

Contextuality of Buildings Form in Bandung Institute of Technology (ITB): Case Study Laboratory of Technic VIII, Bandung

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Abstract: The designing of new buildings at Bandung Institute of Technology campus has created building structures which are varied and tend to be non-contextual, not aligned with the older buildings or the conservation of the building as the existing ones. Therefore, this study is conducted by following some systematic steps, namely: (1) investigating the concept of the ITB campus initial design; (2) describing the architecture values of West and East Halls through their elements; (3) linking those values to the laboratory of technics VIII structure. The objective of this study is to know the continuity of ITB initial concept designing which is implemented in old buildings (West and East Halls) with the new building (Laboratory of Technics VIII) which serves as a base to rate the contextuality between the buildings. Based on the literature review, it is found that the Laboratory of Technics VIII building is contextual for ITB surroundings. But, it is only on its physical structure including these elements, namely the rooftop, wall, column, window, entrance door, and floor. However, non-technically, the building structure of technics laboratory VIII has not reflected the local culture values like the ones in the buildings of West and East Halls. So, it can be concluded that the Laboratory of Technics VIII ITB has not strongly given influence to the surroundings identity.

Keywords: Contextuality, contextual architecture, identity of the surroundings.

1. Introduction

Bandung Institute of Technology is one of state universities in the city. The buildings were designed by an architect from Netherland named Maclaine Pont. ITB campus buildings were built in area of 33 hectares consisting of the main building and some supporting buildings. Up to now, ITB buildings complex is still expanding and adding some facilities in the form of new buildings. Those additional buildings have modern styles and characteristics which are different from the older ones. It makes the new buildings seem as complementary buildings instead of as one unity of the system in the area.

In every designing, the architect or designer should not only emphasize on the functional aspects and spaces which accommodate, but also emphasize on the contextual aspects on the buildings so that the values in the area increase. The finishing part by creating new buildings in the area context with old buildings by considering the existing situation in the surroundings, so the new ones will increase its quality and strengthen the characteristics and identity of the area.

This study focuses on the review of literature related to the designing concept of ITB campus by Maclaine Pont which are Sense of Place and Sense of Identity. The further review is related to the implementation of concept or ideas into the building architecture. This review is based on the analysis on the physical aspect of the building which includes: (1) the form and mass of the building; and (2) elements, rooftop, wall, and floor.

2. Theory

2.1 Contextual Architecture

Contextual architecture is the architecture which minds the visual continuity problem between new buildings with surrounding nuance and studies the difficulties that might appear to create harmony between the buildings with some differences related to style and era in the adjacent location (Brolin, 1980).

Contextual architecture can be described as a method of how to link new buildings with the existing old buildings, both in the structure and the visual building display. Besides, it is also important to link the new buildings with the surroundings and to keep the existing architectural values. Contextual architecture also emphasizes on the harmony between the new buildings with the existing buildings in the surroundings, the adaptation of characteristics between buildings with styles from different eras which hand in hand to result a

visual continuity.

2.2 Contrast and Harmony

Contrast is the design concept which is very conspicuous and different from others. It is also a way to design new buildings which are different from the existing ones. It is well implemented, it can be a focus and an accent in a city area. On the other hand, if it is implemented in a wrong way, it can ruin the existing architecture.

Meanwhile, harmony is a concept in a contextual architecture design which shows the harmony of the new buildings in the surroundings. The new buildings should appreciate and pay attention to the surroundings. Then, the new and the old ones keep the tradition from time to time. So, the existence of one or some new buildings are more supportive than to compete with the existing structure characteristics though they seem dominant (Natasha, 2008).

2.3 Javanese Traditional Architecture

In Javanese society, the spatial concept in a Javanese traditional house consists of the main house and the additional house. The front part of the Javanese house is called pendopo. The middle part of the house is called pringgitan and the back part is gandhok (figure 1). Javanese people believe in influence of power coming from the points of the compass called Pajupat. Pajupat affects the architecture style of Javanese people in term of the orientation of the buildings which face North-South. The orientation of Javanese houses follow the cosmic axis facing North-South. It is hoped that the house facing the South will bring happiness and tranquility for the inhabitants (Fauzy, 2016). The structure of the traditional Javanese rooftop changes from time to time. It is caused by the need of a bigger space (figure 2).



