A study of Playscape approach for Eco-School at South Jakarta

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Abstract. The purpose of this research is to study whether the application of the playscape approach concept for natural schools in Jakarta can be integrated with eco-school. This is done by determining the quality of the form of playing with natural components that already exist in nature schools and is fully related to the components of the playscape approach. The object of the case study chosen were two eco-schools that were active in the South Jakarta area. The results obtained are in the form of an assessment of the components of the playscape approach in the play area in both schools. With the following study steps: (1) study of building mass and outdoor play spaces in school areas, (2) study of playscape components in school play area.

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

1. Introduction
This study was conducted based on the UN Sustainable Human Development which focuses on ensuring children have access to the natural world every day through outdoor free play [1]. Eco-schools in Indonesia consist of various types of schools. One of the alternative schools that are holistic and spiritually oriented is the eco-school [2]. With learning methods and playing equipment that focus on nature, Nature schools can increase children's sense of care for the natural environment. According to research, the eco-school can increase knowledge, attitudes, uses, and concerns for the environment and nature [3]. Eco-school themselves, especially in Indonesia, also have their own characteristics, which are schools with the concept of universe-based education and have the form of school buildings in the form of stilts or huts. Eco-school itself also has a playing pattern area that focuses on natural components such as trees, bushes, soil, sand, and water for children to do learning and play activities in these parts. Currently, there are several schools that have adopted this concept, namely the Sekolah Citra Alam and Sekolah Alam Indonesia Cipedak in South Jakarta.

Sekolah Citra Alam (Figure 1a) is one of the eco-schools located in South Jakarta. The school has a land area of about 20,000 m² with a school building style that blends with nature and exposes building materials. Sekolah Alam Indonesia Cipedak (Figure 1b) has a land area of about 5,000 m² with a school building that is also one with nature. The school building style is in the form of a hut model that focuses on the use of wood materials to emphasize traditional retreats and approaches to nature. These two schools have similar characteristics, the class buildings in these two schools are made separately per building. In each classroom, there is an outdoor play area for children.
When doing direct observation, the children at the eco-school use their outdoor play space for playing, gathering and relaxing. Trees and bushes around the school area become exploration and investigation spaces for children. In (Figure 2a), it can be seen that the children gather in the climbing playground and tree area, while for (Figure 2b) it can be seen that the tree is the center of spot for the children to gather. This phenomenon explains that natural components could influence how children interact with each other or with the nature.

Playing with natural components is a concept of Playscape's approach. 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. [4]. The Nature Playscape Initiative (NPI) defines a playscape as a dynamically designed play environment, rich in vegetation, that maintains young children's affinity for nature [5]. Based from Elliot (2008) in Car Luken (2014) [4] states that playscapes for young children contain the following minimum features: (1) local landscape or a reconstruction of the indigenous environment; (2) natural elements dominate - trees, shrubs, sand, rocks, soil, and flowers; (3) loose natural materials and possibilities for open-ended interactions, explorations, and manipulations; (4) opportunities for risk-taking, spontaneity and discovery, sensory in all aspects; (5) accessibility; (6) a sense of place; (7) multiple spaces or mini-environments; and (8) a dynamic environment. These features will be used as assessment for playscape component in these two eco-schools.

Essentially, this paper presents the initial study of how the components of a playscape exist in the eco-school and whether this concept is suitable to be combined with the different two objects which is school and playground. The specific objectives are (1) To study the assessment for the current state of eco-school playground. (2) To see that eco-school concept can match with the playscape approach

2. Methodology
2.1. The method of study
This research method was carried out in two stage, the first stage is conducted by collecting necessary data which 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 Sekolah Alam Indonesia Cipedak and Sekolah Citra Alam.
The observation is conducted to study how current eco-school and their playground design operates with the children activities and has playscape component. 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
- Playscape approach minimum features

As the primary and secondary data that has been conducted. The second stage is the data analysis method which consist into 3 stages:

1. Analysis of site location and existing condition
   The analysis of this stage is conducted to determine the actual site location and condition. This is done by performing the survey to the site and gather around the data about the site.

2. Analysis of school site plan
   The analysis of this stage is conducted to study the design of eco-school design. Using the spatial analysis for the placement of building and outdoor area. This stage aims to find where is the building and outdoor environment meet each other and how they connected

3. Analysis of minimum playscape features
   The final stage of this analysis is the observation and checklist studies for the minimum playscape features from Elliot (2008) in eco-school design.

