

International Review for Spatial Planning and Sustainable Development

Online ISSN : 2187-3666

ISSN-L : 2187-3666

[Journal home](#)

[All issues](#)

[About the journal](#)

Volume 6, Issue 4

Displaying 1-12 of 12 articles from this issue

Main Section: Urban-Rural Regeneration and Cultural Sustainability

[Editorial Introduction](#)

Urban-Rural Regeneration and Cultural Sustainability

Pindo Tutuko, Yong-Hoon Son

2018 Volume 6 Issue 4 Pages 1-4

Published: October 15, 2018

Released on J-STAGE: October 15, 2018

[DOI](#) https://doi.org/10.14246/irspsd.6.4_1

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[The Role of CSR in the Revitalization of Urban Open Space for Better Sustainable Urban Development](#)

Respati Wikantiyoso, Tonny Suhartono

2018 Volume 6 Issue 4 Pages 5-20

Published: October 15, 2018

Released on J-STAGE: October 15, 2018

[DOI](#) https://doi.org/10.14246/irspsd.6.4_5

[JOURNAL](#) [FREE ACCESS](#)

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[Local Identity Regeneration of Unused Urban Spaces](#)

Yuhan Shao, Binyi Liu

2018 Volume 6 Issue 4 Pages 21-34

Published: October 15, 2018

Released on J-STAGE: October 15, 2018

DOI https://doi.org/10.14246/irspsd.6.4_21

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Global Creative Economy and Istanbul: A Focus on Film Industry Cluster

Doğan Dursun

2018 Volume 6 Issue 4 Pages 35-50

Published: October 15, 2018

Released on J-STAGE: October 15, 2018

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The Role of GeMaSPeKoLa in Supporting the Preservation of Semarang Old Town

Suzanna Ratih Sari, Arnis Rochma Harani, Santosa Adi Wibowo

2018 Volume 6 Issue 4 Pages 51-61

Published: October 15, 2018

Released on J-STAGE: October 15, 2018

DOI https://doi.org/10.14246/irspsd.6.4_51

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The Role of Tourist Behaviour in The Determination of Tourist Attractions

Emerging tourist destinations in Jeju Island, South Korea through self-wedding photography

Yelim Kim, Yong-Hoon Son

2018 Volume 6 Issue 4 Pages 62-75

Published: October 15, 2018

Released on J-STAGE: October 15, 2018

DOI https://doi.org/10.14246/irspsd.6.4_62

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Assessment of Inclusive Historical Public Spaces in achieving preservation of such areas in Malang, Indonesia

Case study: Public spaces developed during the Dutch Colonial period

A.Tutut Subadyo, Pindo Tutuko, Septi Dwi Cahyani

2018 Volume 6 Issue 4 Pages 76-92

Published: October 15, 2018

Released on J-STAGE: October 15, 2018

DOI https://doi.org/10.14246/irspsd.6.4_76

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[Download PDF](#) (1398K)

Section A: Planning Strategies and Design Concepts

Open spaces: spatial configuration, visibility analysis and use

Case study of mass housing in Biskra, Algeria

Souhaila Bendjedidi, Yassine Bada, Rim Meziani

2018 Volume 6 Issue 4 Pages 93-109

Published: October 15, 2018

Released on J-STAGE: October 15, 2018

DOI https://doi.org/10.14246/irspsd.6.4_93

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Research and Practice on Disaster Prevention Planning in Villages based on Planning Support System

Overview: Potential public policies on spatial planning for sustainable urban forms A Case Study

Qingming Zhan, Fang Zou, Weisi Zhang, Yinghui Xiao

2018 Volume 6 Issue 4 Pages 110-127

Published: October 15, 2018

Released on J-STAGE: October 15, 2018

DOI https://doi.org/10.14246/irspsd.6.4_110

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A Study of Flood Disaster Risk Communication Model and Adaptive Behaviours for River-Watershed residents in Taiwan

Di Hu, Jen-Te Pai, Yu-Yun Chen

2018 Volume 6 Issue 4 Pages 128-147

Published: October 15, 2018

Released on J-STAGE: October 15, 2018

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Sustainable Strategy: Comprehensive Computational Approach for Wind Path Planning in Dense Urban Area

Qingming Zhan, Yuli Fan, Yinghui Xiao, Wanlu Ouyang, Yuliang Lan, Zhic ...

2018 Volume 6 Issue 4 Pages 148-164

Published: October 15, 2018

Released on J-STAGE: October 15, 2018

DOI https://doi.org/10.14246/irspsd.6.4_148

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Key factors on migration assuming disaster risk of a megathrust earthquake:

A case study in the Pacific coastal area of Japan

Ryohei Yamashita

2018 Volume 6 Issue 4 Pages 165-179

Published: October 15, 2018

Released on J-STAGE: October 15, 2018

DOI https://doi.org/10.14246/irspsd.6.4_165

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Edited and published by SPSP Press
Production services SPSP Press

Assessment of Inclusive Historical Public Spaces in achieving preservation of such areas in Malang, Indonesia

Case study: Public spaces developed during the Dutch Colonial period

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Received: Jan 31, 2018; Accepted: March 27, 2018

Keywords: Assessment; Inclusive historical public spaces; Preservation

Abstract: Inclusive public spaces, a sort of “urban lungs” and “social binders”, are a representation of responsive, democratic and meaningful space within the context of urban development. In the city of Malang, inclusive public spaces have undergone significant changes, and such changes may lead to a kind of degradation of the historical aspect which can in turn lead to a decline in the overall real condition of an area (spatial, sociological and ecological). Therefore, an assessment of historic spaces used as inclusive public space needs to be done in order to conserve their value to the community. This study aimed to identify the development of, existence of, physical characteristics of, and functions of these Inclusive Historical Public Spaces (IHPS); and also to analyse the integrity of the space values related to people’s preferences and needs with respect to these spaces. This research used survey data collection techniques. Analysis and assessment of the space integrity was based on the quality and significance of space consisting of historical, aesthetic, and functional value. The study found that an inclusive historical space is affected significantly by the access to streets, which have different physical characteristics and functions in the four regions in Malang. To realize conservation of IHPS in Malang, which represent the history and image of an overall region, further support is needed through government policy in urban development management, as well as consideration as to the needs and aspirations of the public.

