Abstract. During the reign of the Dutch East Indies, the phenomenon of developing architectural designs with a diverse variety of forms filled the developmental history of early modern architecture in Malang City. The offer of various aesthetic elements in the various design included the design of public buildings to meet the increasingly complex activity of city life. The aesthetic element is a visual sign that is closely linked to the context of dynamic society development and contemporary architecture development in a particular place. The study will explore how aesthetic visual signs appear in the central zone of Malang City, with two cases of important public buildings in that location. The method used is a qualitative descriptive analysis method in which the syntagma-paradigm relation analysis model is used to find visual signs in the form of a relationship between the aesthetic elements of the building and the context involved. The results of this study show that aesthetic visual signs have a potential and a hierarchy that contribute to the diversity of designing public architectural designs of the Dutch East Indies period in the new city center zone of Malang.

Keywords: visual sign, aesthetic, public building, heritage

1. Introduction

If viewed historically, the architectural development of Malang City began in the second decade of the 20th century when the status of the region was designated as gemeente by the Dutch East Indies government in 1914. Since then, the process of accelerating urban growth and the productivity of architectural design creativity looks more significant and dynamic than the era previously in order to anticipate the growing needs of the city which is getting higher [1]. Physical development through the addition of new public functions became a channel for the entry of various architectural design creativities so that people were ultimately exposed to offers of design products with a more pluralistic aesthetic value content [2]. The city structure and its various architectural design creativities were not found in other former Dutch East Indies cities built by the Dutch, because there were two city centers that were formed during the development era of the region. The city structure with two centers has a major influence on the characteristics and character of the city so that it produces a distinctive form of transformation that must be maintained in Indonesia [3]. One of the city centers planned, designed and, developed by the Dutch East Indies government in Malang City was a new city center located north of the old city center, known today as Malang Tugu Square. Two important public buildings in the area, namely the city hall and train station, have played a major role in the character of the new downtown Malang area both in terms of function and architectural visuals. These two functions of public buildings are manifested in the architectural façade of the building which at first glance looks different. Each of them has an expression that contains certain aesthetic content, implying certain values related to the context of the building's existence such as function, location, social, political, economic, and cultural [4, 5].

At first glance, aesthetic products in the form of building architecture are seen as markers of a form of community life at that time with certain cultural rules and dynamics [6, 7]. The nuances of the diversity of forms and styles of buildings as an expression of the aesthetic values adopted at that time were applied by architects to the buildings they designed, forming visual signs because they were a marker of certain values that were currently prevailing in society [8, 9]. Therefore, it is important to know the visual elements that act as signs. Contains an understanding of markers and markers, so that
visual elements are not only understood as visual aesthetic elements physically but as elements that have a certain meaning and provide deeper knowledge regarding the context behind them [10, 11]. The architectural heritage of the past, in this case, is the architectural legacy of the Dutch East Indies, really needs to be interpreted as something that carries a message through a visual sign, in which aesthetic value is contained as a manifestation of its immaterial nature. This message will be read clearly through visualization that integrates the visible and invisible aspects because these two aspects are both contained in an object and have an inseparable relationship [12, 13]. Thus the study aims to: 1) explore how visual aesthetic signs appear in the new central zone of Malang City, with two cases of important public buildings in that location 2) explore how the potential and hierarchy of visual aesthetic signs contribute to the diversity of heritage public building designs architecture from the Dutch East Indies era in the new city center, Malang.

2. Methods
This research includes 3 stages accompanied by the operationalization of the following methods:
1. Data collection stage: observing the aesthetic elements of the two research object buildings (Kota Baru Malang Station and Malang City Hall) based on the scope of observations in table 1. Observations were made through direct observation or secondary data media (historical data).
2. Analysis stage: graphic analysis supported by qualitative descriptive analysis based on the conceptual framework of figure 1. Visual aesthetic signs are expressed through structured relationships between components within the framework.
3. Interpretation stage: carried out with coding techniques, tabulation, and pairing

| Table 1. Scope of observation                      |
|--------------------------------------------------|
| **Paradigm (V1)**                                 |
| **1st level significant unit (V1-A)**             |
| • Roof                                           |
| • Door                                           |
| • Window                                         |
| **2nd level significant unit (V1-B)**             |
| • Ornament                                       |
| • Stair                                          |
| • Balcony                                        |
| **3rd level significant unit (V1-C)**             |
| • Rythm                                          |
| • Colour                                         |
| • Texture                                        |
| • Axis                                           |
| Building Facade                                  |

