Playscape Concept for Eco-School in West Jakarta

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Abstract. With the background of children's difficulties in playing and seclusion of children with nature caused by, the prevalence of learning methods with books and electronic media as well as reduced opportunities for children to play in nature, the authors develop a design plan for the Eco-School with Playscape Approach in Jakarta. This design aim is to implements playscape play area. The method used is to follow the study of applicable design methods. The analysis was carried out qualitatively and the design results were in the form of an analysis related to the site, space program, zoning, mass formation and application of an approach which if integrated would produce a design of the Eco-School with the Playscape Approach

Keywords: school, eco-school, nature, play, playscape

1. Introduction

Sustainable settlements depend on creating a better environment for human well-being in order to improve the living conditions of people and reduce the disparities in their quality of life. [1]. One of them is children who are very vulnerable to dangerous urban environments and must be protected. Currently, urban life that continues to develop can also have negative effects on health, which is the mental health of children.

According to a number of studies, mental health problems experienced during childhood and adolescence can significantly affect the growth and development of school performance, peer relationships, and family. Worse is the risk of suicide. [2]. This shows the need for a movement to promote a healthy environment with the support of adequate shelter for all and sustainable human settlements for present and future generations. One way is to ensure children have access to the natural world every day through free play outside, and create educational programs for children that support their environment, including natural ecosystems. Since the mid-20th century children have spent less time playing outside. This is due to several things, namely the form of city design, the increasing availability of attractive electronics, attention to parental safety issues and time constraints imposed by homework and school activities. [3]. Activities and forms of school should be a place where children can carry out learning activities by conceptualizing learning and interacting directly with nature.

Nature school or eco-school is a school with an educational concept based on the universe of nature to help students grow into better individual character who are able to utilize, love and care for nature. [4]. In accommodating children's needs while learning and playing, an approach is needed to improve their skills in imagining, moving and socializing as well as interacting with nature. One such approach is a playscape. Playscape is a play area that is purposely designed with the aim of connecting...
children with water, soil, trees and other parts of the world that are normally found in nature. [5]. Playscape can provide access to the elements of natural play and promote forms of exploration and investigation play to help children thrive. [6]. Essentially, this paper presents the initial study of how playscape approach can boost children relationship with the nature through the school and the landscape design. The specific objectives are (1) Creating a space where children can play and connecting to nature through the school and landscape design. (2) Provide variety form of nature play in the landscape school design.

2. Methodology

2.1. The method of study
In order to conduct this qualitative study, necessary data are divided into two types. Primary data and secondary data. To obtain primary data, the method used is observation which is done in several places of interest such as two related eco-school in South Jakarta. The observation is conducted to study how current eco-school and their playground design operates with the children activities. The observation result will serve as a comparative study which will be use as the benchmark of school and landscape design. The secondary data are obtained from literatures and online research which will serve as supporting data for the study such as:
- School User, Facilities, and design guideline
- Children ergonomics
- Playscape approach

As the primary and secondary data that has been conducted. The diagram below will show the workflow of the design (Fig 1)

![Figure 1. The diagram of methodology](image-url)
3. Result and Discussion

3.1. Location Analysis

Based on the data that has been gathered. West Jakarta is the chosen location of eco-school design. Located on Jl Ratu Melati, Kecamatan Duri Kepa. This area is actively inhabited by middle-class residential areas and is surrounded by City Parks, City Forests and also worship facilities such as churches. Seeing the surrounding facilities that support school activities, the designed eco-school is expected to communicate and become a place that suits for school activities in this area. The location selection is based on the background with the prospect of forest activities and city parks that are adjacent to the site location.

![Figure 2. The Site Location and Condition for Eco-School Project](image)

3.2. Space Analysis

| Subject Curriculum        | Activity                                                                 | Space Requirement                  |
|---------------------------|--------------------------------------------------------------------------|------------------------------------|
| Flag Ceremony             | Flag Ceremony                                                            | Field                              |
| Morning & Noon Reflection | Reflection of activities to open the day & close the day of school activities | Indoor Classroom and outdoor classroom |
| Circle Time               | Studies and Playing with group                                            | Indoor Classroom and outdoor classroom |
| Outbound                  | Outbound: Spider Net, High Roof, Wall Climbing                           | Open Field                         |
| Physical Activities       | Physical activities, Football, Volley, and Gymnastic                     | Open field, Auditorium             |
| TEMATIK                   | Common Subject and studies                                               | Indoor and outdoor classroom       |
| Religion                  | Religion subject                                                         | Indoor, outdoor classroom, Auditorium |
| Environmental Education   | Studies, Research, Realtime experience with the nature                    | Indoor, outdoor classroom, garden area |
| Education (PLH)           |                                                                          |                                    |
| Art                       | Singing, dancing, painting and Art related subject                       | Art Classroom, outdoor classroom, amphitheater, auditorium |
| Drama                     | Performing and Imaginative play                                          | Amphitheater, Auditorium           |
Space analysis include the type of space for facilities provided, amount of space, and zoning of space than needed. The space concept comes from the result of observation in two different eco-school that located in South Jakarta, with the result are: (A). Children in eco-school uses nature element for their studies much more than basic school. Therefore, the connection between class and landscape design must connect and be close to each other, (B) The landscape in eco-school play important role for the children play and how they create their own space, (C) While elementary eco-school have many activities that related to perform play Therefore, A space for Children able to perform is needed. This following figure is the children activities and space analysis based from curriculum in Eco-School

As the figure shown table 1. It indicates that most of children curriculum and activities in eco-school used many outdoor spaces for learning and playing. As the outdoor area will mainly focus on playscape approach

3.3 The Playscape Approach
This study seeks to merge together both playground area and school building to made one new classroom spaces that directly connect and have a view of their own playground. With the playground focuses on playscape component. Each of part of the landscape park has their own uniqueness and provide many opportunities for children to learn, play and experience directly with nature.

