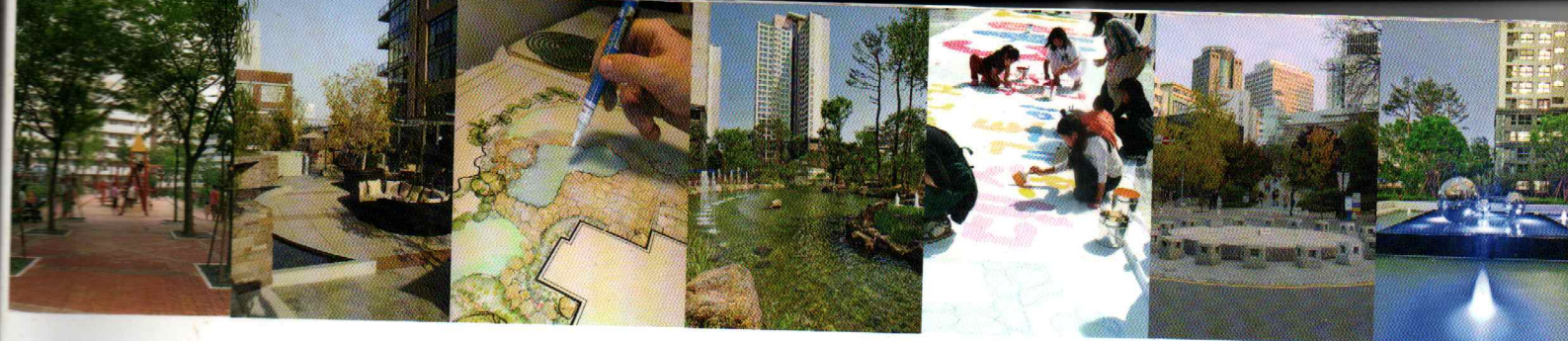
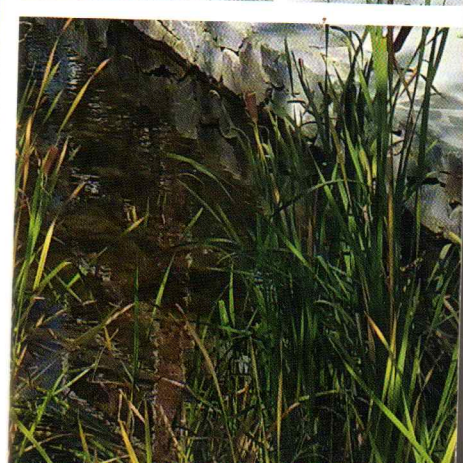




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Space Requirement for Street Trees and Pedestrian Movement, an Evaluation for Urban Street in Indonesia

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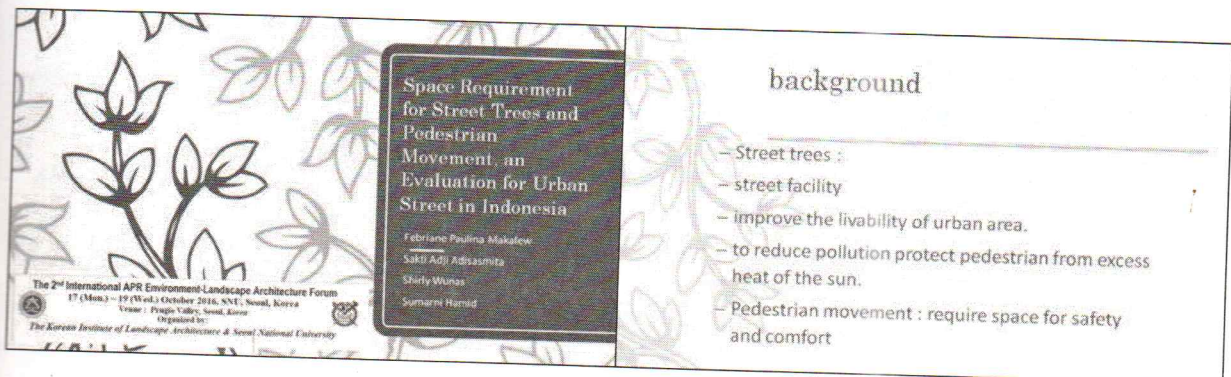
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Abstract

