Aplication of Urban Greenery in Historical Open Space of Jakarta Old City

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ABSTRACT

Jakarta Old City has strong historical value as a genesis of the city today. Along with the growth and development of the city, Jakarta Old City area has undergone many changes that gradually lost its essential characteristics today. A revitalization action has been just conducted, however the application on greenery aspects have not been clearly stated yet. The aims of the research are to analyze the characteristics of the historical open space and to propose appropriate urban greenery in Jakarta Old City. The study site is focused on the Core Zone of Jakarta Old City Revitalization Plan which includes four zones of different characteristics, ie: Sunda Kelapa Zone, Fatahillah Zone, Pecinan Zone and Pekojan Zone. The result of this research shows that the characteristic of open spaces have been strongly influenced by the characteristic of each zone. The conservation concept proposed in the study is "create open space which represents its historical characteristics in each zone by optimizing its function, continuity and comfortness for users. The urban greenery for historical open space in Jakarta Old City was proposed to be inline with that conservation concept and the integrity level of the spaces, and to support the ecological function of the whole city as well.

Keywords : historical open space, Jakarta Old City, urban greenery

1. INTRODUCTION

The long trip the history of the Jakarta city was begun from a small area that was Sunda Kelapa, a small port was supervised by the authority of the Cumda Pajajaran kingdom in the age 16. When this port fell to the hands of Fatahillah troops (joint troops of the Sultan Demak and Cirebon), this port was developed into a city that was named Jayakarta that was marked by the town square that to his southern part was gotten the palace, to his western part was gotten the mosque, his northern part was gotten the market and east him royal facilities. The Jayakarta city that was built during 1527 no longer was found because during 1619 was destroyed level with the land by VOC Netherlands. VOC Netherlands built the structure of the new city that was given by the Batavia name. The pattern of the Batavia City was built similar to the Amsterdam city. According its historic, Jakarta Old City has strong value as an embryo of Jakarta's growth (Ataladjar, 2003).

Along with the growth and development of the City, Jakarta Old City area has undergone many changes that have not reach the optimal condition, physically and functionally until today. One of the urban aspect that have major influence to increase environment quality in Jakarta Old City is urban greenery open space. The role of urban greenery is to contribute to the social and natural sustainability of the city.

Revitalization of Jakarta Old City action has been just conducted, however the application on greenery aspect has not been clearly stated yet. Draft master plan Jakarta Old City explained that open space in the Jakarta Old City must become active space with turn on came back green open space. Moreover the compensation or incentive/disincentive system was needed to stimulate the provisions of green open space especially in the region of high density. To revitalize urban greenery in that area, we need to understand the urban typology to identify the most influencing aspect of the urban open space. According to Krier

(1979) the typology of urban open space can be distinguished from its physical and functional character. This research is aimed to analyze the characteristics of The historical open space and to propose appropriate urban greenery it Jakarta Old City.

2. METHODS OF RESEARCH

This research was done in three steps. The first step was to identify and type the urban space. The locus of that research was typing to find The existing with its characters and typical. The second step was to decided the level of integrity open space according variable of historic, aesthetics and functional value with each parameter (Table 1). The last step was to propose the criteria of urban greenery in urban space of Jakarta Old City according to the typology, historic character and integrity of open space.

Table 1. **Variable and Parameter of Integrity Value**

No	HISTORIC VARIABLE	AESTHETIC VARIABLE	FUNCTIONAL VALUE
1	Chronological value	Ism or style representative	Comfortness
2	Historical Fact	Proportion	Accessibility
3	Rarity	Rythm	Economic Function
4	Historical event	Scale	Social Function
5	Unity		

Source: Modification of Burra Charter (1981), Helly and Budiarti (2005)

The study site was focused on the Core Zone of Jakarta Old City Revitalization Plan which includes four zones of different characteristics, ie: Sunda Kelapa Zone, Fatahillah Zone, Pecinan Zone and Pekojan Zone.