3. Result and Discussion
   3.1. Analysis of Site location and existing conditions
   Based on the data that has been observed and gathered. The location of Sekolah Citra Alam (Figure 3a) is actively inhabited by the middle to low class residential areas and surrounded by many houses. Based on the current location conditions, the roads noises near the school do not interfere with school activities because these roads are residential streets that have low congestion intensity. Meanwhile, the Sekolah Alam Indonesia Cipedak has similar site area characteristics (Figure 3b) to the Sekolah Citra Alam. The school located in a middle class residential area and still surrounded by empty land that has trees around it, this school is located in a lush location and away from vehicle noise disturbances and other residents’ activities. So that when viewed in terms of location placement, the Sekolah Alam Indonesia Cipedak shows more placement of locations that are indeed supported by natural elements. The lushness of the trees in the Sekolah Alam Indonesia Cipedak area is more supportive by the sense of place than the Sekolah Citra Alam.

![Figure 3](image-url)

Figure 3. Location of (a) Sekolah Citra Alam, and (b) Sekolah Alam Indonesia Cipedak.
3.2. Analysis of School site plan
The analysis results show that the Sekolah Citra Alam and the Sekolah Alam Indonesia Cipedak have the same building placement pattern in common. The school buildings are made separately to maximize open space and to give the impression of a connection with nature. The placement of the classroom in an open model provides a small space to be used as a playroom for children. The form of the Sekolah Citra Alam site plan design (Figure 4a) Classroom activities (Pink) are divided into two parts. Where the eastern part is the elementary and junior high school buildings, while the western part is the 1st grade Elementary and kindergarten. With about 50% of the use of space in nature schools is outdoor space for children. Meanwhile, at Sekolah Alam Indonesia Cipedak (Figure 4b) Classroom activities (Pink) were placed around the field at the center of the site. All buildings that are oriented towards the field are bounded by a road that surrounds and connects to all class buildings. Approximately 60% of space use in the Sekolah Alam Indonesia Cipedak is outdoor space. In each building, there is a playroom and planting area, so that the class itself has a view of the playground.

![Figure 4. Site plan of (a) Sekolah Citra Alam, and (b) Sekolah Alam Indonesia Cipedak.](image)

3.3 Analysis of minimum playscape features
This stage of research seeks to assess the current playground area and school design to determine to what extent eco-school use natural components as a tool for children to play and learning activities. The approach taken is to use the minimum feature component according to Elliot (2008) [4] and assess the existing conditions of play spaces in both eco-school. The first thing to do is to describe the conditions and forms of play spaces in the two schools. Table 1 and Table 2 show the results of documentation and observation of the form of play spaces in eco-schools in this study, namely Sekolah Citra Alam and Sekolah Alam Indonesia Cipedak, respectively. Playscape analysis and scoring of these eco-schools are shown in Table 3.
### Table 1. Outdoor Play Area Condition in Sekolah Citra Alam

| Condition | Description |
|-----------|-------------|
|           | The field is surrounded by trees and bushes. This area is often used by children to do group play activities and school special activities |
|           | There are small outdoor spaces that turn out to be places for children to play investigative games with tree and soil components |
|           | In some parts of the play area, the components used still show some components of the manufacturing equipment. However, this manufacturing component is combined with natural components such as sand |
|           | Trees and shrubs can be a space used by children for investigation and social interaction. This part of area required observation from teacher |

### Table 2. Outdoor Play Area Condition in Sekolah Alam Indonesia Cipedak

| Condition | Description |
|-----------|-------------|
|           | The play area that is present is still dominated by manufacturing equipment, but in this school the form of manufacturing equipment still imitates natural elements. The groundcover in this area are still combined with natural elements such as sand |
Each classroom has its own playground and garden for planting. Because this school carries the concept of open class and connect with nature.

The Mini Environment in the playroom section is not surrounded by trees and shrubs. The natural element that is emphasized is only sand.

The water feature in this school has not been used optimally and only for visual and sound purposes.

| Table 3. Conclusion of Playscape Approach |
|-----------------------------------------|
| No | Playscape Minimum Features | Eco-schools | |
| 1. | Local landscape or a reconstruction of the indigenous environment | √ | √ |
| 2. | Natural elements dominate – trees, shrubs, sand, rocks, soil, and flowers | √ | X |
| 3. | Loose natural materials and possibilities for open-ended interactions, explorations, and manipulations | √ | X |
| 4. | Opportunities for risk-taking, spontaneity and discovery, sensory in all aspects | √ | √ |
| 5. | Accessibility | √ | √ |
| 6. | A sense of place | X | √ |
| 7. | Multiple spaces or mini-environments | X | √ |
| 8. | A dynamic environment | √ | X |
| Score | 6 | 5 |

4. Concluding Remarks
The study of playscape and their current playground condition in eco-school has been conducted and the remarks can be concluding as follows: From the results of the assessment conducted, both schools have a high enough potential for a playscape component with a score of 6 & 5, respectively. Nature School is a form of school based on education that promotes and makes nature as the main learning...
method. Meanwhile, Playscape is a play area that is purposely designed with the aim of connecting children nature element. While the assessment has been conducted. Eco-school and the concept playscape could fit each other. With a focus on increasing children's affinity with nature, this conceptual integration is expected to increase children's awareness of nature maximally through play and learning activities.

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