

The Model of Landscape Development in Big Cities of Central Java

by Titin Woro Murtini

Submission date: 05-Sep-2018 09:53AM (UTC+0700)

Submission ID: 997011970

File name: the_model_of_landscape.pdf (1.09M)

Word count: 4026

Character count: 21683

PAPER • OPEN ACCESS

The Model of Landscape Development in Big Cities Of Central Java

To cite this article: E. Darmawan and T. W. Murtini 2018 *IOP Conf. Ser.: Earth Environ. Sci.* **152** 012033

View the [article online](#) for updates and enhancements.

Related content

- 1 - [Application of Semiparametric Spline Regression Model in Analyzing Factors that Influence Population Density in Central Java](#)
Y D Sumantari, I Slamet and Sugiyanto
- 1 - [Spatial durbin error model for human development index in Province of Central Java](#)
A.R. Septiawan, S.S. Handajani and T.S. Martini
- 4 - [Hierarchical time series bottom-up approach for forecast the export value in Central Java](#)
D A Mahkya, B S Ulama and Suhartono



IOP ebooks™

Bringing you innovative digital publishing with leading voices to create your essential collection of books in STEM research.

Start exploring the collection - download the first chapter of every title for free.

The Model of Landscape Development in Big Cities Of Central Java

E. Darmawan^{1*} and T. W. Murtini²

1,2Architecture Department, Engineering Faculty, Diponegoro University

edy_darmawan@yahoo.com

Abstract. The existence of urban parks as a part of urban green space is very important for the environment and the citizen of the city, and inseparable part from the urban landscape. In its development, the existence of an urban parks could create a safe, comfortable, productive, and visually aesthetical environment. The problem arising now is a view that the urban parks are often unsuitable with the surrounding. Therefore, the parks are not functional and does not have significant visual. So that, this research is aimed to reveal model of landscape development in big cities in Central Java. The method used is descriptive qualitative that can describe the detail of problem, in determining the plan to overcome the problem. The research location will focused on big cities in Central Java with potential landscape that can be improved. The results of the research will be composed in an international scientific journals and is expected to be a reference in the field of urban landscape arrangement.

I. Introduction

The dynamic development of the city has brought consequences on the needs of space/ land. The high number of inhabitants in urban areas demands the provision of facilities, infrastructure, and services for life and its activities. Cities with limited resources has attempted to provide a fair environment for the citizens. However, population projection on city planning is often missed, resulting in an imbalance of the number of residents with the provision of facilities and infrastructure of the city. This condition leads to the various problems, one of them is the decrease in the environment quality. The natural ecosystems in urban areas has change slowly into artificial ecosystem. A lot of vacant in urban areas become built lands. The open space areas functions have been switched into trading, settlement, industrial, transportation network, and other facilities and infrastructure. Function changing certainly brings some negative impacts such as the rise in temperature, pollution in urban areas, the decrease of ground level, the danger of flooding, landslides, coastalabration, etc.

Basically, the negative effects of growth of a city can be reduced if government can implement Law No. 26 Years 2007 about The Space Management by developing green open space at least 30% of city's total area (20% public green open space and 10% private green open space). Green open space area is advantageous to keep the balance, the continuity, health, comfortability, sustainability, and enhancement of city's environment quality. Correct arrangement green open space will exactly able to perform to increase improve the quality of the city atmosphere, provide fresh air, decrease pollution, and reduce noise. Green open space filled with plants will affect the quality of city air because the plants creates the micro climate which cool down temperature, maintain air humidity, and increase the level of oxygen [1].



Based on the data from the office of city planning Central Java, the provision of public green open space in Central Java is only meet 10% of the target where it should 20%. Therefore, the development of open city parks should continuously held. From 60 districts, there are 15 districts that have meet the target. These districts are mainly located in dry areas such as city of Semarang, Demak, Kudus, Pekalongan, Tegal, Pati, etc.