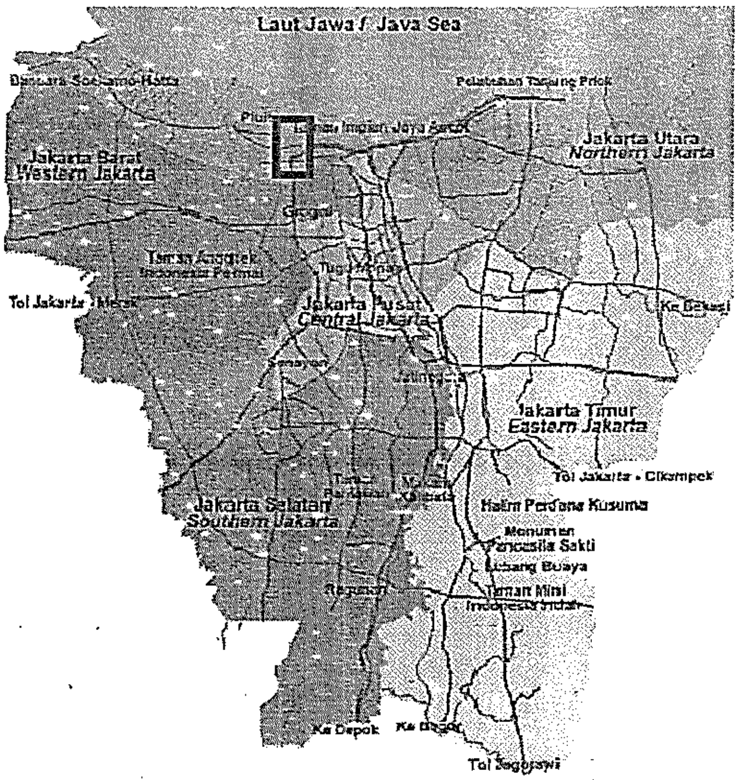

Figure 1 . Study site, Jakarta Old City (inside rectangle).

3. RESULT AND DISCUSSION

Jakarta Old City was one of the historical landscape because of having the criterion as landscape that had character and identity in the past period. Jakarta Old City was the past city with the development experienced the physical shift and the function changes. As the region that had the high value of the history, there were historical open spaces with each character. Public open spcace in Jakarta Old City should create the character of city, could be human interaction and culture appreciation place.

Krier (1979) said that two basic elements of urban open space area are the street and the square. They are differentiated by the dimensions of the walls which bound them and by the pathern of function and circulation which characterized them. The street is product of a framework for the distribution of land gives access to individual plots. The square is produced by the grouping of building mass around an open space. It has more functional character than the square.

Further Carmona (2003) said that in principle, streets are 'dynamic' space with a sense movements, while square are static space with less sense of movements. Streets and squares can be characterized as either 'formal' and 'informal'. Formal spaces typically have a strong sense of enclosure; orderly floorscape and arrangement of street furniture; surrounding buildings that enhance the formality; and often a symmetrical layout. Informal spaces typically have a more relaxed character, a wide variety of surrounding architecture, and an asymmetric layout.

This research shows there are streets and square type in Jakarta Old City. The type of urban open space in Jakarta Old City was dominated by street type. The other type was square (Taman Fatahillah, Tamam Stasiun Kota and tradisional market Pasar Ikan). There were different type of streets in each open space (Figure 2). In Sunda Kelapa Zone, there was Sunda Kelapa harbor as the port that previously as the main entrance that had linear pattern and it was oriented towards the sea. All along the port was gotten by the ship of Phinisi that was anchoring. There was a amorphous square, Pasar Ikan (previously as fish market) that also was oriented toward the sea, now as a traditional market with bad environment condition.

In Fatahillah Zone, open space was dominated by the straight street and square (Taman Fatahillah) as a centre of this zone that was surrounded by historic buildings. Streetwall buildings as the character of this zone. The buildings that were all along or around open space immediately clung to the road. The straight streets in this zone formed grid pattern showed the formality design. There was Jl. Cengkeh (previously *Prinsenstraat*) as an axis that connected between the northern part of Jakarta Old City and Taman Fatahillah (Stadhuis Plein). In this zone also was gotten Jl. Kali Besar as an open space that was divided by the canal that previously as main coridor in Batavia.

Open space in Pecinan and Pekojan Zone was dominated with a street that had amorphous lines and formed the labyrinth. That pattern create an informal open space that made an impression relaxed. Both of zones contained the dwelling with the close building and most as commercial means, espesially Pecinan Zone.