Pedestrian area requires adequate space for the facilities including street trees and people movement. Street trees can improve the livability of urban area and have great advantages for the urban environment. The major function of the tree on the street is to reduce pollution and protect pedestrian from excess heat of the sun. However, from the previous research most street trees in Indonesia are not the type in supporting street function. The major problem is pedestrian pathways are damaged due to the grow of street trees root. Limited space for tree root to grow and the construction of hard surface has been the result of less concern to the space requirement for street tree. Space requirement for pedestrian is related to the movement of people in the pedestrian area including carrying bags and other things. As the space on the pedestrian area divide for plants, facilities and movement of many users, there is limited concern to the children pedestrian movement. This research discusses the space requirement for street trees as pedestrian facilities and pedestrian movement in Indonesian cities. An evaluation is made for urban pedestrian facilities and pedestrian movement standard. The method of this research is literature review and observation with pictures recording. The data is analyzed by evaluate existing pedestrian pathway and street trees using standard in Indonesia and from other countries. It could be concluded that space requirement for pedestrian and tree in urban area in is crucial in saving pedestrian facilities and protecting pedestrian. It needs further research on space requirement for children pedestrian movement.

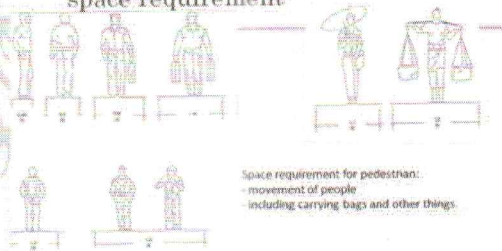
Keywords: Street trees, space requirement, pedestrian, children, Indonesia



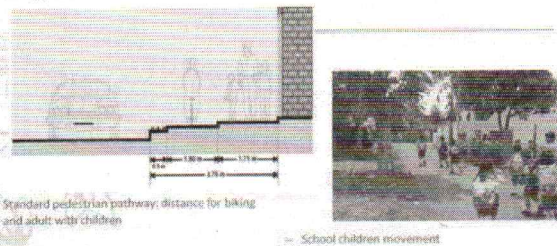
Objective and method

- Space requirement for street tree and pedestrian movement in Indonesian cities.
- Evaluation existing versus standard.
- Method: literature review and observation
- Examples of overseas standard and practice

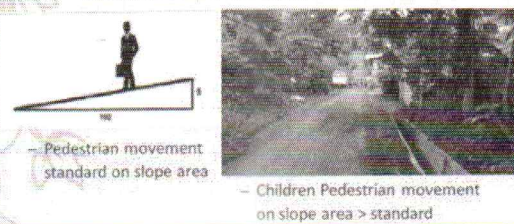
Pedestrian Movement: standard space requirement



Evaluation: Pedestrian Movement



Evaluation: Pedestrian movement



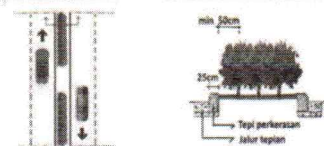
Standard: Pedestrian movement

Pergerakan Jalan	0-3	3-5	5-10	10-15	15-20	20-30	30-40	40-50
Jalan Tugu								
Parkir								
Taman bermain								
Parkir sepeda								
Parkir mobil								
Parkir sepeda motor								
Parkir bus								
Parkir truk								

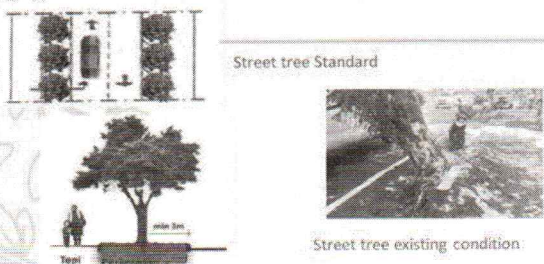
Pedestrian movement standard on slope area