Over these past few years, those cities has conducted rehabilitation and built some parks to meet the target. However, Central Java does not have guidelines in spatial planning especially in the development of city park. Hence, the researchers of this article interested to assess model of landscape development in big cities in Central Java.

2. Related Study

According to the Act of Republic Indonesia No. 26 Year 2007 [2] about The Space Management, green open space is defined as an agglomerated and/or group area/path that has open function such as a place for plants to growing while public green open space is a green open space that is owned and managed by the government and it is generally used for public purposes. The existence of a green open space significantly improves the quality of life and the sustainability of environment by improving citizen's prosperity through a better urban environment and healthier. According to Hakim [1], green open spaces have many functions such as:

- a) Bio-ecological function (physical) that ensures the construction of green open spaces as the part of the air circulation system (lungs of cities) and as the micro climate controller, so the air and water circulation system can naturally work as a shade, an oxygen producer, a rain absorber, a habitat for animals, a pollutant absorber, and as a wind barrier.
- b) Social, economic (productive) and cultural functions to describe local cultural expression as communication media for citizens, recreational facility, and research and education facility.
- c) Urban ecosystem,
- d) Aesthetical function.

Darmawan [3] stated that an interesting green open space will attract many visitors from various ethnic, ages, education levels, socio-economic levels, and interest.

Landscape is a part of green urban open space. Rob [4] defined landscape as an integrated system of biotic and abiotic components including a human influence component. According to Naveh on Restyanto [5], landscape is connected to all physical, ecological, and geographical integration of human's and nature's processes and patterns. In urban areas, the landscape is formed due to the change of natural landscape that is degraded and formed into the shape of a city caused by human activities. Over the time, the landscape will continually change due to human activities. Therefore, it needs proper management in order to maintain its components. Danier [6] stated that the regulation of space and the management of landscape should contribute for creating a unique character of a landscape. Designing landscape should consider principles of landscape design and elements of landscape. According to Hakim [1], the principles of landscape design consist of balance, rhythm and repetition, stress and accentuation, simplicity, contrast, proportion, and unity. While landscape elements that should be concerned are lines, fields, spaces, textures, and colors.

City parks is a support for urban landscapes that is able to shape the character and keep the sustainability of cities. According to Carr [7], the city park is the part of public space and the place for social life. The city park portrays dynamic life of community, it also serve as a destination for many people to do various activities. Without city parks, the citizen of a city will suffer mental strain because city parks are physically able to protect the surrounding environments. Susiloarifin [8] stated that awell managed city parks will be beautiful, comfortable, and safe for their users. Inimproving a park to be a beautiful place, things like materials (soft material and hard material), scales, circulation, parking facilities, lighting, tile patterns, comfort, drainages should be the focus of city park design, there are also supporting elements of park such as display front/ landmark, benches, trash bin, lamps post, vegetations, pavements, parking lot, stalls, children playground and facilities, and sports facilities [1].

3. Research Method

This research are carried under qualitative approach that emphasizes narrative construction or textual descriptive for the studied phenomenon. The method used in this research is descriptive method. According to Arikunto [9], the qualitative descriptive method describes and explains collected findings in order to gather actual and detailed information, identify problems, and make comparison or evaluation. This method furthermore help us to determine what other people do in dealing with the same problem and learn from their experiences in order to make plan and decision for the future. In this article, the descriptive qualitative method is used to describe physical condition of parks in big cities in Central Java and explain the elements and principles of designing landscape in particular. Surveys is used to collect data from certain places on natural setting. The data collected from observations, interviews, and study of literatures then are selected and arranged systematically based on the needs of the study. After that, the compiled data is analyzed with qualitative descriptive analysis method in certain steps of analysis.