The characteristic of open spaces as street or square, had been strongly influenced by the characteristic of each zone. Sunda Kelapa Zone had character as 'old harbor' image, that has sea orientation, warehouse district. Fatahillah Zone had 'colonial city' image with formal open space and streetwall buildings character. Fatahillah square as activity center and Kali Besar as main corridor in Jakarta Old City. Pecinan Zone was a place with 'China Town' character. This zone had informal open space with the shape of the labyrinth. Pekojan Zone with 'cultural and religious settlement' character that also had the informal open space with human settlement (Figure 3).

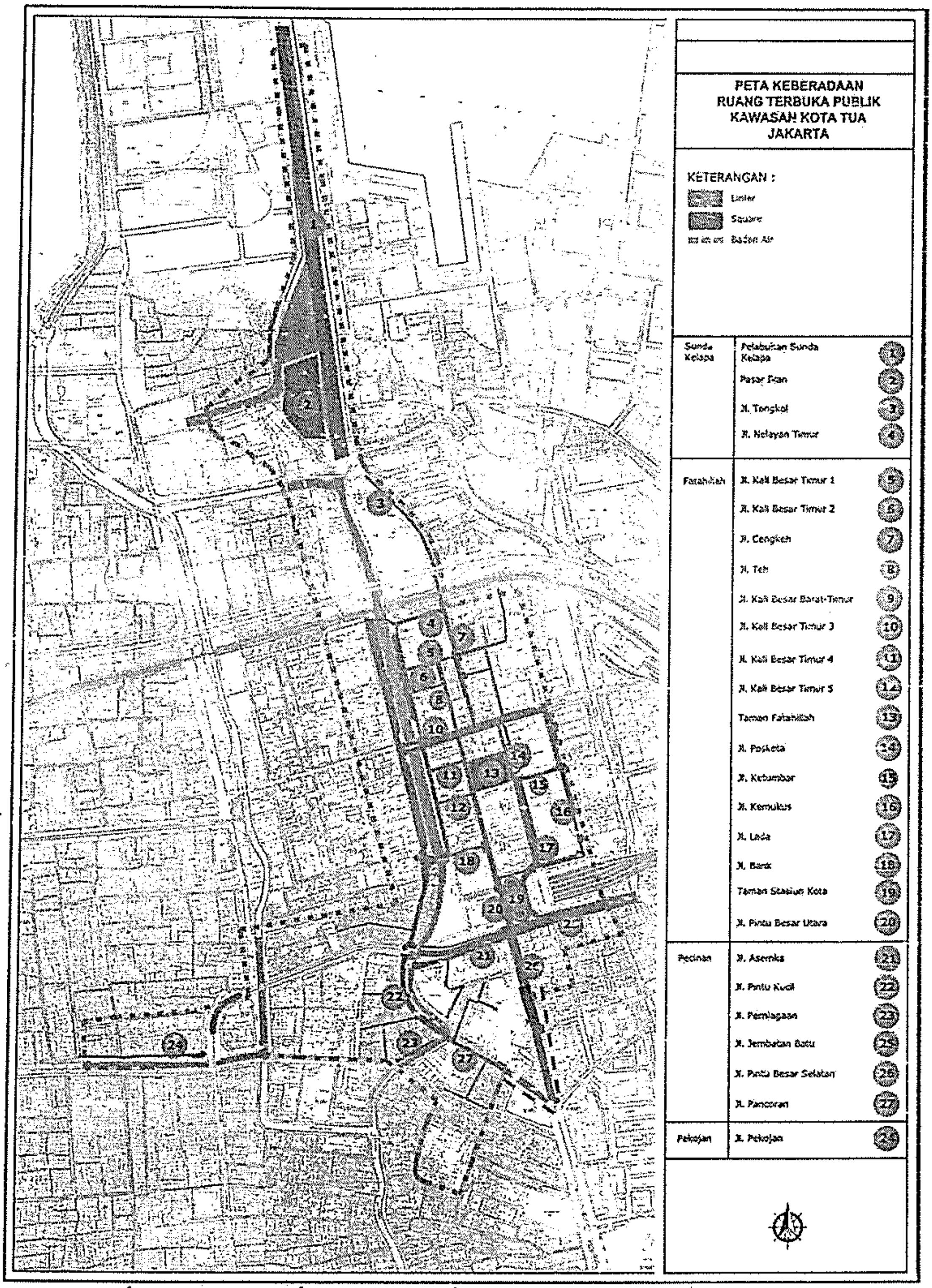

Figure 2 . The map of The Type of Public Open Space

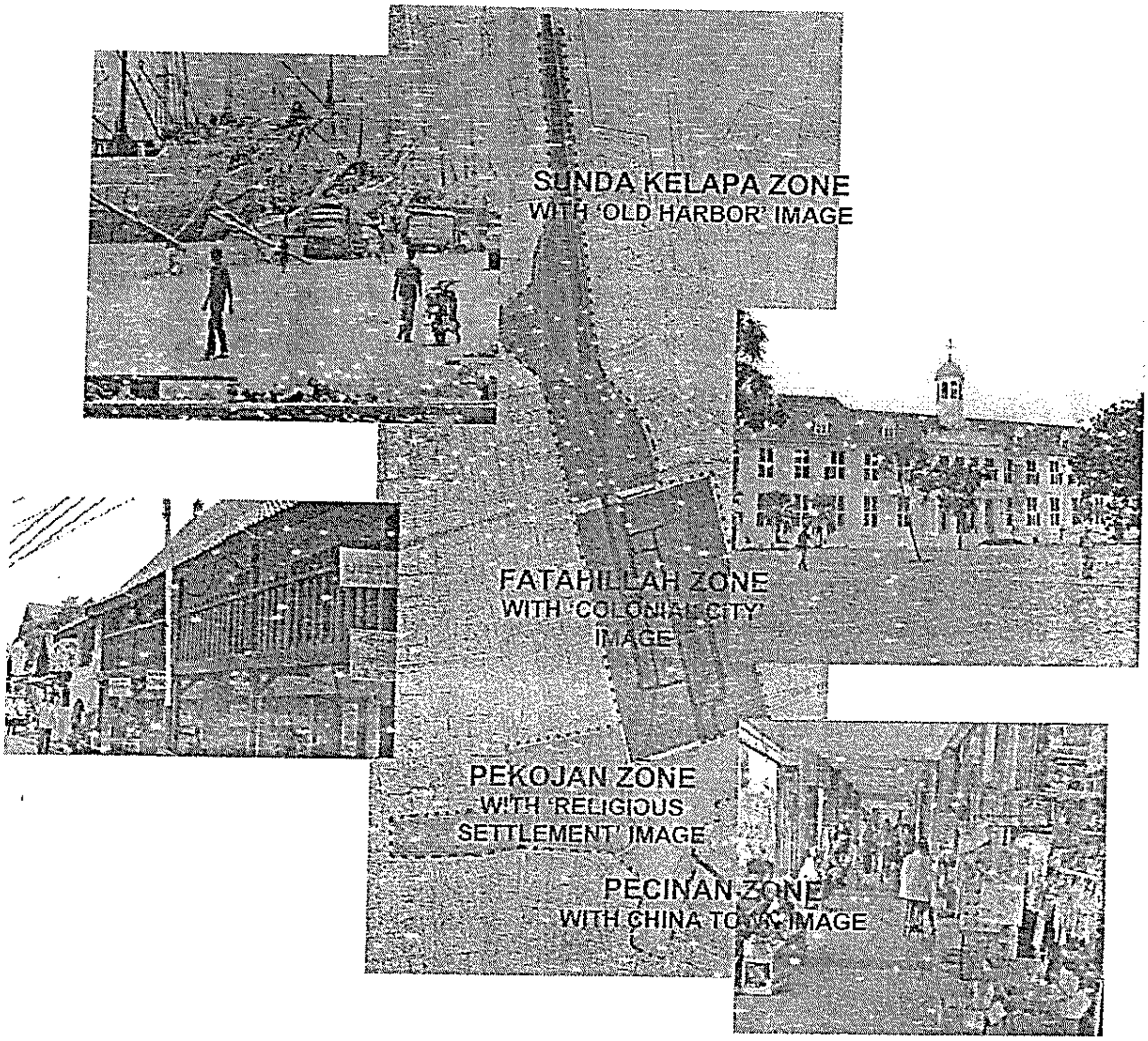

Figure 3. The Characteristic of Each Zone in Jakarta Old City

As the region that had the historic value, open space in Jakarta Old City was inside should be the pillar of the history that must be conserved and turned on by all the power of life. The level integrity of the open space in this research is important to understanding of cultural significance about any aspects of life, and help to decide level of conservation in revitalization of Jakarta Old City. The more it will make us aware about places which need to be preserved and revitalized. Cultural significance is a concept which helps in estimating the value of place. In means historic, aesthetic, scientific or social value, and other approach. In Jakarta Old City historic value encompasses an historic figure, rarity, event and unity. Aesthetic value includes