1. INTRODUCTION

Open public space is an important element as a counterweight in both urban and rural space ([Subadyo, A Tutut & Poerwoningsih, 2017](#)). The existence of such public space gives evidence of changing human needs over time ([Kostof & Castillo, 1992](#)). According to research ([Nasution & Zahrah, 2012](#)), many open public spaces are found to be managed by the private sector. However, privatization often has negative impacts, such as limiting access,

increasing consumerism, social inequalities, declining democratic expression and social interaction. Thus, interest should be paid to the development of inclusive space which can be accessed and utilized easily by everyone and which supports human activities ([Carr et al., 1992](#)). In order to achieve this ideal of a democratic and inclusive public space, space often with historical significance, some assessment is required.

Malang is a city in Indonesia which still has many traces of historic urban space, including open public space dating from the era of Dutch colonization ([Ridjal et al., 2016](#); [Sunaryo et al., 2013](#)). Historic public space can project a certain aesthetic value for the entire region as well as create a sense of inclusiveness for the city ([Mehta, 2014](#)). However, many inclusive public spaces within the city have changed over time as the city has grown ([Harun, Mansor, & Said, 2015](#)). In Malang, since the beginning of the post-independence era, this situation has led to a decline in the the space's historical value, the quality of spatial-ecology, aesthetics, and also the human sociological function.

An understanding of the importance of historical public places to the townspeople needs to be considered, especially in areas which have undergone continuous change and disassembly, which has caused the loss of historical character and uniqueness. To achieve a sustainable urban form, the existence of such spaces needs to be maintained to preserve the overall vitality of the city ([Bandarin & van Oers, 2015](#)). The value of inclusive public spaces is also closely related to the quality of a space's design (physical form/ aesthetic). The aesthetic element has a comprehensive impression that emerges from the community perception ([Carmona, 2015](#)). The aesthetic has relation to the way the area is seen by the public (giving a sense of safety and comfort) ([Alamoush et al., 2017](#)). This is not only considered to be environmental (social engagement and community empowerment) assets but also monumental (the sensorial experience of the "townscape") assets. The morphological work above shows the spontaneous, balanced development of characters, and natural resources within each of these areas ([Romice et al., 2017](#); [Tutuko & Shen, 2016](#)).

Nowadays, citizens of various ages, though in particular the elderly, interact within the context of the public space. Access to such space needs to be taken into consideration to ensure that such people can use the space ([Srichuae, Nitivattananon, & Perera, 2016](#); [Yoshii, 2016](#)). Elements and facilities contributing to such access are key to the space's utilization. An important aspect of urban development planning is the ensuring of such accessibility as an aspect of enabling the mobility of people in a developing city. The power of globalization towards local identity and regional diversity affects urban shape shifts and the existence of public space ([Kaymaz, 2013](#)). This new insight will strengthen the conservation effort, the regulatory support from stakeholders, and also the awareness of planners and architects ([Abdel-Rahman, 2016](#)).

In general, support for historical space is required to prevent the extinction of human civilization itself. The function of such space requires an attention to the aesthetic aspect (as a level of visual comfort satisfaction) and also to the fulfillment of the needs of human activity. Furthermore, the local government should have comprehensive guidance in managing the existing Inclusive Historical Public Spaces (IHPS). The historical space needs to avoid being a mere centralization point of sociometric activity, which may simply relate it to the problems of an inner city ([Hardoy & Satterthwaite, 2014](#)).

The objective focus of this research is based on the three main issues (i.e. history, aesthetic and function), which need assessment as well as regard as focal points in preserving and utilizing IHPS in order to maintain sustainability within urban development in Malang. The utilization of IHPS in accordance with the preservation principle will support the vitality of the maintenance area.

This paper discusses the assessment of IHPS, which will be helpful to supporting ideas on the preservation of such urban areas. It is compiled in three main sections. The first section presents the development of IHPS in existence in Malang, which has significant implications on characteristics of public spaces. Secondly, it assesses the public space integrity based on the quality and significance of the IHPS. Then, the last section contains the assessment analysis based on human preference.

2. METHODOLOGY

This research used a descriptive qualitative method with a survey included (non-experimental). The investigation of the existence of IHPS in Malang, an assessment of them, as well as an analysis of their characteristics as space, provides a starting point for determining the concept and direction for the preservation of such historic space. The existence of IHPS may be traced back through old maps and literature in relation to the periodization in which a particular space was able to survive and are studied further based on the type/character and the forming function. Moreover, assessment and analysis of the public space integrity is based on the quality and significance of the IHPS which consists of historical, aesthetic and functional value ([Arifin, Arifin, & Suryadarma, 2002](#)) where the variables, indicators and parameters are shown in the following tables.

Table 1. Variables, Indicators and Parameters Based on the Historical Value

Variable	Indicator	Parameter					
		High	V	Moderate	V	Low	V
Chronological Value	The level of regional age	> 100 years	3	50 – 100 years	2	< 50 years	1
Historical Facts	The number of historical facts	> 5	3	2 - 5	2	< 2	1
Uniqueness	The number of similar objects	None	3	1 – 10 similar object	2	> 10 similar object	1
Historical Events	The level of historical events that occurred	International	3	National	2	Regional	1
Wholeness	The level of wholeness	80 – 100%	3	50 – 79%	2	10 – 49%	1

High historical value, if the total value = 13-15; Moderate historical value, if the total value = 9-12; Low historical value, if the total value = 5-8.

Source: ([Australia ICOMOS Incorporated, 2000, 2013](#); [Catanese & Snyder, 1988](#); [Helly & Budiarti, 2005](#)).

