hakozaki, Higashi-ku, Fukuoka 812-8581, Japan Fax: +81-92-642-3349; email: jhe@arch.kyushu-u.ac.jp

Journal Information and Service: For ordering information, claims, and any enquiry concerning the journal, please contact the JHE office.

Publication Frequency: Two issues per year.

Copyright and Photocopying: Journal compilation © The International Society of Habitat Engineering. All rights reserved. No part of this publication may be reproduced, stored, or transmitted in any form or by any means without prior permission in writing from the copyright holder. Authorization to photocopy items for internal and personal use is granted by copyright holders for libraries and other users registered with JHE office, provided the appropriate fee is paid directory to JHE. This

consent does not extend to other kinds of copying such as copying for general distribution for advertising or promotional purpose, for creating new collective works, or for resale. Special requests should be addressed to the JHE office:

jhe@arch.kyushu-u.ac.jp

Manuscript Submission: Please follow the "Instruction to Authors" on the inside page of the back cover. Our www site also has information regarding submission.

http://kyudai-archurb.jp/he/ishe/

Only electronic files are acceptable for submission. Please be aware that the review process needs some months.

Review and Judgment: First, the submitted manuscript is reviewed. The review process may take at least two months where manuscripts will be assessed anonymously by at least two independent reviewers that will provide comments and constructive criticism on the contribution, recommending (1) acceptance, (2) acceptance with specified revisions and resubmission, or (3) rejection. A set of proofs will be sent to the author who is expected to check and return the proofs within a specified time period. Acceptance will be based on the quality of the research and relevance (of contribution) to the Journal of Habitat Engineering.

Advertisement: For details, contact JHE Office

Contact: Journal of Habitat Engineering Office: jhe@arch.kyushu-u.ac.jp

http://kyudai-archurb.jp/he/ishe/

ISSN: 1883-647X

© International Society of Habitat Engineering, 2009

Journal of Habitat Engineering

Volume 1, Number 1, December 2009

Contents

	Original Article	
	Indoor Thermal Environment and Design Techniques of Tibetan Traditional Dwellings Yingzi ZHANG, Jiaping LIU and Atsushi DEGUCHI	107
	Compact Kampungs: Formal and Informal Integration in The Context of Urban Settlements of Yogyakarta, Indonesia Sudaryono SASTROSASMITO	119
	Correlation Analysis of Influencing Factors on Rate of Residential Damage due to Strong Winds Considering Structural Conditions of Houses Eriko TOMOKIYO and Junji MAEDA	135
1	Urban Social Disaster: A Case Study of Solo City during 1740-2000 QOMARUN, ARYA Ronald, TAUFIK and RONIM Azizah	143
	Probabilistic Analysis of Room Use of Elderly Living Alone in Detached House Based on Observation by Using Active RFID Xiaoyu QU, Daisuke MATSUSHITA and Junzo MUNEMOTO	153
	Integration of Space Ranking Methods for Analyzing Urban Transportation Networks Zhuoran L1 and Shichen ZHAO	163
	Comparison of Territorial and Non-territorial Workspace Usage at an Architecture Design Office Xinnan ZHANG, Xiaoyu QU, Junzo MUNEMOTO, Daisuke MATSUSHITA and Takashi IZATO	173
	A Proposal for Applying a Larger Unit of Behavioral Setting's K 21model to a Street Scale in Urban Spaces -A Case Study of Sukhumvit Road, China Town, and Khao San Road, in Bangkok City, Thailand Wei-Lun KUO and Hirofumi MINAMI	185
	A Comparative Study on Impact of Varying Residential Environments on Children in New City versus Exterior Regions in Shanghai, China: Case Study on Songjiang Ward Kiheon RYU and Shichen ZHAO	197
	Investigation of Summer Indoor Environment for Post-Disaster Reconstruction Folk Houses in Si Chuan Jiaping LIU, Dalong LIU, Liu YANG, Rongrong HU and Yungang AN	207
	Supporting the People's Process in Human Settlements Development -Re-asserting Responsibility through Support- Lalith LANKATILLEKE and Yuki TODOROKI	215
	Design Methodology of Energy Saving Building in Developing Cities - The Geography, Climate, Society and Indoor Environment of Tibet- En LI, Yasunori AKASHI and Jiaping LIU	229

Original Article

Urban Social Disaster: A Case Study of Solo City during 1740-2000

OOMARUN

Doctor Candidate, Department of Architecture and Planning, Faculty of Engineering, Gadjah Mada University of Yogyakarta Master Lecturer: Department of Architecture Faculty of Engineering, Muhammadiyah University of Surakarta Jl. A Yani 1, Pabelan, Kartasura, Surakarta 57102, Indnesia; qomarun_solo@yahoo.co.id