aspects of sensory perception for which criteria may include consideration representativeness in special historical style or ism, scale, rhythm, and proportion. Other approach may be developed as understanding of a particular place increases. Functional approach was important to be used to understand Jakarta Old City open space using. Its value was considered according to comfortness by user, accessibility, economic and social function (Table 1). The result of the integrity value of open space can be seen in Table 2.

Table 2. **The Value of The integrity Open Space**

Zone	Open Space	Historic Value		Aesthetic Value		Functional Value		Total Value	
		V	C	V	C	V	C	V	C
Sunda Kelapa	Pelabuhan Sunda Kelapa	13	H	12	H	7	M	32	H
	Pasar Ikan	9	M	8	M	9	M	26	M
	Jl. Nelayan Timur	7	L	6	M	7	M	20	L
	Jl. Tongkol	6	L	7	M	9	M	22	M
Fatahillah	Taman Fatahilah	15	H	12	H	11	H	38	H
	Jl. Kali Besar Barat-Timur	15	H	12	H	10	H	37	H
	Jl. Pintu Besar Utara	15	H	12	H	9	M	36	H
	Jl. Bank	13	H	12	H	9	M	36	H
	Jl. Poskota	14	H	12	H	9	M	35	H
	Jl. Lada	12	M	11	H	9	M	32	H
	Jl. Kali Besar Timur 4	13	H	10	H	8	M	31	H
	Jl. Kali Besar Timur 5	13	H	10	H	8	M	31	H
	Jl. Cengkeh	12	M	8	M	10	H	30	M
	Taman Stasiun Kota	9	M	11	H	10	H	30	M
	Jl. Ketumbar	11	M	11	H	7	M	29	M
	Jl. Kemukus	11	M	11	H	7	M	29	M
	Jl. Kali Besar Timur 1	6	L	6	L	7	M	19	L
	Jl. Kali Besar Timur 2	7	L	6	L	7	M	20	L
	Jl. Kali Besar Timur 3	12	M	7	L	11	H	30	M
	Jl. Teh	8	M	6	H	5	L	19	L
Pecinan	Jl. Pancoran	10	M	10	H	11	H	31	H
	Jl. Jembatan Batu	9	M	11	M	7	M	27	M
	Jl. Perniagaan	10	M	7	M	9	M	26	M
	Jl. Pintu Besar Selatan	9	L	9	M	9	M	27	M
	Jl. Pintu Kecil	7	L	9	M	8	M	24	M
	Jl. Asemka	7	M	4	L	9	M	20	L
	Pekojan	9	H	7	L	8	M	24	M

V = value ; C = Category ; H = high ; M = middle; L = low

The value of the integrity open space was divided into three groups that were the high value of the integrity, middle value of the integrity and the low value of the integrity. Based on results of the assessment, the integrity level of public open spaces were dominantly high in Fatahillah Zone. Open space in this zone was the success reflection from the historic open space. Taman Fatahillah was historic open space that had the value of integrity was highest. As a main square, this open space had an important meaning for Jakarta Old City. Apart from as the historic legacy, this open space also as the centre of the activity of the community and as landmark from The Jakarta Old City. Sunda Kelapa Harbor in Sunda Kelapa Zone and Jalan Pancoran in the Pecinan Zone as open space that had the highest value of the integrity

According to Tisler (1979), the conservation action was the process of the application of methods to maintaining and supporting cohesiveness of the character of a region and life persistence and welfare of humankind. The action that was carried out could be varied, where for each action could be carried out with the approach or the combination of several actions. It was classification of the conservation action on open space based on results of existence and character investigation, typical and the value of the integrity. This classification could be made the guidance in conservation and using space and espesially related urban greenery, it was need to design of the greenery in Jakarta Old City.