Table 2. Variables, Indicators and Parameters Based on the Aesthetic Value

Variable	Indicator	Parameter					
		High	V	Moderate	V	Low	V
Representation of a Particular Style	Regional image representation (Traditional/	Very represent-ative	3	Quite represent-ative	2	Less represent-ative	1

Variable	Indicator	Parameter					
		High	V	Moderate	V	Low	V
(Contextual and Homogeneous)	Colonial/ Chinatown)						
Proportion	Proportion of Width to Height	W/H > 1,5	3	W/H = 1 – 1,5	2	W/H > 1,5	1
Rhythm	Continuity of street wall	Continues	3	Some are disconnected	2	Disconnected	1
Scale	Human scale (comparison)	Monumental scale	3	Human scale	2	Intimate Scale	1

High historical value, if the total value = 10-12; Moderate historical value, if the total value = 7-9; Low historical value, if the total value = 4-6.

Source: (Jacobs, 1993; Helly & Budiarti, 2005)

Table 3. Variables, Indicators and Parameters Based on the Functional Value

Variable	Indicator	Parameter					
		High	V	Moderate	V	Low	V
Amenities	Separation between pedestrians and vehicles	Clear	3	Unclear	2	None	1
Accessibility	Link system/ “Oldtown” linkage	Direct linkage system	3	Indirect linkage system	2	Unrelated linkage system	1
Economic Usefulness	Number of commercial front stores	Found > 50%	3	Found 10 – 50%	2	Found < 10%	1
Social Needs	Activity	Found > 3 activities	3	Found 2–3 activities	2	Found only 1 activity	1

High historical value, if the total value = 10-12; Moderate historical value, if the total value = 7-9; Low historical value, if the total value = 4-6.

Source: Carmona et al. (2010)

The value rating was processed by a peer group of the Centre of Environmental and Landscape Study, Department of Architecture, University of Merdeka Malang through expert judgement. This method is used to determine the value of each criterion where the total value of its criteria generates the value of space integrity (Equation 1) (Arifin, Arifin, & Suryadarma, 2002). The overall results are classified into three levels, i.e., high integrity space (rating of 31-39), moderate integrity space (rating of 22-30), and low integrity space (rating of 13-21).

$$I = \sum H + \sum A + \sum F$$

Equation 1. Formula of Space Integrity. Source: Arifin, Arifin, and Suryadarma (2002)

Description:

I = Space Integrity Value;

H = Historical Value;

A = Aesthetic Value;

F = Functional Value.

Subsequently, a community preference analysis was conducted to examine the needs of the community in the use of public space as an inclusive historical space. The respondent data came from selected zones which were based on the Malang *bouwplan* development underlying the centre of Malang from the Dutch colonial era (*Celaket - Kayutangan - Alun-alun, Ijen – Gajayana Stadium, Tugu – Rampal, and Sukun – Kasin*). The data processing used purposive sampling method (Ritchie et al., 2013) in which 30 respondents both in the visitors and residents category were involved in each of those four

zones. The respondents of *Celaket-Kayutangan-Alun-alun* zone consisted of the town square (*Alun-alun*) visitors ($n = 15$) and its area residents ($n = 15$). In *Ijen-Gajayana* Stadium, the respondents were composed of the stadium visitors ($n = 15$) and the cultural conservation building owners/residents ($n = 15$). In *Tugu-Rampal*, the sample respondents were taken from Tugu and Rampal park visitors ($n = 15$) and its area residents ($n = 15$). The respondents of the *Sukun-Kasin* zone consisted of the Sukun Cemetery and Soepraoen Army Hospital visitors ($n = 15$) and the residents around Raya Dieng, Langsep and Sodanco Supriadi streets ($n = 15$). This sampling method was based on the users' first determination. The sample group was drawn from 20% of the total number of average weekly visitors to each particular area.

Table 4. Variable, Sub Variables and Operational Variables

Variable	Sub Variable	Operational Variable
Amenities and Images	Image	Maintaining historic physical characteristics
		The availability of pedestrian ways
	Safety and amenities	The availability of street furniture, such as seating, trash bins, street lighting and others
		The availability of vegetation barriers
Access and Linkage	Access	The availability of municipal transport and its improvements
	Linkage	The availability of pedestrian way linkages
	Transit	The availability of halte/ transit shelters
		The availability of car parks
Economic Usefulness	Street market	Structuring and coordinating of street traders
	Investor	Involvement of local communities and investors
		Investor's right to choose the company types
Social Needs	Utilization	The utilization of IHPS for commercial purposes
	Event	Enhancement of type and frequency of activities
	Evening Use	Extra hours of activity (up to night events)
	Facility	Provision of facilities for various ages
		Social integration of support facilities

Source: (Carmona et al., 2010; Helly & Budiarti, 2005)

All respondents ($n = 120$) gave answers to the questionnaire of operational variables related to public space utilization (Table 4.). The questionnaire contained closed questions with a choice of quantitative answers related to the importance level of IHPS and measured using a Likert scale. The results of the answers were then analysed using (1) the validity and reliability test and (2) further analysis. A validity test was used to determine the validity level of question variables in the questionnaire. That is, it examined the corrected item value for each variable and compared it with the R table (from SPSS 15 software support) by using the scale analysis. Beyond this, Cronbach's Alpha method was applied to the reliability test. The calculation of its method is based on the median intercorrelation among the question items in the questionnaire where reliability is shown when the alpha value is more than 0.6. Finally, the respondents' answers were analysed by using the descriptive analysis method of Chi-Square.

3. THE DEVELOPMENT OF INCLUSIVE HISTORICAL PUBLIC SPACES IN MALANG

Malang, as the second largest city in East Java, grew rapidly after being taken over by the Dutch colonial government. That rapid development was marked by the expansion of transportation modes and intercity lanes to the north of Malang (Malang-Pasuruan-Surabaya) in the 1870s (Baskoro, 2017;

[Handinoto, 1996](#)), and also urban planning from 1917 in eight phases (*Figure 1(a)*) ([Basundoro, 2015](#); [Santoso, Suryasari, & Antariksa, 2013](#); [Handinoto, 1996](#)).