ARYA Ronald

Doctor Lecturer, Department of Architecture and Planning, Faculty of Engineering, Gadjah Mada University of Yogyakarta

TAUFIK

Doctor Candidate, Faculty of Social and Behavioral Sciences, Universiteit Van Tilburg, Netherlands Master Lecturer, Department of Social Psychology Faculty of Psychology, Muhammadiyah University of Surakarta

RONIM Azizah

Master Lecturer, Department of Architecture Faculty of Engineering, Muhammadiyah University of Surakarta

The background of the study is a highly frequency of mass amok phenomenon in Solo City in the last several decades. Exploring the urban social disaster, this study observed the development of Solo City during 1740 to 2000. The purpose of this research is not only to explore the urban space damaged, but also to clarify the main formula of urban social disaster. The research is approached by rationalistic paradigm; while the method of study is conducted by the historical-archeology. This study finds that there are 26 accidents within 1-12 scale range of Urban Space Damaged (USD) during 1740-2000. The other finding is the main formula of urban social disaster as: $(f_m) = (f_1) + (f_2)$. The study shows that the bigger latent conflict (f_1) occurs, the easier manifest conflict (f_m) happens; while the urban social disaster is always in need of a trigger (f_1) . However, this study finds that the urban social disaster appears approximately every 10 years; while the victims of every accident are always seem in the collapse buildings, the dying people and the chaotic environment. Therefore, the urban spaces of Solo City usually have a setback period. According to the serial data, the main factors of latent conflicts (f_1) are conducted by economic-disparity, social-leaderless and hypocrite-culture; while the several triggers (f_1) are conducted by the activity of socio-politic, socio-economic and socio-culture. The study has yet to find the indicator and parameter of each factor's formula so that this study suggests taking the advance research related to the detail formula of urban social disaster.

Keywords: Amok, Solo, Urban social disaster, Urban space damaged

1. Introduction

Solo (also known as Surakarta) is a town on the island of Java. Solo is geographically located at 110°46'49"–110°51'30" East and 7°31'43"–7°35'28" South (see Fig. 1). Solo has an area of about 42km² and there are around 0.6M people living in the city in 2009 (Bappeda, 2006). Solo is one of the oldest cities in Indonesia and it has been selected by UNESCO as the World Heritage City (WHC) since 2008 (see Fig. 2). The embryo of Solo has appeared since 1500s (Qomarun, 2007). Solo is originally an ancient city which grows into the one of modern cities in Indonesia by presenting malls, apartments, hotels, offices and some high rise buildings.

The city was firstly established by the settlement of *Ki Solo* in the early 16th century. *Solo* stems from the Javanese word '*soroh*' which means laborer (Sajid, 1984). They served and worked from one generation to the next generation for the Kingdom of *Pajang* (1527-1586) on the Port of *Nusupan*, Bengawan Solo River.

After the native period (1500s-1750s), Solo has been built by many people from many countries (Chinese, Arab, and Dutch) since 1750s. People from around the world came and developed the city of Solo after the Kingdom of *Mataram* had moved to *Solo* in 1746 (Lombard, 2005). In that accord, *Solo* has become a cross-culture-city since 1750s. The city of *Solo* became



Fig. 1 Electron Location of Solo

(Source: Google Earth, http://earth.google.com, 2007)

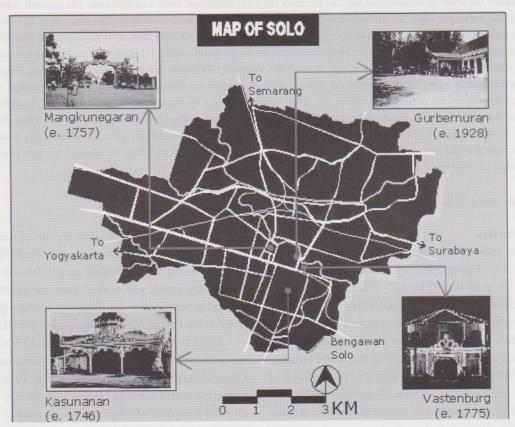


Fig. 2 Map of Solo

(Source of Map: Bappeda, 2006; Source of Photos:KITLV, 2009)

the capital of Javanese Kingdom from 1745 to 1945 (200 years). Accordingly, the city of *Solo* became the most advance city in Indonesia regarding to the urban facilities (examples: train, tram, car, electricity, telephone, water system, bridge and dam) in 1900s. After this country had changed to the republic era in 1945, the capital moved to *Yogyakarta* from 1945 to 1950 and *Jakarta* from 1950 until now (Ricklefs, 2005). The city of Solo is actually a symbol of paradox. On the one hand, the city is chosen by UNESCO as the world heritage city regarding to its urban culture; on the other hand, the city has a highly urban social disasters regarding to its urban history. Understanding the several urban social disasters, the research explore the urban morphology and identify the main formula of urban social disasters.