Basically, the plants that was chosen must be in accordance with the context of the region and supported the user's good comfort physically and visually. In the open space that had high value of integrity should be done preservation or the like action (conservation or rehabilitation), for to protect historic character previously from the negative change, so it need limitation in the using of the space. In the greenery planning of historic townscape, besides functioning ecologically, the plants arrangement must support preservation or conservation efforts to protect the historic character.

The middle value of integrity open spaces were the space that should to be done adative use, that is the utilisation of the historic character important that still was by putting the requirement for now. The plants arrangement must pay attention to the character of the history that still was available, or was supporting return efforts of the character that has been lost. In the low value of integrity, open space could be developed freer both physically and the function. The plants arrangement could be also developed freer in order to support the improvement of the environment ecologically and user comfortness.

According to the typical, character and integrity value of public open space in Jakarta Old City, the open space conservation concept that was proposed in the study is "create a public open space which represents its historical characteristics in each zone by optimizing its function, continuity and comfortness for users". Basically public open space must be striven for in open space conservation efforts by maximising his function at the same time giving comfort for his user. It means through the apropriate plants arrangement was expected to be able to create the open spaces that reflected the character of each zone and supported the activity of humankind optimally.

Revitalization that has conducted in Jakarta Old City was conservation efforts through renewing a place with the same function or with the more appropriate function in order to be able to be used. According to Draft Masterplan Jakarta Old City 2007, public open space in Jakarta Old City was place that able to be used as the community interaction also could function as the increasingly densely populated city lungs. The concept of public space in Draft Master Plan was conservation of The Jakarta Old City through the integration of the activity of humankind in the green open space became the foundation in the utilisation of historic open space. With the available potential as historic space, public open space must also could support the availability of green open space. Generally the plants had four function (Robinson, 1992), that were 1) give comfortness, 2) increase environment quality, 3) create architectural design, 4) give aesthetics value.

Beside to support ecological function, Carmona et.al. (2003) said that soft landscaping can be a decisive element in creating character. Trees and other vegetation could add a sense of human scale. In some streets, trees reinforce or provide a sense of enclosure. English Heritage (2000) argue that the landscaping in urban areas is not always apropriate and that where used, it should be chosen and located in relation to the overall townscape effect. The siting of vegetation to open space as street or square, formal or informal must be applied with the different strategy (Figure 4).

For all landscape schemes, English Heritage suggest an eight-part strategy: 1) have regard for historic context and local distinctiveness, 2) consider the suitability of materials and their combination, 3) design for robustness in terms of long-term maintenance, 4) cleansing, 5) avoid clutter by keeping signage, 6) have concern for pedestrians, 7) have a concern for people with disabilities, 8) consider public transport. Especially for the street, generally was gotten by the criterion of the tree election that must be filled the side of the road (Booth, 1990): 1) give shading, 2) the branching system was not extensive, 3) The root system did not penetrate inside.