The first milestone of Malang's urban development (phase I/ *bouwplan* I) was completed on May 18, 1917 in the form of a housing establishment for Europeans (*Oranjebuurt*) in Celaket (Jaksa Agung Suprpto street) and Rampal (Panglima Sudirman, Pattimura and Urip Sumoharjo streets). Later, on 26 April 1920 was initiated phase II of the city expansion (*bouwplan* II) with a focus on the development of a regional administrative centre (*Gouverneur General Buurt*) Malang. In the centre, there was a landmark round square (*JP Coen Plein*) which became a point of confluence and public space distribution (Tugu, Mojopahit, Suropati, Kertanegara, Kahuripan and Sultan Agung streets). Since then, the city was developed and built with a concentric urban spatial structure, like small towns of Europe in the 18th century, where the round square became the city centre. Formerly, all roads in the area used names from the Netherlands.

In *bouwplan* III, the Sukun area was chosen as the European cemetery complex due to its territory being the main access connecting Malang and Blitar (west side of Malang). Moreover, in *bouwplan* IV, middle and lower housing development was placed on the area between Brantas River, with access to the town and Samaan public cemetery. In 1924, *bouwplan* V the housing for affluent residents was built (Ijen street) and the sports area (Gajayana Stadium) surrounded by Semeru, Tangkuban Perahu and Kawi streets. At that time, Dutch and other European families exclusively enjoyed Ijen Boulevard and its surrounding areas, while the indigenous people had to settle for living in the suburbs with their inadequate facilities. In phase VI of urban development, Malang expanded to the old town of Mergosono - *Eilandenbuurt*. In *bouwplan* VII, the city developed an upper class residential area in the west of the city. Lastly, the development and supply of industrial estates was allocated in the southern part of Malang as the final stage of urban development prior to independence (*bouwplan* VIII). The development of Malang city is clearly explained by [Handinoto \(1996\)](#) in Figure 1 (a), that the development of Malang city consists of 8 stages. Further research, [Subadyo, A. T. \(2010\)](#) studied about the development stage of the Malang city by determining development of land use zones in the city of Malang, as shown in Figure 1 (b).

Based on the city's historical development, the tracking of IHPS evolution is represented by development in the territory in *Figure 1(b)*, recorded over three time periods (*Table 5*). The search outcome is then reviewed to see type/characters and functions as IHPS (*Table 6*). The city development required a renewal/reform of the city structure. However, these days the alteration process is suspected to be having a deleterious effect on the IHPS. The surviving IHPS needs to be evaluated and controlled in order to maintain the urban public spaces' sustainability.

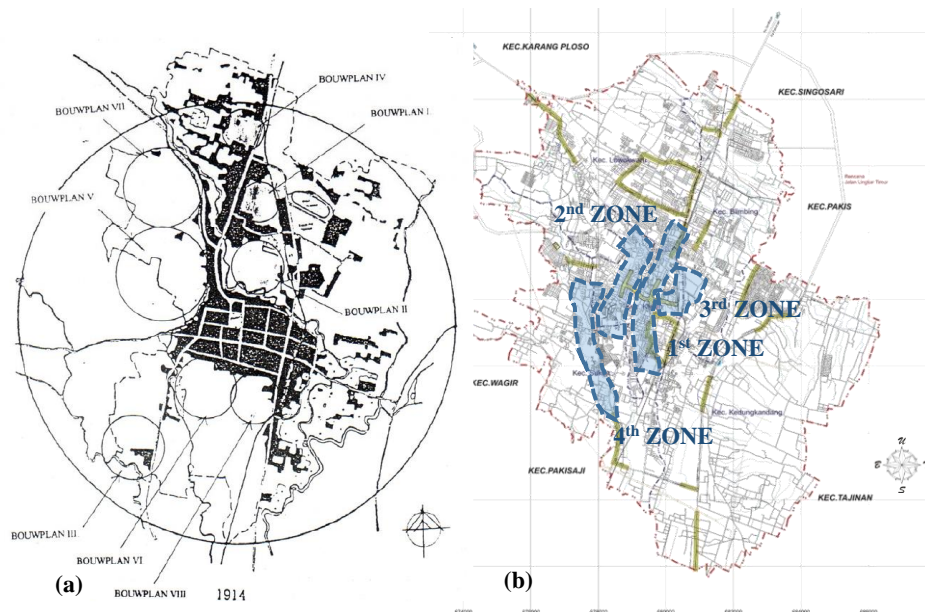


Figure 1. (a) Expansion Points of Malang (Bouwplan I - VIII) Starting from 1917-1935;
(b) Research Area of IHPS

Source: (Handinoto, 1996; Subadyo, A. T., 2010)

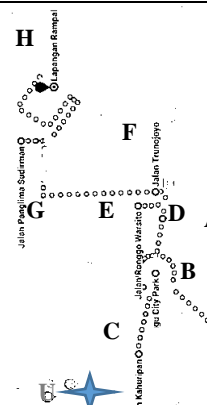
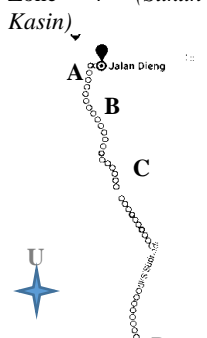
Table 5. The existence of Malang IHPS based on periodization

Zone	Name of IHPS (<i>The Dutch Naming</i>)	Period of Time		
		1900-1942	1942-1972	1972-2002
Zone 1 (<i>Celaket-Kayutangan-Alun-Alun</i>)	Tumenggung Suryo street (<i>Bengawan Solo straat</i>)	Existant	Existant	Existant
	Jaksa Agung Suprpto street (<i>Tjelaket</i>)	Existant	Existant	Existant
	Pattimura street (<i>Klojen Lorstraat</i>)	Existant	Existant	Existant
	Basuki Rahmat street (<i>Kayoe tangan</i>)	Existant	Existant	Existant
	Alun-Alun (<i>Aloen-Aloen</i>)	Existant	Existant	Existant
	Sartono street/ <i>Comboran</i> (<i>Voorschotweg</i>)	Existant	Existant	Existant
Zone 2 (<i>Ijen-Stadion Gajayana</i>)	Pasar Besar (<i>Pasar/Petjinanstraat</i>)	Existant	Existant	Existant
	Mayjen Panjaitan street	Existant	Existant	Existant
	Bandung street (<i>Bandungstraat</i>)	Existant	Existant	Existant
	Jakarta street (<i>Bataviastraat</i>)	Existant	Existant	Existant
	Malabar Park (<i>Malabar Urban Forest</i>)	Existant	Existant	Existant
	Ijen (<i>Ijen Boulevard</i>)	Existant	Existant	Existant
	Semeru street (<i>Smeroe straat/Smeroeplein</i>)	Existant	Existant	Existant
	Kawi street (<i>Kawistraat</i>)	Existant	Existant	Existant
	Racetrack	Existant	Existant	Not existant
Zone 3 (<i>Tugu-Rampal</i>)	Wilis Park	Existant	Existant	Not xeistant
	Mojopahit street (<i>Speelmanstraat</i>)	Existant	Existant	Existant
	Tugu/ Alun-Alun Bunder (<i>Jan Pieterzoen plain</i>)	Existant	Existant	Existant