Figure 1: Spatial Pattern of Traditional Javanese Houses (Left) Common People Houses (Right) Nobility Houses

Source: Pramesti, 2001

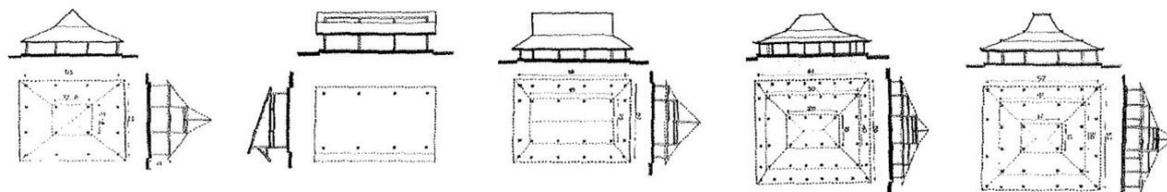


Figure 2: Variation of Rooftop Form in Javanese Traditional Houses
 Left I: Tajug Type Left II: Panggang-pe Type Middle: Kampung Type Right I: Limasan Type
 Right II: Joglo Type

Source: Ratnasari, 2007

2.4 Archetypes

Arche-type is a term which is postulated by Carl Jung, a psychologist, which means pictures or figures which are gotten from human collective consciousness. Evensen is an architect who tries to implement it in the architecture. The basic structures can also be called architecture archetypes which is from Greek meaning the existing basic patterns or the early structure or original model as the basis of the next variation and combination (Evensen, 1987). In the theory of archetypes, the structure of element can be classified into three aspects, namely rooftop, wall and floor elements (Fauzy, 2016).

3. Method

The research methods used in this study were descriptive, analytical and interpretative using qualitative approach aiming at describing the initial concepts/ideas of ITB campus and describing the values in the West and East Halls architecture through the elements. Then, it was linking the theories and values from the West and East Halls architecture to the new building which is the laboratory of technics VIII through review on rooftop, wall and floor elements. This study was done systematically based on the facts, supporting with the literature review on books, articles and journal articles which later were analysed so that the conclusions can be derived.

4. Results and Discussions

In this part, the comparative analysis of Technics Laboratory VIII ITB building with West and East halls of ITB were discussed. The analysis was done through archetypes approach including rooftop, wall and floor elements. The principles of structuring approach including axis, symmetry, and hierarchy. This research also used the contextual architecture approach as the result.

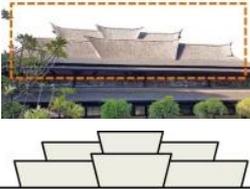
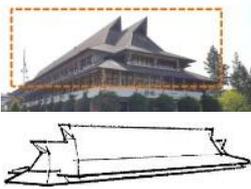
4.1 The Comparative Analysis of Building Mass

Table 1: The Comparative Analysis of West/East Halls with Laboratory of Technics VIII Building Mass

	West Hall/East Hall	Laboratory of Technics VIII
Building Mass	 <p>Fig 3: The Building Mass of West/East Halls The height of the roof in every building mass was influenced by the philosophy of Javanese architecture, the more to the center, the more it is sticking up, close to the sky, where it is the place of God.</p>	 <p>Fig 4: The Building Mass of Technics Laboratory VIII Harmony: The shape of the mass of Technics laboratory still resembles the mass' shape West/East halls, which is the rectangular shape with a higher roof in the center.</p>

4.2 The Comparative Analysis of Building Roof Elements

Table 2: The Comparative Analysis of West/East Halls with Laboratory of Technics VIII Building Roofs

	West Hall/East Hall	Laboratory of Technics VIII
Roofs	 <p>Fig 5: The Building Roof of West/ East Halls The shape of West/East Halls' roof are lengthwise and piled, with the sharp tips sticking upwards as the termination, and they are made of shingle materials.</p>	 <p>Fig 6: The Building Roof of Technics Laboratory VIII Harmony : The technics laboratory's building shape still resembles the roof shape of West/East Halls building.</p>

4.3 The Comparative Analysis of Building Wall Elements

Table 3: The Comparative Analysis of West/East Halls with Laboratory of Technics VIII Walls and Columns

	West Hall/East Hall	Laboratory of Technics VIII
<p>Walls and Columns</p>	 <p>Fig 7: Wall and Column in West/East Halls</p> <p>The columns arranged along the corridor resemble columns of Greek architecture, as in the Parthenon temple, Greece (Suryono, 2015).</p>	 <p>Fig 8: Wall and Column in Technics Laboratory VIII</p> <p>Harmony : The walls and columns in Technics Laboratory building still resemble the walls and columns in West/East halls. The stone materials on the lower wall of the Technics Laboratory VIII building resembles the West / East Hall.</p>