2. Method

The paradigm of research was conducted by a rationalistic inquiry. The main frame of rationalistic inquiry is referring to the sense, logic, and ethics (Muhadjir, 1996). Studying object of the past time, the method of study was carried out by historical-archeology (Ambary, 1999). The historical-archeology is conducted by a three-science-approach: (1) historical approach (pictorial data, textual data, and audio-visual data); (2) archeology approach (arty-fact, eco-fact, and ipse-fact); (3) and assist science approach (sociology, geography, law). Related to the past empiric, the research was dominantly based on the several old documents. As the historical study, the method of research was carried out by a-three-archive: (1) primary files; (2) secondary files; and (3) physical files. The primary files were collected from Javanese, English, Dutch and also the official documents. The Javanese documents are including: paintings; newspapers; maps; regulations; and 'babad' (Javanese historical texts); while the English documents are including: photographs; texts; and paintings; while the Dutch documents are including: maps; texts, paintings; photographs; and regulations. The primary files are directly taken from the real world at the past time by the people as the performers (example: Raffles, 1800s; Woodbury, 1850s; Paku Buwono X, 1900s). Afterwards, the secondary files are indirectly taken from the real world at the past time by the people as the historians. The international historians (1950s-2000s) are: Ricklefs, Houben, Lombard, Carey, Nas, Reid,

Olthof, Graaf; while the national historians (1950s-2000s) are: Muljana, Notosusanto, Kartodirdjo; and the local historians (1950s-2000s) are: Sajid, Ngadijo, Shanta, Nurhadiantomo. On the other hand, the physical files are directly taken from the real world by the authors at the present time (2007-2009). The physical files are including: *arty-fact* (built environment); *eco-fact* (natural environment); and *ipse-fact* (social environment).

3. Discussion

3.1 Terminology of 'Amuk'

'Amuk' as a Javanese word had developed in several meanings. The word 'amuk' (English: amok) has appeared since 1800s in the remarkable book titled: 'The History of Java'. This book was written by Raffles in 1817. He lived and observed the life of Java Island from 1811 to 1816. He describes the word 'amuk' as follows:

"This phrenzy, as a crime against society, seems, if not to have originated under the Dutch, certainly at least to have been increased during their administration by the great severity of their punishments. For the slightest fault, a slave was punished with a severity which he dreaded as much as dead. He often prefered to rush on death and vengeance."

(Source: The History of Java, Volume I: London: Oxford University Press, 1965; p. 250).

At the present time, amok can be found in both medical and social activity. According to the medical perspective, amok is just special form of illness which we know, similar to hysteria, epilepsy or catatonia (Kraepelin, 1976). Amok is a biological disorder classified as a reactive psychosis. On the other hand, according to the social perspective, amok is a culturally specific pathway for pent-up emotions to emerge (Carr, 1985). Amok is the common practice of suppression of anger and other negative feelings. According to these terminologies, the study will be conducted by the second perspective. According to Galtung (1982), there are 2 kinds of mass amok: (1) violence as action; and (2) violence as structure.

3.2 Previous Studies

Every urban history of all around the world (America, Europe, and Asia) is actually not free from the urban social disaster. The urban morphology in the world is almost occurred the social conflict, yet it is only a few studies. The study of *Klinken* (2007) related to urban

social disaster in Indonesia found that there are 5 types of social conflict as: (1) separatist conflict (Aceh, Papua, and Timor); (2) racial conflict (Madura, Kalimantan, Java); (3) communal conflict (Jakarta, Solo, Bandung); (4) vigilantism conflict (Lombok, Sulawesi, Java); and (5) terrorism conflict (Jakarta, Solo, Surabaya). However, the study found that the urban social disaster is conducted and dominated by political issues. Afterwards, the study of Nurhandiantomo (2004) related to urban social disaster in Surakarta, found that the social conflicts are conducted by law and economic issues. The study found that the integration of all citizens, which was coming from many countries, had been failed during the monarchy-colonial-republic periods. Completing those issues, this paper is actually approached by habitat engineering or built environment issue. The theory of social conflict has been firstly released by Pruitt and Rubin (1986) since 1980s. They describe the social conflict as the perceived divergence of people interest or the unsuccessful achievement of people's aspiration. There are 5 strategies to cope the social conflicts as: (1) contending; (2) problem solving; (3) yielding; (4) inaction; and (5) withdrawing. However, social conflict is not necessary to appear the destruction, yet the worst conflict can be happened in horrifying condition.