Zone	Name of IHPS (<i>The Dutch Naming</i>)	Period of Time		
		1900-1942	1942-1972	1972-2002
	Kahuripan street (<i>Riebeeckstraat Van</i>)	Existant	Existant	Existant
	Kertanegara street (<i>Daendels Boulevard</i>)	Existant	Existant	Existant
	Ronggowarsito Park (<i>Vander Cappelen straat</i>)	Existant	Existant	Existant
	Trunojoyo street (<i>Goedangweg</i>)	Existant	Existant	Existant
	Panglima Sudirman street (<i>Klerekstraat/Rampalstraat</i>)	Existant	Existant	Existant
	Rampal park	Existant	Existant	Existant
Zone 4 (<i>Sukun-Kasin</i>)	Raya Dieng street (<i>Diengstraat</i>)	Existant	Existant	Existant
	Raya Langsep street (<i>Langsepstraat</i>)	Existant	Existant	Existant
	APP Park/ Ijen Nirwana	Existant	Existant	Not existant (changeover to Ijen Nirwana Resort)
	Sodanco Supriadi street (<i>Soekoenstraat</i>)	Existant	Existant	Existant

Table 6. Classification of the type/character and function of IHPS

Zone	Name of IHPS	Type/Character	Function
Zone 1 (<i>Celaket-Kayutangan-Alun-Alun</i>)	A. Tumenggung Suryo street	Concave-convex	Vehicle and pedestrian circulation
	B. Jaksa Agung Suprpto street	Concave-convex	Vehicle and pedestrian circulation
	C. Pattimura street	Straight-flat	Vehicle and pedestrian circulation
	D. Basuki Rahmat street	Curved-flat	Vehicle and pedestrian circulation
	E. Alun-Alun	Square	City icon; multifunction park (recreational and social)
	F. Sartono street/ <i>Comboran</i>	Straight-flat	Vehicle and pedestrian circulation
	G. <i>Pasar Besar</i>	Square	Market; vehicle and pedestrian circulation
Zone 2 (<i>Ijen-Stadion Gajayana</i>)	A. Mayjen Panjaitan street	Curved-concave	Vehicle and pedestrian circulation
	B. Bandung street	Curved-concave-convex	Vehicle and pedestrian circulation
	C. Jakarta street	Straight-flat-boulevard	Vehicle and pedestrian circulation
	D. Malabar Park	Rectangular	City forest
	E. Ijen	Straight-flat-boulevard	Vehicle and pedestrian circulation; townscape
	F. Semeru street	Straight-flat	Vehicle and pedestrian circulation
	G. Kawi street	Straight-flat	Vehicle and pedestrian circulation
Zone 3 (<i>Tugu-Rampal</i>)	A. Mojopahit street	Curved-concave-convex	Vehicle and pedestrian circulation
	B. <i>Tugu/ Alun-Alun Bunder</i>	Circle	City icon and park

Zone	Name of IHPS	Type/Character	Function
	C. Kahuripan street	Curved-concave-convex	Vehicle and pedestrian circulation
	D. Kertanegara street	Straight-flat-boulevard	Vehicle and pedestrian circulation
	E. Ronggowarsito Park	Oval-rectangular	City park
	F. Trunojoyo street	Straight-flat	Vehicle and pedestrian circulation
	G. Panglima Sudirman street	Curved-flat	Vehicle and pedestrian circulation
	H. Rampal park	Amorphous square	City park, military training arena, multifunctional field
	A. Raya Dieng street	Curved-flat	Vehicle and pedestrian circulation
	B. Raya Langsep street	Straight-flat	Vehicle and pedestrian circulation
	C. APP Park/ Ijen Nirwana	Amorphous square	City forest; agro-educational area
	D. Sodanco Supriadi street	Curved-concave-convex	Vehicle and pedestrian circulation

4. ASSESSMENT OF THE PUBLIC SPACE INTEGRITY AND THE PUBLIC PREFERENCE

4.1 Assessment public space integrity


Based on a composite assessment, the integrity value is classified into three levels (high, moderate and low integrity values). High integrity values are seen dominantly in the Tugu-Rampal area, which reflects the successful IHPS (*Table 7.*). Ijen Boulevard (39), *Alun-alun* (38), and *Tugu/ Alun-Alun Bunder* (38) corridors have the highest integrity rates scattered across zones (Zone 1, 2 and 3). Inclusive public spaces provide an engaging opportunity for various activities, such as relaxation, socialization and education (walking, playing, sitting, chatting or simply resting) ([Mehta, 2014](#)) where such activities had occurred in the three IHPS above.