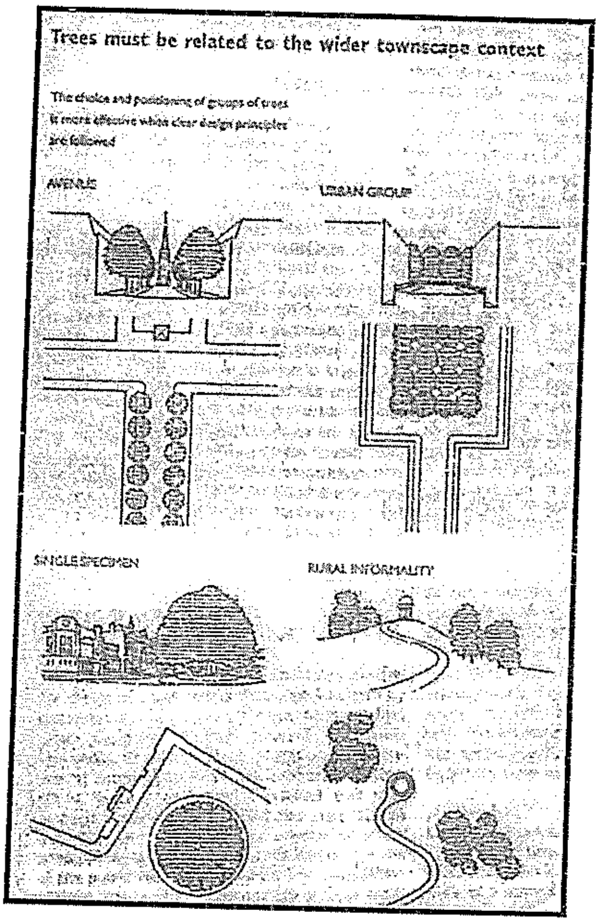

Figure 4 . The appointment strategy of the tree in open space
(Source: English Heritage, 2000)

Planting design in Jakarta Old City open space should be appropriated with the character as historical landscape and integrity value of open space. According that considerations, it was produced the guidance of urban greenery that discussed in each zone.

Sunda Kelapa Zone

The character of Sunda Kelapa Zone is an old harbor. Sunda Kelapa Harbor had open space that oriented to the sea. The plant that was chosen and its arrangement, apart from to improve the environment and gave comfort for the user also must be able to reinforce the character of the region as old harbor. Character that reflected the old harbor should be preserved and clarified.

As a center of this zone, Sunda Kelapa harbor with street type, should be planted in linear open space to provide a sense of enclosure and continuity and to create the sea orientation. For users comfortness, streets or square in this zone was planted with canopy trees and combined with scrubs or ground cover and windscreen to shade and control temperature. The alternative trees which be sited in this zone are pohon Kelapa (*Cocos nucifera*), waru laut (*Tibiscus tiliaceus*) dan ketapang (*Terminalia catappa*) dan cemara laut (*Casuarina equisetifolia*) (Figure 4).

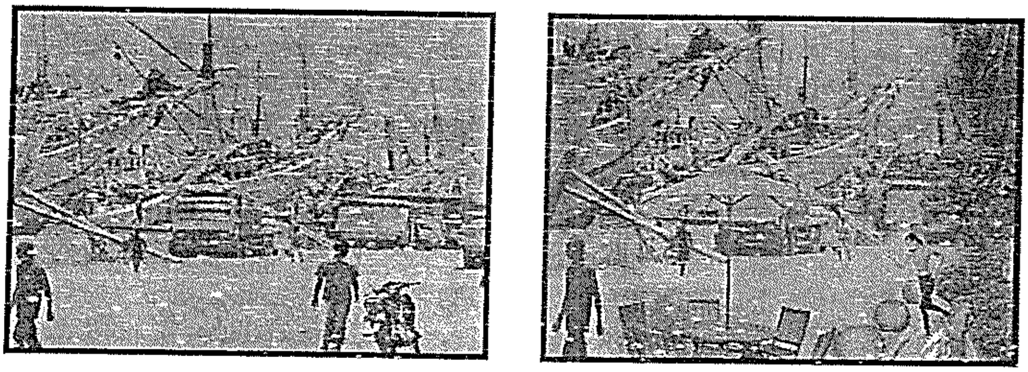

Figure 4. Sunda Kelapa Harbor Before and After Planted

Planting design in the square of Pasar Ikan should be aimed to improve the environment condition. The plant that was choosen could protect open space from the abrasion, controlled the temperature and the wind and reduced sun radiation. That vegetation can be planted on pedestrian way and connected with open space in Fatahillah Zone.

Fatahillah Zone

Open space in this zone must be aimed to reinforce the colonial city image. Formality in design must be maintained. Trees on the Fatahillah Zone could be sited to create formal character. Given a formal setting may involve a degree of regimentation, with trees planted in straigth lines on streets and formal geometric patherns rather than picturesque groups on Taman Fatahillah. According Carmona (2003), in some streets, trees reinforce or provide a sense of enclosure and continuity, but in all urban environments trees need to be sited positively. As a zone that had dominantly high value of integrity, trees should be sited also positively. Making spaces with plants that is as sophisticated as that associated with buildings and urban space (Robinson, 1992).