Figure 1. Conceptual framework for analysis
3. Result and Discussion

3.1. Syntagma (composition themes) on the building facade

Based on the framework of figure 1, through graphic and descriptive analysis, the syntagma (composition themes) found in the two research objects in the railway station and city hall public building categories is tabulated into table 2 and table 3. In addition to syntagma, table 2 and table 3 shows how much the significant potential of the unit in building up aesthetic visual signs on each building facade. This potential is known by calculating the intensity of the appearance of each significant unit in each theme, then proxied based on the weight of its role when paired with other significant units in shaping the theme.

Table 2. Potential and hierarchy of significant-units on the building facade

| Syntagma (V2) | Paradigm (V1) |
|--------------|--------------|
| Composition Theme | 1st level Significant Unit * | 2nd level Significant Unit** | 3rd level Significant Unit (V1-C) |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Regularity | 0.12 | 0.29 | 0.29 | 0.29 | 0.18 | 0.18 | 0.24 | 0.24 | 0.03 | 0.12 | 0.29 | 0.29 | 0.29 | 0.24 | 0.24 | 0.03 | 0.18 |
| Balance | 0 | 0.40 | 0.07 | 0.40 | 0.13 | 0.20 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 | 0.13 |
| Dynamism | 0.40 | 0.40 | 0.40 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 | 0.20 |
| Monotony | 1.00 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 |
| Dominance | 0.25 | 0.50 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 | 0.25 |
| Firmness | 0.50 | 0.50 | 0.50 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Homogeneity | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

Potential Significant Unit

| 0.52 | 0.25 | 1.69 | 0.36 | - | - | - | 0.69 | 3.48 | 1.36 | 1.00 | - | 0.31 | 0.33 | 0.73 | 1.37 | 0.37 | - | 1.35 | 0.18 |

Hierarchy of Significant Unit

| 4 | 6 | 2 | 5 | - | - | - | 3 | 1 | 2 | 4 | 8 | 7 | 5 | 1 | 6 | 3 | 9 |

Conclusion

6 1st significant units
9 2nd significant units

15 paradigms play a role in shaping the façade syntagma of the Kota Baru Station building

* 1 Roof 2 Door 3 Window
4 Eaves 5 Stair 6 Balcony
7 Ornament 8 Colour 9 Façade plane

** 1 Rythm 2 Colour 3 Texture
5 Verticality 6 Horizontality 7 Shape
9 Scale 10 Proportion 11 Quantity

15 variables

First, this is the result of an exploration of the Malang City Station building façade. The results of the graphic and descriptive analysis show that there are 7 themes of composition as a form of relationship between the aesthetic elements of the building facade (can be seen in the composition theme column in table 2 above). The syntagma on the railway station building façade consists of 7 composition themes, namely regularity, balance, dynamism, monotony, dominance, firmness, and homogeneity (table 2). The whole theme is formed from the relations between 15 significant units (variables), consisting of 6 1st level significant unit and 9 2nd level significant unit.

The results of the exploration of the city hall building facade are tabulated based on the results of qualitative descriptive and graphic analysis (table 3), showing that there are 6 composition themes. The six themes of the composition build up a building facade syntagma as a form of relationship between the aesthetic elements of the building facade. The syntagma on the facade of the city hall building covers 6 composition themes that are the same as those of the railway station building facade (except homogeneity), but with different levels of complexity of relations between different elements. For example, the theme of firmness on the facade of a city hall building is much more complex than that of a train station building (12 significant units/ variables versus 3 significant units/ variables). All 6 themes are formed from the relationship between 16 significant units (variables), consisting of 6 1st level significant units and 10 2nd level significant units.
### Conclusion

| Homogeneity | Firmness | Dominance | Monotony | Dynamism | Balance | Regularity |
|-------------|----------|-----------|----------|----------|---------|------------|
| 0.23        | 0.12     | 0.27      | 0.04     | 0.20     | 0.17    | 0.17       |
| 0.17        | 0.17     | 0.11      | 0.09     | 0.27     | 0.12    | 0.17       |
| 0.06        | 0.13     | 0.31      | 0.09     | 0.27     | 0.09    | 0.19       |
| 0.13        | 0.19     | 0.31      | 0.09     | 0.19     | 0.19    | 0.19       |