Table 7. The integrity value of Malang IHPS based on historical, aesthetic and functional value

Zone	Name of IHPS	Historical Value		Aesthetic Value		Functional Value		Total	
		V	C	V	C	V	C	V	C
Zone 1 (<i>Celaket-Kayutangan-Alun-Alun</i>)	Tumenggung Suryo Street	7	L	7	M	11	H	25	M
	Jaksa Agung Suprpto Street	13	H	11	H	12	H	36	H
	Pattimura Street	7	L	7	M	7	M	21	L
	Basuki Rahmat Street	14	H	10	H	11	H	35	H
	<i>Alun-Alun</i>	15	H	12	H	11	H	38	H
	Sartono Street/ <i>Comboran</i>	7	L	6	L	7	M	20	L

Zone	Name of IHPS	Historical Value		Aesthetic Value		Functional Value		Total	
		V	C	V	C	V	C	V	C
	<i>Pasar Besar</i>	15	H	6	L	10	H	31	H
Zone 2 (<i>Ijen-Stadion Gajayana</i>)	Mayjen Panjaitan Street	7	L	6	L	6	L	19	L
	Bandung Street	12	H	10	H	8	M	30	M
	Jakarta Street	13	H	7	M	8	M	28	M
	Malabar Park	12	M	7	M	6	L	25	M
	Ijen	15	H	12	H	12	H	39	H
	Semeru Street	14	H	10	H	10	M	34	H
	Kawi Street	13	H	10	H	10	M	33	H
	Racetrack	-	-	-	-	-	-	-	-
	Wilis Park	-	-	-	-	-	-	-	-
Zone 3 (<i>Tugu-Rampal</i>)	Mojopahit Street	14	H	8	M	9	M	31	H
	<i>Tugu/ Alun-Alun Bunder</i>	15	H	12	H	11	H	38	H
	Kahuripan Street	10	M	7	M	7	M	24	M
	Kertanegara Street	14	H	12	H	11	H	37	H
	Ronggowarsito Park	12	M	10	H	10	H	32	H
	Trunojoyo Street	11	M	8	M	10	H	29	M
	Panglima Sudirman Street	12	M	10	H	11	H	33	H
	Rampal Park	13	H	10	H	11	H	34	H
Zone 4 (<i>Sukun-Kasin</i>)	Raya Dieng Street	12	M	9	M	8	M	27	M
	Raya Langsep Street	10	M	8	M	9	M	27	M
	APP Park/ Ijen Nirwana	-	-	-	-	-	-	-	-
	Sodanco Supriadi Street	7	M	7	M	8	M	22	M

V = value, C = category of value (H = high, if V = 31-39; M = moderate, if V = 22-30; L = low, if V = 13-21)

 = the highest value

As a remainder from a past era, the inclusive public space maintains yet a high representation of its original historical character. Square and circle patterns (in Alun-alun and Tugu/ Alun-Alun Bunder), townscape corridor (Ijen Boulevard) and historical buildings (Alun-alun: Tax Office, Bank Indonesia Office, State Treasury Office, Pelangi Hotel, Jami' Mosque, and GPIB Immanuel Church; *Tugu/ Alun-alun Bunder*: Malang City Hall, Complex of State Senior High School 1, 3, and 4, Skodam Hall V Brawijaya, Tugu Malang Hotel, and Splendid Inn; Ijen Boulevard: the housing of the Dutch upper class along the two sides of the street corridor) are the most dominant of the historical aspects of the colonial city design. The space proportion and scale strongly support its aesthetic value. As IHPS, those public spaces are sufficient to provide comfortable use and have been utilized optimally by the community. However, it also needs to be considered that congestion of activity, particularly in public spaces close to intersections, remains problematic ([Sedyowati, Suhartanto, & Sholichin, 2018](#)).

The *alun-alun* has an important meaning to cities on Java Island and represents the concept of the urban-hub - the "palace center" idea - based on the high philosophical principles of Hastabrata. It has become the center of community activity and, for Malang, an icon and landmark.



Figure 2. The IHPS of highest integrity value (a) Idjen Boulevard; (b) Alun-Alun; (c) Tugu/Alun-alun Bunder

In addition, Ijen - Gajayana Stadium zone has the highest integrity values among Kawi Street, Semeru Street, Gajayana Stadium open space, Bandung Street and Ijen Boulevard. While, Jakarta Street, Bandung Street, and Malabar City Forest have a moderate value, although the value and historical significance of the Jakarta Street corridor is high, in fact, it has undergone many changes, thus lowering its aesthetic value. Furthermore, a low integrity value is shown in Mayjen Panjaitan Street, which has experienced many changes in all areas of value.

Moderate integrity values in Tugu-Rampal are shown on Kahuripan and Trunojoyo streets, even though there are meaningful historic public buildings such as the Senaputra Amusement Park (Kahuripan Street) and Kota Baru Railway Station (Trunojoyo Street). In the Sukun - Kasin zone, all IHPS (Sodanco Supriadi, Langsep and Raya Dieng streets) have moderate space integrity values.

High integrity value IHPS refers to public space which has a high value of historical character, image (inclusivity) and aesthetics in each region. On the other hand, areas of moderate and low IHPS value fulfill less of those three criteria of the IHPS integrity value. Further analysis explains more about the relationship between public space integrity within the area of community preference.

4.2 Public Preference of IHPS

In general, the function of inclusive public spaces should fulfill criteria of being responsive, democratic and meaningful ([Carr et al., 1992](#)). Firstly, the “responsive” requirement means that inclusive public space is used for a wide range of activities and interests. Secondly, for the “democratic” requirement, inclusive public space can be used by people from various social, economic and cultural backgrounds, and also is accessible by everyone. Lastly, the “meaningful” requirement means that inclusive public space establishes an important relationship between humans and space as a social context ([Carr et al., 1992](#)).


According to [Carmona et al. \(2010\)](#), the success of an inclusive public space can be measured by (1) Amenities and Images, (2) Access and Linkage, (3) Economic Usefulness, and (4) Social Needs variables. Inclusive public space utilization needs to consider peoples’ expressed preferences in an effort to meet those required variable parameters. To maintain sustainability, the development of such areas should involve its occupants and user societies ([Budihardjo & Sujarto, 1999](#); [Turcu, 2013](#)). Those local communities are not only used as an object of historic area development, but also should be involved as a subject in giving suggestions and thoughts on planning, implementation and supervision.


The analysis of the results of public preference on the needs of IHPS utilization is shown in the following tables. In the first table (*Table 8*), the operational variables that are considered very important (VH) and important (H) by more than a half of respondents are the physical character enhancements (60%), availability of pedestrian ways (64%), street furniture availability (73%), vegetation barriers (60%), minibus availability (70%), pedestrian way linkage (80%), car parks (77%), coordinating of street traders (54%), investors (63%), commercial purposes (73%), increasing of activity type and frequency (76%) and facilities for various ages (67%). This finding is an indication that the variables which are highly needed by communities in Zone 1, are: Amenities and Images, Access and Linkage need, and Economic Usefulness.