The study is conducted in big cities across Central Java focused on parks as the object of observation which is typical for the city. The parks chosen as the sample study are selected according to their uniqueness, location, width, facilities, service areas, and the need of people around for public space. Six parks on six different cities are chosen as the sample of this study, as seen in table 1 below. These parks are inspected on their physical condition and comprehensiveness of their facilities as the representative of the parks in big cities in Central Java



Information:

- A = Kota Semarang (Taman Menteri Supeno)
- B = Kabupaten Demak (Alun-alun Simpang Enam)
- C = Kabupaten Kudus (Alun-alun Simpang Tujuh)
- D = Kabupaten Pati (Alun-alun Simpang Lima Pati)
- E = Kota Pekalongan (Taman Morumen)
- F = Kota Tegal (Taman Poci)

Figure 1. Research Location. Source: Researcher, 2017

4. Results & Discussion

4.1 Analysis of Physical Condition of Parks in Big Cities in Central Java

Several parks in big cities in Central Java are also the icon for the city. The existence of the parks is one of government efforts to provide comfortability to meet the needs for public green space. Parks is not only as complementary feature of the city, but also serves to maintain coolness, climate, provide shades, rest area, and as a recreation site. Based on direct observation in the field, it is known that the physical condition for the parks are sampled as follows:

- a) *Alun-alun Simpang Enam Demak*
 - Located *Jalan Sultan Fatah No. 41 Bintoro, Kecamatan Demak, Kabupaten Demak*
 - There are souvenirs vendor and culinary stalls.
 - The base is hard material and grass. There are also shade trees. The decoration tree cannot be used optimally so it cannot add the appeal of this place.
 - Custom large nameplate is built specially for this place and often photographed by visitors.
 - Activities that mainly happened are social activities, where people gathered in this place to chat, interact, enjoying themselves tourism, or in some cases exercising.
- b) *Alun-alun Simpang 7 Kudus*

- Located in *Jalan Sunan Kudus*
 - The existing vegetations are shade trees, decorative plants, and eye-catching bush.
 - Equipped with support facilities, such as resting shelters, jogging tracks, flower gardens, park benches, garbage cans, and attractive garden lights.
 - Pavement on the sidewalk is made as attractive as possible using granite stone temple and natural stone mosaic used to encircle the intersection.
 - This square serves as a public space to hold car free day activities, festivals, sports, ceremonies, gathering places, tourist attractions, etc.
- c) *Taman Monumen*
- Located in *Jalan Imam Bonjol, Bendan, Pekalongan*.
 - Green open space is an active public park located in the center of Pekalongan City in area \pm 0,69 Ha.
 - Physically, the base uses pavement, surrounded by many trees but in light density because the trees are cypress and short shrubs.
 - In addition, there are also some street furniture such as park bench, lamp posts, billboards (signed), flower pots, garbage bin and flagpole.
 - During the day there are only a few street vendors inside the park not as many as in the afternoon and evening. In addition, only a few local people come to socialize or just play (relaxation).
- d) *Taman Poci*
- Located in *Jalan Kolonel Sudiarto, Panggung, Tegal Timur*.
 - There are a variety of beautiful plants and trees, as well as sculptures and cups that become icons for this park.
 - Equipped with facilities such as parking areas, bathroom, praying room, and street vendors.
 - Easy to reach by public transport and private vehicle because it is equipped with road signs as a signpost.
 - In the park, there is a main building that resembles a large sailing ship and its top can be used to see the scenery around the park.
 - Activities happen are leisure activities, afternoon walks, tours, playground for children.
- e) *Alun-alun Simpang Lima Pati*
- Located in *Jalan Tombronegoro, Pati Kidul, Kecamatan Pati, Kabupaten Pati*.
 - There are street vendors, children's playground, flagpole, dumpster, jogging track, garden lights, ornamental plants pots, gathering places, signage, sculpture.
 - Equipped with shade vegetation, bush, and ornamental plants.
 - The shape of the park is semi circular with a good drainage system to avoid puddle of rainwater.
 - Pavement on the sidewalk is arranged in pattern with different colors and shapes.
 - Activities appear in this park are leisure activities, tours, shopping, culinary, sports, and play for children.
- f) *Taman Menteri Menteri Supeno*
- Located in *Jalan Menteri Supeno, Semarang*.
 - This 5.000 m² park is located in the city center and surrounded by office buildings and equipped with seating, lamp post, billboards, bins, pedestrian paths, bathrooms, vegetation, parking lots, children's playground, vendors area, skateboard area, and a fountain with a statue that symbolizes the family planning program in the middle of the park.
 - The number of trees and vegetation make the atmosphere around the park is cool. So, during the day residents often sit around or just simply hanging out, rest, sightseeing, and enjoying the view.
 - In the afternoon and the evening, there are some street vendors selling various types of food. At night, this park is often used as a venue for event.