### Composition Theme

| Composition Theme | 1st level Significant Unit | 2nd level Significant Unit | Significant unit 3 |
|-------------------|---------------------------|---------------------------|--------------------|
| 1.                | 4.                        | 7.                        | 10.                |
| 2.                | 5.                        | 8.                        | 11.                |
| 3.                | 6.                        | 9.                        |                    |

### Paradigm

#### Potential and hierarchy of significant-units on the building facade

**City Hall Malang-Indonesia**

| Syntagma (V2) | 1st level Significant Unit | Paradigm (V1) | 2nd level Significant Unit | Significant unit 3 |
|---------------|----------------------------|---------------|---------------------------|--------------------|
| Composition | 1st level Significant Unit | 2nd level Significant Unit | Significant unit 3 |
| Theme        | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| Regularity   | 0.23 | 0.12 | 0.27 | 0.04 | 0.27 | 0.08 | 0.12 | 0.12 | 0.23 | 0.12 | 0.08 | 0.12 | 0.12 | 0.12 |
| Balance      | 0.17 | 0.17 | 0.11 | 0.17 | 0.22 | 0.14 | 0.17 | 0.03 | 0.06 | 0.17 | 0.17 | 0.06 | 0.14 | 0.08 |
| Monotony     | 0.20 | 0.36 | 0.36 | 0.18 | 0.27 | 0.27 | 0.27 | 0.27 | 0.27 | 0.27 | 0.27 | 0.27 | 0.27 | 0.27 |
| Dominance    | 0.27 | 0.25 | 0.09 | 0.64 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.09 | 0.18 | 0.09 | 0.18 |
| Firmness     | 0.06 | 0.13 | 0.31 | 0.31 | 0.19 | 0.13 | 0.19 | 0.13 | 0.19 | 0.13 | 0.19 | 0.19 | 0.19 | 0.19 |
| Homogeneity  | 0.06 | 0.13 | 0.31 | 0.31 | 0.19 | 0.13 | 0.19 | 0.13 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 | 0.19 |

### Potential Significant Unit

| Potential Significant Unit | 1st level Significant Unit | 2nd level Significant Unit | Significant unit 3 |
|----------------------------|---------------------------|---------------------------|--------------------|
| 1.                        | 4.                        | 7.                        | 10.                |
| 2.                        | 5.                        | 8.                        | 11.                |
| 3.                        | 6.                        | 9.                        |                    |

### Table 3. Potential and hierarchy of significant-units on the building facade

| Equipment | 1st level Significant Unit | 2nd level Significant Unit | Significant unit 3 |
|-----------|---------------------------|---------------------------|--------------------|
| Railway Station | 1st level Significant Unit | 2nd level Significant Unit | Significant unit 3 |
| 1. Façade plane | 3.48 | 49.76% | Façade plane | 1.92 | 32.05% |
| 2. Window | 1.69 | 24.20% | Window | 1.20 | 20.05% |
| 3. Coloumn | 0.69 | 9.92% | Coloumn | 1.11 | 18.53% |
| 4. Roof | 0.52 | 7.39% | Roof | 0.93 | 15.54% |
| 5. Eaves | 0.36 | 5.15% | Door | 0.68 | 11.33% |
| 6. Door | 0.25 | 3.57% | Eaves | 0.15 | 2.49% |
| Total | 7 themes | 100% | Total | 6 themes | 100% |

### Table 4. The potential and hierarchical paradigm in building facade syntagma

| 1st level significant unit | 2nd level significant unit |
|----------------------------|----------------------------|
| 1. Shaped | 1.37 | 19.55% | Shape | 1.23 | 20.55% |
| 2. Proportion | 1.35 | 19.29% | Proportion | 0.90 | 14.94% |
| 3. Colour | 1.00 | 14.29% | Colour | 0.65 | 10.87% |
| 4. Horizontality | 0.73 | 10.48% | Horizontality | 0.61 | 10.22% |
| 5. Verticality | 0.37 | 5.27% | Verticality | 0.50 | 8.28% |
| 6. Axis | 0.31 | 4.43% | Axis | 0.39 | 6.56% |
| Total | 7 themes | 100% | Total | 6 themes | 100% |