Table 4: The Comparative Analysis of West/East Halls with Laboratory of Technics VIII Windows

	West Hall/East Hall	Laboratory of Technics VIII
<p>Windows</p>	 <p>Fig 9: The Windows in West/East Halls</p> <p>The windows in West/East halls of ITB are made of stained glass materials which placed on the elongated parts of the building and facing the north-south way. The frames are made of wood materials, and the stained glass materials used facets pattern with lines that form a crystal pattern (Anindito, 2006).</p>	 <p>Fig 10: The Windows in Technics Laboratory VIII</p> <p>Harmony : The composition and the model of window frames in Laboratory of Technics VIII looks similar to the West/East halls.</p>

Table 5: The Comparative Analysis of West/East Halls with Laboratory of Technics VIII Access and Entrance

	West Hall/East Hall	Laboratory of Technics VIII
<p>Access/ Entrance Door</p>	 <p>Fig 11: The Access of West/East Halls</p> <p>The stairs leading to the entrance of the building use a floor cover. The barrier on the edge of the stairs has the similar shape to the Temple (Chandra, 2012). While for the entrance door and the frame building of West/East Halls are made of local leak wood materials.</p>	 <p>Fig 12: The Access of Technics Laboratory VIII</p> <p>Harmony : The alignment of floor material colours on the main entrance access into the Technics Laboratory VIII is similar to entrance access to the West/East halls. The door frames with the frames and glases also resemble the building of West/East halls.</p>

4.4 The Comparative Analysis of Building Floor Elements

Table 6: The Comparative Analysis of West/East Halls with Laboratory of Technics VIII Floors Materials

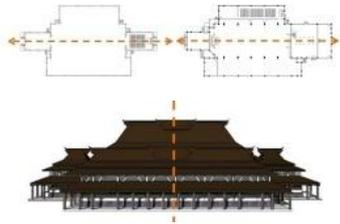
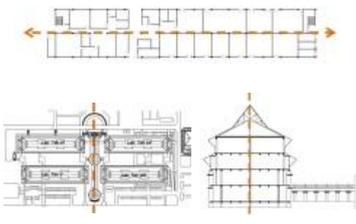
	West Hall/East Hall	Laboratory of Technics VIII
Floors	 <p>Fig 13: West/East Halls Floors</p> <p>There are two types of floor cover materials used in West/East Halls, namely floor cover with square patterned aggregate stone for the entire hall on the first floor, and 30x30 cm ceramic material for the interior of the entire the building floor.</p>	 <p>Fig 14: Technics Laboratory VIII Floors</p> <p>Harmony : The colour of floor materials on the hall</p> <p>Contrast : The colour of floor materials on the inside</p>

4.5 The Comparative Analysis of Axis, Symmetry, and Hierarchy

Table 7: The Comparative Analysis of West/East Halls with Laboratory of Technics VIII Axis

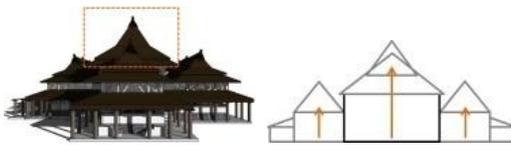
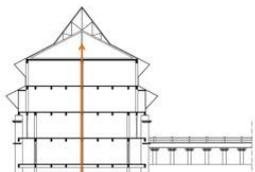
	West Hall/East Hall	Laboratory of Technics VIII
Axis	 <p>Fig 15: The Axis of West/East Halls</p> <p>The West/East halls are oriented to West and East. Its also has opening that faced to the North and South. The mass orientation of the this building refers to Mount Tangkuban Perahu as its axis reference.</p>	 <p>Fig 16: The Axis of Technics Laboratory VIII</p> <p>Harmony : The Technics Laboratory VIII building refers to the North-South axis, similar to the axis of West/East halls buildings.</p>

Table 8: The Comparative Analysis of West/East Halls with Laboratory of Technics VIII Symmetry

	West Hall/East Hall	Laboratory of Technics VIII
Symmetry	 <p>Fig 17: The Symmetry in West/East Halls</p>	 <p>Fig 18: The Symmetry in Technics Laboratory VIII</p>
	West Hall/East Hall	Laboratory of Technics VIII