Three dimensional effect in Taman Fatahillah and streets in this zone can be enhanced by tree planting beside by the existing building. It was also could reinforce or complete a sense of spatial containment, or create a 'space within a space'. But the plants that was sited did not obstruct the user's point of view to carry out the appreciation of buildings fasade that according to Collins and Collins (1965) freestanding sculptural mass that was part of the principle of open space urban areas aesthetics.

Commonly, alternative of plants, trees street in Fatahillah Zone could be planted with cengkeh (*Caryphyllus aromaticus*), tanjung (*Mimussops elengi*), bungur (*Lagerstroemia losreginae*), mahoni (*Switeniaa mahogani*). Especially for Jl. Cengkeh, planting design must pay attention historical function of this open space. Previously, this open space had the axis function. The tree arrangement all along this street must be able to clarify the axis function. This street could be planted the clove (*Syzgium aromaticum*), appropriate with its name, apart from as shading also as the director of the street and clarified the function axis (Figure 5).

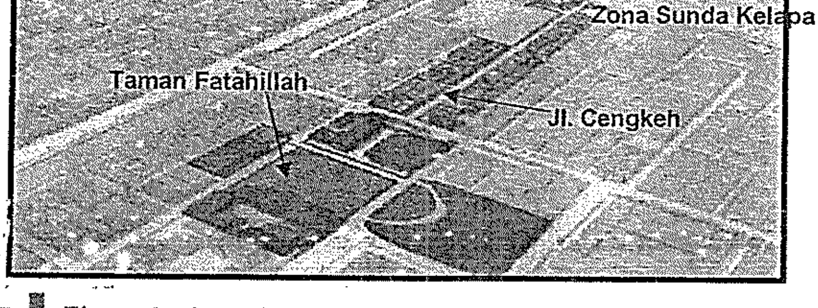

Figure 5. The Axis of Taman Fatahillah and Sunda Kelapa

Trees on the square may choosen that are wider than on the street in order to give better shading beside to complete a sense of spatial containment. The alternative trees were beringin (*Ficus benjamina*), ki hujan (*Samanea saman*), flamboyan (*Delonix regia*) atau asam londo (*Pithecelobium dulce*).

Pecinan Zone and Pekojan Zone

Open space in this zone reflected the image of Pecinan and image of religius settlement that was strong as the character that was owned and the function inside. Because of that the plants and the arrangement also must be able to support increase efforts in this image. Pecinan Zone were as settlement and commercial area, Pekojan Zone were dominantly as settlement that previously as Arabic settlement area. Pekojan Zone Pecinan and Pekojan Zone had informal that have a more relaxed character. Commonly, the plants in this zone should be sited with the plants that can give comfortness for users, but especially in Pecinan Zone should be directed to enhance Pecinan image. Ornamental plant that appropriate with Pecinan Zone could be choosen to create strong visual impact. Single or double row of plant all along the streets in both of zone should be sited to help establish pedestrian scale. The alternative trees for pedestrian ways in both of zone were tanjung (*Mimussops elengi*), bungur (*Lagerstroemia losreginae*), mahoni (*Switeniaa mahogani*).

Urban Greenery Linkage

The arrangement greenery in each zone must be connected to form linkage in The Jakarta Old City. Hiller (1996) said that to design succesfull public spaces, it is essential to understand movement, especially that of pedestrians. Pedestrian way with the linear trees could help to create that linkage and support the movement using of open space from one place to other place in The Jakarta Old City. The exact route election could help in created linkage and satisfied the continuity requirement from open space. According to this research, open space with the high and middle value of integrity could be choosen as open spase that created pedestrian linkage with the trees in side of the road. The linkage in Jakarta Old City could be created with Taman Fatahillah as a center square that connected with the streets in Fatahillah Zone, Sunda Kelapa Zone, Pecinan Zone and Pekojan Zone.

4. CONCLUSIONS

The aplication of greenery in historical open space of Jakarta Old City should consider character of historical open space, typical of open space (street or square), The integrity level of open space and technical and maintenance aspect. This study proposed the altnernative of plants and its arrangement in open space of Jakarta Old City.

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