Street tree: Standard space requirements

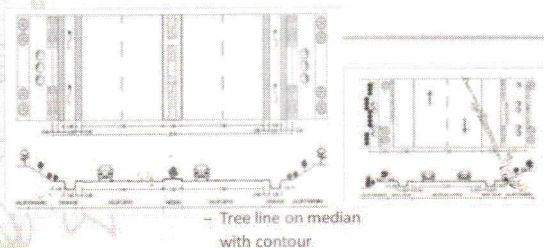
- Planting distance on hard surface



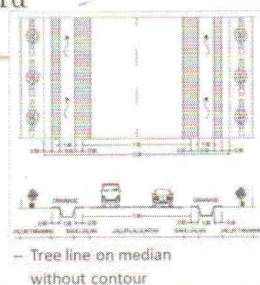
Evaluation: Street tree



Street trees : Standard

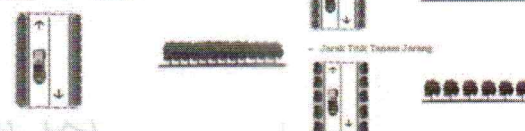


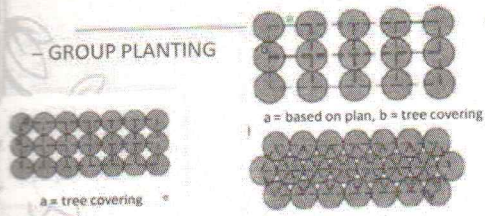
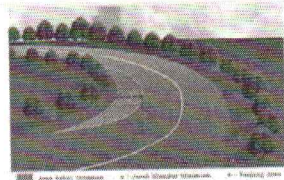
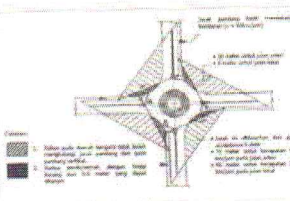
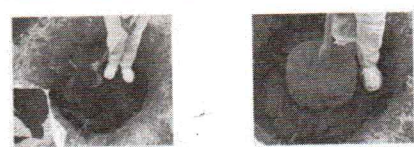
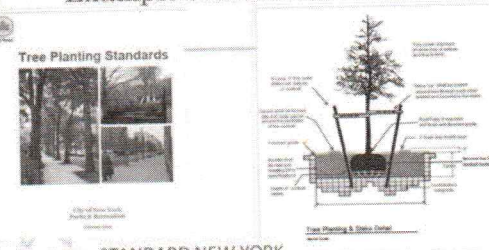
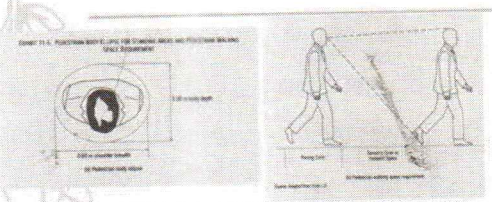
Standard



Standard

- Planting in line



Standard – GROUP PLANTING  a = tree covering a = based on plan, b = tree covering	Standard – Planting in the horizontal curve  Gambar 6. Jarak Antar Tanaman Pada Titik-titik Bagian Dalam Leengkung Horizontal																
Standard – PLANTS LINE ON FREE VIEW AREA intersection street  Gambar 8. Jarak Antar Tanaman Pada Perempatan (Perempatan Rambu 40 km/jam)	Standard – Distance of view on roundabout 																
Standard  – Planting street tree – Indonesia standard	Standard <table border="1"> <thead> <tr> <th>NO</th> <th>LOCATION</th> <th>DISTANCE PLANTING</th> <th>EXPLANATION</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>PEDESTRIAN PATHWAY</td> <td>4 M FOR URBAN 9 M FOR RURAL</td> <td>THE HEIGHT OF THREE NO TALLER THAN ELECTRICITY AND PHONE LINE NOT DAMAGE UNDERGROUND UTILITY NOT COVER STREET LIGHT</td> </tr> <tr> <td>2.</td> <td>MEDIAN (< 1.5 M WIDE)</td> <td>0.5 M FROM STREET LINE</td> <td>PLANTS MAINTAIN AT 1 M HEIGHT NO PLANTS ON STREET HARD SURFACE</td> </tr> <tr> <td>3.</td> <td>MEDIAN (> 1.5 M WIDE)</td> <td>0.5 M FROM STREET LINE</td> <td>NO PLANTS ON STREET HARD SURFACE</td> </tr> </tbody> </table> STANDARD: MINISTRY OF PUBLIC WORKS: NO. 05/PR/T/M/2012 GUIDELINE FOR PLANTING TREES ON STREET	NO	LOCATION	DISTANCE PLANTING	EXPLANATION	1.	PEDESTRIAN PATHWAY	4 M FOR URBAN 9 M FOR RURAL	THE HEIGHT OF THREE NO TALLER THAN ELECTRICITY AND PHONE LINE NOT DAMAGE UNDERGROUND UTILITY NOT COVER STREET LIGHT	2.	MEDIAN (< 1.5 M WIDE)	0.5 M FROM STREET LINE	PLANTS MAINTAIN AT 1 M HEIGHT NO PLANTS ON STREET HARD SURFACE	3.	MEDIAN (> 1.5 M WIDE)	0.5 M FROM STREET LINE	NO PLANTS ON STREET HARD SURFACE
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Example overseas standard Tree Planting Standards  – STANDARD NEW YORK	Example overseas standard  – STANDARD MANUAL HIGHWAY CAPACITY																
Example : overseas practice  – TREE PLANTING IN PERTH, AUSTRALIA	Conclusion – Space requirement for tree in urban area is crucial in saving pedestrian facilities and protecting pedestrian. – Maintenance street facility should be regularly with guideline – Children pedestrian movement pattern require space for their safety and comfort when doing activity in their journey – Implementation of standard should be under supervision																



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