3.3 Solo and Mass Amok

Mass amok can be defined as a cluster of observable behaviors which presents neither codify-able nor reduce-able to a thing, followed by an extremely violent outburst often involving murder, in which the perpetrator usually claims to have no collection of the incident (Kevin, 1998). Solo is actually a city which has a lot of mass amok experiences, especially in the last 50 years. There have been 15 accidents since Independence Day (1945). The victims of every mass amok accident are always seemed in the collapse buildings, the dying people and the chaotic environment. The urban spaces are definitely damaged and horrified for several days (see Fig. 3). Avoiding from negative impression, this paper omit some images that presenting dead body pictures, communal angry pictures or other tragic accident photos.

There is an incredible example related to mass amok in *Solo*, that is: city hall building. There are 3 city hall buildings which have ever been in the same site for the last 60 years (see Fig. 4). The city hall, which is usually as the most popular building in every city, has ever seen in a three-different-style city hall building since the Independence Day (August 17th, 1945). Firstly, the city hall (known as 'gurbernuran'), which has established since 1928, was destroyed in 1948. This accident is usually called as 'politik boemi hangus' (burning earth



Fig. 5 Example of Mass Amok in Solo: 'Mei Kelabu, 1998' (Grey May, 1998) (Source: Solopos, 1998)

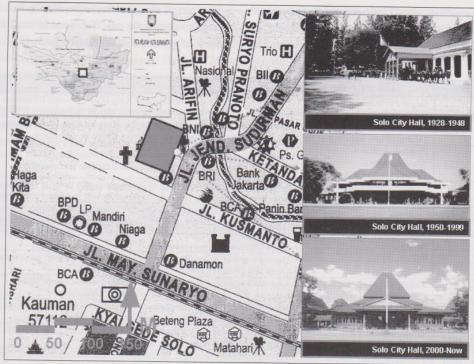


Fig. 4 Three Different City Hall Buildings since Independence Day, 1945 (Source of Map: Bappeda, 2006; Source of Photos: KITLV, Solopos and Survey, 2009)

politics). Secondly, after the city hall had been built again in 1950, it was unfortunately destroyed again in 1999. This accident is usually called as 'amuk massa PDIP' (PDIP mass amok). Although it was safe from the mass amok in 1998, it wasn't safe from 'amuk massa PDIP' in 1999. Mass amok in May 1998 was the worst urban social disaster in Solo. This riot, which was usually called as 'Mei Kelabu' (Gray May), occurs in 3 days. It was not only destroying thousands of buildings, but also killing hundreds of human being. However, the city hall was built again in 2000, and it was the third city hall building in the same site in Solo.

3.4 The History of Solo and Its Conflicts 1740-2000

Firstly, Solo was a settlement near to 'Bengawan' (Giant) River in 1500s. This settlement was built by the people from the lowest class in Javanese social status. They lived and served for the Regent of Pajang. The noble called them 'soroh bau' which means the laborers or man-powers. After the Javanese Kingdom had moved to Pajang from Demak in 1546, they were removed to the middle class in Javanese social status. After becoming

'abdi dalem' (means the noblemen staffs), the noble called 'Ki Solo' or 'Ki Soroh' (means the leader of laborer) to the one of them who was chosen as a leader. Afterwards, the Bengawan River was also renamed by 'Bengawan Solo' River. Unfortunately, it happened only for a short time, because the Javanese Kingdom was moved from Pajang to Mataram in 1586. Accordingly, the people who lived near to Bengawan Solo River were removed again to the lowest class, similar to the earlier status. Amazingly, after 200 years passing time, the Javanese Kingdom was return again to the Ki Solo III settlement in 1746. Moreover, the palace of the kingdom was established on the site of Ki Solo III. Accordingly, the people who lived near to Bengawan Solo River were removed again to the middle class, similar to the Pajang era. Differently from the earlier era (Demak-Pajang), the previous Javanese Kingdom (Mataram) had a very strong European intervention. The several foreigners (Chinese, Arab, Indian, and African) have also lived in surrounding of Solo since 1600s. Hence, the city of Solo has been developed by many people

from many countries since 1750s. According to the serial data, it is actually not really smooth process during its acculturation. The several conflicts of race, religion or

politic interest are not always mixed in the fine condition during developing the city. There are 26 conflicts during the last 260 years (1740-2000) (see Table 1).