1.2 Analysis of The ¹ Model of Landscape Development in Big Cities in Central Java

The landscape of the city park is one of the element of urban space needed by the community. Therefore, the landscape model of urban parks as a public space must have good standards, especially in terms of design and facilities, and supporting elements. The provision of such facilities should be in line with the type of park and the needs of the community, to create a synergy between natural elements and the landscape generated by the diversity of vegetation, activities, with artificial elements provided as social and recreational facilities. The integration between these natural and artificial elements will create an attractive aesthetic visuals in every parks. Parks landscape models in observed areas are explained in Table 1 below:

¹ **Table 1.** Urban Park Landscape Development Model in Big Cities in Central Java

No.	Name	Elements of Park Support	Landscape Design Principles
1	Alun-alun Simpang Enam Demak 	<ul style="list-style-type: none"> - Front view of this place is good enough indicated by the sculpture of the name of the place. - Support facilities are in good condition and able to provide comfortability for visitors. - Access to this place is also quite easy, it can be reached by various types of vehicles and are on a busy way passed by vehicle. 	<ul style="list-style-type: none"> - There is a harmony between elements related to size, color, quantity, and appearance. - Hierarchy in this place is indicated by the differences in size, shape, and strategic location. - The rhythm and repetition of landscape elements are seen in one pattern with a balance of composition between the elements. - Exciting pavement and vegetation selection shows the contrasting elements of this place.
2	Alun-alun Simpang Tujuh Kudus 	<ul style="list-style-type: none"> - The front view of this place is very interesting marked with the sculpture of the place arranged in a unique way, so it looks interesting. - Behind the sculpture is a small garden equipped with different types of plants with different sizes, types and colors. - Overall, the supporting facilities are in good condition and designed as attractive as possible, thus making the surrounding environment looks beautiful. - Easy to reach because it is in the city center. 	<ul style="list-style-type: none"> - Setup of supporting elements consist of the size, color, quantity, and appearance shows the existence of harmony among elements that exist. - The use of different shapes and sizes on the supporting elements indicates a hierarchy in this place. - The rhythm and repetition of landscape elements are seen in one pattern with a balance of composition between the elements. - Preparation of pavements with different shapes and types, as well as the use of different colors in plants indicate the presence of contrast elements.
3	Taman Monumen Pekalongan	<ul style="list-style-type: none"> - The front view of the park looks less attractive. Because the statue of the 	<ul style="list-style-type: none"> - Setup of supporting elements gives minimal consideration for the size, color, quantity, and



fighters who became a landmark for this garden looks dull, the plaque of war heroes name who are near the statue are damaged.

- This park became a pride for the people of Pekalongan, dan because it was built to commemorate the struggle for independence, it become scared.
- Some of park's supporting facilities are below maintained.
- The arrangement of trees and plants in this park is quite good and provide coolness for the environment.
- The park is easy to reach because it is on the main road.

appearance, so the harmony between elements are almost invisible.

- The use of different shapes and sizes on the supporting elements indicates a hierarchy.
- The rhythm and repetition of landscape elements are seen in one pattern with a balance of composition between the elements.
- Contrast elements seen in the statue of the fighters who stood firmly in the middle of the hall or plaza in the park.

4 Taman Poci Tegal



- The front view of this park is very interesting because the park is flanked by two replicas of objects that characterize the City of Tegal, the replica of the pot on the right and replicas of aci tofu on the left.
- Support facilities are complete and in good condition.
- The park is also equipped with good vegetation arrangement, so it gives the cool impression.