Table 8. Public preference level of Zone 1 (Celaket – Kayutangan – Alun-alun)

Variable	Operational Variable	The Number of Respondent Needs (%) [*]					
		VH	H	M	L	VL	Total
Amenities and Images	Physical character	44	16	7	20	13	100
	Pedestrian ways	33	31	29	7	0	100
	Street furniture	23	50	13	13	0	100
	Vegetation barriers	39	21	16	11	13	100
Access and Linkage	Minibus availability	29	41	30	0	0	100
	Pedestrian way linkage	50	30	10	3	7	100
	Halte	0	3	50	17	30	100
	Car parks	20	57	10	7	7	100
Economic Usefulness	Coordinating of street traders	27	27	17	7	23	100
	Investors	43	20	17	3	17	100
	Company types	0	10	30	50	10	100
	Commercial purpose	50	23	10	17	0	100
Social Needs	Type and frequency of activity	25	51	7	17	0	100
	Extra hours of activity	13	10	30	30	17	100
	Facilities for various ages	40	27	10	17	7	100
	Support facilities	7	0	37	33	23	100

^{*}VH = very high (very important); H = high (important); M = moderate (quite important); L = low (less important); VL = very low (not important)

 = >50% respondent

 = the highest percentages


In the second table (*Table 9*), the operational variable needs emphasized most strongly by respondents (more than 50%) include: the physical character enhancements (70%), availability of pedestrian ways (63%), street furniture availability (73%), vegetation barriers (70%), minibus availability (70%), pedestrian way linkage (80%), car parks (87%), coordinating of street traders (54%), increasing of activity type and frequency (76%), extra hours of public activity (60%) and facilities for various ages (67%). From those, the variables, with most pronounced necessity by people in Zone 2, are: Amenities and Images, Access and Linkage needs, as well as Social Needs.


According to [Jalaladdini and Oktay \(2013\)](#), human activity in a space is closely related to time. Importance needs to be adjusted by paying attention to particular periods of time, such as working hours, weekends, holidays and other considerations. The timing of public activities is arranged in such way to avoid the making useless of space (eg. is only used at certain times and not utilized for the bulk of the time). In addition, to succeed, a feasible corridor is needed for the running of activities at different times ([Jacobs, 1993](#)). Time management aims to avoid conflict, divide activities among different times and take advantage of certain events such as market days (bazaar). In relation to that, the increasing of activity type and frequency in Ijen - Gajayana Stadium IHPS can be achieved by the careful timing of events.

Table 9. Public preference level of Zone 2 (Ijen – Gajayana Stadium)

Variable	Operational Variable	The Number of Respondent Needs (%)*					
		VH	H	M	L	VL	Total
Amenities and Images	Physical character	43	27	20	7	3	100
	Pedestrian ways	33	30	30	7	0	100
	Street furniture	50	23	13	13	0	100
	Vegetation barriers	40	30	17	10	3	100
Access and Linkage	Minibus availability	30	40	30	0	0	100
	Pedestrian way linkage	50	30	17	3	0	100
	Halte	0	3	50	17	30	100
	Car parks	67	20	10	3	0	100
Economic Usefulness	Coordinating of street traders	7	47	17	27	23	100
	Investors	3	20	17	43	17	100
	Company types	0	10	30	50	10	100
	Commercial purpose	0	50	10	23	17	100
Social Needs	Type and frequency of activity	23	53	7	17	0	100
	Extra hours of activity	30	30	13	10	17	100
	Facilities for various ages	40	27	10	17	7	100
	Support facilities	7	0	37	33	23	100

*VH = very high (very important); H = high (important); M = moderate (quite important); L = low (less important); VL = very low (not important)

 = >50% respondent


 = the highest percentages


In the third table (*Table 10*), the operational variables that show a high level of importance (very important (VH) and important (H)) are: physical character enhancements (80%), availability of pedestrian ways (73%), street furniture availability (73%), vegetation barriers (73%), minibus availability (70%), pedestrian way linkage (80%), car parks (84%), coordinating of street traders (54%), increasing of activity type and frequency (76%), extra hours of public activity (73%) and facilities for various ages (67%). The respondent answers recognised the Amenities and Images, Access and Linkage and Social Needs variables as the main necessity in Zone 3.

Table 10. Public preference level of Zone 3 (Tugu – Rampal)

Variable	Operational Variable	The Number of Respondent Needs (%)*					
		VH	H	M	L	VL	Total
Amenities and Images	Physical character	53	27	17	3	0	100
	Pedestrian ways	43	30	20	7	0	100
	Street furniture	23	50	13	13	0	100
	Vegetation barriers	40	33	17	10	0	100
Access and Linkage	Minibus availability	30	40	30	0	0	100
	Pedestrian way linkage	50	30	10	3	7	100
	Halte	0	3	50	30	17	100
	Car parks	17	67	10	7	0	100
Economic Usefulness	Coordinating of street traders	27	27	23	17	7	100
	Investors	3	20	17	43	17	100
	Company types	0	10	30	50	10	100
	Commercial purpose	0	10	50	23	17	100
Social Needs	Type and frequency of activity	53	23	7	17	0	100
	Extra hours of activity	43	30	30	10	0	100
	Facilities for various ages	40	27	10	17	7	100
	Support facilities	7	0	37	33	23	100

*VH = very high (very important); H = high (important); M = moderate (quite important); L = low (less important); VL = very low (not important)

 = >50% respondent

 = the highest percentages

In the fourth table (*Table 11*), the operational variables that are considered very important (VH) and important (H) by most respondents (more than 50%) are: physical character enhancements (60%), availability of pedestrian ways (63%), street furniture availability (73%), vegetation barriers (60%), minibus availability (70%), pedestrian way linkage (80%), car parks (68%), investors

(60%), commercial purpose (90%) and increasing of activity type and frequency (76%). From those 16 variable operational questions, the fundamental needs were shown in Zone 4 to be Amenities and Images, as well as Access and Linkage. The availability of pedestrian and minibus ways is a necessity in establishing inter-regional linkages. The existence of a street market, as well as increasing the type and frequency of activities is intended to be an optimal use of IHPS.