Table 1 List of Urban Social Disaster during 1740-2000

No	Year	Name of Conflict	Description of Conflict	
1.	1742	Geger Pecinan (Chinese Rebellion)	Rebellion the Chinese to the Javanese King (<i>Paku Buwono II</i>) and the Dutch related to the more 10.000 Chinese murder in Batavia.	
2.	1755	Pemberontakan Mangkubumi (Mangkubumi Rebellion)	Rebellion the prince <i>Mangkubumi</i> to the Javanese King (<i>Paku Buwono III</i>) and the Dutch related to the Javanese Kingdom succession.	
3.	1757	Pemberontakan Mangkunegara (Mangkunegara Rebellion)	Rebellion the prince <i>Mangkunegara</i> to the Javanese King (<i>Paku Buw III</i>) and the Dutch related to the Javanese Kingdom succession.	
4.	1825	Tragedi Yudakusuma (Yudakusuma Tragedy)	Yudakusuma as the commander of Diponegoro war, order to Chinese mass murder since they make the Javanese people in hunger and suffer.	
5.	1871	Pemberontakan Petani (Farmer Rebbleion)	Since the Javanese Kingdom has moved to Solo, the farmer in the district of Surakarta was actually pressured by the Chinese about the highly tax.	
6.	1905	Pembegalan (Robbery)	Covering the difficult daily life, the Javanese are usually being a robber to the Chinese rich and trader.	
7.	1911	Tawuran Kongsi (Trading Conflict)	Having a special protection from the Dutch to the foreigner batik traders (Arab and Chinese), the native traders gave a rebellion.	
8.	1912	Konflik Legiun MN-Cina (MN-Chinese Conflict)	Legiun Mangkunegaran had already attacked to the Chinese district before Van Wijk Resident arrived to stop the violence.	
9.	1913	Konflik SI-Cina (SI-Chinese Conflict)	Having been success in <i>Revolution Tiongkok</i> , the Chinese made a great celebration for several days so that <i>Syarekat Islam</i> (SI) was protest.	
10.	1923	Gerakan Misbach (Misbach Movement)	Syarekat Rakyat (SR), leading by Misbach, was trying to mix Islam- Marxism and pressing to the Javanese people.	
11.	1942	Perang Jepang (Japanese War)	During the Japanese period, the Javanese made the Dutch exodus from Solo and also robbed their properties.	
12.	1946	Gerakan Anti-Swapraja (Anti-Autonomy Movement)	Having been independence day, the Javanese people in Solo protest about the local government conducted by <i>Kasunanan</i> and <i>Mangkunegaran</i> .	
13.	1946	Pemberontakan Banteng (Banteng Rebellion)	To disappear the politic power of <i>Kasunanan</i> (PB XII) in Solo, <i>Barisan Banteng</i> killed <i>abdi dalem</i> (king staff) and kidnapped the king.	
14.	1947	Kerusuhan PON (PON Riot)	During the revolution period, there were a lot of ideologies surround the athletes so that they fight without sports.	
15.	1948	Perpecahan Militer (Army Riot)	During the revolution period, there were a lot of frictions in the army force so that the internal clash was appeared in killing, kidnapping or firing.	
16.	1948	Perang RI-PKI (RI-PKI War)	During the revolution period, there were a lot of organizations claimed as the leader of the Javanese so that the government (RI) attacked PKI.	
17.	1948	Perang Santri-PKI (Santri-PKI War)	During the revolution period, there were a lot of organizations claimed as the leader of the Javanese so that Islamic organization attacked PKI.	
18.	1948	Boemi Hangus (Burning Earth)	Disappeared the politic power of colonial in Solo, <i>Slamet Riyadi</i> burned the Dutch building including office, settlement, fort, etc.	
19.	1948	Penyerangan Laskar-Cina (Soldier-Chinese War)	Disappeared the politic power of colonial in Solo, the Javanese attacked the Chinese who were giving cooperation with the Dutch.	
20.	1965	Kerusuhan Massa 1965 (Mass Amok 1965)	During the revolution period, there were a lot of organizations claimed the leader so that the Javanese attacked PKI (<i>Partai Komunis Indonesia</i>)	
21.	1966	Kerusuhan Massa 1966 (Mass Amok 1966)	During the economic crisis, the poor Javanese society robbed in the several Chinese districts: <i>Nonongan, Coyudan, Tambak Segaran</i> .	
22.	1972	Kerusuhan Massa 1972 (Mass Amok 1972)	After the poor Javanese had fought with Arab about transport tariff, they continued to riot to the Chinese districts: burning, robbing, killing.	
23.	1980	Kerusuhan Massa 1980 (Mass Amok 1980)	Having been a little crash in the street between bicycle (Javanese) and pedestrian (Chinese), the riots happened in several cities in Java.	
24.	1998	Kerusuhan Massa 1998 (Mass Amok 1998)	Having been an economic and politic crisis, the Javanese made a big scale of riot to the Chinese district and public amenities.	
25.	1998	Amuk Massa Pembalap (Mass Amok Racer)	Having been a big scale of riot on May 1998, the young wild racers riot to the police offices, traffic amenities, street furniture, etc.	
26.	1999	Amuk Massa PDIP (Mass Amok PDIP)	After Megawati had failed to be a president, the partisan (PDIP) made a riot to the Chinese district and government amenities.	