### 3.2. Paradigm forming syntagma on the building facade

Based on table 2 and table 3, it can be seen that the syntagma on the building facade was built by the existence of a paradigm. The paradigms that play a role in forming the facade syntagma of railway station and city hall buildings are tabulated based on their hierarchy, as follows (table 4).

**Table 4. The potential and hierarchical paradigm in building facade syntagma**

| 1st level significant unit | 2nd level significant unit |
|----------------------------|----------------------------|
| 1. Shape | 1.37 | 19.55% | Shape | 1.23 | 20.55% |
| 2. Proportion | 1.35 | 19.29% | Proportion | 0.90 | 14.94% |
| 3. Colour | 1.00 | 14.29% | Colour | 0.65 | 10.87% |
| 4. Horizontality | 0.73 | 10.48% | Horizontality | 0.61 | 10.22% |
| 5. Verticality | 0.37 | 5.27% | Verticality | 0.50 | 8.28% |
| 6. Axis | 0.31 | 4.43% | Axis | 0.39 | 6.56% |
| Total | 7 themes | 100% | Total | 6 themes | 100% |

**Schema**
After being tabulated, it can be seen that of all the syntagma formed, 2 paradigms contributed greatly to the formation of the building facade design of Kota Baru Malang Station, namely the facade area (49.76%) and the shape (19.55%), as seen in table 4. Likewise, the same results apply to the building facade design of Malang City Hall. Facade area (32.05%) and shape (20.55%) are the 2 paradigms that contribute the most to the formation of the building facade syntagma, as seen in table 4.

When the existing results at the city hall juxtaposed with the railway station, as the visualization of the schema above, it turns out that the significant units that have the highest hierarchy are the same, namely the facade plane and shape, although with different percentages. The emphasis on this city hall is that the complexity of the relationship between units is more complex because the resulting phrases are 105 phrases, which is bigger when compared to train station phrases which only amount to 47 phrases. This suggests a little for a while that visually this building has the potential to dominate the visual experience of the observer's eye moving in the area.

3.3. **Visualization of the dominant aesthetic visual signs on the building facade**

The similarity of visual signs with the highest hierarchy between the station and city hall is shaped by the theme of a balanced composition. However, the relationship between the visual elements between the two buildings in forming a balance is built by different visual elements.

Figure 2. Visual aesthetic sign on the railway station building facade
Figure 3. Visual aesthetic signs on the city hall building facade

The balance at the city hall is the strongest visual sign because it has the highest hierarchy in terms of phrases and variables, built by visual elements of the facade plane, shapes, dimensions, and axes (figure 3). These visual signs are the visual signs that contribute the most to the area, emphasizing the strong relationship between the function of the area and the function of the building as the city center and the center of government. The visual diversity and visual dynamics in the area are characterized by balance - regularity of the station building facades along with more varied visual elements than the city hall visual elements (figure 2). The theme of the dynamic composition between the station and city hall is relatively different from the hierarchy, which also reinforces this statement.

4. Conclusion
- The similarity of highest potency and hierarchy of visual signs from one building to another can serve as a visual binder between buildings in an area
- This visual sign signifies the importance of the context of the location and the context of architectural development in giving a certain aesthetic value into the visual expression of the building
- The context of building function affects 1) the dominance of the aesthetic value of each building 2) the visual diversity in the area and 3) the visual dynamics in the area
- The design of new building facades in the new city center of Malang can take into account the presence of visual signs of existing buildings, but can still provide flexibility in enriching the diversity of forms through the contextualization of the functional characteristics of the new buildings.
- The last one is more on the potential for further research possibilities, namely that How the complexity of the relationship between the visual components in the visual composition of the building facade is influenced by the hierarchy of building functions on an area scale, can be seen further through comparisons with other buildings of the same era in different locations

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