<p>Symmetry</p>	<p>From the building, it can be seen that the West and East hall of ITB has a symmetrical shape. But, when it is viewed from the building plan, the shape of East hall building is not symmetrical. The left and right wings of the building are different, because of the different functions of space.</p>	<p>Harmony : Symmetry (Horizontal)</p> <p>Harmony : Symmetry (Vertical)</p> <p>Contrast : Value/concept of Javanese Architecture</p>
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Table 9: The Comparative Analysis of West/East Halls with Laboratory of Technics VIII Hierarchy

	West Hall/East Hall	Laboratory of Technics VIII
<p>Hierarchy</p>	<div style="text-align: center;">  </div> <p>Fig 19: Hierarchy in West/East Halls</p> <p>The hierarchy of building masses that sticking to the top, is the application of Javanese architectural philosophy that is "manunggaling" on Gusti or worship to God. The sheath inside the room is interpreted as the synthesis of Basilica architecture. The room arrangement where there is a high space flanked by the lower spaces on the left and right (Suryono, 2015).</p>	<div style="text-align: center;">  </div> <p>Fig 20: Hierarchy in Technics Laboratory VIII</p> <p>Contrast : There is no difference in space hierarchy, the space in Laboratory of Technics VIII tends to be linear.</p>

5. Conclusion

From the results of analysis, it can be concluded that Laboratory of Technics VIII building has contextuality to ITB surroundings. Contextual in this case can be divided into two, namely physically and also non-physically. Physical contextual means that the building has visually linkages with the environment, it can be seen through the similarity of the building structures. While the non-physical contextual means there is a link between the building with the surroundings in terms of values or concepts which contained in the embodiment of the architecture.

The Laboratory of Technics VIII building is a physically contextual building, but less context in a non-physical. The physical alignment efforts can be seen from architectural elements which are similar to those of the West Hall and the East Hall, as well as from the building mass structures designed to address the north-south axis by providing visuals of Mount Tangkuban Perahu. Therefore, the existing spatial imagery from the 1920 period is still maintained.

On the other hand, the Laboratory of Technics VIII building is not contextual in terms of local culture, where Maclaine Pont designed the West and East Halls that is not only physically related, but also contains of values or elements of Javanese architecture in it. Therefore, it can be concluded that Laboratory of Technics VIII building has not strongly given influence to the surroundings identity of ITB University located in Bandung.

Reference

- [1]. F. Bachtiar, "Sintesis Akulturasi Arsitektur Pada Masjid Al-Muttaqun di Klaten", Journal of

- Architecture Research, Bandung.
- [2]. S. Alwin, “Pelestarian Arsitektur Peninggalan Kolonial Belanda Gedung Aula Barat Institut Teknologi Bandung”, In Proceedings of the Re-interpretation of Local Architecture Identity, Bali, 2013.
 - [3]. Adimihardja, Kusnaka; Purnama Salura, 2004. Arsitektur Dalam Bingkai Kebudayaan, Foris, Bandung.
 - [4]. Brolin C, Brent, 1980. Architecture In Context: Fitting New Buildings with Old, Nostrand Reinhold, New York.
 - [5]. Ching, Francis, DK, 2007. Architecture: Form, Space, and Order, Thompson Publishing, New York.
 - [6]. Evensen, Thomas, Thiis, 1987. Archetypes in Architecture, Norwegian University Press.
 - [7]. Ray, Keith, 1980. Contextual Architecture: Responding to Existing Style, McGraw-Hill, New York.
 - [8]. Salura, Purnama, 2010. Arsitektur Yang Membodohkan, Cipta Sastra Salura, Bandung.
 - [9]. Salura, Purnama, 2007. Menelusuri Arsitektur Masyarakat Sunda, Cipta Sastra Salura, Bandung.
 - [10]. Sumalyo, Yulianto, 1993. Arsitektur Kolonial Belanda di Indonesia, Gajah Mada University Press, Yogyakarta.
 - [11]. Anindito, Ario, 2006. Keberhasilan Perpaduan Gaya Arsitektur Pada Aula Timur Institut Teknologi Bandung.
 - [12]. Chandra, Rivani, 2012. Pengaruh Spirit Lokal Pada Arsitektur Gedung Sate dan Aula Barat ITB di Bandung.
 - [13]. Natasha, Janice, 2012. Kontekstualitas Dalam Arsitektur.
 - [14]. Ratnasari, Yulia, 2007. Langgam Arsitektur Jawa dan Hindu-Bali Pada Vihara Sanggar Agung di Kenjeran, Surabaya.