(Source: Authors, 2009)

3.5 Measure of Urban Space Damaged

According to the serial data, the urban space damaged can be described in 3 levels as follows: (1) hard class; (2) harder class; and (3) hardest class. The hard class (scaled as 0.00-3.99) is identified as a conflict presented by public suing activity without any physical victims (including: the people power, public demonstration, mass protest); while the harder class (scaled as 4.00-7.99) is identified as a conflict presented by public suing activity

within any physical victims (including: burning, ruining, robbing); and the hardest class (scaled as 8.00-12.00) is identified as a conflict presented by public suing activity within any dying people (including: killing, raping, plundering). According to the serial data, the class and scale of Urban Space Damaged (USD) in Solo during 1740-2000 can be described as table and diagram below (see Table 2 and Fig. 5).

Table 2 List of Class and Scale of Urban Space Damaged (USD) during 1740-2000

No	Year	Name of Conflict	Class of USD	Scale of USD	Background of Conflict
1	1742	Chinese Rebellion	3 rd -Hardest Class	10	Politic Interest
2	1755	Mangkubumi Rebellion	3 rd -Hardest Class	10	Politic Interest
3	1757	Mangkunegara Rebellion	3 rd -Hardest Class	10	Politic Interest
4	1825	Yudakusuma Tragedy	3 rd -Hardest Class	10	Law-Racial
5	1871	Farmer Rebbleion	1st-Hard Class	3	Politic Interest
6	1905	Robbery	2 nd -Harder Class	6	Social-Racial
7	1911	Trading Conflict	2 nd -Harder Class	6	Economic-Racial
8	1912	MN-Chinese Conflict	2 nd -Harder Class	6	Politic-Racial
9	1913	SI-Chinese Conflict	2 nd -Harder Class	6	Politic, Economic, Racial
10	1923	Misbach Movement	2 nd -Harder Class	6	Religion
11	1942	Japanese War	3 rd -Hardest Class	10	Politic Interest
12	1946	Anti-Autonomy Movmt.	2 nd -Harder Class	7	Politic Interest
13	1946	Banteng Rebellion	3 rd -Hardest Class	10	Politic Interest
14	1947	PON Riot	2 nd -Harder Class	6	Politic Interest
15	1948	Army Riot	3rd-Hardest Class	10	Politic Interest
16	1948	RI-PKI War	3 rd -Hardest Class	10	Religion-Politic
17	1948	Santri-PKI War	3rd-Hardest Class	10	Religion
18	1948	Burning Earth	2 nd -Harder Class	6	Politic Interest
19	1948	Soldier-Chinese War	3 rd -Hardest Class	10	Politic, Economic, Racial
20	1965	Mass Amok 1965	3rd-Hardest Class	11	Politic Interest
21	1966	Mass Amok 1966	2 nd -Harder Class	6	Economic-Racial
22	1972	Mass Amok 1972	3 rd -Hardest Class	10	Social-Racial
23	1980	Mass Amok 1980	3 rd -Hardest Class	11	Social-Racial
24	1998	Mass Amok 1998	3 rd -Hardest Class	12	Social-Racial
25	1998	Mass Amok Racer	2 nd -Hardest Class	7	Politic, Economic, Racial
26	1999	Mass Amok PDIP	3 rd -Hardest Class	9	Politic Interest

(Source: Authors, 2009)

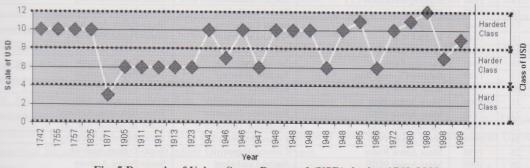


Fig. 5 Dynamic of Urban Space Damaged (USD) during 1740-2000

(Source: Authors, 2009)