Table 11. Public preference level of Zone 4 (Sukun – Kasin)

Variable	Operational Variable	The Number of Respondent Needs (%)*					
		VH	H	M	L	VL	Total
Amenities and Images	Physical character	20	40	7	20	13	100
	Pedestrian ways	33	30	30	7	0	100
	Street furniture	23	50	13	13	0	100
	Vegetation barriers	20	40	17	10	13	100
Access and Linkage	Minibus availability	40	30	20	10	0	100
	Pedestrian way linkage	50	30	10	3	7	100
	Halte	10	17	23	20	30	100
	Car parks	21	47	20	7	7	100
Economic Usefulness	Coordinating of street traders	13	17	13	37	20	100
	Investors	27	33	33	3	3	100
	Company types	7	3	20	33	37	100
	Commercial purpose	23	67	3	7	0	100
Social Needs	Type and frequency of activity	53	23	7	17	0	100
	Extra hours of activity	20	13	23	30	13	100
	Facilities for various ages	13	10	17	20	40	100
	Support facilities	17	13	10	33	27	100

*VH = very high (very important); H = high (important); M = moderate (quite important); L = low (less important); VL = very low (not important)

= >50% respondent

= the highest percentages ($\geq 70\%$)

Generally, all operational variables of the Amenities and Images (physical character enhancement, the availability of pedestrian ways, street furniture availability, and the existence of barrier vegetation) is selected by the majority of respondents in all four IHPS zones. Meanwhile, the Access and Linkage becomes the second needs variable in all IHPS zones. Nevertheless, the highest percentage of necessity is shown to be the operational variables of the Access and Linkage variable (the need for pedestrian way linkage of 80% in Zone 1, car parks in Zone 2 (87%) and Zone 3 (84%)). Interestingly, the highest public demand selected in Zone 4 (Sukun - Kasin) is for commercial purpose (90%) in the Economic Usefulness variable.

Table 12. Top priorities in improving community needs on the low-moderate integrity level of IHPS

Zone	Name of IHPS (level of integrity*)	Type/ character	Function	Top Priorities in Improving Community Needs
Zone 1 (Celaket-Kayutangan-Alun-Alun)	Tumenggung Suryo Street (M)	Concave-convex	Vehicle and pedestrian circulation	1. Pedestrian way linkage 2. Car park s 3. Activity type and frequency 4. Street furniture availability 5. Commercial purpose 6. Minibus availability
	Pattimura Street (L)	Straight-flat		
	Sartono Street/ Comboran (L)	Straight-flat		
Zone 2	Mayjen Panjaitan Street (L)	Curved-concave	Vehicle and	1. Car parks 2. Pedestrian way linkage

Zone	Name of IHPS (level of integrity*)	Type/ character	Function	Top Priorities in Improving Community Needs
<i>(Ijen-Stadion Gajayana)</i>	Bandung Street (M)	Curved-concave-convex	pedestrian circulation	3. Activity type and frequency 4. Street furniture availability 5. Physical character 6. Vegetation barriers 7. Minibus availability
	Jakarta Street (M)	Straight-flat-boulevard		
	Malabar Park (M)	Rectangular	City forest	
Zone 3 <i>(Tugu-Rampal)</i>	Kahuripan Street (M)	Curved-concave-convex	Vehicle and pedestrian circulation	1. Car parks 2. Physical character 3. Pedestrian way linkage 4. Activity type and frequency 5. Pedestrian way availability 6. Street furniture availability 7. Vegetation barriers 8. Extra hours of public activity 9. Minibus availability
	Trunojoyo Street (M)	Straight-flat		
Zone 4 <i>(Sukun-Kasin)</i>	Raya Dieng Street (M)	Curved-flat	Vehicle and pedestrian circulation	1. Commercial purpose 2. Pedestrian way linkage 3. Activity type and frequency 4. Street furniture availability 5. Minibus availability
	Raya Langsep Street (M)	Straight-flat		
	Sodanco Supriadi Street (M)	Curved-concave-convex		

*M = Moderate, L= Low; based on *Table 7*.

The public preference assessment is a manifestation of public awareness in maintaining the environmental sustainability value, especially in IHPS, that has an integrity value focused on history, aesthetics and function. Maximizing the potentiality of regional conservation based on community preferences can enhance the low to moderate integrity values derived from the results of the IHPS integrity assessment. The focus on primary needs enhancement is obtained from $\geq 70\%$ respondents and the top priorities are shown in sequence on *Table 12*. The majority of low to moderate integrity IHPS is in areas of functionality, such as pedestrian corridors and for vehicle access, while its physical characters tend to be linear line variations.

5. CONCLUSION

From the assessment analysis of Malang IHPS, it is concluded that actions related to increasing the integrity level should be consistent with the following: (1) High integrity of IHPS: protecting the historical character from various negative changes (including limiting the addition of functions); (2) Moderate integrity of IHPS: adaptive use effort (utilizing, replicating, recreating (reconstructing)) in order to strengthen the existing character; (3) Low integrity of IHPS: optimal renewal effort (in the physical order and function, but also continued supporting of the regional image).

In the future, the development of Malang as a city of destination requires a vigorous public space to be visited by the wider community inclusive of different socio-economic levels. This ideal can be realized if the planning is done comprehensively, holistically and in an integrated fashion. Conservation efforts should take into consideration all regional requirements related to a wide range of issues. These activities should focus on more creative utilization

efforts, should produce new heritage products, lead to implementation of participation programs, as well as economic and socio-cultural activities in those conservation areas, which are wholly supported by public preference.

Based on that, further analysis of regulatory products is required in subsequent research. Such study would aim to assess the effectiveness of regulatory implementation and the extent of government support in trying to preserve and utilize historic areas, especially in IHPS in Malang. Then, the final synthesis will combine previous analysis into formulation of a concept for utilization of the IHPS as the basis for preserving and developing historic areas in Malang.

ACKNOWLEDGMENT

Many thanks to DIKTI of Republic of Indonesia, which has supported funding during this fundamental research, and thanks also to others who helped improve the writing of this manuscript.

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