- The harmony between elements is quite visible from the use of size, color, quantity, and display of each element.
- Hierarchy seen from different shapes and sizes of supporting elements.
- The rhythm and repetition of landscape elements are seen in one pattern with a balance of composition between the elements.
- Contrast elements seen in the use of colors and sizes on the replica of objects and nameplate.

5 Alun-alun Simpang Lima Pati



- The front view of this park is less interesting because there is no marker that can be used as a landmark.
- Support facilities are in good condition.
- Pavement on sidewalks and flower pots has

- Existing elements look good.
- Hierarchy is seen from different shapes and sizes of supporting elements.
- The rhythm and repetition of landscape elements are seen in one pattern with a balance of composition between the elements.

		<p>different color and shape compositions.</p> <ul style="list-style-type: none"> - Easy to reach because it is in the city center. 	<ul style="list-style-type: none"> - Contrast element are seen in the use of color and size on pavement pavement and flowerpot.
<p>6</p>	<p>Taman Menteri Supeno Semarang</p>  	<ul style="list-style-type: none"> - The front view of the park looks interesting with a large nameplate that has colored lights. - The park has complete support facilities for community activities. - The location of this park is strategically located in the city center, making it easy to reach. - Vegetation is enough to give a cool impression for the surrounding environment. 	<ul style="list-style-type: none"> - Setup of supporting elements that consider the size, color, quantity, and appearance shows the existence of harmony among elements that exist. - Hierarchy is seen from different shapes and sizes of supporting elements. - Rhythm and repetition of landscape elements are seen in line elements in the form of roads and circular spaces. - Contrast element are seen in the arrangement of pavement garden floor. - The balance is visible from the shape of a triangle-shaped garden with an emphasis on the center of a garden with a fountain.

Source: Results Analysis, 2017.

Based on the analysis of parks as observed above, the assessment of this study can be seen in Table 2 below. The assessment is categorized using data nominal scale. Category used consisting of 3 = very good; 2 = good enough; and 1 = not good.

Table 2. Assesment of Urban Park Landscape Design Model in Big Cities in Central Java

No.	Name	Supporting Elements of Park	Landscape Design Principles	Landscape Elements	Total Score
1	Alun-alun Simpang Enam Demak	3	2	2	7
2	Alun-alun Simpang Tujuh Kudus	3	3	2	8
3	Taman Monumen Pekalongan	2	1	2	5
4	Taman Poci Tegal	3	2	2	7
5	Alun-alun Simpang Lima Pati	2	2	2	6
6	Taman Menteri Supeno Semarang	3	3	3	9

Source: Results Analysis, 2017.

The assessment of results of the research shows that model garden with highest score is a *Taman Menteri Supeno Semarang*. This is because *Taman Menteri Supeno* has complete supporting facilities

which are located at the center of the city, using various elements of pavement, and having good vegetation arrangement giving cool atmosphere on the environment.

9 Acknowledgement

This research is supported by Direktorat Riset dan Pengabdian Masyarakat Direktorat Jenderal Penguatan Riset dan Pengembangan Kementerian Riset, Teknologi, dan Pendidikan Tinggi. The researcher also presents his sincere appreciation to Dean of Engineering Faculty of Diponegoro University. We like to give our gratitude to colleagues from Architecture Department, Engineering Faculty, Diponegoro University who provide insight and expert opinion in assisting this research, although they may not agree with all of the interpretations/ conclusion of this paper.

6. Conclusions

Based on studies and analysis that has been done, the researcher conclude that city park in big cities in Central Java serves well as public open space used by people to interact socially. Most of this park is in strategic location, so it is easy to reach. These park can be a tourist attraction, but some of them do not have facilities for disabilities people. The management and supervisor of a park also has low awareness. This can be seen through bad arrangement of parking lot and many broken facilities. Therefore, the city park landscape development model has to utilize potential and the unique culture of local residents to overcome any problems. The management of the park should be the collaboration of society and regional government.