3.6 Formula of Urban Social Disaster

According the serial data, the urban social disasters (manifest conflicts) are always related to the latent conflict and trigger. The manifest conflict (fm) is actually caused by the combining of both latent conflict (f_1) and trigger (f_1) . This formula can be written as: $(f_m) = (f_1) + (f_1)$. The latent conflict can be categorized as 3 factors: (1) economicdisparity; (2) social-leaderless; and (3) culturalhypocrite. The latent conflict appeared since the native people lost their land, livestock, or even basic necessities of life by the foreigners or invasions. Accordingly, in latest decades, these latent conflicts were actually changes to the economic-disparity. Moreover, the native people are always needed a king or even a non-formal leader. They have already lived in 450 years within a Javanese king, a man within God's power. When they had an estrange king or leader in middle of them, they were actually lost apart of their spiritual leader. Hence, the latent conflict has appeared since the social-leaderless occurred. The other latent conflict is found as a culturalhypocrite. The cultural-hypocrite was firstly found in justice-disparity, like the explanation of Raffles in 1817. Accordingly, in latest decades, these latent conflicts were actually changes to the habit of illegal activity without any punishment as the regulation said. The daily activities are actually in a hypocritical condition: what the regulations they have already approved are always different with what they have already done. Without any punishment during in the breaking laws, the hypocrite developed into the social habit and moreover to be a culture. On the other hand, there are 3 kinds of trigger: (1) socio-economic activity; (2) socio-politic activity; and (3) socio-culture activity. The socio-economic activities are including: trading, tax, tariff, price, income; while the socio-politic activities are including: election, sport, campaign, demonstration, protest, party; and the socioculture activities are including: religion, race, tradition, ritual, ceremony. To describe the various urban social disasters (manifest conflict) related to the latent conflict and trigger can be explained as Table 3 (see Table 3).

Table 3 List of Manifest Conflict, Latent Conflict and Trigger during 1740-2000

No	Year	Name of Manifest Conflict (f _m)	Category of Latent Conflict (f _i)	Category of Trigger (ft)
1	1742	Chinese Rebellion	Cultural-Hypocrite	Socio-Culture Activity
2	1755	Mangkubumi Rebellion	Social-Leaderless	Socio-Politic Activity
3	1757	Mangkunegara Rebellion	Social-Leaderless	Socio-Politic Activity
4	1825	Yudakusuma Tragedy	Economic-Disparity	Socio-Economic Activity
5	1871	Farmer Rebellion	Economic-Disparity	Socio-Economic Activity
6	1905	Robbery	Economic-Disparity	Socio-Economic Activity
7	1911	Trading Conflict	Economic-Disparity	Socio-Economic Activity
8	1912	MN-Chinese Conflict	Social-Leaderless	Socio-Politic Activity
9	1913	SI-Chinese Conflict	Economic-Disparity	Socio-Economic Activity
10	1923	Misbach Movement	Social-Leaderless	Socio-Politic Activity
11	1942	Japanese War	Social-Leaderless	Socio-Politic Activity
12	1946	Anti-Autonomy Movement	Social-Leaderless	Socio-Politic Activity
13	1946	Banteng Rebellion	Social-Leaderless	Socio-Politic Activity
14	1947	PON Riot	Social-Leaderless	Socio-Politic Activity
15	1948	Army Riot	Social-Leaderless	Socio-Politic Activity
16	1948	RI-PKI War	Social-Leaderless	Socio-Politic Activity
17	1948	Santri-PKI War	Social-Leaderless	Socio-Politic Activity
18	1948	Burning Earth	Social-Leaderless	Socio-Politic Activity
19	1948	Soldier-Chinese War	Social-Leaderless	Socio-Politic Activity
20	1965	Mass Amok 1965	Economic-Disparity	Socio-Economic Activity
21	1966	Mass Amok 1966	Economic-Disparity	Socio-Economic Activity
22	1972	Mass Amok 1972	Economic-Disparity	Socio-Economic Activity
23	1980	Mass Amok 1980	Economic-Disparity	Socio-Economic Activity
24	1998	Mass Amok 1998	Economic-Disparity	Socio-Economic Activity
25	1998	Mass Amok Racer	Cultural-Hypocrite	Socio-Culture Activity
26	1999	Mass Amok PDIP	Social-Leaderless	Socio-Politic Activity

(Source: Authors, 2009)

4. Conclusion

The research finds that there are 26 urban social disasters during 1740-2000 (260 years). The data shows that there == 15 (58%) mass amok categorized as hardest class conflicts, which means within physical and personal wictims. The research finds that the manifest conflict is actually caused by both latent conflict and trigger, or the formula can be written as: $(f_m) = (f_l) + (f_t)$. The bigger the latent conflict occurs, the easier the manifest conflict happens. The latent conflicts are mostly appeared by social-leaderless and economic-disparity; while the regers are mostly found in socio-economic and sociopolitic activities. However, this study finds that the urban social disaster appears in every 10 years during 1740-2000; while the victims of every accident are always seem in the collapse buildings, the dying people or the chaotic environment. Having no seriously covered of the latent conflict, the manifest conflict is actually easy happen in the future time. To avoid the urban social assaster, decrease the economic disparity, make the law enforcement and achieve the fair leader. On the other hand, the research has yet to study about the parameter and indicator of the main formula. Therefore, the result of study suggests taking the advance research which explores the parameter and indicator of the main formula.