Playscape theory is a play area designed to connect children with water, soil, trees, and other parts of objects that are usually found in nature. [5] Playscape encourages creativity, imagination and an affinity for nature. Playscape as a dynamically designed play environment, rich in vegetation, which maintains the affinity of young people for nature [7]. In this study, the architectural aspect will be combined from two separate objects which is outdoor playground and school building. School ground design should encourage children to play outdoors with some method [8] which the methods are:

- Creation of Outdoor Classroom

  Sobel (2008) in Ashley Parson (2011) states that each individual child has their own space around the perimeter of a larger group space, Therefore, the creation of space which children can create is needed and shown on following table (table 2).

| Type of Play and Spaces | Activity       | Playscape Component                  |
|-------------------------|----------------|-------------------------------------|
| Log Play                | Studying       | Log and Wood                        |
|                         | Jumping        |                                     |
|                         | Gathering      |                                     |
| Imaginative Play and Outdoor Classroom | Studying       | Log and Stone Seating (Can be played to jumping around them) |
|                         | Performing     |                                     |
|                         | Gathering      | Tree                                |
|                         | Imaginative Play|                                     |
|                         | Running        |                                     |
|                         | Rolling        |                                     |
Outdoor Classroom

| Activity | Plants |
|----------|--------|
| Studying | Wood Seating |
| Gathering | Tree |
| Imaginative Play | Shrub |
| Free Play | |
| Running | |

Beam and Hill

| Activity | Terrain |
|----------|---------|
| Studying | Sloping hill |
| Gathering | Sand |
| Imaginative Play | Shrub |
| Free Play | Tree |
| Running | |
| Rolling | |

Amphitheater

| Activity | Terrain |
|----------|---------|
| Studying | |
| Gathering | |
| Jumping | |
| Imaginative Play | |
| Free Play | |
| Performing | |

- Create Opportunities for Large Landscape Experiences
Nahban and Trimble (1994) in Ashley Parson (2011) states that large landscape experience mean providing view to distant place. Therefore, the size of enclosed space will need views to larger vistas. In this case the view to larger vistas is the school building and other landscape park. This large landscape experience also provides many group activities that can accommodate children playing activities and eco-school needs. Which shown on following table (table 3).

Table 3. Create Opportunities for Large Landscape Experiences

| Type of Play and Spaces | Activity | Views |
|-------------------------|----------|-------|
| Playscape Park 1 | The park that located in near the front of building that can accommodate children play activities for 1 – 3 elementary grades. | The park has a larger view vistas to the building across and other park (Park 2). The activities is more focused on small exploration and interaction with sand, water, shrubs and tree |
Playscape Park 2

This park accommodate children play activities for each of all elementary grades. Slopping of hill in this area provide many playing opportunities. The park has a view to larger view vistas to amphitheater and main hierarchy of building and the open field park for outbound activities.

Playscape Park 3

This park accommodates children playing and learning activities for the 4 – 6 elementary grades. Which the park mainly focused on extension of indoor to outdoor classroom. The park has a view to neighborhood which is in future development is a city forest.

- Create Opportunities for Small Landscape Experiences

Nahban and Trimble (1994) in Ashley Parson (2011) states that Opportunities for Small Landscape experience means exploration under rocks, around corners, inside plants, and under trees. Therefore, to accommodate this experience the creation of small activities around the playground design which is shown on following table (Table 4.)

| Type of Play and Spaces | Activity          | Playscape Component                      |
|-------------------------|-------------------|-----------------------------------------|
| Imaginative Play        | Studying          | Log and Stone Seating (Can be played to jumping around them) |
|                         | Performing        | Tree                                    |
|                         | Gathering         |                                         |
|                         | Imaginative Play  |                                         |
|                         | Running           |                                         |
|                         | Rolling           |                                         |
| Wooden Bridge           | Imaginative Play  | Wooden bridge                           |
|                         | Running           | Log (To climb)                          |
|                         | Hopping & jumping | Sand                                    |
|                         | Exploration under | Slopping Hill                           |
|                         | wooden bridge     |                                         |
|                         | Sand Play         |                                         |
| Climbing Wall           | Climbing          | Wood board                              |
|                         | Hopping and jumping| Small rocks                           |
|                         |                   | Shrubs                                  |
|                         |                   | Log                                     |
| Type of Play and Spaces | Activity         | Playscape Component |
|-------------------------|------------------|---------------------|
| Imaginative Play        | Studying         | Log and Wood        |
|                         | Jumping          |                     |
|                         | Gathering        |                     |
| Perform Play & Sand     | Performing       | Shrubs              |
|                         | Gathering        | Tree                |
|                         | Sand play        | Sand features       |
|                         | Imaginative Play | Water features      |
| Slopping & Log          | Running          | Log                 |
|                         | Rolling          | Shrubs              |
|                         | Climbing         | Rocks               |
|                         | Jumping          | Tree                |
|                         | Gathering        | Slopping Hill       |
|                         | Imaginative Play |                     |
4. Concluding Remarks

The study of playscape in order to be applied in a school ground has been conducted and the remarks can be concluding as follows:

- The Playscape could provide many form of play. The space that created with natural design and nature element could stimulate children to improve their way of play and connect them to experience the nature itself through play and learning in this open space.
- The eco-school and playscape concept could fit with each other. As the eco-school mainly focus on how children learning with nature. The playscape mainly focus is how children playing in nature.

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