7. References

- [1] Hakim, Rustam dan Hardi Utomo. 2003. *Komponen Perancangan Arsitektur Lansekap (Prinsip-Unsur dan Aplikasi Desain)*. Jakarta: Penerbit Bumi Aksara.
- [2] Undang-undang Republik Indonesia Nomor 26 Tahun 2007 tentang Penataan Ruang.
- [3] Darmawan, Edy. 2009. *Ruang Publik Dalam Arsitektur Kota*. Semarang: Badan Penerbit Universitas Diponegoro.
- [4] Rob, Krier. 1979. *Urban Space*. London: Academy Editions.
- [5] Restyanto, Yoga. 2011. *Arsitektur Landscape Kawasan Wisata Outbound Bukit Tangkiling*. *Jurnal Perspektif Arsitektur*. Volume 6 Nomor 2 Desember 2011.
- [6] L. 2015. *The Little Sustainable Landscape Book*. Oxford: Global Canopy Programme.
- [7] Carr, Stephen et al. 1992. *Public Space*. Australia: Press Syndicate of University of Cambridge.
- [8] Susiloarifin, Hadi dan Nurhayati. 1994. *Pemeliharaan Taman*. Jakarta: Penebar Swadaya.
- [9] Arikunto. 2006. *Procedure Research: A Practical Approach*. Jakarta: PT Rineka.

The Model of Landscape Development in Big Cities of Central Java

ORIGINALITY REPORT

19%

SIMILARITY INDEX

13%

INTERNET SOURCES

14%

PUBLICATIONS

5%

STUDENT PAPERS

PRIMARY SOURCES

1

china.iopscience.iop.org

Internet Source

6%

2

Edy Darmawan, Mecca Arfa, Dina Lestari Purbawati. "The development of nature based-tourism in Tembarak District, Temanggung Regency", Asia Pacific Journal of Tourism Research, 2018

Publication

4%

3

T W Murtini, N Muladica. "The Application of the Environmentally Friendly Co-Housing Concept in the Residences at Desa Tegaldowo, Kecamatan Bantul, Yogyakarta", IOP Conference Series: Earth and Environmental Science, 2018

Publication

2%

4

pertambangan.fst.uinjkt.ac.id

Internet Source

1%

5

earchive.tpu.ru

Internet Source

1%

6	repository.tudelft.nl Internet Source	1%
7	ejournal3.undip.ac.id Internet Source	1%
8	eprints.undip.ac.id Internet Source	1%
9	Yuan Lukito, Antonius Rachmat Chrismanto. "Recurrent neural networks model for WiFi-based indoor positioning system", 2017 International Conference on Smart Cities, Automation & Intelligent Computing Systems (ICON-SONICS), 2017 Publication	1%
10	pt.scribd.com Internet Source	<1%
11	Ani Purwanti, Muzayyanah, Budiyanto. "Strategies for Fulfillment of Reproductive Rights on Adolescent Women in Central Java", IOP Conference Series: Earth and Environmental Science, 2018 Publication	<1%
12	N M Ni'mah, S Lenonb. "Urban greenspace for resilient city in the future: Case study of Yogyakarta City", IOP Conference Series: Earth and Environmental Science, 2017 Publication	<1%

13

media.neliti.com

Internet Source

<1%

14

Y Arafah, H Winarso, D S A Suroso. "Towards Smart and Resilient City: A Conceptual Model", IOP Conference Series: Earth and Environmental Science, 2018

Publication

<1%

15

Broto Wahyono Sulisty, Wiwik Widyo Widjajanti. "Assessment of the existence of green open space in fishermen village, Surabaya", AIP Publishing, 2018

Publication

<1%

16

Wiwik Yulianti, Sudharto P. Hadi. "The Effectiveness of Building Permit Regulation for Green Open Space at Housing Estates: Case Study of Kendal Regency, Central Java, Indonesia", E3S Web of Conferences, 2018

Publication

<1%

Exclude quotes Off

Exclude matches Off

Exclude bibliography Off