References

- Ambary, H. M. (1999). Stage of history: Dedicated to Prof. Lombard. Jakarta: Yayasan Obor. (in Indonesian.)
- Bappeda. (2006). *Urban planning of Surakarta*, 2007-2016. Surakarta: Bappeda Press. (in Indonesian.)
- Blumer, H. (1969). Symbolic Interaction: Perspective and Method. New York: Prentice Hall.
- Carr, John E. (1985). Ethno-behaviorism and the culturebound of syndrome: The case of Amok, culture, medicine, and psychiatry. Berkley, CA: University California Press.
- Carey, P. (1976a). *Mataram and ts successors: 1600-1830*. Cambridge: Cambridge University Press.
- Carey, P. (1976b). *The origin of Java War, 1825-1830*. Oxford: Oxford University Press.
- Dahrendorf, R. (1959). Case and class conflict in Industrial Society. Stanford, CA: Stanford University Press.
- Galtung, J. (1982). The true world: A transnational

- perspective. New York: The Free Press.
- Google Earth. (2009). Map of Solo city and surrounding area. Retreived 17, December, 2009, from http:// www.google.com
- Graaf, H. J. de. (1954). *De Regering van Panembahan Senapati Ingalaga*. Jakarta: Pustaka Grafitipers. (in Indonesian.)
- Graaf, H. J. de. (1961). De Regering van Sunan Mangku-Rat I Tegal-Wangi, vorst van Mataram, 646-1677: De Ontbinding van Het Rijk. Jakarta: Pustaka Grafitipers. (in Indonesian.)
- Graaf, H. J. de. (1958). De Regering van Sultan Agung, Vorst van Mataram,1613-1645, en Die van Zijn. Voorganger Panembahan Seda-ing Krapjak, 1601-1613. Jakarta: Pustaka Grafitipers. (in Indonesian.)
- Houben, V. J. H. (2002). *Keraton and Kumpeni:* Surakarta and Yogyakarta, 1830-1870. Yogyakarta: Bentang Budaya. (in Indonesian.)
- Kartodirdjo. (1975). The Indonesian history I-III. Jakarta: Departemen Pendidikan dan Kebudayaan. (in Indonesian.)
- KITLV (Royal Netherlands Institute of Southeast Asian and Caribbean Studies at Leiden) (2009). *Image database*. Retreived December 10, 2009, from http://www.kitlv.nl/
- Klinken, G. van. (2007). Communal violence and democratization in Indnesia: Small town wars. New York: Routledge. (in Indonesian.)
- Kraepelin, E. (1976). *Comparative psychiatry*. Bristol: J. Wright.
- Lombard, D. (2005). *Java Island (1st-3rd Volume)*. Jakarta: Gramedia. (in Indonesian.)
- Muhadjir, N. (1996). *Qualitative research methods*. Yogyakrta: Rake Sarasin. (in Indonesian.)
- Muljana, S. (1968). The rise and fall of Javanese Kingdom in XV century. Jakarta: Bhratara. (in Indonesian.)
- Nas, P. J. M. (1986). *The Indonesian city*. New York: Foris.
- Ngadijo. (1993). *The history of Keraton Surakarta*. Surakarta: Tiga Serangkai. (in Javanese.)
- Nurhadiantomo. (2004). *Social conflicts: The social justice of Law*. Surakarta: Muhammadiyah University Press.
- Olthof, W.L. (1941). *The history of Java Island*. Yogyakarta: Narasi Press. (in Indonesian.)

Pruitt, D. G., & Rubin, J. Z. (1986). *The theory of social conflict*. New York: McGraw-Hill. (in Indonesian.)

Qomarun. (2007). *Morphology of Solo*, 1500-2000. Surabaya: Petra University Press. (in Indonesian.)

Reid. (1998). *Indonesian heritage*. Jakarta: Buku Antar Bangsa. (in Indonesian.)

Raffles, T. S. (1817). *The history of Java*. London: Oxford University Press.

Ricklefs, M. C. (2005). *The history of modern Indonesia*. Yogyakarta: GMU Press. (in Indonesian.)

Sajid. (1984). *The history of Sala*. Surakarta: Rekso Pustaka. (in Javanese.)

Shanta. (1998). *The History of Pajang*. Surakarta: Sasana Pustaka. (in Javanese.)

Solopos. (2008). Ten Years 'Gray May' Riot: The Raise of Solo. Surakarta: Solopos Press. (In Indonesian.)